CURRICULUM

(R2015)

CHOICE BASED CREDIT SYSTEM

(Applicable to the batches admitted from July 2015)

B.Sc. BIOTECHNOLOGY

I-VI SEMESTERS

SEMESTER - I

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							
Part I	HS	BAL101	Part - I -Tamil-I / Hindi-I / French – I	4	0	0	4
Part II	HS	BEH101	Part - II- English	4	0	0	4
Part III	MC	BBS101	Cell Biology	3	1	0	4
	MC	BBS102	Genetics	3	1	0	4
	MC	BBS103	Bioinstrumentation	3	1	0	4
	PRACTICAL						
	MC	BBS1L1	Cell Biology Lab	0	0	4	2
	AE		Seminar	1	0	0	-
			Total				**22**

SEMESTER - II

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							
Part I	HS	BAL201	Part- II-Tamil- II/ Hindi - II /French – II	3	0	0	3
Part II	HS	BEH201	English – II	3	0	0	3
Part	MC	BBS201	Principles of	3	1	0	4

III			Biochemistry				
	MC	BBS202	Industrial Biotechnology	3	1	0	4
	MC	BBS203	Basics of Computer	3	1	0	4
	PRACTICAL						
	MC	BBS2L1	Biochemistry Lab	0	0	4	2
Part IV	HS	BCI204	Environmental Studies	2	0	0	2
	EC	BBC206	Value Education	2	0	0	2
Total							**24**

SEMESTER - III

Part	**Category**	**Sub Code**	**Sub Name**	**No. of periods per week**			**Credit**
				L	**T**	**P**	
THEORY							
Part I	HS	BAL301	Tamil- III/ Hindi-III /French – III	4	0	0	4
Part II	HS	BEH301	English – III	4	0	0	4
Part III	MC	BBS301	Microbiology	3	1	0	4
	MC	BBS302	Enzymology	3	0	0	3
	MC	BBS303	Bioinformatics	3	0	0	3
	PRACTICAL						
	MC	BBS3L1	Microbiology lab	0	0	4	2
Part IV	NE	BAL002 BCA3E1	Non Major Elective I – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.	2	0	0	2
Total							**22**

SEMESTER - IV

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							
Part I	HS	BAL401	Tamil-IV / Hindi-IV /French-IV	3	0	0	3
Part II	HS	BEH401	English-IV	3	0	0	3
Part III	MC	BBS401	Molecular biology	3	1	0	4
	MC	BBS402	Bio processing Technology	3	1	0	4
	MC	BBS403	Genetic Engineering	3	1	0	4
	PRACTICAL						
	MC	BBS4L1	Molecular biology and Genetic engineering lab	0	0	4	2
Part IV	NE	BAL004 BCA4E1	Non Major Elective II – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme	2	0	0	2
	SE	BBS4E3	Skill Based Elective I	2	0	0	2
Total							**24**

SEMESTER - V

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							

Part III	MC	BBS501	Immunology	3	2	0	5
	MC	BBS502	Molecular Genetics	3	1	0	4
	MC	BBS503	Plant &Animal Biotechnology	3	2	0	5
	ME	BBS5E4	Major Elective – I	4	0	0	4
	PRACTICAL						
	MC	BBS5L1	Immunology Lab	0	0	4	2
	MC	BBS5L2	Bioprocess Lab	0	0	4	2
Part IV	SE	BBS5E5	Skill Based Elective – II	2	0	0	2
	SE	BBS5E6	Skill Based Elective – III	2	0	0	2
Total							**26**

SEMESTER - VI

Part	**Category**	**Sub Code**	**Sub Name**	**No. of periods per week**			**Credit**
				L	**T**	**P**	
THEORY							
Part III	MC	BBS601	Environmental Biotechnology	3	1	0	4
	MC	BBS602	Nanobiotechnology	3	1	0	4
	ME	BBS6E7	Major Elective – II	3	0	0	3
	PRACTICAL						
	MC	BBS6L1	Plant& Animal Biotechnology Lab	0	0	4	2
	EE	BBS6P1	Project	0	0	12	6
PartV	EE	BBS6V1	Extension Activities	-	0	2	1
Total							**20**
GRAND TOTAL							**138**

LIST OF ELECTIVES

SUBJECT CODE	**SUBJECT**	**L**	**T**	**P**	**C**
MAJOR ELECTIVE – I					
BBS551	BIO FERTILIZER TECHNOLOGY	4	0	0	4
BBS552	HERBAL TECHNOLOGY	4	0	0	4
BBS553	VERMICULTURE	4	0	0	4
BBS554	BIOPHARMACEUTICAL TECHNOLOGY	4	0	0	4

BBS555	DAIRY TECHNOLOGY	4	0	0	4
BBS556	CANCER TECHNOLOGY	4	0	0	4
BBS557	WASTE MANAGEMENT TECHNOLGY	4	0	0	4
BBS558	BIOFUEL TECHNOLOGY	4	0	0	4
MAJOR ELECTIVE – II					
BBS651	INDUSTRIAL SAFETY ENGINEERING	3	0	0	3
BBS652	STEM CELL AND TISSUE ENGINEERING	3	0	0	3
BBS653	GENOMICS AND PROTEOMICS	3	0	0	3
BBS654	BIOSTATISTICS	3	0	0	3
BBS655	FOOD PROCESS TECHNOLOGY	3	0	0	3
BBS656	FERMENTATION TECHNOLOGY	3	0	0	3
BBS657	MEDICAL BIOTECHNOLOGY	3	0	0	3

NON MAJOR ELECTIVE (NE) I

Sub Code	**Sub Name**	**L**	**T**	**P**	**C**
BAL002	Basic Tamil – I for those who studied other language under Part I	2	0	0	2
BCA3E1	Special Tamil – I for those who studied Tamil under Part I	2	0	0	2

NON MAJOR ELECTIVE (NE) II

Sub Code	**Sub Name**	**L**	**T**	**P**	**C**
BAL004	Basic Tamil – II for those who studied other language under Part I	2	0	0	2
BCA3E1	Special Tamil – II for those who studied Tamil under Part I	2	0	0	2

	□□□□□ – I	L	T	P	C

LIST OF SKILL BASED ELECTIVES (Choose any three courses – one in semester IV & two in semester V):

S.NO	Sub Code	Sub Name	L	T	P	C
1	BBA011	BPO Management	1	0	2	2
2	BBE002	Desk Top Publishing	1	0	2	2
3	BCA001	Computer Application	1	0	2	2
4	BCA002	Graphical and Web Design	1	0	2	2
5	BCA003	Multimedia	1	0	2	2
6	BCA004	Networking and Maintenance	1	0	2	2
7	BCA006	Web Designing	1	0	2	2
8	BSC001	Animation	1	0	2	2
9	BSC002	Computer Hardware and Networking	1	0	2	2
10	BSC003	Computer Programming	1	0	2	2
11	BSC004	Computer Technology	1	0	2	2

	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department: முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES : இருபதாம் நூற்றாண்டு இலக்கியம் மற்றும் மொழி வரலாற்றை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	இருபதாம் நூற்றாண்டு கவிதைஇலக்கியத்தைப் பற்றி அறிவர்
CO2	இருபதாம் நூற்றாண்டுகட்டுரைஇலக்கியத்தைப் பற்றி அறிவர்
CO3	இருபதாம் நூற்றாண்டுசிறுகதைஇலக்கியத்தைப் பற்றி அறிவர்
CO4	இக்கால இலக்கிய வரலாறுபற்றி அறிவர்
CO5	மொழி வரலாறு – செம்மொழிபற்றி அறிவர்
CO6	தற்கால இலக்கியத்தில் ஆழ்ந்த அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation)H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences	Engg Sciences	Professional Core (PC)	Core Elective	Non-Major Elective	Open Elective	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

SEMESTER I

அலகு -1 **இருபதாம் நூற்றாண்டு கவிதைகள்** 9

1. பாரதியார் -யாமறிந்த மொழிகளிலே 2. பாரதிதாசன்-நீங்களே சொல்லுங்கள்!

3. கண்ணதாசன் -அழுகை 4. பெருஞ்சித்திரனார்- தமிழா நீ எங்கே?

5. தமிழ் ஒளி - (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல் ரகுமான் - கல்லின் காயம்

அலகு -2 **உரைநடை** (I) 4 **கட்டுரைகள்** 9
1. மனிதனும் அழகும் - திரு.வி.க.2. வீட்டிற்கோர் புத்தகசாலை-அறிஞர் அண்ணா
3. பொறியியல் தமிழ் - நா. மால் முருகன்
4. தேசியமறை திருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 **உரைநடை** (II) **சிறுகதை** - 4 **கதைகள்** 9
1. நட்சத்திரக் குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம் – ஜெயகாந்தன்4. கடவுளும் கந்தசாமிப் பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 **இக்கால இலக்கிய வரலாறு** 9
1. இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு
2. இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு
3. இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

அலகு -5 **மொழி வரலாறு** 9
1. தமிழ்மொழி வரலாறு 2. உலகச் செம்மொழிகளின் வரலாறு
3. தமிழுக்கும் உலகச் செம்மொழிகளுக்குமான உறவு வரலாறு

பாட நூல்கள்:
1. இருபதாம் நூற்றாண்டு கவிதை, உரைநடை, சிறுகதை(அலகு-3) பாரத் பல்கலைக்கழக வெளியிடு
பார்வை நூல்கள்

1. சு. ஆனந்தன்,"தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ் அமைப்புற்றவரலாறு", வியாபார ஐக்கிய சங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ் வரலாறு", பூம்புகார் பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல் தாய்மொழி", பூம்புகார் பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டு விளக்கம்" , பூம்புகார் பதிப்பகம்,2006
3. மௌனி, "மௌனி படைப்புகள்", காலச்சுவடு பதிப்பகம், 2010
4. புதுமைப்பித்தன், "காஞ்சனை", அன்னம் பதிப்பகம், 2013

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

	Hindi-I	L	T	P	C
BAL101	**Total Contact Hours – 60**	4	0	0	4
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name &Department:- Mrs Rani Selvan & Department of Hindi				
COURSE OBJECTIVES: -					
To understand , read, write and speak Hindi language with grammatical.					

COURSE OUTCOMES (COs)	
CO1	Remember the behaviour
CO2	Understand the importance of money by story
CO3	Apply the concept of Hindi grammar
CO4	Analyze the usage of translation from English to Hindi
CO5	Evaluatethe unseen passage to answer the questions
CO6	Create the knowledge in Hindi Language

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation)H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **9**

NAVEEN GADYA CHAYANIKA – 2 - Bholaram ka jeev - Mehamaan se Bhagavaanbachaaye - NumberovaliThijori – Kaffan - Gunda

UNIT II **9**

NON DETAILED TEXT: KAHANI KUNJ - Stories: 6 – 10 only

UNIT II **9**

GRAMMAR: SHABDA VICHAR ONLY - NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS - Theoretical & Applied

UNIT-I **9**

TRANSLATION - English – Hindi only - ANUVADH ABHYAS – III - 1 – 15 Lessons Only

UNIT V **9**

COMPREHENSION - 1 Passage from ANUVADH ABHYAS – III (16 – 30)

TEXT BOOKS:

UNIT 1 - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017
UNIT II - Govind Prakashan, SadharBagaar, Mathura, Uttar Pradesh – 281001 - Editor:

Dr V.P. Amithab

UNIT III - Vyakaran Pradeep by Ramdev - Hindi Bhavan, 36, Tagor Town, Allahabad –

211002.

UNIT IV - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017.

UNIT V - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

CourseCoordinator **HOD**

BAL101	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

Initier les étudiants aux principes de base et à la pratique de la communication orale et écrite.

COURSE OUTCOMES (COs)	
CO1	Comprendre les bases de la langue.
CO2	Analyser les modèles de phrases et former la grammaire.
CO3	Pour apprendre les bases de la grammaire ainsi que ses principes.
CO4	Se souvenir de l'anatomie des conjugaisons.
CO5	Créer des dialogues et des conversations par eux-mêmes dans la langue et pratiquer des compétences orales et écrites.
CO6	Se souvenir des règles nécessaires de la langue

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		√								

4	Approval		Academic Council Meeting

UNIT I - Vous comprenez **9**

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail! **9**

Masculine Singular and Feminine singular - Conjugaison des verbes (present tense) -

Les articles définis.

UNIT III En se detend? **9**

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir)

UNIT IV Racontez-moi **9**

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage! **9**

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!- Article

partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

BEH101	**ENGLISH I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. SHEEBA - English				
COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.					
	COURSE OUTCOMES (COs)				

CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L						H		
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓							

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019
3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

Course Coordinator **HOD**

BBS101	**CELL BIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr. S.Sharmila & Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with the basics of Cells and cellular components. Learners will understand the structure, function and its types.					

COURSE OUTCOMES (COs)	
CO1	Recall the history and fundamental principles of cellular biology
CO2	Understand the cellular components, their structure and functions
CO3	Apply the role of cell organelles in physiology
CO4	Analyze the cell cycles and growth of cells
CO5	Analyze the molecular and sub-cellular components of a cell to a framework of heredity and evolution.
CO6	Analyze the mechanism and types of cancer.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	L	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT **12**

An Overview of cells – Origin and evolution of cells- Cell theory, Classification of cells – Prokaryotic cells and Eukaryotic cells- Comparison of prokaryotic and eukaryotic cells Cell cycle – components in cell cycle control – cyclic- CDKs – check points in cell cycle - abnormalities in cell cycle.

UNIT II **12**

Cell Membrane – Fluid mosaic model of membrane structure- Membrane proteins and their

properties-Membrane carbohydrates and their role- Transport across membranes – Diffusion - active and passive diffusion.

UNIT III **12**

Endoplasmic reticulum – Types, structure and function- Golgi apparatus – Structure and function-Lysosome– Structure and functions- Morphology and functions of peroxisomes and glyoxisomes-Ribosomes – Types structure and function.

UNIT IV **12**

Nucleus: Structure and function. Chromosomes, chromatin structure- Mitochondria – Structure and functions- Cytoskeleton: Types of filaments and their functions. Microtubules – Chemistry and functions – Cilia and flagella- Cell –cell interactions.

UNIT V **12**

Introduction to Necrosis, Senescence, Apoptosis – Programmed cell death- Mechanism of Apoptosis- Oncogenes – Types of cancer.

TEXT BOOKS:

1. Harvey Lodish, Arnold Berk, Chris A. Kaiser and Monty Krieger. Molecular CellBiology, 4th ed., WH Freeman and Co, New York, 1999.
2. Cooper, Geoffrey M, Sunderland. The Cell - A Molecular Approach, SinauerAssociates, 2nd ed., Inc, 2000.

REFERENCE BOOKS:

1. Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter. Molecular Biology of the Cell, Garland Science publisher, USA, 4th ed, 2002.
2. Gerald Karp. Cell and Molecular Biology: Concepts and Experiments, 4th ed., NCBImart, 2004.

Course Coordinator **HOD**

BBS102	**GENETICS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr. S.Selvakumar & Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with the fundamental knowledge on laws of genetics, inheritance, and heredity. Learners will understand the causes of genetic disorders and the methods					

of gene transfer.

COURSE OUTCOMES (COs)

CO1	Recal the basics about genes and hereditary.
CO2	Understand the structure and organization of genetic materials
CO3	Understand the different laws of genetics.
CO4	Apply the concept of alleles to ABO blood grouping
CO5	Apply pedigree analysis to understand genetic disorders
CO6	Analyze the molecular mechanism of crossing over

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	L	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Classical gentics, Mendelian Laws- Mendel's experiment-monohybrid cross-pheotype, genotype, Dihybrid inheritance, Interaction of genes, Fine structure of Genes.

UNIT II **12**

Chromosome structure and organization in prokaryotes and eukaryotes, Unsusal chromosomes-chromosome banding, chromosome abnormalities- genetic disorders.

UNIT III **12**

Classical concepts of allelomorphism, Multiple alleles, ABO blood groups, Rh factor, sex linkage in Drosophila, linkage in human beings, mechanism of sex determination, XX-XY mechanisms of sex determination, sex determination in Drosophila, environmental factors and sex determination, sex differentiation.

UNIT IV **12**

Coupling and Repulsion-Hypothesis, Test cross in maize and crossing over, theory of crossing over, molecular mechanism of crossing over, sex chromosomes and sex linked inherited disorders, colour blindness, hemophilia, Muscular dystrophy.

UNIT V **12**

Transformation, Tansduction, Conjugation, Plasmids and Episomes.

TEXT BOOKS

1. GardenerEJ, Simmons MJ and Snustad DP. Principles of Genetics, J.Wiley and Sons Pubs., 1998.
2. Obe G and Natarajan AT. Chromosomal Abberrations: Basic and Applied aspects, Springer Verlag, Berlin, 1990.
3. Tamarin R.H. (2012). Principles of Genetics. Tata McGrawHill, New York

REFERENCE BOOKS:

1. Winter PC, Hickey GI, and FletcherHL. Instant notes in Genetics, Viva Books Pvt.Ltd. 2003
2. Sinha U, Sunita Sinha, and Vikas. Cytogenetics, Plant Breeding and evolution, Publishing House Private, Limited, 1998
3. Brooker, R.J. (1999). Genetics, Principles and Analysis. Addison Wesley Longman, California.
4. Gardner, E.J. (2011). Human Genetics. Viva Books Pvt. Ltd., India.

Course Coordinator **HOD**

	BIOINSTRUMENTATION	**L**	**T**	**P**	**C**
BBS103	**Total Contact Hours – 60**	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with basic instruments used in the field of biochemistry, microbiology and biotechnology. Learners will understand the theory and application of chromatography, electrophoresis, spectroscopy and radioisotope techniques.

COURSE OUTCOMES (COs)

CO1	Recall basic principles and concepts of different instrumentation
CO2	Understand the applications of various instruments.
CO3	Understand basic parameters of different equipment.
CO4	Apply knowledge in working of devices.
CO5	Apply different instruments for desired applications.
CO6	Analyze the data from devices and interpret the results

Mapping of Course Outcomes with Program outcomes (POs)
(H/ML indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								
	CO2	H	M								
	CO3	H	M								
	CO4	H	M							H	M
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Sedimentation Principle, Types of rotors, Preparative and Analytical Centrifuges, Density Gradient Centrifugation, Differential centrifugation.

UNIT II **12**

Theory and Application of Paper Chromatography, TLC, Gel Filtration Chromatography, Ion

	CELL BIOLOGY LAB	L	T	P	C

Exchange Chromatography, Affinity Chromatography, GLC and HPLC.

UNIT III **12**

Theory and Application of PAGE, Agarose Gel Electrophoresis 2DE, Iso-electric Focusing, Immuno diffusion, Immuno Electrophoresis, ELISA, RIA, Southern, Northern and Western Blotting.

UNIT IV **12**

Theory and Application of UV and Visible Spectroscopy, Fluorescence Spectroscopy, MS, NMR, ESR, Atomic Absorption Spectroscopy.

UNIT V **12**

Introduction to Radioisotopes and their Biological Applications, Radioactive Decay – Types and Measurement, Principles and Applications of GM Counter, Solid and Liquid Scintillation Counter, Autoradiography, RIA.

TEXT BOOKS

1. Webster JG. Bioinstrumentation. John Wiley & Sons Incorporated; 2004.
2. Wilson PD, Wilson K, Walker J, Walker JM, editors. Principles and techniques of practical biochemistry. Cambridge University Press; 2000.
3. Veerakumari L. Bioinstrumentation. MJP Publisher; 2019.

REFERENCE BOOKS:

1. Katoch R. Analytical techniques in biochemistry and molecular biology. Springer Science & Business Media; 2011.
2. Kates M, Work E. Laboratory techniques in biochemistry and molecular biology. North-Holland Publishing Company; 1986.
3. Harvey DT. The Essence of Chromatography. ACS Publications;2003.
4. Westermeier R, Westermeier R. Electrophoresis in practice. Weinheim Germany: Wiley-Vch; 2001.

Course Coordinator **HOD**

	Total Contact Hours –30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr. S.Sharmila & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with basic cell biology experiments. Learners will understand the microscopical observation of cells

COURSE OUTCOMES (COs)

CO1	Perform the differential staining and measure osmotic potential.
CO2	Differentiate the structure of prokaryotes and eukaryotes
CO3	Grasp the microscopic observation of chromosomes in cells.
CO4	Manipulate the estimation of Hb, WBC and RBC levels as compared to the control
CO5	Sketch the difference between mitosis and meiotic division

Mapping of Course Outcomes with Program outcomes (POs)

(H/ML indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

I QUALITATIVE ANALYSIS

1. Cell Division: Mitosis – onion root tip: Meiosis – Transdescantia

2. Polytene chromosomes – chironomous larvae

3. Microscopic observation of prokaryotic and eukaryotic cell (differential staining)

4. Screening of leaf pigments – paper chromatography

5. Haemoglobin estimation

6. WBC and RBC count – Haemocytometer

7. Osmotic potential – (sucrose / salt solution)

II PERMANENT SLIDE OBSERVATION

8. Meiosis

9. Plant cell

10. Mitochondria

11. Chloroplast

TEXT BOOKS

1. Smith and Wood, Cell Biology, Chapman and Halls, 1996.
2. Bruce Alberts and other, Molecular Biology of the Cell, Garland Publishing, 3rd ed., 1994.
3. Veerakumari L. Bioinstrumentation. MJP Publisher; 2019.

REFERENCE BOOKS:

1. Julio E. Celis, Cell Biology: A Laboratory Handbook, Academic Press, 3rd ed, 2005.
2. Gerald Karp, Cell and Molecular Biology", John Wiley and Sons Inc. New York, 1996.
3. Kates M, Work E. Laboratory techniques in biochemistry and molecular biology. North-Holland Publishing Company; 1986.
4. Harvey DT. The Essence of Chromatography. ACS Publications;2003.
5. Westermeier R, Westermeier R. Electrophoresis in practice. Weinheim Germany: Wiley-Vch; 2001.

Course Coordinator **HOD**

SEMESTER II

	□□□□□ - II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
BAL201	Prerequisite course- TAMIL – I				
	Course Coordinator Name& Department: முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES : சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	சிற்றிலக்கியமான தூது,பள்ளு ,குறவஞ்சி பற்றி அறிந்துகொள்வர்
CO2	சைவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO3	வைணவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO4	பௌத்த, இசுலாம், கிறித்துவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறுபற்றி அறிந்துகொள்வர்
CO6	சிற்றிலக்கியம் மற்றும்சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 9

அற்புதத்திருவந்தாதி - 1 - 5

திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10

மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 9

பெரியாழ்வார் - முதல்திருமொழி - 1 - 10

ஆண்டாள் - திருப்பாவை - - 1 - 10

தொண்டரடிப்பொடிஆழ்வார் - திருமாலை - 1 - 5

அலகு4 9

ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10

பராபரக்கண்ணி- குணங்குடிமஸ்தான்சாகிபு - 1 - 20

இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 9

சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாட நூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BAL201	**Hindi-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				
COURSE OBJECTIVES: - To understand and improve the skills in the Language of Hindi					

COURSE OUTCOMES (COs)	
CO1	Remember of Ramayana In Sabari part
CO2	Understand the historical stories
CO3	Apply the concept of translation
CO4	Analyze and develop the letter writing skills
CO5	Analyze and develop the speaking skills
CO6	Apply the knowledge in letter writing and speaking skills

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **9**

MODERN POETRY - SHABARI

UNIT II **9**

ONE ACT PLAY - EKANKI SANKALAM

UNIT III **9**

TRANSLATION - HINDI – ENGLISH ONLY

UNIT IV **9**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **9**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - LokbharathiPrakashan ,1 Floor, DuebariBuilding,Mahathma Gandhi Marg,

Allahabad – 1.

UNIT II – Publishers – Vani Prakasam, New Delhi-110002

UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BAL201	**Française -II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				
COURSE OBJECTIVES: - Présenter aux élèves la complexité de la grammaire et comment la surmonter avec des règles simples					

COURSE OUTCOMES (COs)	
CO1	Être capable d'interpréter la langue.
CO2	Se familiariser avec les approches méthodologiques de l'étude des textes littéraires et culturels, telles que la lecture attentive, la contextualisation socio-historique et la théorie littéraire et culturelle.
CO3	Acquérir une maîtrise avancée du français parlé et écrit.
CO4	Encourager le développement de compétences en linguistique, en traduction et en études comparatives.
CO5	Se souvenir de l'anatomie des conjugaisons au passé.
CO6	Pour évaluer le texte donné de manière critique et améliorer les compétences en communication.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I -Quelle journee! 9

La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! 9

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)

Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? 9

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? 9

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est-Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! 9

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	0	0	3
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English				
COURSE OBJECTIVES:- To have a better understanding of the English language skills and its implementation it in day to day life activities.					
	COURSE OUTCOMES (COs)				

CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O	PSO2	PS O3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L						H		
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb – Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

Course Coordinator **HOD**

BBS201	**PRINCIPLES OF BIOCHEMISTRY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi & Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with basic principles of biochemistry. Learners will understand the bioenergetics					

and biomolecular structures.

COURSE OUTCOMES (COs)

CO1	Recall the basic properties of water, acids, bases and buffer.
CO2	Understand the structures of Carbohydrates, proteins, amino acids and lipids
CO3	Understand the structural aspects of protein and enzymes; Factors influencing enzyme activity.
CO4	Apply knowledge in the law of thermodynamics
CO5	Apply chromatographic technique to seperarte biological materials
CO6	Analyze the enzyme activity, mechanisms and kinetics

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L--Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I **12**

Aqueous solutions - properties of water - hydrogen ion concentration - acids, bases and their concept - buffers and electrolytes and their functions - acidity, alkalinity and pH determination.

UNIT II **12**

Bioenergetics - energy and its forms - free energy - laws of thermodynamics - enthalpy and entropy - redox potential - redox coupling and ATP bioenergetics.

UNIT III **12**

A brief account on the biochemistry of Carbohydrates (sugars, starch, cellulose), Lipids (triglycerides, fats), Proteins (structural, catalytic) - primary, secondary, tertiary and quaternary structure and characteristics of proteins and amino acids.

UNIT IV **12**

Enzymes: classification and nomenclature of enzymes - physico chemical nature of enzymes - enzyme kinetics - mechanism of enzyme action - factors affecting enzyme activity

UNIT V **12**

A brief account on the biochemistry of the secondary plant products: Alkaloids, flavonoids, anthocyanins, terpenes - Elementary treatment of fractionation of biological materials by chromatography (PC,TLC), electrophoresis (principle and types), centrifugation (principle and types).

TEXT BOOKS:

1. Murray K, Rodwell V, Bender D, Botham KM, Weil PA, Kennelly PJ. Harper's illustrated biochemistry. 28. New York: McGraw-Hill; 2009.
2. Lehninger AL, Nelson DL, Cox MM. Principles of Biochemistry. 3rd edit. (2000). CBS publishers, New Delhi.
3. Satyanarayana, U., and U. Chakrapani. "Biochemistry, Books and allied (P) Ltd." 2006.

REFERENCE BOOKS:

1. Henrissat, Bernard. "A companion for students of enzymology: Understanding Enzymes, 3rd edn by Trevor Palmer, Ellis Horwood, 1991
2. Voet, Donald, Judith G. Voet, and Charlotte W. Pratt. Fundamentals of biochemistry: life at the molecular level. 2013.
3. Champe, Pamela C., Richard A. Harvey, and Denise R. Ferrier. Biochemistry. Lippincott Williams & Wilkins, 2005.
4. Zubay GL, Parson WW, Vance DE. Principles of Biochemistry, Wm. C. C. Brown, Dubuque. 1996.

Course Coordinator **HOD**

BBS202	**INDUSTRIAL BIOTECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				

	Course Coordinator Name & Department :- Dr. S.Sharmila & Biotechnology

COURSE OBJECTIVES: - Learners will be familiar with major commercial products production using microbes. Learners will understand the different types of bioreactors and microbial culture process.

COURSE OUTCOMES (COs)

CO1	Recall the different microorganisms involved in production of commercial products.
CO2	Understand methods of the strain improvement.
CO3	Understand the features, and operations of different type of fermenters.
CO4	Apply the stoichiometry of bioprocess
CO5	Apply downstream processing techniques
CO6	Analyze the growth kinetics of microorganisms

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Introduction to biotechnology and products. Major classes of commercial products using microorganisms-enzymes, amino acids, vitamins, antibiotics, organic solvents, organic acids, food and beverages.

UNIT II **12**

Industrially important microorganisms: screening techniques - detection & assay of fermentation products-strain improvements - mutations, protoplast fusion and rDNA techniques for strain development.

UNIT III **12**

Bioreactors / Fermentor: Types, features, operation: sterilization (Batch and Continuous), inoculation and sampling. Control of bioprocess parameters. Microbial growth and media formulation. Microbial culture - batch, fed batch, semi-continuous, continuous. Growth kinetics of microorganisms

UNIT IV **12**

Downstream processing: Solid-liquid separation, flotation, flocculation, filtration, centrifugation, cell disruption, concentration, evaporation, liquid-liquid extraction, membrane filtration, precipitation, adsorption. Product purification by chromatography.

UNIT V **12**

Industrial process of beverages - enzymes - amino acid - organic acids - organic solvents – antibiotics-Introduction to nanotechnology - history and recent developments - sources of nanoparticles - microbial production of nanoparticles - advantages of microbial nanoparticles – applications

TEXT BOOKS:

1. Reed. C, Prescott and Dann's, Microbiology, Macmillan publishers. 1982.
2. Prave. P, Faust, V and Sitih. W, Fundamentals of Biotechnology, ASM press. 1987.
3. Demain A.L, Manual of industrial microbiology and Biotechnology, ASM press. 1986.
4. Satyanarayana, U, Biotechnology, Books and Allied (P) Ltd, 2006.

REFERENCE BOOKS:

1. Wulf Cruger and Anneliese Cruger, "A Textbook of Industrial Microbiology",Panima Publishing Corporation.
2. Michael J. Waites, Neil L.Morgan, John.S. Rockey and Grey Higton, "Industrial Microbiology": An Introduction, Blackwell science publishing house.
3. Casida Jr, L. E., "Industrial Microbiology", New Age International(p) Ltd
4. Presscott. Dunn, "Industrial Microbiology", Agrobios (India).

Course Coordinator **HOD**

	BASICS OF COMPUTER	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4

BBS203	Prerequisite course – Biology at Higher Secondary Education
	Course Coordinator Name & Department :- Dr. S.Selvakumar & Biotechnology

COURSE OBJECTIVES: - Learners will be familiar with computer usage and programming. Learners will Understand Components of Computer System

COURSE OUTCOMES (COs)

CO1	Recall the Basic Applications of Computer
CO2	Understand Components of Computer System.
CO3	Apply the Basics of Operating System.
CO4	Analyze the PowerPoint presentation.
CO5	Apply the Programming languages.
CO6	Analyze the applications of Internet.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Introduction - Basic Applications of Computer, Components of Computer System- Input devices; Output devices; Computer Memory; Concept of Hardware and Software; Antivirus

UNIT II **12**

Introduction- Basics of Operating System; Basics of popular operating system (LINUX, WINDOWS); the User Interface; Task Bar; Icons; Menu; Running an Application; Changing Mouse Properties.

UNIT III **12**

Introduction – Basics of PowerPoint presentation; Entering and Editing Text; Preparation of Slides and slideshow; Inserting Word Table or An Excel Worksheet; Adding Clip Art Pictures; Inserting Other Objects; Resizing and Scaling an Object Presentation of Slides; Choosing a Set Up for Presentation; Rehearse timing: Short cut keys

Introduction – Basics of Spreadsheets; Manipulation of Cells; Entering Text, Numbers and Dates; Creating Text, Number and Date Series; Editing Worksheet Data; Formatting spread sheet; Formulas and Function; Short cut keys

UNIT IV **12**

Introduction – Flowcharts – Algorithms - Pseudocodes – Programming languages: data types, variables, constants, operators, input output, expressions, control flow constructs (conditional and loop statements) - functions, arrays, structures and unions - Pointers - Data structures - File handling. Programming languages for Bioinformatics

UNIT V **12**

Introduction - Basic of Computer Networks; Local Area Network (LAN); Wide Area Network (WAN); Internet; Concept of Internet; Applications of Internet; Connecting to the Internet; Troubleshooting; World Wide Web (WWW). E-mail Account & Its Functions. Role of computer in Biological field.

TEXT BOOKS:

1. The complete reference Microsoft Reference access 2007 by Virginia Anderesen

REFERENCE BOOKS:

1. Microsoft Office 2003: The Complete Reference (Osborne Complete Reference Series) by Jennifer Kettell, Guy Hart-Davis, Curt Simmons and Jennifer Kettell

2. E-Book: Microsoft Office 2010 Ultimate Tips & Tricks

Course Coordinator **HOD**

	BIOCHEMISTRY LAB	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2

BBS2L1	Prerequisite course – Biology at Higher Secondary Education
	Course Coordinator Name & Department :- Dr.S.Anbuselvi & Biotechnology

COURSE OBJECTIVES: - Learners will be familiar with various biochemical experiments .Learners will understand the principle and determination of biomolecucles by each experiment.

COURSE OUTCOMES (COs)

CO1	Perform qualitative analyses of lipids
CO2	Operates the amino-acids separation by TLC.
CO3	Grasp the basic principle involved in qualitative analysis of amino acids
CO4	Manipulates the determination of saponification, acid and iodine number
CO5	Sketches the classification of carbohydrates

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

I Analysis of Sugars

1. Monosaccharide-Glucose, Fructose, Galactose, Mannose, Pentose.

2. Disaccharides-Sucrose, Maltose and Lactose.

3. Polysaccharides-Starch and Dextrin.

II. Analysis of Amino Acids

1. Histidine

2. Tyrosine

3. Tryptophan

4. Methionine

5. Cysteine

6. Arginine

III Lipid Analysis [Group Experiments]

1. Determination of Saponification number.

2. Determination of Acid number.

3. Determination of Iodine number.

IV Demonstration Experiments

1. Separation of amino acids by TLC.

TEXT BOOKS

1. Wilson PD, Wilson K, Walker J, Walker JM, editors. Principles and techniques of practical biochemistry. Cambridge University Press; 2000.
2. Mu P, Plummer DT. Introduction to practical biochemistry. Tata McGraw-Hill Education; 2001.
3. Varley H. Practical clinical biochemistry. Practical clinical biochemistry. 1954.

REFERENCE BOOKS:

1. Jayaraman J, Jayaraman J. Laboratory manual in biochemistry. Delhi: Wiley Eastern; 1981.
2. Fasman GD. Practical handbook of biochemistry and molecular biology. CRC press; 1989.
3. Sawhney SK, Singh R, editors. Introductory practical biochemistry. Alpha Science Int'l Ltd.; 2000.
4. Wood EJ, editor. Practical biochemistry for colleges. Elsevier; 2012.

Course Coordinator **HOD**

BCI203	ENVIRONMENTAL STUDIES	L	T	P	C

	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi & Biotechnology				

COURSE OBJECTIVES: - To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and abiotic ecosystem

COURSE OUTCOMES (COs)

CO1	Recall the basic concepts of natural resources, ecosystem and environmental pollution
CO2	Understand about the Biodiversity and its conservation
CO3	Analyze Environmental Pollution and Management.
CO4	Apply organic environmental approach to protect our habitat for the next generation.
CO5	Analyze the impact of population and Urbanization to affect the system of habitat loss
CO6	Analyze case studies relate to environment and healt.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **6**

Introduction to Environmental Sciences: Natural Resources: Environmental sciences – relevance – significance – public awareness – forest resources – water resources – mineral resources – food resources – conflicts over resource sharing – exploitation – land use pattern – environmental impact – fertilizer – pesticide Problems - case studies

UNIT II **6**

Ecosystem, Biodiversity and its conservation: Ecosystem – concept – structure and function – producers, consumers and decomposers –food chain – food web – ecological pyramids – energy flow – forest, grassland, desert and aquatic ecosystem – definition – genetic, species and ecosystem diversity – biodiversity – definition – genetic, species and ecosystem diversity – values and uses of biodiversity – biodiversity at global, national (india) and local levels – hotspots, threats to biodiversity –conservation of biodiversity – insitu and ex-situ..

UNIT III **6**

Environmental Pollution and Management- Environmental pollution – causes – effects and control measures of air, water, marine, soil, solid waste. Thermal, nuclear pollution and disaster management – floods, earth quake, cyclone and land slides, role of individuals in prevention of pollution – pollution case studies.

UNIT IV **6**

Social issues – Human population: Urban issues – energy – water conservation – environmental ethics – global warming – resettlement and rehabilitation issues – environmental legislations – environmental production act. 1986 – air, water, wildlife and forest B.C.A.: syllabus (CBCS) conservation act – population growth and explosion – human rights and value education – environmental health – HIV/AIDS – role of it in environment and human health – women and child welfare – public awareness – case studies

UNIT V **6**

Visit to a local area / local polluted site / local simple ecosystem – report submission.

TEXT BOOKS:

1. Sharma J.P., 'Environmental Studies', 3rd Edn, University Science Press, New Delhi (2009)
2. Anubha Kaushik and C.P.Kaushik, 'Environmental Science and Engineering', 3rd Edn New age International Publishers, New Delhi (2008)
3. K. Kumarasamy, A. Alagappa Moses and M. Vesanthy, 2004, Environmental Studies, Bharathidasan University Pub, 1, Trichy.

REFERENCE BOOKS:

1. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
2. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub., Trichy
3. G.Tyler Miller,JR, 'Environmental Science', Tenth Edition, Thomson BROOKS/COLE (2004)
4. Gilbert M.Masters, 'Introduction to Environmental Engineering and Science', 2nd Edition Pearson Education (2004).

Course Coordinator **HOD**

BSS201	VALUE EDUCATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name & Department:- Ms. G. Vinothini, Commerce				

COURSE OBJECTIVES: - To enable the students to understand the Social values. To provide knowledge on the features for life. To acquire the knowledge on Human rights. To impart the knowledge on Environment and Ecological balance. To educate the knowledge on Social evils..

	COURSE OUTCOMES (COs)
CO1	Recall the basic concept of human values, Social Value role of medias, Self-introspection – Self esteem
CO2	Understand the duties and responsibilities of individuals and role of media
CO3	Apply Salient features for life, : Truth, commitment,, honesty and integrity, forgiveness and love and also positive creative thinking
CO4	Demonstrate Universal declaration of Human rights, peace and nonviolence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship.
CO5	Analyze living and nonliving environmental balance, Ecological balance and conservations and enrichment
CO6	Manipulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-ow

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO 6	PO7	PS O1	PSO 2	PS O3
2	CO1	H	M	M							
	CO2	H	H	H		L					
	CO3	M	H	M	M				H		
	CO4	H	M	L							
	CO5	H	H	M			M				
	CO6	M	M	L							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT I **6**

Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

UNIT II **6**

Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT III **6**

Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development..

UNIT IV **6**

Social values- Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms

UNIT V **6**

Effect of international affairs on values of life/ Issue of Globalization - Modern warfare – Terrorism- Environmental issues - mutual respect of different cultures, religions and their beliefs.

TEXT BOOK

1. N. Arumugam, S. Mohana, Lr. Palkani- value based education- Saras Publication, 2009
2. DN Ghose, Value Education- dominant publishers, 2005
3. M.G. Chitakra, Education and Human values, A.P.H Publishing Corporation. New Delhi

REFERENCE BOOKS

1) For Life, for the future: Reserves and Remains – UNESCO Publications.
2) Values, A Vedanta kesari presentations, Sri Ramakrishna Math, Chennai
3) Values for Excellence in Life Compiled by then Curriculum Development Cell Thiagarajar College, Madurai, in collaboration with the Education wing, Brahma Kumaris, Madura

Course Coordinator **HOD**

SEMESTER III

BAL301	**தமிழ் – III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES : காப்பிய இலக்கியம் மற்றும் நீதி இலக்கியத்தை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	ஐம்பெரும் காப்பியங்களைபற்றி அறிவர்
CO2	பிற்கால காப்பியங்களைபற்றி அறிவர்
CO3	முக்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO4	பிற்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றைபற்றி அறிவர்
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

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பாட நூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BAL301	**Hindi-III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				
COURSE OBJECTIVES: - To understand and improve the skills in the Language of Hindi					

COURSE OUTCOMES (COs)	
CO1	Remember of Ramayana in Panchavati part
CO2	Understand the history of Hindi literature
CO3	Apply the concept of Hindi grammatical speech
CO4	Analyze and develop the translation skills
CO5	Evaluate and develop the unseen passage skills
CO6	Create the skills in Hindi language

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		√								

4	Approval		Academic Council Meeting

UNIT I **9**

POETRY - PANCHAVATI

UNIT II **9**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **9**

ALANKAR – Anupras – Yamak - Slesh - VakrokthiUpama – Rupak – Drishtanth –

Virodhabas.

UNIT IV **9**
TRANSLATION - HINDI – ENGLISH

UNIT V **9**
COMPREHENSION

Text Books:

By MaithilisharanGupt, AnuvadhAbhyas – III

Reference Books:
Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BAL301	**Française -III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				
COURSE OBJECTIVES :- Développer les aspects techniques de la langue et des nuances grammaticales variées pour interpréter le sujet.					

COURSE OUTCOMES (COs)	
CO1	Transmettre les différents aspects qui composent la langue.
CO2	Pour apprendre certains faits, procédures, pratiquer certaines structures grammaticales et pratiquer des stratégies de communication.
CO3	Pour apprendre la culture des natifs de la langue.
CO4	Analyser les différences entre la grammaire de base et avancée.
CO5	Se souvenir de l'interdépendance entre les conjugaisons
CO6	Comprendre les restrictions grammaticales.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO 2**	**PSO 3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I Vivement demain! **9**

Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? **9**

	ENGLISH- III	L	T	P	C

Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? 9

Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme! 9

Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-La forme ((en + participle present))

UNIT V On se retrouve ! 9

Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present -Passe compose-Imparfait et future

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Total Contact Hours – 60	4	0	0	4
Prerequisite course – + 2 level English				
Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills..

COURSE OUTCOMES (COs)

CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message - Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

Course Coordinator **HOD**

	MICROBIOLOGY	**L**	**T**	**P**	**C**

BBS301	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.L.Jeyanthi Rebecca & Biotechnology				

COURSE OBJECTIVES: -Learners will be familiar with basics of microbiology**.** Learners will understand the overall applications of microbiology in biotechnological field.

COURSE OUTCOMES (COs)

CO1	Recall the basics about microorganisms.
CO2	Understand the classification and morphology of microbes.
CO3	Apply the methods for identification of microorganisms.
CO4	Apply techniques for the isolation and growth of microbes.
CO5	Analyze the various roles of microorganisms in food and dairy Industry.
CO6	Analyze the role of microorganisms in clinical diagnosis.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	**H**	**M**						**H**	**M**	
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**								
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Microbiology - definition, history and scope – Prokaryotes and eukaryotes – Microorganisms-bacterial cell – size, shape and arrangement - General structure – functions of microbial cellular compounds (viruses, bacteria, algae, fungi, protozoa) –Microscopy – Principles of Light, dark field and Phase contrast microcopy.

UNIT II **12**

Principles & classification of microbes – binomial nomenclature Whittaker five kingdom classification– sterilization and disinfection - Physical and chemical methods of sterilization – MIC: Disc Diffusion, Well Diffusion; Stain and staining methods – principles of staining - simple, differential, capsule, nuclear and spore staining methods.

UNIT III **12**

Microbial media – Types of Media, Reviving, culturing and sub culturing of microbes; Isolation and enumeration of microorganisms in soil, water and air – methods of obtaining Pure cultures – Inoculum preparation- methods for microbial identification. Microbial growth – Phases of growth curve, Factors influencing the growth of microbes-classification based on that. (Temperature, pH, Nutrition) and nutritional types of microorganisms. .

UNIT IV **12**

Food and Industrial Microbiology - Microbiology of fermented food and dairy products – cheese, yogurt, Alcoholic beverages-beer, wine, biological specimen diagnosis, prevention and control of important microbial diseasesetc. Food spoilage and Preservation processes. Microbes as source of food - single cell protein, Application of Microbes in industries production of antibiotics (penicillin, streptomycin), amino acids (Glutamic Acid) organic acids (citric acid and Lactic acid).

UNIT V **12**

Medical microbiology – pathogenesis, lab diagnosis, Pathogenic bacteria diseases (E.coli, Leprosy, Tuberculosis, Salmonella typhi, Staphylococcus aureus, Vibrato cholera), Fungal diseases- Mycotoxicoses (Candida sp, Aspergillus, Cryptococcus), Viral Diseases (HIV,Rabies,Hepatitis and Polio Virus) and Protozoan diseases (Plasmodium, Trypanosoma).

TEXT BOOKS:

1. Pelczar Chan and Klieg Tate, Microbiology, McGraw Hill Publications, 1993.
2. Pelczar, M. J, Reid R. D and Chan E. C. Microbiology,5th ed. New York: McGraw-Hill.1977.
3. Stainier RY, Ingraham JL, Wheelis ML & Painter PR General Microbiology. Publisher: MacMillan

REFERENCE BOOKS:

1. Jecquelyn G. and Black, Microbiology -Principles and Explorations.
2. Prescott, Harley and Klein, Microbiology, Fifth edition ,McGraw Hill publications, 2003.
3. Madigan M.T., Martinko J.M. and Parker J., Brock Biology of Microorganisms: Prentice-Hal, Inc USA.
4. Brock TD., Milestones in Microbiology, Infinity Books

Course Coordinator **HOD**

BBS302	**ENZYMOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.S.Anbuselvi & Biotechnology				

COURSE OBJECTIVES:-Learners will be familiar with classification of enzymes. Learners will understand their structure, kinetics, interactions and applications of enzymes.

COURSE OUTCOMES (COs)

CO1	Remember the basics concepts of enzymes and its characteristics.
CO2	Understand the mechanism of action of enzymes.
CO3	Apply the factors influencing rate of enzyme catalyzed reaction
CO4	Apply the kinetics for the enzymes catalyzed reactions
CO5	Analyze the regulation of enzymes and mechanisms involved.
CO6	Analyze the applications of enzymes and their immobilization methods.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	**H**	**M**						**H**	**M**	
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**								
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Classification - IUB system, rationale, overview and specific examples. Characteristics of enzymes, enzyme substrate complex. Concept of active centre, binding sites, stereo specificity and ES complex formation. Effect of temperature, pH and substrate concentration on reaction rate. Activation energy. Transition state theory. Enzyme activity, international units, specific activity, turnover number.

UNIT II **12**

Enzyme catalysis-Factors affecting catalytic efficiency - proximity and orientation effects, distortion or strain, acid - base and nucleophilic catalysis. Isoenzymes and multiple forms of enzymes. Mechanism of action chymotrypsin, ribonuclease.

UNIT III **12**

Michaelis - Menten Equation - form and derivation, steady state enzyme kinetics. Significance of Vmax and Km. Bisubstrate reactions. Graphical procedures in enzymology - advantages and disadvantages of alternate plotting. Enzyme inhibition - types of inhibitors - competitive, noncompetitive and uncompetitive, their mode of action and experimental determination.

UNIT IV **12**

Protein ligand binding including measurements, analysis of binding isotherms, cooperativity and kinetics of allosteric enzymes. Enzyme regulation: Product inhibition, feedback control, enzyme induction and repression and covalent modification. Allosteric regulation.

UNIT V **12**

Relative practical and economic advantage for industrial use, effect of partition on kinetics and performance with particular emphasis on charge and hydrophobicity (pH, temperature and Km). Various methods of immobilization - ionic bonding, adsorption, covalent bonding (based on R groups of amino acids), microencapsulation and gel entrapment.

TEXT BOOKS:

1. Zubay GL, W M C, Biochemistry, 4th edition, Brown Publishers, 1988.
2. Nelson, David l and Cox, Principles of Biochemistry, Macmillan/worth, NY, 1999
3. Stryer L., Biochemistry. ,W.H. Freeman and Company.

REFERENCE BOOKS:

1. Berg JM, Tymoczko.JL, Stryer, L. Biochemistry. 6 th ed. Freeman, 2006.
2. Tripathi,G, Enzyme Biotechnology, ABD Publishers. 2009.
3. Devlin's Textbook of Biochemistry with Clinical correlations. John Wiley and Sons Inc.
4. Mathews C.K.,Van Holde K.E. and Ahern K.G., Biochemistry, Benjamin /Cummings.

CourseCoordinator **HOD**

BBS303	**BIOINFORMATICS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.S.Selvakumar & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with basics of bioinformatics in Bioscience field. Learners will understand the applications of sequence analysis and phylogenetic tree construction.

COURSE OUTCOMES (COs)

CO1	Remember the basic principle and applications of biological databases
CO2	Understand the sequence alignment tools and its use.
CO3	Apply the basic concepts of bioinformatic matrices.
CO4	Analyze the various biological datas & bioinformatic tools
CO5	Analyze the application of bioinformatics with the biological data
CO6	Analyze the Bootstraping strategies

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	**H**	**M**						**H**	**M**	
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**								
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Introduction to bioinformatics, Biological data formats. Application of bioinformatics in various fields **.**

UNIT II **12**

Biological databases – Nucleotide databases – Genbank, EMBL, DDBJ; Protein Sequence Databases – Swiss Prot, Trembl, PIR, UNIPROT, Various Data retrieval formats in biological databases – ENTREZ, SRS

UNIT III **12**

Sequence Analysis: sequence similarity, identity and homology - Definitions of homologues, orthologues and paralogues

Pairwise Sequence Alignment: Dot matrix, Dynamic programming alignment, BLAST and FASTA. Scoring matrices: PAM and BLOSUM.

UNIT IV **12**

Multiple Sequence Alignments (MSA): various approaches for MSA - Progressive, Hierarchical and Iterative – Clustal W, clustal X , T-COFFEE and their application for sequence analysis

UNIT V **12**

Evolutionary analysis: distances - clustering methods - rooted and un-rooted tree representation - Bootstraping strategies – phylogenetic trees – PHYLIP, PAUP

TEXT BOOKS:

1. Introduction to Bioinformatics by Teresa Attwood and David Parry-Smith-2001

REFERENCE BOOKS

1. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins by Andreas D. Baxevanis and B. F. Francis Ouellette -2002

2. Bioinformatics: Sequence and Genome Analysis, Second Edition by David W. Mount-2004

3. Essential Bioinforamtics by Jin Xiong -2006

4. Introduction to Bioinformatics by Arthur M. Lesk-2008

Course Coordinator **HOD**

BBS3L1	MICROBIOLOGY LAB	L	T	P	C
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.L.Jeyanthi Rebecca & Biotechnology				

COURSE OBJECTIVES:- Learners will be familiar with sterilization and inoculation methods. Learners will understand the staining method and microbes identification.

COURSE OUTCOMES (COs)

CO1	Perform the basic microbiological tests
CO2	Handle different sterilization and staining techniques.
CO3	Grasp different inoculation techniques.
CO4	Manipulates various biochemical tests.
CO5	Operates microscope for microbe identification.
CO6	Perform the basic microbiological tests

Mapping of Course Outcomes with Program outcomes (POs)
(L/M/H indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	**H**	**M**								
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**							**H**	**M**
	CO5	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

1. Sterilization techniques
2. Demonstration of microbial culture
3. Simple staining - -differential staining –capsular staining – spore staining – hanging drop
4. Inoculation techniques – pour plate – spread plate
5. Dilution techniques
6. Biochemical tests for bacterial identification – catalase test –oxidase test – IMVIC test –

   TSI test
7. Starch degradation –carbohydrate fermentation – Gelatin liquefaction
8. Viable bacteria – haemocytometer
9. Morphological identification of fungi.

TEXT BOOKS:

1. General Microbiology - Stanier R.Y., 5th edition, Macmillan Publication, UK. 1987.

2. Nina Parker, Microbiology Manual, OpenStax CNX,2001.

3. Stainier RY, Ingraham JL, Wheelis ML & Painter PR General Microbiology. Publisher: MacMillan

REFERENCE BOOKS:

1. Pelzer, Chan and Kreig. Microbiology. 5th Edition. McGraw-Hill. 1986.
2. James Cappuccino. Microbiology: A Laboratory Manual, 10 ed., Pearson, 2013.
3. Madigan M.T., Martinko J.M. and Parker J., Brock Biology of Microorganisms: Prentice-Hal, Inc USA.
4. Brock TD., Milestones in Microbiology, Infinity Books

Course Coordinator **HOD**

BAL351	அடிப்படைத் தமிழ் - I	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES : தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ் எழுத்துக்களைஅறிவர்
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளைஅறிவர்
CO3	சொல்லமைப்புபற்றிஅறிவர்
CO4	சொற்களை உருவாக்கும்அறிவைப்பெறுவர்
CO5	சொற்களை தொடராக மாற்றும்திறனைப்பெறுவர்
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

அலகு –1 9

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 12

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 12

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 12

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

.1ஆறுமுகநாவலர்,"தமிழ் இலக்கணம்", பாரிநிலையம், 2012
2. கழகப்புலவர்குழுவினர்,"நன்னூல்–எழுத்ததிகாரம்", கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,"நன்னூல்–சொல்லதிகாரம்", கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,"நன்னூல்",உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BAL351	**சிறப்புத்தமிழ் – I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES : பண்டைத்தமிழரின்நாகரிகமும்பண்பாடும்பற்றிஅறியச்செய்தல்					

COURSE OUTCOMES (COs)	
CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்
CO4	தமிழரின்கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றி அறிவர்
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றி அறிவர்
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(L/M/H indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு1 9

நாகரிகமும்பண்பாடும் -சங்ககாலத்துஅரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்

அலகு2 9

பண்டைத்தமிழர்திருமணமுறை ,நல்லறம் - குடும்பவாழ்வுபற்றியதமிழர்கொள்கை - பண்டையத்தமிழரின்உணவு, உடை, உறையுள்

அலகு3 9

பண்டைத்தமிழரின்கல்விநிலை - பண்டைத்தமிழரின்வானியல்அறிவு - பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4 9

மகளிர் நிலை - சங்கத் தமிழரின் சமய வாழ்வு - சங்ககால விழாக்கள்

அலகு5 9

இந்திய நாகரீகத்தில் தமிழ்ப் பண்பாட்டுக்கூறுகள் - மருத்துவக் கலை - தமிழகக் கோயில் கட்டிடக்கலை வளர்ச்சி

பாடநூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2010
2.பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2012
3கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", மணிவாசகர் பதிப்பகம், 2012

பார்வைநூல்கள்

1. நா. வானமாமலை, "தமிழர்பண்பாடும்தத்துவமும்", அலைகள்வெளியீட்டகம், 2011

2. பேரின்பன், "தமிழர்வரலாறு:சிலகேள்விகளும்தேடல்களும்", அலைகள்வெளியீட்டகம்,2011

3. மா.இராசமாணிக்கனார், "தமிழகவரலாறும்தமிழர்பண்பாடும்", செண்பகாபதிப்பகம், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

SEMESTER IV

BAL401	□□□□□ **- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES : சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்					
COURSE OUTCOMES (COs)					
CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்				
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்				
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்				
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்				

CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

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- 170 - 184

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பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BAL401	**Hindi-IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. Mustak Husaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)	
CO1	Rememberthe skills of the leadership
CO2	Understand and develop the skills to overcome the mistake
CO3	Apply the concept of Hindi essay writing
CO4	Analyzeand develop the translation skills
CO5	Evaluate the unseen passage skills
CO6	Create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								
	CO2	H	M								

	CO3	H	M						H		
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**
DRAMA – Andher Nagari

UNIT II **09**
NOVEL - GABAN - Premchand

UNIT III **09**
GENERAL ESSAY

UNIT IV **09**
TRANSLATION - HINDI – ENGLISH

UNIT V **09**
COMPREHENSION

Text Books:
ByBharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas – III

Reference Books:
UNIT 1 - Publisher–Vani Prakashan, New Delhi – 110 002.
UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002
UNIT III – Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra -282002
UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17
UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BAL401	**Française -IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

Initier les étudiants aux niveaux avancés de la langue..

COURSE OUTCOMES (COs)

CO1	Pour apprendre la culture des natifs de la langue dans la configuration avancée.
CO2	Comprendre la structure grammaticale intégrale en français.
CO3	Encourager le développement de compétences en linguistique
CO4	Évaluer l'ensemble des compétences orales et écrites
CO5	Se souvenir de la construction du langage
CO6	Pour améliorer la maîtrise avancée de la langue

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**

2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences	Engg Sciences (ES)	Professional Core (PC)	Core Elective	Non-Major Elective	Open Elective	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I Vous plaisantez! **9**

Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien! **9**

Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verbe)

UNIT III A vos risqué et perils! **9**

Le subjonctif Present- La construction passive pour metre en valeur l'object direct de l' action

UNIT IV C'est tout un programme! **9**

Les pronom possessives -Les adjectifs et les pronoms indefinis-Les pronom demonstratifs:

Les constructions --celui+de

UNIT V C'est la fete ! **9**

Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				

COURSE OBJECTIVES: -

To focus on the balanced development of the English language communication skills.

COURSE OUTCOMES (COs)

CO 1	Remember the basic concepts of English literature
CO 2	Understand the importance of the English language.
CO 3	Apply the themes and values by comprehending the given text.
CO 4	Analyse the grammar and the literary texts.
CO 5	Evaluate the characters and the genre prescribed.
CO 6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO**

											3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle** - **Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar** - **Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, “My India”, Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, “Matilda”, Random House UK, 1994
3. Shakespeare, “Macbeth”, Macmillan Publisher, 2014

Course Coordinator **HOD**

BBS401	**MOLECULAR BIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.L.Jeyanthy Rebecca & Biotechnology				

COURSE OBJECTIVES: -Learners will be familiar with genetic material and their importance in living creatures. Learners will understand the genetic code, replication, transcription and translation of prokaryotes and eukaryotes.

COURSE OUTCOMES (COs)

CO1	Remember the basics concepts behind central dogma of molecular biology.
CO2	Understand how DNA acts as genetic material and gene organization.
CO3	Apply the role of enzymes in replication events.
CO4	Apply the mechanisms of DNA repair and mutations.
CO5	Analyze the mechanisms involved in transcription and translation processes.
CO6	Analyze the significance of genetic code and post translational modifications.

Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	**H**	**M**						**H**	**M**	
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**								
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

DNA as the vehicle of inheritance-structure of DNA-forms of DNA-nucleic acid biosynthesis-experimental evidence: Griffith, McLeod, McCarty and Avery, Hershey–Chase experiments-Definition of gene-organization of genes and non coding DNA in prokaryotes- Eukaryotes–unique, moderately repetitive and highly repetitive DNA sequence-satellite DNA- Cot value-DNA binding proteins

UNIT II **12**

DNA replication in prokaryotes and eukaryotes- modes of replication-semi continuous and semi discontinuous replication- Okazaki fragments- RNA primers – enzymes of replication – DNA polymerases I, II, III, -DNA modifying enzymes: topoisomerases-helicases- binding proteins and ligases- replication in E.coli–replisomes-events at OriC (initiation), events on the replication fork (elongation) and termination- Fidelity of replication-Sigma or rolling circle mode of replication in Φ x 174-Inhibitors of replication.

UNIT III **12**

Repair of DNA–types of damages- repair by direct reversal of damage- excision repair-recombination repair- SOS repair-Mutation: definition-type of mutations (spontaneous and induced) point mutation-Gene mutation and chromosomal aberrations- Cause of mutations-chemical and physical agent

UNIT IV **12**

Transcription in prokaryotes and eukaryotes: RNA polymerases–enzyme structure- role of sigma factor- promoter-closed and open promoter complexes-Initiation-elongation and termination of RNA synthesis-Post transcriptional modification in prokaryotes and eukaryotes- transcription factors

UNIT V **12**

Genetic code–Basic features of genetic code-Deciphering of genetic code-Wobble hypothesis-Protein biosynthesis-activation of amino acids-initiation-elongation and termination of translation in prokaryotes and eukaryotes-Post translational modifications-Inhibitors of translation - Regulation of gene expression in prokaryotes and eukaryotes- operon concept.

TEXT BOOKS:

1. Harvey Lodish, Arnold Berk, S Lawrence Zipursky, Paul Matsudaira, David Baltimore and James Darnell, Molecular Cell Biology,3rd Edition.,W.H. Freeman Publishers, 1995.
2. Brown, T.A. Genomes, John Wiley and Sons Inc.
3. Lodish, H., Berk, A., Zipursky, S., Matsudaira, P., Baltimore, D. and Darnell, J.E Molecular Cell Biology, W.H. Freeman and Company

REFERENCE BOOKS:

1. McLennan A, Bates A, Turner P and White M. Bios Instant Notes Molecular Biology, 4th ed. Taylor and Francis, 2012.
2. Verma PS and Agarwal VK. Cell Biology (Cytology, Biomolecules, Molecular Biology), Paperback, S. Chand and Company Ltd., 2016
3. Brown. T.A. Molecular Biology LabFax, Bios Scientific Ltd. Oxford.
4. Lewin, B. Gene X, Oxford University Press

Course Coordinator **HOD**

BBS402	**BIOPROCESSING TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- **Dr.S.Sharmila& Biotechnology**				

COURSE OBJECTIVES:-Learners will be familiar with the fermentor and fermentation process. Learners will understand the isolation and culture of industrially important microbes and industrial bioprocesses.

COURSE OUTCOMES (COs)

CO1	Remember the basics concepts behind stem cells.
CO2	Understand how stem cell based therapies are carried out.
CO3	Apply the culturing techniques for stem cells.
CO4	Apply the knowledge of stem cells in transplantation and therapies
CO5	Analyze the mechanisms involved in stem cell based therapies.

CO6	Analyze the significance of tissue culture and engineering processes.

sMapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	**H**	**M**								
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**							**H**	**M**
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Introduction to Bioprocess Technology: History and Scope- Bioreactor: Design, parts and accessories, functions- Modes of Operation of fermenter- Batch, fed batch, Continuous, Semi continuous, Perfusion- Types of reactors CSTR, Tower, Jet loop, Airlift, Bubble column, Packed bed- Applications of Bioprocess Technology.

UNIT II **12**

Microbial growth kinetics: Batch and continuous reactors- Immobilized cell systems- Bioreactor instrumentation, control and monitoring variables such as Temperature, agitation, pressure, pH - On line measurement. On/off control. PID control. Computers in bioprocess control systems. Transport phenomena in bioprocess – Mass transfer and Mass transfer coefficient for gases and liquids.

UNIT III **12**

Isolation and screening of microbes: primary and secondary metabolites, new metabolites- Preservation of microbes- Strain improvement: General, mutation and recombination- Media formulation and sterilization of gases and nutrient solutions- Inocula preparation – Immobilized cells- Enzyme co-immobilization

UNIT IV **12**

Downstream processing- Cell disruption: Mechanical and non-mechanical methods - Recovery and purification of products: Separation of insoluble products-filtration – Micro to Nano

filtration, centrifugation, flocculation and coagulation-Separation of soluble products- liquid-liquid extraction, precipitation, adsorption, dialysis, reverse osmosis, chromatography-purification-crystallization and drying

UNIT V **12**

Industrial Bioprocesses: Anaerobic processes-ethanol, lactic acid production- Aerobic processes-Citric acid, yeast, penicillin- Organic acid (acetic acid)- antibiotics(Streptomycin)- malt beverages-enzymes (Amylase and protease), vitamins, biopolymers, biofertilizers, biopesticides, recombinant products-insulin and hepatitis B – Waste water management

TEXT BOOKS:

1. Shuler M. L. and Kargi, F,Bioprocess engineering: Basic concepts, 2nd ed,Prentice Hall Upper Saddle River, NJ,2002.
2. Okafor N, Modern Industrial Microbiology and Biotecchnology, Science Publishers,USA,2007.
3. Bioprocess Engineering: Basic Concepts, Shuler,M.L. and Kargi, F., Prentice Hall, Engelwood Cliffs,1991

REFERENCE BOOKS:

1. Mansi EMT,Bryce CFA,Dahhou B,Sanchez S,Demain AL and Allman AR,Fermentation Microbiology and Biotechnology,CRC press,Taylor & Francis group,New York,2012.
2. Stanbury PF,Whitaker A and Hall SJ,Principles of Fermentation technology, 3rded, Joe Hayton,Elseiver Ltd,2017.
3. Fermentation Microbiology and Biotechnology (2002), Mansi El-Mansi and Charlie Bryce, Taylor and Francis Ltd., London (Replika Press Pvt. Ltd., Kundli – 131 028)

Course Coordinator **HOD**

BBS403	**GENETIC ENGINEERING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.S.Selvakumar & Biotechnology				

COURSE OBJECTIVES: -Learners will be familiar with basics of genetic engineering. Learners will understand the construction of cDNA libraries & applications of rDNA technology in plants, animals and industries

COURSE OUTCOMES (COs)

CO1	Remember the basics concepts of genetic engineering
CO2	Understand the role of vectors and restriction enzymes
CO3	Apply the knowledge of genetic engineering in cDNA and genomic construction
CO4	Apply the function of restriction enzymes in DNA mapping

CO5	Analyze the mechanisms involved in gene transfer and animal cloning
CO6	Analyze the significance of genetic engineering in health care.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	**H**	**M**						**H**	**M**	
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**								
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Introduction to Genetic engineering; Role of genes within cells- method of creating recombinant DNA molecules.-Role of vectors plasmid, cosmid, BAC, YAC etc.-Restriction enzymes and mapping of DNA-Role of Transposons in genetic engineering-Safety guidelines of creating recombinant DNA research.

UNIT II **12**

Characterization of recombinant clones by Southern, Northern, Western and PCR analysis. Construction of genomic and cDNA libraries, methods of nucleic acid sequencing, factors involved in expression of cloned genes.

UNIT III **12**

Method of gene transfer to plants- agrobacterium mediated / chemical mediated, Biolistics. Transgenic plants- Ri and Ti plasmids, Screening of recombinants, Biopharmaceuticals, Single cell proteins.

UNIT IV **12**

Animal cloning, Ethical aspects of animal cloning, -Transgenic animals- sheep, goat, cattle, fish etc- Methods of gene transfer to animals-embryo transfer.

UNIT V **12**

Health care: Vaccines, hormones, antibiotics & pharmaceuticals- Industrial enzymes and agriculture.

TEXT BOOKS:

1. Brown TA,Gene cloning-and introduction,VNR (U.K) Co Ltd. 2000.
2. Slater A, Scott NW and Fowler MR, Plant Biotechnology: an Introduction to Genetic Engineering. Oxford: Oxford University Press, 2008.
3. Levine AD,2009, "Cloning" The Rosen publishing group, 1st.

REFERENCE BOOKS:

1. Setlow JK, Genetic engineering: Principles and methods, Springer. 2004.
2. Fridal R, Genetic engineering, Lerner publications. 2006.
3. LeVine H,2006, "Genetic engineering-A reference handbook" ABC-CLIO.
4. Watson JD. The Molecular Biology of the Gene, Benjamin Cummings, 1987

Course Coordinator **HOD**

BBS4L1	**MOLECULAR BIOLOGY AND GENETIC ENGINEERING LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department:- Dr.L.Jeyanthy Rebecca & Biotechnology				
COURSE OBJECTIVES: -Learners will be familiar with molecular biology. Learners will understand the genetic engineering techniques.					
COURSE OUTCOMES (COs)					
CO1	Perform the isolation of DNA and plasmids on different electrophoresis				
CO2	Handle and operate the transformation techniques				
CO3	Fixes the staining procedure for DNA and proteins.				
CO4	Manipulate data structures and algorithms				

CO5	Sketches real time application using a suitable data structure
CO6	Perform the isolation of DNA and plasmids on different electrophoresis

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	**H**	**M**							**H**	**M**
	CO2	**H**	**M**								
	CO3	**H**	**M**								
	CO4	**H**	**M**								
	CO5	**H**	**M**								
	CO6	**H**	**M**								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

1. Isolation and visualization of plasmids on agarose gels
2. Restriction mapping
3. Ligation
4. Transformation, Screening for recombinants
5. Chemical and transposon mutagenesis
6. Selection of hyper producers of secondary metabolite
7. Characterization of medium components
8. Characterization of secondary metabolites by polyacrylamide gel electrophoresis, silver
9. Staining of protein on gels.
10. HPLC.

TEXT BOOKS:

1. Ansubel FM, Brent R, Kingston RE, Moore DD, Current Protocols I Molecular Biology,Greene Publishing Associates, NY, 1988.
2. Old RW, Primrose SB, Principles of Gene Manipulation, An Introduction To Genetic Engineering, Blackwell Science Publications, 1993.

REFERENCE BOOKS:

1. Friefelder, David and George M. Malacinski, Essentials of Molecular Biology, 2nd Edition, Panima Publishing, 1993.
2. Bailey, James E. and David F. Ollis, Biochemical Engineering Fundamentals, 2nd Edition. McGraw Hill, 1986.

Course Coordinator **HOD**

BAL004	**அடிப்படைத் தமிழ் - II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	2	0	0	2
	Prerequisite course – Basic Tamil – I				
	Course Coordinator Name& Department : □□□□□□□. □.□□.□□□□□□□□ & □□□□□□□□□□□				
COURSE OBJECTIVES : தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	தமிழ்மொழியின்சொல்வகை, திணை, பால்பாகுபாடுபற்றிஅறிவர்				
CO2	அடுக்குத்தொடர், இரட்டைக்கிளவி, ண,ன,ர,ற,ள,ழவேறுபாடுபற்றிஅறிவர்				
CO3	பத்திகளைசுருக்கியும், விரிவாக்கிஎழுதும்அறிவைப்பெறுவர்				
CO4	சொற்களைகையாண்டுஉரையாடுவதுபற்றிபெறுவர்				

CO5	கட்டுரை, கடிதம்எழுதும்அறிவைப்பெறுவர்
CO6	தமிழ்மொழியில்சரளமாகபேசும்எழுதும்திறனைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

அலகு –1 9

1.1 தமிழ் மொழி அறிமுகம்
1.2 சொல் வகைகள்
1.3 திணை, பால் பாகுபாடு

அலகு – 2 9

2.1 அடுக்குத் தொடர், இரட்டைக் கிளவி
2.2 ஒரு ஓர் வேறுபாடு
2.3 ண,ன,ர,ற,ள,ழ வேறுபாடு

அலகு – 3 9

3.1 பத்தியிலிருந்து வினாக்களுக்குரிய விடைகளை கண்டறியும் பயிற்சி
3.2 சுருக்கி வரைதல்
3.3 விரிவாக்கி எழுதுதல்

அலகு – 4 9

4.1 உரையாடல்
4.2 கட்டுரை
4.3 மடல் வரைதல்

பாட நூல்கள்

1. மருதூர் அரங்கராசன்,"தவறின்றித் தமிழ் எழுத", ஐந்திணைப்பதிப்பகம், 2012
2. ஞா.தேவநேயப்பாவாணர், "உயர்தரக் கட்டுரை இலக்கணம்", கௌராபதிப்பகம்,2013
3. க. கயிலாயநாதன்,"தமிழ் மொழி விளக்கம்", முல்லைநிலையம், 2006

பார்வை நூல்கள்

1. பாரதிதாசன், "தவறின்றித்தமிழ்எழுத", நாம்தமிழர்பதிப்பகம், 2013
2. ஆசிரியர்குழு, "கடிதம்வரைதல்', லியோபப்ளிகேஷன்ஸ், 2013
3. பாவாணர், "கட்டுரைவரைவதுஎப்படி?", தமிழ்மண்பதிப்பகம், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BAL453	**சிறப்புத்தமிழ் – II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – SPECIAL TAMIL – I				
	Course Coordinator Name& Department : முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES : நாட்டுப்புற இலக்கியத்தைப் பற்றி அறியச் செய்தல்					
COURSE OUTCOMES (COs)					
CO1	தாலாட்டுமற்றும்குழந்தைப்பாடல்கள்பற்றிஅறிவர்				
CO2	தொழிற்பாடல், காதல்பாடல், கொண்டாட்டப்பாடல்கள்பற்றிஅறிவர்				
CO3	சங்ககாலமக்களின்விடுகதை, நம்பிக்கை, சடங்குகள்பற்றிஅறிவர்				
CO4	பழமொழிகள், நாட்டுப்புறமருத்துவம், சமயவழிபாடுகள்பற்றிஅறிவர்				
CO5	நாட்டுப்புற இலக்கிய வரலாறுபற்றிஅறிவர்				
CO6	வாய்மொழிஇலக்கியம்மூலம்சங்ககாலமக்களின்வாழ்வியலைஅறிவர்				
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low					

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு1 9

தாலாட்டுப்பாடல்- குழந்தைப்பாடல்- விளையாட்டுப்பாடல்

அலகு2 9

தொழிற்பாடல்கள் - காதல்பாடல்கள்- கொண்டாட்டப்பாடல்கள்

அலகு3 9

விடுகதைகள் - நம்பிக்கைகள் -சடங்குகள்

அலகு4 9

பழமொழிகள் -நாட்டுப்புறமருத்துவம் - சமயவழிபாடுகள்

அலகு5 9

நாட்டுப்புற இலக்கிய வரலாறு

பாடநூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புறஇயல்ஆய்வு", மணிவாசகர்பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014

பார்வைநூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புறபாடல்வகைகள்", புலமைவெளியீடு, 1982
2. சரசுவதிவேணுகோபால், "தமிழகநாட்டுப்புறவியல்", தாமரைவெளியீடு, 1981
3.கழனியூரன், "நாட்டுப்புறவியல்கட்டுரைகள்", காவ்யாபதிப்பகம், 2014

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

SEMESTER V

BBS501	**IMMUNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 75	3	2	0	5
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology				

COURSE OBJECTIVES: - Learners will be able to identify the cellular and molecular basis of immune responsiveness. The students will be able to describe the roles of the immune system in both maintaining health and contributing to disease.

COURSE OUTCOMES (COs)

CO1	Recall the basic concept of immunity and cells involved in the immune system
CO2	Understand the immunoglobulin structures and it's diversity, morphology and functions.
CO3	Understand the interaction among immune cells and subsequent immune response
CO4	Apply the basic knowledge on immune response to perform experiments on graft rejection and tumor treatment.
CO5	Apply basic knowledge on antigen and antibody interaction to perform various clinical experiments
CO6	Analyze diagnostic reports to evaluate the prognosis of disease

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								

	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Introduction, Immunity, antigens &their classification, complement and their biological functions, types of immune responses, anatomy of immune response.

UNIT II **12**

B-lymphocytes and their maturation, activation &differentiation, structure and function of immunoglobulin, immunoglobulin classes, antibody production, mono-clonal antibodies and diagnosis major histocompatibility complex

UNIT III **12**

T -Lymphocytes their classification, maturation, activation & differentiation, antigen presenting, cells (APC), macrophages, langerhans cells, their origin and function, mechanisms of phagocytosis, Cytokines and their role in immune response, immunosuppression, immune tolerance.

UNIT IV **12**

Principle and application: Precipitation- Immuno diffusion & Widal test, Agglutination reactions, Radio immune assay, ELISA, Complement fixation test, Immuno fluorescence technique, Immuno electrophoresis -Hypersensitivity reactions.

UNIT V **12**

Graft rejection, evidence and mechanisms of graft rejection, prevention of graft rejection-immunosuppressive drugs, mechanisms of immunity to tumour antigens. Auto antibodies in humans, pathogenic mechanisms -autoimmune diseases- treatment of auto immune disorders.

TEXT BOOKS

1. John W, Kimball Maxwell, Introduction to Immunology, Mac Millan International Edition.
2. Tizard. Introduction to Immunology, Saunders College Publication, 3rd ed., 1992.
3. Abbas. Basic Immunology, W.B. Saunders Company, 2nd ed., 2009.

REFERENCE BOOKS:

1. Ivan, Roit M, Jonathan, Brostof and David Male. Immunology 5th Edition., Churchil Livingstone Publishers, 1998.
2. Helen Chappel and Mansel Haeney, Essential Clinical Immunology, ELBS/Blackwell Scientific Publications.
3. Thomas J. Kindt, Barbara A. Osborne, Richard A. Goldsby, and Janis Kuby, Immunology, W H Freeman and Co.
4. Charles A. Janeway Jr., Paul Travers, Mark Walport and Mark J. Shlomchik, Immunobiology, Garland Publishing.

Course Coordinator **HOD**

BBS502	**MOLECULAR GENETICS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Sharmila& Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with genetics at molecular level. Learners will understand the types of gene transfer mechanisms, replication and synthesis process.

COURSE OUTCOMES (COs)

CO1	Recall about DNA structure, types and mutation.
CO2	Understand the enzyme system and mechanism of replication
CO3	Understand the fidelity of replication and DNA repair mechanism
CO4	Apply the analysis and characterization related technologies with omics.
CO5	Apply genomics and proteomics strategies to evaluate the impact of transposable elements in genome
CO6	Analyze gene expression using genomics and proteomics tools

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								
	CO2	H	M								

	CO3	H	M						H	M	
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Gene as a unit of mutation and recombination - DNA as a genetic material - different types; RNA as a genetic material - different types-genetic code; Mutation - molecular nature - physical and chemical mutagens and its applications.

UNIT II **12**

DNA replication - prokaryotic and eukaryotic DNA replication - Mechanisms of DNA replication - Enzymes and accessory proteins involved in DNA replication - Bacterial genetic system - transformation, conjugation and transduction.

UNIT III **12**

DNA damage - mechanism of repair - excision repair, recombination repair, promoter, operator, terminator and attenuator - SOS, and adaptive responses and their regulation - Heat shock response.

UNIT IV **12**

Genomics and Proteomics: structural and functional genomics; proteomics -definition - analysis and characterization - related technologies, and interrelations with genomics.

UNIT V **12**

Discovery of types and structure of plasmids - artificial plasmid transfer and their applications - Insertion sequence in prokaryotes - Transposable elements - discovery and characterization.

TEXT BOOKS

1. Watson JD. The Molecular Biology of the Gene, Benjamin Cummings, 1987.
2. Darnell J, Lodish H and Baltimore D. Molecular Cell Biology, 2nd Edition, Scientific American Books, New York, 1990.
3. Tamarin, R H. 2009. Principles of Genetics. McGraw-Hill

4. Lewin B. 2003. Genes VIII. Oxford University Press. Oxford.

REFERENCE BOOKS:

1. Glick, B. R. and Pasternak, J. J. 1994. Molecular Biotechnology: Principles and applications of recombinant DNA. ASM Press, Washington D.C
2. Hartwell, L. H., L. Hood, M. L. Goldberg, A. E. Reynolds, L. M. Silver and R. G. Veres. 2004. Genetics from Genes to Genomes. McGraw Hill.
3. Kreuzer, H. and A. Massey. 2001. Recombinant DNA and Biotechnology. ASM Press, Washington D.C.
4. The Human Genome 2001, Nature Vol. 409.
5. Primrose, S. B., and R. M. Twyman. 2006. Principles of gene manipulation and Genomics, Blackwell Publishing MA. USA.

Course Coordinator **HOD**

BBS503	**PLANT AND ANIMAL BIOTECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 75	3	2	0	5
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with plant and animal genetic engineering. Learners will understand the plant tissue culture, genome organization, animal cell culture techniques and their applications in medicine

COURSE OUTCOMES (COs)

CO1	Recall the genome organization in plants and animals
CO2	Understand the concept of tissue and cell culture techniques
CO3	Understand the method and application of genetic engineering tools in the field of crop development and animal breeding.
CO4	Apply different gene transfer methods in crop development
CO5	Apply different gene transfer methods in animal breeding and Gene Therapy
CO6	Analyze the merits and demerits of recombinant plants and animals

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								

	CO2	H	M							M	H
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Plant genomic organization – nuclear, organelle genomes – mitochondria and chloroplast – inheritance pattern. Arabidopsis thaliana – a model plant for genome analysis – Genomic studies in rice and maize.

UNIT II **12**

Plant tissue culture – basic of plant tissue culture, plant hormones – their role in development of plant – micropropagation - callus induction, organogenesis, embryogenesis, somatic embryogenesis, somaclonal variation, artificial seeds and embryo rescue, plant cell suspension culture - secondary metabolites production and uses.

UNIT III **12**

Plant genetic engineering – gene transfer methods – plant cloning vectors, Agrobacterium technology, Nitrogen fixation – Molecular biology, Applications of plant biotechnology- Techniques in crop improvement, molecular breeding, commercialization of plant biotechnology, plant pharmaceuticals, Plant cell bioreactors – Bt cotton, Bt corn, Golden rice, Genetic Use Restriction Technology – terminator seeds.

UNIT IV **12**

Animal cell culture – basis, materials and methods - animal cell lines, biology of cultured cells – types of culture - Organ culture – Stem cells - basics of stem cells – ASC, ESC – applications – transplantation. Pharmaceuticals from animal systems – humanized pharmaceuticals. Animal cell bioreactors, Animal systems as bioreactors.

UNIT V **12**

Animal genomes – Animal breeding and molecular farming. Animal transgenesis - methods and applications. Assisted reproduction techniques – Artificial insemination, in vitro fertilization and embryo implantation, germplasm preservation, methods of cryopreservation. Animal cloning – case studies, Applications of animal biotechnology in medicine - Prenatal diagnosis and gene therapy.

TEXT BOOKS

1. An introduction to Plant Tissue culture by MK Razdan. M.K. 2003. Oxford & IBH Publishing Co, New Delhi, 2003.
2. Plant Biotechnology: An Introduction to Genetic Engineering by Adrian Slater, Nigel W. Scott, Mark R. Fowler. Oxford University Press, 2008
3. Borem et al Understanding Biotechnology. Pearson 2011.

REFERENCE BOOKS:

1. Chemistry of Natural Products by Sujata V. Bhat, Bhimsen A. Nagasampagi, Meenakshi Sivakumar. Birkhäuser, 2005.
2. Phytochemical Methods A Guide to Modern Techniques of Plant Analysis By JB Harborne. Springer, 1998.
3. Plant cell culture, A Practical approach, 2nd Edition, Edited by R.A. Dixon and R.A. Gonzales.
4. Winnacker EL. From Genes to clones. 4 th ed VCH Publ. 2003. 2. Watson et al. Recombinant DNA 3 rd ed. 2006, Freeman.

Course Coordinator **HOD**

BBS5L1	**IMMUNOLOGY LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with immunological techniques. Learners will understand the different diagnostic tests that are used in identifying the diseases

COURSE OUTCOMES (COs)

CO1	Perform the complicated diagnostic tests
CO2	Handle and operate the sophisticated instruments and equipment.
CO3	Calibrate the equipment according to the diagnostic test objectives.
CO4	Manipulate the obtained values with reference range values.
CO5	Sketches and write the interpretation and inferences.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								

	CO2	H	M								
	CO3	H	M								
	CO4	H	M							H	M
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

1.Immunodiffusion, Radial immunodiffusion, Immunoelectrophoresis.

2. Testing for typhoid antigens by Widal test.

3. Enzyme Linked Immuno Sorbent Assay (ELISA).

4. Isolation of peripheral blood mononuclear cells.

5. Separation of lymphocytes (lymphoprep/Ficol hypoprep).

6. T & B lymphocytes differentiation-Con- A induced proliferation of thymocytes (by MTT method).

7. Immunoglobulin preparation-Use of sephadex columns for separation of immunoglobulins-development of conjugates.

8. Lymphoid organs and their microscopic organization.

9. Purification of lgG from serum: Western-blotting-Cell hybridization.

10. Hybridoma technology and monoclonal antibody production, Western blotting.

TEXT BOOKS

1. William Paul. Fundamentals of Immunology, (Lippincott Williams & Wilkins), 1999.
2. Ashim K Chakravarthy. Immunology, Tata Mc Graw - Hill, 1998.

3. Janeway, C. (Ed), Immunobiology 9 th ed. Garland Publ. 2016

REFERENCE BOOKS

1. Kuby J. Immunology, WH Freeman and Co., 2000
2. Roitt and Ivan. Essential Immunology, 9th ed., Blackwell Scientific, 1997. Kumar HDK. Molecular Biology, Vikas Publishing House Private Ltd, 1994.
3. Coico and Sunshine. Immunology: A short course. 7th ed. Wiley, 2015.
4. Stevens, C. & Miller, L. Clinical Immunology and Serology A Laboratory Perspective. Philadelphia: Davis (2017).

Course Coordinator **HOD**

BBS5L2	**BIOPROCESS LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department Dr.S.Sharmila& Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with various bioprocess techniques. Learners will understand the different methods used in the production of many beneficial fermented products.

COURSE OUTCOMES (COs)

CO1	Perform the small scale and large scale fermentation process.
CO2	Handle downstream processing in different type of fermentor
CO3	Grasp the techniques such as chromatography and enzyme immobilization for effective downstream process
CO4	Operates the fermentor and other related instruments professionally to increase the yield of fermented products
CO5	Manipulate the obtained values with reference range values.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

1. Growth kinetics
2. Effect of pH and temperature on enzyme kinetics
3. Media formulation for an industrial important microbe
4. Optimization of culture conditions for amylase production
5. Downstream process – purification of any one protein / enzyme from fermented broth using chromatography
6. Cell/Enzyme immobilization
7. Production of cheese/yoghurt
8. Bread making
9. Production of wine
10. Production of citric acid
11. Mushroom cultivation
12. Colourant production – Serratia
13. Flavorant production
14. Identification of food pathogens
15. Qualitative analysis of any one industrial effluent
16. Adsorption kinetic studies in any one metal removal process
17. Vermicomposting

18. Demonstration of any one pesticide degradation

TEXT BOOKS:

1. Michael L Shuler and Fikret Kargi. Bioprocess Engineering Basic concepts, Prentice Hall, 1992.
2. Neway JO. Bioprocess Technology Fermentation Process Development of Industrial Organisms, T & F Publisher, 1989.
3. Casida L.E. JR Industrial Microbiology. 3rd Wiley Eastern reprint. John Wiley and Sons Inc. 2 nd ed. 2016.

REFERENCE BOOKS:

1. Jackson AT. Bioprocess Engineering in Biotechnology, Prentice Hall Engelwood Cliffs, 1991.
2. Shuler ML and Kargi F. Bioprocess Engineering: Basic concepts, 2nd Edition, Prentice Hall, Engelwood Cliffs, 2002.
3. Scragg A. Environmental Microbiology 1st ed. Am Society for Microbiology 2005.
4. Ahmed N. Industrial and environmental Biotechnology. Horizon Scientific Press 2001

Course Coordinator **HOD**

SEMESTER VI

BBS601	**ENVIRONMENTAL BIOTECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Selvakumar & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with bioremediation systems. Learners will understand the methods of sewage treatment and biofuel production.

COURSE OUTCOMES (COs)

CO1	Remember the ecosystem, pollution, green-house effect and ozone depletion.
CO2	Understand the basic concept of bioremediation.
CO3	Analyze the different methods for treating sewage water.
CO4	Apply the standards that to be followed in solid and liquid phase bioremediation.
CO5	Apply the importance of microbes in sewage treatment.
CO6	Analyze the potential of engineered microbes for bioremediation and biofuel production.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M				M				
	CO2	H	M				M				

	CO3	H	M				M		H	M	
	CO4	H	M				M				
	CO5	H	M				M				
	CO6	H	M				M				
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Limiting factors, energy transfer and biogeochemical cycling in ecological systems; Response of microbes, plant and animals to environmental stresses; Concept of ecosystems and ecosystem management, Environmental problems- ozone depletion, green- house effect, water, air and soil pollution, land degradation.

UNIT II **12**

Introduction, constraints and priorities of Bioremediation, Biostimulation of Naturally occurring microbial activities, Bioaugmentation, in situ, ex situ, intrinsic & engineered bioremediation.

UNIT III **12**

Solid phase bioremediation - land farming, prepared beds, soil piles, Phytoremediation. Composting, Bioventing & Biosparging; Liquid phase bioremediation - suspended bioreactors, fixed biofilm reactors. Biological method of sewage treatment, WHO standards

UNIT IV **12**

Mining–heavy metals, Microbial transformation, accumulation and concentration of metals, metal leaching, extraction and future prospects.

UNIT V **12**

Microorganisms and energy requirements of mankind; Production of nonconventional fuels - Methane (Biogas), Hydrogen, Alcohols and algal hydrocarbons, Use of microorganisms in augmentation of petroleum recovery.

TEXT BOOKS

1. Environmental Biotechnology, Agarwal SK, APH Publishing Corporation, 2001.
2. Biodegradation & Bioremediation, Martin Alexander. Academic Press, 1999.
3. Industrial and Environmental Biotechnology, Nuzhat Ahmed, Fouad M. Qureshi and Obaid Y. Khan, 2006. Horizon Press

REFERENCE BOOKS:

1. General Microbiology, Stanier RY, Ingram JL, Wheelis ML and Painter RR, McMillan Publications, 1989.
2. Biotechnology and Biodegradation, Advances in Applied Biotechnology Series, Karrely D, Chakrabarty K and Omen GS. Gulf Publications Co. London, Volume 4, 1989.
3. Waste water engineering - treatment, disposal and reuse, Metcalf and Eddy Inc., Tata McGraw Hill, New Delhi.
4. Environmental Chemistry, AK. De, Wiley Eastern Ltd, New Delhi.

Course Coordinator **HOD**

BBS602	**NANOBIOTECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with biocompatible nanomaterials and biopolymers. Learners will understand the various applications of nanoparticles in bioscience field.

COURSE OUTCOMES (COs)

CO1	Remember the definition, development, cytotoxic studies related to nanomaterials and carbon nanotube.
CO2	Understand the concept of targeted drug delivery system
CO3	Apply the polymer controlled drug delivery for treatment of cancer and other diseases.
CO4	Apply nanomaterials and biopolymers for controlled delivery of therapeutic nucleic acid
CO5	Apply quantum dots, and Biodegradable optical nanoparticles for tumor diagnosis and treatment
CO6	Analyze different nanomaterials for various biomedical applications including tumor diagnosis and treatment.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	L	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Nanotechnology – definition and scope, nanobiotechnology- recent development and applications, Biocompatability and cytotoxicity studies of Nanomaterials, carbon nanotubes, Bioconjugation mediated drug delivery. General medicine is changing into personalized nanomedicine.

UNIT II **12**

Biopolymer- polymer nanofibers - electrospinning method and their biomedical applications, polymer nanocomposite- bone and dental restorations, polymer controlled drug delivery for the treatment of cancer and other diseases. Biodegradable polymer derived from amino acid.

UNIT III **12**

Liposome - liposomes in sensor technology, polymeric Micelles – Production of Lipospheres for Bioactive compound delivery – Melt dispersion technique, Solvent evaporation technique and InVitro drug release - Polymeric biodegradable liposphere for vaccine delivery

UNIT IV **12**

Nucleic acid engineered nanomateials and their applications. Protein patterning for applications in biomaterials. DNA lipoplexes – Lipofection efficiency in Vitro and in Vivo, Polymer controlled delivery of therapeutic nucleic acid

UNIT V **12**

PLA and PLGA Based nanoparticulate delivery system. Metal Microbes interaction, Biological metal nanoparticle synthesis and biomedical application – Dendrimers, quantum dots, Biodegradable optical nanoparticles for tumor diagnosis and treatment

TEXT BOOKS

1. Jain KK. Nanobiotechnology in Molecular Diagnostics: Current Techniques and Application, Horizon Biosciences, 2006.
2. Edelstein AS and Cammearata RC. Nanomaterials: Synthesis, Properties and Applications, Institute of Physics Publishing, Bristol and Philadelphia, 1996.
3. Mark Ratner and Daniel Ratner, Nanotechnology: A Gentle Introduction to Next Big Idea, Low Price edition, Third Impression, Pearson Education

REFERENCE BOOKS:

1. Niemeyer CM and Mirking CA (Eds.). Nano biotechnology Concepts, 2004.
2. Christof M. Niemeyer (Editor), Chad A. Mirkin (Editor) Nano biotechnology: Concepts, Applications and Perspectives, Wiley Publishers, April 2004.
3. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, John Wiley and Sons Inc, 2009.
4. Pradeep T, Nano, The Essentials, Understanding Nanoscience and Nanotechnology, Tata McGraw-Hill Publishing Company Limited, 2007.

Course Coordinator **HOD**

BBS6L1	**PLANT AND ANIMAL BIOTECHNOLOGY LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with plant tissue culture methods. Learners will understand the applications of genetic engineering in plant and animal biotechnology.

COURSE OUTCOMES (COs)

CO1	Performs the plant tissue culture techniques skillfully.
CO2	Handle the sterilization unit and other sophisticated instruments professionally.
CO3	Calibrates Evan's blue staining to determine the protoplast viability
CO4	Manipulate the data obtained from experiments and write interpretation and inferences
CO5	Sketches the application of protoplast, micro propagation and somatic embryos.

Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

1. Plant tissue culture: Tissue culture and Sterilization techniques.
2. Callus induction in *Daucus carota*.
3. Micropropagation in Rose.
4. Nodal bud culture in *Hibiscus rosasinensis*.
5. Rooting and hardening of regenerated shoots.
6. Preparation of synthetic seeds using shoot meristems.
7. Isolation and purification of protoplasts from Asparagus leaf mesophyll cells.
8. Determination of protoplast viability using Evan's blue staining.
9. Protoplast culture and regeneration -protoplast fusion using PEG
10. Isolation of plant genomic DNA from cauliflower-RFLP.
11. Aseptic techniques for animal cell culture-Establishment of a primary cell culture-Resuscitation of frozen cell lines-subculture of adherent cell lines-subculture of suspension cell lines-Quantification of cells- Cryopreservation of cell lines-Isolation and propagation of viruses by CAM route-Isolation and propagation by Yolk Sac route-Isolation of genomic DNA from sheep liver cells.

TEXT BOOKS

1. Butler M. Animal cell culture and technology: The basics, II Edition, Bios Scientific Publishers, 2004.
2. Reinert J and Bajaj YPS. Applied and Fundamental Aspects of Plant Cell, Tissue and Organ culture, Narosa Publishing House, 1997.
3. Plant Biotechnology: An Introduction to Genetic Engineering by Adrian Slater, Nigel W. Scott, Mark R. Fowler. Oxford University Press, 2008

REFERENCE BOOKS:

1. Slater A, Scott NW and Fowler MR. Plant Biotechnology: The Genetic Manipulation of Plants, Oxford University Press, 2008.
2. Watson JD, Myers RM, Caudy A and Witkowski JK. Recombinant DNA genes and genomes - A short course, III Edition, Freeman and Co, NY, USA, 2007.
3. Phytochemical Methods A Guide to Modern Techniques of Plant Analysis By JB Harborne. Springer, 1998.
4. Plant cell culture, A Practical approach, 2nd Edition, Edited by R.A. Dixon and R.A. Gonzales.

Course Coordinator **HOD**

BBS6P1	**PROJECT WORK**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	12	6
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology				
COURSE OBJECTIVES: - To facilitate the students to understand the current scenario in computing technology and present the research report on their findings as per the acceptable format.					
COURSE OUTCOMES (COs)					
CO1	List out the concept and objectives, nature, types and methods of project.				
CO2	Choose the process and steps involved in preparation of project work, research gap				
CO3	Practice the research design, and methodology , sampling techniques & sampling design				
CO4	Calculate the statistical tools in the project for data analysis				

CO5	Measure the major findings, suggestions and conclusion
CO6	Design the model for project report

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M								H
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

MAJOR ELECTIVES

BBS551	MAJOR ELECTIVE-I: BIOFERTILIZER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with the basic concepts of biofertilizer technology. Learners will understand the isolation, culturing methods, enumeration and identification of microbial species.

COURSE OUTCOMES (COs)

CO1	Recall the basics of biofertilizer technology
CO2	Understand the microbial culturing methods

CO3	Apply the knowledge in inoculums preparation
CO4	Apply microbes as biofertilizers
CO5	Analyze distribution, morphological and biochemical characteristics of microbes
CO6	Analyze the importance, advantages and constraints of biofertilizers

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				

4	Approval		Academic Council Meeting

UNIT I **9**

An introduction to fertilizers, synthetic fertilizers, natural fertilizers, inorganic fertilizers, organic fertilizers, bio-fertilizers - importance, advantages and constraints.

UNIT II **9**

Isolation, culturing methods, enumeration and identification of microbial species - Rhizobium, Azospirillum Azotobacters, blue green algae and phosphate solubilisers.

UNIT III **9**

Morphology of Rhizobium, Azospirilium, Azotobacters, blue green algae and phosphate solubilisers and maintenance - inoculant preparation.

UNIT IV **9**

Preparation of microbial inoculants - large-scale production of microbes - their application as biofertilizers - crop responses to biofertilizers.

UNIT V **9**

Azolla - distribution, morphological and biochemical characteristics - cyanobacterial symbionts - azolla biofertilizer technology - organic matter and composting - method of processes, applications and limitations.

TEXT BOOKS

1. N.S.Subba Rao, (2000). Biofertilizers in Agriculture. Oxford & IBH publishing Co., New Delhi.

REFERENCE BOOKS:

1. Daniel Sundararaj, D. and G. Thulasidas. (1993). Botany of Field Crops. (2nd Ed.) Macmilan India Ltd.
2. Jeswani, L.M. and Balddev, B. (1990). Advances in Pulse Production Technology. ICAR, New Delhi
3. . Malsen, L.J.G.V. and S. Somaatmadja, (1993). PROSEA - Plant Resources of South East Asia. No.1. Pulses. International Book Distributors, Dehradun

Course Coordinator **HOD**

BBS552	**MAJOR ELECTIVE-I: HERBAL TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with concepts of Herbal technology. Learners will understand the medicinal uses of herbs.					
COURSE OUTCOMES (COs)					
CO1	Recall the history of herbal medicine.				
CO2	Understand the uses of herbs in curing ailments				
CO3	Apply the medicinal herbs for various ailmernts				
CO4	Analyze the types and methods of druh adulteration				

CO5	Analyze the phytochemical screening tests for secondary metabolites
CO6	Analyze the role of Plant tissue culture in biomedicine

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				

4	Approval		Academic Council Meeting

UNIT I **9**

Herbal medicines: history and scope - definition of medical terms - role of medicinal plants in Siddha systems of medicine; cultivation - harvesting - processing - storage - marketing and utilization of medicinal plants

UNIT II **9**

Pharmacognosy - systematic position - chemical constitution and medicinal uses of the following herbs in curing various ailments; Tulsi, Ginger, Fenugreek, Indian Goose berry and Ashoka.

UNIT III **9**

Phytochemistry - active principles and methods of their testing - identification and utilization of the medicinal herbs; Catharanthus roseus (cardiotonic), Withania Somnifera (drugs acting on nervous system), Clerodendron Phlomoides (anti-rheumatic) and Centella asiatica (memory booster).

UNIT IV **9**

Analytical pharmacognosy: Drug adulteration - types, methods of drug evaluation - Biological testing of herbal drugs - Phytochemical screening tests for secondary emtabolites (alkaloids, flavonoids, steroids, triterpenoids, phenolic compounds, fatty acids, tannins, glycosides and volatile oils).

.UNIT V **9**

Medicinal Plant Biotechnology: Genetics as applied to medicinal herbs - mutation - polyploidy. Plant tissue culture as source of biomedicinals - Historical developments - types of cultures - phytopharmaceuticals in tissue cultures

TEXT BOOKS

1. Herbal plants and Drugs Agnes Arber, 1999. Mangal Deep Publications.

REFERENCE BOOKS:

1. Glossary of Indian medicinal plants, R.N.Chopra, S.L.Nayar and I.C.Chopra, 1956. C.S.I.R, New Delhi.
2. The indigenous drugs of India, Kanny, Lall, Dey and Raj Bahadur, 1984. International Book Distributors.
3. Ayurvedic drugs and their plant source. V.V. Sivarajan and Balachandran Indra 1994. Oxford IBH publishing Co.
4. Pharmacognosy, Dr.C.K.Kokate et al. 1999. Nirali Prakashan

Course Coordinator **HOD**

BBS553	**MAJOR ELECTIVE-I: VERMICULTURE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Selvakumar & Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar the basic concept of vermiculture. Learners will understand the basic components for vermiculture .					
COURSE OUTCOMES (COs)					
CO1	Recall the ecological classification				
CO2	Understand the scope of vermiculture				
CO3	Apply the knowledge of vermiculture in industries				

CO4	Analyze the methods of vermiculture
CO5	Analyze the optimal conditions for vermiculture
CO6	Analyze the benifits of vermicomposting.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I **9**

Vermicomposting - Definition, introduction and scope: Ecological classification: Humus feeders, Humus formers, leaf mold, top soil and sub soil types

UNIT II **9**

Physical, chemical and biological changes brought by earth worm in soil - burrows - drilosphere - earthworm casts

UNIT III **9**

Optimal conditions for Vermiculture - temperature, moisture, pH, soil type, organic matter, protection from sunlight, rain, predators - food preference.

UNIT IV **9**

Basic components for vermiculture - Culture practices - Home - School - Industries - Vermi wash.

UNIT V **9**

Composting - Vermicomposting - Required conditions - Methods - Advantages - Cost-Benefit analysis of Vermicomposting. B.Sc. Biotechnology: Syllabus (CBCS)

TEXT BOOKS

1. Jsmail, S.A., 1970, Vermicology. The biology of earthworms. Orient Longman, London.

REFERENCE BOOKS:

1. Edwards, C.A. and Bohlen, P.J. 1996, Ecology of earthworms-3rd Edition, Chapman and hall.
2. Lee, K.E., 1985. Earthworms - Their ecology and relationship with soil and land use, Academic Press, Sydney.

Course Coordinator **HOD**

BBS554	**MAJOR ELECTIVE-I: BIOPHARMACEUTICAL TECHNOLOGY**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator & Department :- Dr.S.Sharmila& Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with basic concepts of biopharmaceutical technology. Learners will understand the various applications of biopharmaceutical technology in medical field.					
COURSE OUTCOMES (COs)					
CO1	Recall the basic concepts of biopharmaceutical technology				

CO2	Understand the manufacturing of drugs
CO3	Apply the knowledge in enchancement of bioavailability
CO4	Analyze the various route of drug administration
CO5	Analyze the - factors affecting protein drug binding
CO6	Analyze the factors affecting biotransformation of drugs

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I **9**

Introduction to biopharmaceutics – Various route of drug administration- drug absorption, factors influencing drug absorption from the gastrointestinal tract.

UNIT II **9**

Manufacturing Principles - Compressed tablets - wet granulation - Dry granulation or slugging - Direct compression - Tablet presses formulation - Coating - Pills - Capsules - Parental solutions - injections

UNIT III **9**

Binding of drugs to blood components - tissue binding of drugs - factors affecting protein drug binding - significance of protein/tissue binding of drugs - kinetics of protein-drug binding

UNIT IV **9**

Biotransformation - drug metabolizing enzymes - phase I reactions - phase II reactions - first pass effect - factors affecting biotransformation of drugs - bioactivation and tissue toxicity.

UNIT V **9**

Bioprecursor prodrugs - carrier prodrugs - application of prodrug design: - enchancement of bioavailability - site specific drug delivery - limitations of prodrug design

TEXT BOOKS

1. Brahmankar, D.M. "Biopharmaceutical and pharmacokinetics: A Treatise", Vallabh Prakashan, 1995.

REFERENCE BOOKS:

Remington's *Pharmaceutical Sciences,* Mack Publishing

Course Coordinator **HOD**

BBS555	**MAJOR ELECTIVE-I: DAIRY TECHNOLOGY**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with the basic concepts in dairy technology. Learners will understand the role of dairy technology.					
COURSE OUTCOMES (COs)					

CO1	Recall the concepts in dairy technology.
CO2	Undertsand the applications of dairy products
CO3	Apply the knowledge for indigenous milk products and by products
CO4	Analyze the causes and control measures of milk products
CO5	Analyze the therapeutic effects of fermented milk products-
CO6	Analyze the quality control and quality assurance

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I **12**

Market milk – market milk industry in India – Collection, Transportation of milk- milk reception – Clarification- Chilling – Homogenisation – Sterilization- Pasteurization – UHT processing of fluid milk – aseptic packaging – Special milk – Clean Milk Production – Grading of Milk

UNIT II **12**

Fat rich Dairy products – Cream, preparation, types, defects – Butter preparation, types, defects – Butter Spreads- Preparation of Ghee , defects in ghee- AGMARK standards- Frozen dairy products – Manufacture of Ice Cream: Ingredients and their role, types and defects, Judging and grading of Cream, Butter and Ice Cream.

Concentrated and dried milk Products- Condensed milk – Evaporated milk – BIS standards – defects- Manufacture of milk powder- whole milk, skim milk powder- spray drying – whey powder- whey protein concentrates- biodiesel from whey.

UNIT III **12**

Fat rich Dairy products – Cream, preparation, types, defects – Butter preparation, types, defects – Butter Spreads- Preparation of Ghee , defects in ghee- AGMARK standards- Frozen dairy products – Manufacture of Ice Cream: Ingredients and their role, types and defects, Judging and grading of Cream, Butter and Ice Cream.

Concentrated and dried milk Products- Condensed milk – Evaporated milk – BIS standards – defects- Manufacture of milk powder- whole milk, skim milk powder- spray drying – whey powder- whey protein concentrates- biodiesel from whey.

UNIT IV **12**

Indigenous milk products and by products – Channa – Chana based products – preparation of Khoa and Khoa based products – peda- Gulab jamun – Rasagolla – preparation of paneer – kulfi – utilization of skim milk – butter milk – whey.

UNIT V 0 **12**

Introduction- Cleaning and Sanitation – Sterilization agent- Can Washing- Manual & Mechanical washing – Washing treatments – Cleaning in Place Programmes (CIP) – Packaging of milk & Milk Products – Function- Packaging Material – Filling system – Aseptic Packaging

TEXT BOOK

1. Sukumar de, 2000, "Outlines of Dairy Technology" Oxford Univ press
2. Bhattacharya A and Rajan R P , 2002 " An over view on Yogurt, beverage and food world" .

REFERENCE BOOKS:

1. Andrews,2004, "Biochemistry of Milk Products" Black rabbit books, 2nd ed.
2. Ananthakrishnan C P., and Padmanabhan " The technology of milk processing" Shrilakshmi publications

Course Coordinator **HOD**

BBS556	**MAJOR ELECTIVE-I: CANCER TECHNOLOGY**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology				
COURSE OBJECTIVES: - Learners will be familiar with basics in cancer biology. Learners will					

understand the features of cancer cells.	
COURSE OUTCOMES (COs)	
CO1	Remember the fundamendals of cancer technology
CO2	Understand the principles of carcinogenesis
CO3	Apply the knowledge of cancer in drug development
CO4	Analyze the epidemology, causes, mutations and features
CO5	Analyze the different sites and forms of cancer
CO6	Analyze the advances in cancer detection and therapy

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I **12**

Fundamentals of Cancer Biology- Cell Cycle- regulation of cell cycle, modulation in cell cycle in cancer, Changes in signaling molecules- Effects on receptors, signal switches, Classification of stages of cancer- metasis, Metastatic cascade, common features of cancer cells, Tumor suppressor genes, Cancer genetics.

UNIT II **12**

Principles of Carcinogenesis- Carcinogens- Targets of carcinogens, Chemical carcinogenesis, Physical carcinogenesis- X-ray radiation and radiation carcinogenesis, Viruses and Cancer, Diet and cancer

UNIT III **12**

Molecular biology of cancer- Oncogenes, Identification of oncogenes, Retroviruses and oncogenes, growth factors and Growth factor receptors as oncogenes..

UNIT IV **12**

Different sites and forms of cancer, Lung, Liver, Breast, Cervical, Blood, Prostrate, Ovarian cancers- Epidemology, causes, mutations, and features

UNIT V **12**

Cancer therapy- Cancer Immunology, Different forms of cancer therapy- Chemotherapy, radiation, Detection of cancers, advances in cancer detection and therapy, Gene therapy.

TEXT BOOK

1. Lewis J.Kleismith,2006, "Principles of Cancer Biology" Pearson Benjamin Cummings.
2. Raymond W. Ruddon,2007, "Cancer Biology" Oxford University Press, 4th.

REFERENCE BOOKS:

1. G.M. Cooper,2008, "Oncogenes" Jones & barlett Publisher, 1st.
2. 'Molecular Cell Biology' Darnell, Lodish & Baltimore, IV Ed,2004
3. An Introduction to cellular and Molecular Oncology- Oxford University Press, 2003
4. Genes VII and VIII – Benjamin Lewin, 2004

Course Coordinator **HOD**

BBS557	**MAJOR ELECTIVE-I: WASTE MANAGEMENT TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours –	4	0	0	4
	Prerequisite course – Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.S.Selvakumar & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with basics of waste management technology. Learners will understand the waste management strategies.

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of waste management technology
CO2	Understand the agricultural, biomedical and industrial waste management.
CO3	Apply the knowledge for waste management.
CO4	Analyze the classification of wastes
CO5	Analyze the waste generation methodology
CO6	Analyze the remedial measures for waste

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H							H	M	
	CO2				H						
	CO3			H							
	CO4		M								
	CO5	M									
	CO6		H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT-I: **9**

Introduction: Definition and Classification- Disposal methods: Land fill and Incineration – Recycling methods: biological reprocessing and Energy recovery-. Avoidance and Reduction Methods- Waste handling and Transport – Waste management Concepts

UNIT-II: **9**

Introduction- Waste Consistency- Waste Management Function: Production ,Collection, Storage, Treatment , Transfer, Utilization- Waste Management system Design – Waste Management System: Dairy Waste, Beef Waste, Swine Waste, Poultry Waste, Other animal – Municipal and Industrial Sludge- Food Processing – Agri Chemical Waste Management- Handling.

UNIT-III: **9**

Introduction- Waste Consistency- Waste Management Function: Production ,Collection, Storage, Treatment , Transfer, Utilization- Waste Management system Design – Waste Management System: Dairy Waste, Beef Waste, Swine Waste, Poultry Waste, Other animal – Municipal and Industrial Sludge- Food Processing – Agri Chemical Waste Management- Handling.

UNIT-IV: **9**

Paper and Pulp Industry – Leather Industry – Cement Industry – Chemical Industry – fertilizer Industry – Pharmaceutical Industry – Textile industry – Iron and Steel industry – Mining Industry – Lignite industry – Petroleum Industry – Nuclear Industry**UNIT-V:**

UNIT-V: **9**

Bioremediation – Phyto-remediation- Recycling of Plastic and Paper

TEXT BOOK:

1. Wang, Shannmas Hung, 2008, "Advanced hazardous industrial waste treatment" CRC Press.

REFERENCE BOOKS

1. Agricultural Waste Management Hand Book by USDA, III Ed,2005
2. Industrial Biotechnology Problems and Remedies by Indu Shekhar Thakur, VI Ed,2006

Course Coordinator **HOD**

BBS558	**MAJOR ELECTIVE-I: BIOFUEL TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.S.Sharmila& Biotechnology				

COURSE OBJECTIVES :- Learners will be familiar with basics of biofuel technology. Learners will understand the biofuel policies .

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of biofuel technology
CO2	Understand the methods of biofuel production
CO3	Apply the knowledge for enhanced biofuel production
CO4	Analyze the economy of biofuel
CO5	Analyze the environmental impacts of biofuel
CO6	Analyze the The future of biofuel.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H		H					H	M	
	CO2	H									
	CO3	H		H							
	CO4		H								
	CO5	H		H							
	CO6		H		M						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT -I **9**

Introduction – Potential of biomass – biofuel policies: Policy in EU – Biofuel standardization – International Trade of biofuel-Biofuel Life Cycle – Energy balance -& Efficiency of biofuel – Biofuel emission: Green house gas emission – Vehicle emission standards – other environmental Impacts of Biofuel – economy of biofuel – Consideration of Co-Products

UNIT –II **9**

BioEthanol – Feed stock production: sugar Crops, Starch crops , Cellulosic feed stock – Bioethanol Production : Sugar to ethanol Process, Starch to ethanol process, Cellulose to Ethanol Process – Distillation & Dehydration process – Properties – Application –tandardisation – Energy balance – Bioethanol Emission : Green house gas emission, toxic exhaust emission – Other environmental impacts: water issues, land use & biodiversity, human Health.

UNIT –III **9**

Lipid derived Biofuel – Feed stock production -: Oil seed crops, Micro algae , Animal fats, waste oils – Fuel production : Oil Extraction , Oil Refining, Transesterification – Properties & Use : Properties of Pure Plant Oil (PPO) , Properties of Biodiesel – Application – Energy balance – Emissions of lipid biofuel – Other Environmental Impacts – Economy

UNIT –IV **9**

BtL Fuel: Feed tock production – BtL production – Gasification, Gas Cleaning – Synthesis process. Biohydrogen: Processing – Use – The Future of Biofuel..

UNIT–V **9**

BioMethane – Feed stock Production- BioMethane Production : Digestion Process- Digester types- biogas Purification – Properties & Use – Application – Standardization – BioMethane Emission – Other Environmental Effects – Economy

TEXT BOOKS:

1. Balasubramaniyan.K, Essence of customers relationship management, learn tech press
2. Jagdish N Sheth, Atul Parvatiyar, G Shainesh - customers relationship management- McGraw Hill Publisher, 2000
3. Roger. J Baran and Robert J. Galka- customers relationship management, Routledge publisher 2013

REFERENCE BOOKS:

1. M. Peeru mohamed, customer relationship management, Vikas publications

2. Kaushik mukerjee, customer relationship management PHI

3. Customer relationship management G Shainesh &. Jagdish N Sheth

Course Coordinator **HOD**

BBS651	**MAJOR ELECTIVE-II: INDUSTRIAL SAFETY ENGINEERING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Higher Secondary studies				

	Course Coordinator Name & Department :- Dr.S.Selvakumar & Biotechnology

COURSE OBJECTIVES :- Learners will be familiar with basics of industrial safety engineering. Learners will understand the safety measures.

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of industrial safety engineering
CO2	Understand the safety policy
CO3	Apply the knowledge of fire safety in Industry
CO4	Analyze the classification of industrial accidents
CO5	Analyze the personal protective equipment and personal protection
CO6	Analyze the remedial measures for accidents

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	-	-	-	-	-	-	H	M	
	CO2	-	H	-	-	-	M	H			
	CO3	-	H	-	-	-	M	M			
	CO4	M	-	-	-	-	M	M			
	CO5	-	-	-	-	-	-	-			
	CO6	-	-	H	-	-	-	-			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				

4	Approval		Academic Council Meeting

UNIT-I **9**

Safety in Process Plants – Hazard Analysis – Types of Hazard – hazard Identification techniques Hazard Evaluation – Important Factories Act.

UNIT-II **9**

Hazards in work place: safety in the use of chemicals at work – Chemical hazard - Air-Borne Contaminants – particulate matter – Hazard and safety methods – hazards and Safety measures in

Refineries , Paper and Pulp Industries- Safety Conditions in tanneries –Hazards of Pesticide – Sugar industry

UNIT-III **9**

Introduction- Safety policy- Safety in electrical installation: Electrical shock and prevention- safety precautions for residential and commercial installation - Case study.

Four stages of Fire- types of Fire Detectors – Fire safety in Industry – chemistry of fire- Types of Combustion- Fire Triangle- Fire extinguishing Technique – Engineering consideration for safety consideration

UNIT – IV **9**

Industrial accidents – Classification – prevention – accident cost – Steps of investigation – Analysis of Accidents – Remedial Measures – Methods of Prevention – Safety Slogans – Case study

UNIT – V **9**

Personal protective Equipment and personal Protection – Aim – Need – Types : Non Respiratory Protective equipments- Respiratory type

First aid – principles and methods – First aid training – Scope of first aid – Golden rules– First aid treatment : for wounds and Hemorrage , Shock , respiration :Schafer's Method, Shock. Fractures, Burns and Scalds , Unconsciousness, Heat exhaustion and Stroke– First aid Kit box A and B.

TEXT BOOK :

1. Nicholas , 2008, "Practical Guidance to Industrial Safety" 3rd ed.
2. Prof.M.H.Fulekar, 2007, "Industrial Hygiene & chemical Safety" 2nd ed.

REFERENCE BOOKS:

1. Rudd,2005, "Strategy of process engineering" Willey
2. Wang, Shannmas Hung,2008, "Advanced hazardous industrial waste treatment" CRC Press

Course Coordinator **HOD**

BBS652	**MAJOR ELECTIVE-II: STEM CELL AND TISSUE ENGINEERING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	0	0	3
	Prerequisite course – Higher Secondary studies				

	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology

COURSE OBJECTIVES :- Learners will be familiar with basics of stem cells. Learners will understand the applications of stem cell technology.

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of stem cell technology
CO2	Understand the possible sources for human embryonic stem cell
CO3	Apply the knowledge of stem cells in medical field
CO4	Analyze the novel stem cell based therapies
CO5	Analyze the possibilities to overcome immuno-rejection
CO6	Analyze the current advantages and limitations of stem cells

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-		H	M	
	CO2	M	H	-	-	-	-				
	CO3	H	M	-	-	-	-				
	CO4	H	M	-	-	-	-				
	CO5	H	M	-	-	M	-				
	CO6	H	M	-	-	-	-				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				

4	Approval		Academic Council Meeting

UNIT- I: **9**

Origin and characteristics of human stem cell, plasticity of human somatic stem cells research, Novel stem cell based therapies, Scientific and technical obstacles to overcome before realizing the potential clinical uses of novel human stem cell based therapy, Cord blood,-Stem cell marker.

UNIT- II: **9**

Possible sources for human embryonic stem cell, growing human ESC in laboratoy, Current advantages and limitations of hESC and human somatic cells-Examining the need for new hES cell lines, Developments regarding establishment of human stem cell banks and registries.

UNIT- III: **9**

Preparation of complete human neuroculture, Culturing and subculturing human neurospheres, Differentiation of cells from human, neurospheres into neurons, astrocytes and oligodendrocytes; Immunolabelling procedures

UNIT- IV: **9**

Possibilities to overcome immuno-rejection responses in stem cell therapy, Haematopoietic stem cell transplantation - A new therapy for autoimmune disease, Prenatal diagnosis of genetic abnormalities using fetal CD34+ stem cells, Stem cells in treatment for major diseases and reparative medicine, ESC a promising tool for cell replacement therapy, germ line therapy.

UNIT- V: **9**

Basic principles and consideration - Cell type and source, Metabolic requirements of cells, Reconstruction of connective tissues, Reconstruction of epithelial or endothelial surfaces - cells embedded in extracellular matrix material, Culture on a single surface and sandwich configuration, Bioreactor design on tissue engineering - Hollow fiber systems, Microcarrier based systems-Tissue engineering of the liver

TEXT BOOK:

1. R.C.Dubey, 2004, "Text book of Biotechnology" 3rd Ed.

REFERENCE BOOKS:

1. Sudha Gangal , 2002, "Principles and Practice of Animal tissue culture", IV Ed

P. Ramadass , 2008, " Animal Biotechnology" MJP pub

Course Coordinator **HOD**

BBS653	**MAJOR ELECTIVE-II - GENOMICS AND PROTEOMICS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	0	0	3

	Prerequisite course – Higher Secondary studies
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology

COURSE OBJECTIVES :- Learners will be familiar with basics of genomics and proteomics. Learners will understand the role of proteomics in medicine.

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of genomics and proteomics
CO2	Understand the serial Analysis of gene expression
CO3	Apply the knowledge of proteomics in medical field
CO4	Analyze the applications of genomics
CO5	Analyze the target identification and validation of drug
CO6	Analyze the microarray image processing and analysis

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		H						H	M	
	CO2	M	H	M							
	CO3	H			M						
	CO4					M					
	CO5	H		M							
	CO6		H			M					
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT-I: **9**

Genomic and c DNA sequence: gene prediction rules – gene prediction softwares – human and Arabidopsis genome projects – mutations

Unit – II **9**

Gene therapy - applications of genome – transgenic animals and plants – Pathway regulatory networks

UNIT-III: **9**

Introduction, Serial Analysis of Gene Expression, Microarray, Types of Microarrays, Microarray Fabrication, Microarray hybridization and detection, Microarray Image Processing and analysis, Expression ratios, Transformations of the Expression ratio, Data Normalization

UNIT-IV: **9**

Proteomics – protein separation - 2DE, protein identification – mass spectrometry. Protein chips. Applications of proteomics – Medical proteomics in disease diagnosis, pharmaceutical proteomics in drug development.

UNIT- V: **9**

Discovering a drug - target identification and validation - identifying the lead compound - optimization of lead compound - chemical libraries.

TEXT BOOK:

1. Discovering Genomics, Proteomics and Bioinformatics (2nd Edition) by A. Malcolm Campbell and Laurie J. Heyer , 2009, Pearson Education.

REFERENCE BOOKS

1. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins by Andreas D. Baxevanis and B. F. Francis Ouellette, 2004-Wiley Interscience

2. Principles of Proteomics by R.M.Twyman, Taylor & Francis group , 2004 BIOS Scientific Publishers.

3. Introduction to Bioinformatics by Arthur M. Lesk ,2008, Oxford University

4. Essential Bioinforamtics by Jin Xiong, Cambridge, 2011

Course Coordinator **HOD**

BBS654	**MAJOR ELECTIVE-II - BIOSTATISTICS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Higher Secondary studies				

	Course Coordinator Name & Department :- Dr.S.Sharmila& Biotechnology

COURSE OBJECTIVES :- Learners will be familiar with basics of biostatistics. Learners will understand the significance of bioststistics.

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of biostatistics
CO2	Understand the Measures of central tendency, dispersion and correlation
CO3	Apply the knowledge biostatistics for research
CO4	Analyze the methods in correlation
CO5	Analyze the significance of Students't' test
CO6	Analyze the variance

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H							H	M	
	CO2				H						
	CO3		H								
	CO4		M								
	CO5			H							
	CO6						H				
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

Unit I **9**

Statistics – definition, functions and its limitations Collection, classification, tabulation of data, diagrammatic and graphical representation of data

Unit II **9**

Measures of central tendency - mean, median, mode, geometric mean, harmonic mean - Merits and demerits

Unit III **9**

Measures of dispersion – range, quartile deviation, decile, percentile mean deviation, standard deviation, variance, coefficient of variation, skewness – kurtosis

Unit IV **9**

Correlation - Types, scatter diagram - Karl Pearson's method, Spearman's Rank method, concurrent deviation method, Regression equations and their properties (simple problems)

Unit V **9**

Probability, Definitions of various terms used in probability, Addition and multiplication rule, Conditional probability, Independence of events, Baye's theorem (simple problems)

Test of significance for small samples - Students't' test - to test the significance of sample mean, difference between two sample mean, Analysis of variance –meaning and assumptions - one way and two way classification

TEXT BOOKS:

1. Fundamentals of biostatistics, Khan and Khanum, Ukaaz Publications (2004)
2. Statistical methods, S.P.Gupta, S.Chand & Sons, 1997

REFERENCE BOOKS:

1.S.C.Gupta & V.K.Kapoor, Fundamentals of Mathematical Statistics, Sultan Chand and Sons, New Delhi, 2003
2. An introduction to biostatistics, N.Gurumani, MJP Publishers-2004
3. Fundamentals of biostatistics , Bernard Rosner-2011
4.Stanton A & Clantz, Primer of Biostatistics — The McGraw Hill Inc., New York-2001.
5.Arora PN & Malhon PK, (1996) Biostatistics. Imalaya Publishing House, Mumbai.
6.Zar, J.H. (1996). Biostatistical analysis. Prentice Hall, Upper saddle River, New Jersey, USA

Course Coordinator **HOD**

BBS655	**MAJOR ELECTIVE-II - FOOD PROCESS TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Higher Secondary studies				

	Course Coordinator Name & Department :- Dr.S.Selvakumar & Biotechnology

COURSE OBJECTIVES :- Learners will be familiar with basics of food process technology. Learners will understand the role of significance of bioststistics

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of food process technology
CO2	Understand the physical and chemical factors influencing structure of micro-organisms
CO3	Apply the knowledge to overcome deterioration of various types of food products
CO4	Analyze the packaging methods for prevention
CO5	Analyze the importance and functions of quality control
CO6	Analyze the food safety and evaluation.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						H	M	
	CO2		H	H		M					
	CO3	H					M				
	CO4		H								
	CO5	H	H	M							
	CO6	H	M					M			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT-I **9**

History of microbiology of food - microbial growth pattern, physical and chemical factors influencing structure of micro-organisms - types of micro-organism normally associated with food - mold, yeast and bacteria

UNIT-II **9**

Micro-organisms in natural food products and their control - contaminants of foods - stuffs, vegetables, cereals, pulses, oilseeds, milk and meat during handling and processing - biochemical changes caused by micro-organisms - deterioration of various types of food products - food poisoning and microbial toxins.

UNIT-III **9**

Scope and importance of food processing - principles and methods of food preservation - freezing, heating, dehydration, canning, additives, fermentation, irradiation, extrusion cooking, hydrostatic pressure cooking, dielectric heating, microwave processing.

UNIT-IV **9**

Introduction to packaging - packaging principles and operation - package functions and design - deteriorative changes in foodstuff and packaging methods for prevention - shelf life of packaged foodstuffs - methods to extend shelf life.

UNIT-V **9**

Objectives, importance and functions of quality control - methods of quality - assessment of food materials - fruits, vegetables, cereals, dairy products, meat, poultry, egg and processed food products - sampling and specification of raw materials and finished products - statistical quality controls - food regulations, grades and standards - food adulteration, food safety and evaluation

TEXT BOOKS:

1. Der, A.E. 1978. Food Processing and Nutrition. Academic Press, London.
2. Lows, P. and Ellis H. 1990. Food Processing. Prentice Hall, Reston Virginia, USA.

REFERENCE BOOKS:

1. Rsdel W.B., Copley, M.J. and Morgen, A.I. 1973. Food Dehydration, 2nd Edn. (2 Vol. Set). AVI, Westport.

2. Jelen, P. 1985. Introduction to Food Processing. Prentice Hall, Reston Virginia, USA.

3. Branen A.L. and Davidson, P.M. 1983. Antimicrobials in Foods. Marcel Dekker, New York.

4. Charalambous, G. and Inglett, G. 1981. The Quality of Foods and Beverages. (2 vol. set). Academic Press, New York.

Course Coordinator **HOD**

BBS656	MAJOR ELECTIVE-II - FERMENTATION TECHNOLOGY	L	T	P	C

	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.L.Jeyanthy Rebecca & Biotechnology				

COURSE OBJECTIVES :- Learners will be familiar with basics of fermentation technology. Learners will understand the significance of fermentation technology in industries

COURSE OUTCOMES (COs)

CO1	Remember the basic fundamentals of fermentation technology
CO2	Understand the preservation methods of microbial culture
CO3	Apply the knowledge in Production of metabolites
CO4	Analyze the importance of microorganisms in fermentation technology
CO5	Analyze the growth paramaters for industrially important microorganisms
CO6	Analyze the role of microorganisms in waste water treatment

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO 2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H	M	
	CO2	H									
	CO3		M								
	CO4	H		M							
	CO5										
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT-I **9**

History and scope of Microbiology, Identification of Microorganisms, Prokaryotes and Eukaryotes, Bacterial Taxonomy, Microscopy, Bright Field, Phase contrast, Fluorescence and

Electron Microscope, Specimen Preparation for Microscopy, General Structural organization of Bacteria and other microorganisms, Arachae bacteria.

UNIT-II **9**

Microbial nutrition, Growth of Microorganisms in different Media, Isolation of Pure culture, Growth curve of Microbes, Culture of Microorganisms-continuous and synchronous culture, Enumeration of Microorganisms, Preservation of Microbial Culture, Mode of Nutrition Transport in Microbes, Effect of pH, temperature, osmotic Pressure on Growth of Microbes, antimicrobial agents and disinfectants.

UNIT-III **9**

Historical view of Fermentation Process and products, Outline of various unit operation involved in integrated bioprocesses, Isolation, Preservation and improvement of Industrial Microorganisms, Medium Requirement for Fermentation processes, Carbon, Nitrogen, Minerals, Vitamins and Other Nutrients

UNIT-IV **9**

Production of primary metabolites, organic acids (citric acid, itaconic acid, acetic acid, gluconic acid), Amino acids (glutamic acid, lysine, aspartic acid, phenylalanine), alcohols (Ethanol, 2,3-butanediol). Production of secondary metabolies, antibiotics-betalactams (penicillin, cephalosporin), Aminoglycosides (streptomycin, kanamycin), Macrolides (erythromycin), Vitamins, Production of Vaccines and Recombinant Proteins-Proteases, Amylases, Lipases.

UNIT-V **9**

Microorganisms in waste water treatment, Bio-fertilizers and Bio-Pesticides, Recycling of biomaterials, production of biogas, plant growth factors. Natural Bio preservatives (nisin), Bio-Polymers (Xanthan gum and PHB), Single Cell Protein

TEXT BOOKS:

1. Michael J. Pelezar, J.R.E.C.S Chan, Noel R. Erieg,2005, “Microbiology “ TATA McGraw Hill, 5th.

REFERENCE BOOKS:

1. Anantha Narayan, C.K. Jayaram Paniker,2009, “Text Book of Microbiology” Orient Blackswan, 7th.
2. Presscott and Dunn,2006, “Industrial Microbiology” CBS Publishers& Distributors.

Course Coordinator **HOD**

BBS657	MEDICAL BIOTECHNOLOGY	L	T	P	C
	Total Contact Hours – 60	3	0	0	3

	Prerequisite course – Higher Secondary studies
	Course Coordinator Name & Department :- Dr.S.Anbuselvi& Biotechnology

COURSE OBJECTIVES :-

Learners will be familiar with basics of medical biotechnology. Learners will understand the significance of medical biotechnology in medicine.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts in medical biotechnology.
CO2	Understand the diagnostics methods
CO3	Apply the knowledge in diagnosis of pathogenic microbes.
CO4	Analyze the importance of vaccines.
CO5	Analyze the development of microbial resistance to antibiotics
CO6	Analyze the role of growth hormones.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H	M	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I **9**

Manipulation of assisted reproductive technology- artificial insemination and storage- isolation and *in vitro* maturation of Oocytes- IVF- Embryo transfer technique- Pregnancy diagnosis -

Animal cell culture-media, maintenance and culture of primary, secondary and continuous cell lines- organ culture- applications- cancer cell lines- apoptosis

UNIT II **9**

Chromosomal disorders – Gene controlled diseases –Identification of disease genes-Functional cloning (Haemophilia) – Positional cloning (DMD) – Candidate gene approach (Alzheimer's) – Molecular basis of human diseases :Pathogenic mutations (Gain of function mutations: Oncogenes - Loss of function - Tumour Suppressor Genes - Immunopathology: Hepatitis, Autoimmune Disorders)

UNIT- III **9**

Prenatal diagnosis - Invasive techniques and Non-invasive techniques – Diagnosis of pathogenic microbes: Classical and modern methods- Diagnosis using protein and enzyme markers, monoclonal antibodies.DNA/RNA based diagnosis- Molecular markers- Microarray technology-genomic and cDNA arrays

UNIT IV **9**

Vaccines-conventional, recombinant, synthetic peptide, anti-idiotype, DNA vaccines- Deletion mutant and vaccinia vector vaccine- Prophylaxis - Antibiotics-mode of action- antibacterial, antifungal, antiviral, antitumor antibiotics- synthetic chemotherapeutic agents- development of microbial resistance to antibiotics

UNIT V **9**

Hybridoma technique for Monoclonal Ab production and applications- Gene therapy:Exvivo, Invivo, Insitu- Cell and tissue engineering- Stem cell therapy- Nanomedicines- Gene products in medicine – Humulin, Erythropoietin, Growth Hormone/Somatostatin, tPA, Interferon

TEXT BOOK:

1.Jogdand, S. N. 2000. Medical Biotechnology, Himalaya Publishing house,
Mumbai.

REFERENCE BOOKS

1. Click, B. R. and Pasternak. 2002. Molecular Biotechnology: Principle and applications of recombinant DNA. ASM Press.

2. Ramasamy, P.2002. Trends in Biotechnology, University of Madras, Pearl press.

3. Trevan. 2001. Biotechnology. Tata McGraw-Hill.

4. Jenkins, N (Ed) 1999. Animal cell biotechnology: Methods and Protocols. Humana press, New Jersey.

Course Coordinator **HOD**

BBA011	**BUSINESS PROCESS OURTSOURCING - MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	**2**	**0**	**0**	**2**

	Prerequisite course – +2 studied in Higher Secondary Studies
	Course Coordinator Name &Department: -Ms.D.K.Sowmiyalakshmi, Business Administration

COURSE OBJECTIVES: -

To familiarize the students with the basic fundamentals of BPO.
To impart knowledge on types of BPO and call centers .
To enable the students on the concept Health care BPO & Transaction BPO.
To peep into the concept of Human Resource BPO and the career opportunities in BPO

COURSE OUTCOMES (COs)

CO1	Underline the basic fundamentals of BPO.
CO2	Discuss the awareness about the models of BPO.
CO3	Initiate the concept of Health Care BPO.
CO4	Identify the elements of Transaction processing BPO.
CO5	Evaluate the career opportunities in BPO.
CO6	Formulate the challenges faced by BPO industry.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO 3
2	CO1	H	H						H	M	L
	CO2	M	L								
	CO3	L	H								
	CO4	H	H								
	CO5	H	H								
	CO6	M	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part III Project	Part V Extension Activity			
						✓					
4	Approval	Academic Council Meeting									

BPO MANAGEMENT

Unit I

Business Process Outsourcing – Basics – Benefits of BPO – Growth Drivers – BPO Models and Types of Vendors – Offshore BPO – Evolution Destinations – Challenges of Off shoring – BPO Companies in India.

Unit II

BPO Industry – Employment Opportunities – Employee Structure – Skill Set Required – Compensation Levels – Contact Centre BPO – Types of Call Centres – Technology – Components and working of a Call center – Issues and Problems – Case Study – Intelenet Global.

Unit III

Healthcare BPO – Structure of the American Healthcare Sector – Activity Profile – Future Trends and Threats – Case Study – Cbay Systems. Transaction Processing BPO - Elements of Back – Office Serivces – Financial Services – Insurance – Case Studies – Datamatics – Hinjuja TMT. Human Resource BPO – Reasons for outsourcing HR – Activities involved in HR BPO – HR Outsourcing Trends – Career in HR BPO – Emerging BPO Domains – Media and Entertainment BPO – Publishing BPO.

Text Books:-

Business Process Outsourcing Sarika Kulkarni Jaico Publishing House, Delhi 2005

Reference Books:-

BPO DIGEST Deepak Shikapur Ameya (Inspiring Books) 2004.

Course Coordinator HOD

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	DESKTOP PUBLISHING	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
BBE002	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO2**	**PS O3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

Course Coordinator HOD

BCA001	**COMPUTER APPLICATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PS O3**
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

Course Coordinator HOD

BCA002	**GRAPHICAL AND WEB DESIGNING**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)	
CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
O3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part I Tamil/Linguistic (any one)	Part II English/ Linguistic (any one)	Part III Core	Part III Substream	Part III Project	Part IV Advanced Tamil/ EVS/VE/	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

Course Coordinator HOD

BCA003	**MULTIMEDIA**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO2**	**PS O3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

Course Coordinator HOD

BCA004	**NETWORKING AND MAINTENANCE**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part I Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**

Course Coordinator HOD

BCA006	**WEB DESIGNING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PS O3**
2	**CO1**	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2
Terminology, Starting a Website, HTML Coding

UNIT-3
HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

Course Coordinator HOD

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO2**	**PS O3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

ANIMATION
Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2
3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

Course Coordinator HOD

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
									✓		
4	Approval	Academic Council Meeting									

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

Course Coordinator HOD

BSC003	**COMPUTER PROGRAMMING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String – String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**

Course Coordinator HOD

BSC004	**COMPUTER TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)	
CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

SYLLABUS – B.SC CATERING

S.NO	CATEGORY	SUB CODE	SUBJECTS	L	T	P	C
1.1	Humanities & Social Sciences (HS)	BMH 101	French-I	3	0	0	3
1.2	Humanities & Social Sciences (HS)	BMH 102	English-I	3	0	0	3
1.3	Professional Core (PC)	BMH 103	Food production and Patisserie-I	3	1	0	4
1.4	Professional Core (PC)	BMH 104	Food and beverage Service-I	3	1	0	4
1.5	Professional Core (PC)	BMH 105	Front office operation-I	3	1	0	4
1.6	Professional Core (PC)	BMH 106	Foundation of accommodation operations	2	1	0	3
	Practical	BMH 2L1	Food production and Patisserie-I(practical)	-	1	3	-
	Practical	BMH 2L2	Food and beverage Service-I (practical)	-	1	3	-
	Practical	BMH 2L3	Front office operation (practical)	-	1	3	-
		Total Contact Hours 30					21

SEMESTER II

S.NO	CATEGORY	SUB CODE	SUBJECTS	L	T	P	C
2.1	Humanities & Social Sciences (HS)	BMH 201	French-II	3	0	0	3
2.2	Humanities & Social Sciences (HS)	BMH 202	English-II	3	0	0	3
2.3	Professional Core (PC)	BMH 203	Food production and Patisserie –II	3	0	0	3
2.4	Professional Core (PC)	BMH 204	Food and Beverage Service-II	3	0	0	3
2.5	Professional Core (PC)	BMH 205	Front office operation-II	3	0	0	3
2.6	Professional Elective (PE)	BMH 206	Food Science and Nutrition	3	0	0	3
2.7	PC Practical	BMH 2L1	Food production and Patisserie –II (practical)	-	0	3	3
2.8	PC Practical	BMH 2L2	Food and Beverage Service-II (practical)	-	0	3	3
2.9	PC Practical	BMH 2L3	Front office operation (practical)	-	0	3	3
		Total Contact Hours 30					27

SEMESTER III

S.NO	CATEGORY	SUB CODE	SUBJECTS	L	T	P	C
3.1	Professional Core (PC)	BMH301	Food production and Patisserie-III	3	0	0	3
3.2	Professional Core (PC)	BMH 302	Food and beverage Service-III	3	0	0	3
3.3	Professional Core (PC)	BMH 303	Accommodation operation-I	3	0	0	3
3.4	Professional Core (PC)	BMH 304	Bakery and confectionary-I	3	0	0	3
3.5	Professional Electives (PE)	BMH 305	Computer Application	3	0	0	3
	Practical	BMH 4L1	Food production and Patisserie(practical)-II	-	1	3	-
	Practical	BMH 4L2	Food and beverage Service(practical)-II	-	1	3	-
	Practical	BMH 4L3	Housekeeping operation (practical)	-	0	3	-
	Practical	BMH 4L4	Bakery and confectionary (practical)-II	-	0	3	-
		Total Contact Hours 30					15

SEMESTER IV

S.NO	CATEGORY	SUB CODE	SUBJECTS	L	T	P	C
4.1	Professional Core (PC)	BMH 401	Food production-IV	3	0	0	3
4.2	Professional Core (PC)	BMH 402	Food and beverage Service-IV	3	0	0	3
4.3	Professional Core (PC)	BMH 403	Accommodation operation-II	3	0	0	3
4.4	Professional Core (PC)	BMH 404	Bakery and confectionary-II	3	0	0	3
4.5	Professional Electives (PE)	BMH 405	Hotel Law	3	0	0	3
4.6	Professional Electives (PE)	BMH 406	Introduction To Tourism	3	0	0	3
4.7	Practical	BMH 4L1	Food production and Patisserie(practical)-II	0	0	6	3
4.8	Practical	BMH 4L2	Food and beverage Service(practical)-II	0	0	6	3
4.9	Practical	BMH 4L3	Housekeeping operation (practical)-II	0	0	6	3
4.1	Practical	BMH 4L4	Bakery and confectionary (practical)-II	0	0	6	3

Semester V

S.NO	CATEGORY	SUB CODE	SUBJECTS	L	T	P	C
5.1	Ability Enhancement Courses (AEC) Project Work, Seminar, Internship, Term Paper, etc.	BMH 5V1	Industrial Exposure Training	0	0	30	15
		Total Contact Hours 30					15

SEMESTER VI

S.NO	CATEGORY	SUB CODE	SUBJECTS	L	T	P	C
6.1	Professional Core (PC)	BMH 601	Food production-V	3	2	0	4
6.2	Professional Core (PC)	BMH602	Food and beverage Service – V	3	2	0	4
6.3	Professional Core (PC)	BMH603	Front Office Management	**3**	2	0	4
6.5	Practical (PC)	BMH604	Food production (practical)-III	0	2	6	4
6.6	Practical (PC)	BMH6L1	Food and beverage Service(practical)-III	0	2	6	4
6.7	Ability Enhancement Courses (AEC) Project Work	BMH6L2	PROJECT			12	06
		Total Contact Hours 24					BMH 6P1

SUMMARY OF CURRICULUM STRUCTURE AND CREDIT & CONTACT HOUR DISTRIBUTION

S.No	Sub Area	Credit As per Semester						No. of Credit	% of credit
		I	II	III	IV	V	VI		
1	Humanities & Social Sciences (HS)	**6**	**6**					**12**	**8.95**
2	Professional Core (PC)	**15**	**18**	**12**	**24**		**20**	**89**	**66.41**
3	Professional Electives (PE)		**3**	**3**	**6**			**12**	**8.95**
4	Ability Enhancement Courses (AEC) Project Work, Seminar, Internship, Term Paper, etc.					**15**	**06**	**21**	**15.67**
	Total Credit	**21**	**27**	**15**	**30**	**15**	**26**	**134**	**100**
	Total Contact Hour	**30**	**30**	**30**	**30**	**30**	**30**	**180Hrs**	

SEMESTERS	TOTAL CONTACT HOURS	TOTAL CREDITS
I	30	21
II	30	27
III	30	15
IV	30	30
V	30	15
VI	30	26
TOTAL	**180**	**134**

FIRST SEMESTER

DIPLOMA CATERING SCIENCE AND HOTEL MANAGEMENT

1. FRENCH-I

Subject Code BMH101	FRENCH-I	L	T	P		C
	Total Contact Hours – 45 hours	4	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:-

1.Introduce the basics of the French language to beginners .

2.To develop their French knowledge as well as their communicative skills so as to be able to respond in simple everyday contexts with hotel guests.

COURSE OUTCOMES (COs)

CO1	1.To have fundamental understanding of the French language in several core competencies.
CO2	2.To acquire French knowledge in the five areas of assessment listening, reading, spoken interaction, spoken production, and writing.
CO3	3.To develop listening skills and understand the gist of a variety of communication modes (TV, video, radio, etc.)
CO4	4.To read a broad range of printed materials for general, specific and practical information write notes, letters and compositions on familiar topics.
CO5	5.Creating a good command of French Vocabulary .
CO6	6.To learn the ability to make sentence structure in a cohesive and organized manner.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	1	2	3	4	5	6
2	CO1	M			H		L
	CO2		H	M			H

	CO3	H		L	H	M	
	CO4		M	H			
	CO5	H		L		M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

INTRODUCTION TO THE LANGUAGE

Alphabets, Pronunciation of the word.

UNIT-II **(9)**

Accents used in French, Greetings

UNIT-III **(9)**

Numbers 1 to 100

UNIT- IV **(9)**

Name of vegetables, Fruits and meats, Name of the sea foods. Name of kitchen professionals & Utensils, Family members

UNIT-V **(9)**

Self-Introduction, Presenting a beginners Speech, Introducing other person, Delivering thanks.

References:

1. Saison 1
2. Methode De Francais
3. Dider
4. Echo A1
5. Methode De Francais

Weblinks:

1. https://www.youtube.com/watch?v=yInM6Gq49qI

2. https://www.youtube.com/watch?v=hd0_GZHHWeE

3. https://madras.afindia.org

2. ENGLISH-I

Subject Code BMH102	ENGLISH-I	L	T	P		C
	Total Contact Hours – 45 hours	4	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:

1.Demonstrate the ability to use professional written and oral communication skills and technology to successfully communicate.

2. To enable the learner to communicate effectively and appropriately in real life situations.

3. To develop Listening, Reading, Speaking and Writing.

4. To learn about the supporting evidence in a vocabulary appropriate to the target audience.

5.Recognize their own verbal mistakes and correct them.

6. To integrate material from outside sources logically and gracefully into an oral presentation

COURSE OUTCOMES (COs)

CO1	1.To acquire active reading ability so as to appreciate ambiguity and complexity.
CO2	2.To articulate their own interpretations in a proper language.
CO3	3.To understand English well and to have an awareness and curiosity for other perspectives.
CO4	4.To write effectively for a variety of professional and social settings.
CO5	5.Topractice writing as a process of motivated inquiry, engaging other writers' ideas as they explore and develop their own.
CO6	6.To demonstrate an ability to revise for content and edit for grammatical and stylistic clarity.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	L		H	H		M
	CO2		M				
	CO3	H		M	H	M	L

	CO4		M			H	
	CO5			H		M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT 1 : COMMUNICATION –TYPES & PROCESS (9)

Introduction, definitions, Process of communication, Types of communication, upward, downward, horizontal, vertical and diagonal, Verbal, nonverbal, oral and written. Interpersonal communication - one way/ two way, Mediums of communication.

UNIT 2 COMMUNICATION (9)

Message Component, Communication and Information, Conflict and its Resolution, Communication and Empathy. Aids and Barriers to Communication – Inadequacy of message design, physical. Appearance, selective attention, prejudice, language difference, inadequate. Listening, lack of feedback, imperceptions, mannerisms. Listening – Need for listening, listening for content, critical listening, Empathetic listening, attentive listening

UNIT 3 WRITTEN COMMUNICATION SKILLS (9)

Advantages and disadvantages, Note making, writing a log book Comprehension and précis writing, Letter writing

UNIT 4 ORAL COMMUNICATION SKILLS (9)

Advantages and disadvantages, Articulation and delivery Making speeches and presentations, Telephone etiquettes, Restaurant and hotel English

UNIT 5 PRONOUNCIATION& BODY LANGUAGE (9)

Pronunciation, stress, invocation, Rhythm. Greetings, First name, handshakes, Some polite expressions, apologies, remarks, etiquette and manners.

References:

1. Improve Your Writing ed. V.N. Arora and Laxmi Chandra, Oxford Univ. Press, New Delhi.

2. Technical Communication – Principles and Practices by Meenakshi Raman &Sangeeta Sharma,

Oxford Univ. Press 2007, New Delhi.

3. Effective Technical Communication by Barun K. Mitra, Oxford Univ. Press, 2006, New Delhi

4. Business Correspondence and Report Writing by Prof. R.C. Sharma & Krishna Mohan, Tata McGraw Hill & Co. Ltd., New Delhi.

Weblinks:

1.https://www.lifehack.org/785450/online-learning-sites

2.https://www.mindtools.com/page8.html

FOOD PRODUCTION & PATTISSERIE-I

Subject Code BMH103	Subject Name: Food Production &Pattisserie-I	L	T	P	C
	Total Contact Hours – 45 hours	3	1	0	4
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. To understand the professionalism of being an educated chef and the concepts of developing modern cookery practices.
2.To comprehend the professional requirements of kitchen personnel, cooking, basic classification and the importance of hygiene.

COURSE OUTCOMES (COs)

CO1	1.To gain knowledge about insight of kitchen organization, duties and responsibilities of kitchen staff, workflow.
CO2	2.To acquire information of methods of cooking and learn the basic skills in continental cuisine their market form, selection, storage and uses.
CO3	3.To comprehend the different types of salad
CO4	4.To understand the different types of sandwiches
CO5	5.To acquire the technical skills about the different types of cuts in vegetables
CO6	6. To understand the kitchen equipments and its various usage .

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1		L				L
	CO2	L		M	M		
	CO3	M		L	H	M	H
	CO4	H		H			L
	CO5		H	M		M	M
3	Category	Professional Core (PC)					

4	Approval	

UNIT-I **(9)**

INTRODUCTION TO COOKERY

Levels of skills and experiences, Attitudes and behaviour in the kitchen, Personal hygiene, Uniforms & protective clothing

UNIT-II **(9)**

Aims and objective of cooking food: Various textures, various consistencies, Techniques used in pre-preparation, Techniques used in preparation.

Classification of cooking materials and their uses: Foundation ingredients - Meaning, action of heat on carbohydrates, fats, proteins, minerals and vitamins.

Fats and oils – Meaning and examples of fats and oils. Hydrogenation of oils, uses of fats and oils, quality for shortenings, commonly used fats and oils, their sources and uses.

Raising agents – Functions of raising agents, chemical raising agents and yeast.

Eggs – Uses of egg in cooking, characteristics of fresh eggs, deterioration of eggs, storage of eggs.

Salt – Uses.

Liquid –Water, stock, milk, and fruit juices, etc., uses of a liquid.

Flavourings and seasonings – Uses and examples.

Sweetening agents – Uses and examples. Thickening agent

UNIT-III PREPARATION OF INGREDIENTS **(9)**

Washing, Peeling and scraping, pairing, cutting (terms used in vegetable cutting, julienne, Brunoised, Macedonia, Jardinière, Pays Anne), grating, grinding, mashing, sieving, milling, steeping, centrifuging, emulsification, evaporation, homogenization

Methods of mixing food: Beating, Blending, Cutting, Creaming, Folding, Kneading, marinating, Sealing, Stirring, Whipping, and Whisking

UNIT- IV KITCHEN ORGANIZATION **(9)**

Main & satellite Kitchen Duties and responsibilities of each staff. Cooking fuels Uses and advantages of different cooking fuels. Different equipment’s used in food production

UNIT-V METHODS OF COOKING FOOD(9)

• Roasting • Grilling • Frying • Baking • Broiling • Poaching • Boiling • stewing • Principles of each of the above • Care and precautions to be taken • Selection of food for each type of cooking

References:

1.Thangam E Philip"Modern Cookery Volume I" 4th Edition 2018

2.Krishna Arora Theory of Cookery 6th Edition, Frank Brothers & Company 2016

3.VictorCesarani& Ronald Kinton , Practical Cookery, ELBS, 2018

Weblinks:

1.https://www.ihmnotessite.net/food-production

2.https://hm1year1semfp.blogspot.com/2019/01/ihm-hotel-management-food-production_12.html

FOOD AND BEVERAGE SERVICE –I

Subject Code BMH104	Subject Name: FOOD AND BEVERAGE SERVICE –I	L	T	P		C
	Total Contact Hours – 45 hours	3	0	0		4
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:

1.To remember and identify the organization structure of F&B department.

2.ToRecognize areas of improvement for food/beverage handling and safety.

3.To modify the perspective, assessing food/beverage service operations through the technical skills and behavior of guests..

4.To consider how each element of staff, snack bar/restaurant, bar/lounge and lane service contributes to the overall ambiance and customer experience.

COURSE OUTCOMES (COs)

CO1		1.To understand the history and modern food and beverage service industry.
CO2		2.To learn the classification of F&B serive industry and able to plan a service outlet.
CO3		3.To utilize the F&B Service man poser and understand the departmental relationship
CO4		4. To adapt to the different skills required for food service and choose the quality modern equipments for service in the F&B outlets.
CO5		5.To comprehend the different types of menu and its service methods.
CO6		6.To learn about F&B Department hierarchy

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1			H		M	
	CO2	H		L	M		L
	CO3					M	
	CO4	M	H		L		M
	CO5	H	M	H	H	M	H
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

THE HOTEL & CATERING INDUSTRY

Introduction to the Hotel Industry and Growth of the hotel Industry in India. Types of F&B operations. Classification of Commercial, Residential/Non-residential. Philanthropic/ Welfare Catering - Industrial/Institutional/Transport

UNIT-II **(9)**

DEPARTMENTAL ORGANISATIONS & STAFFING

Organisation of F&B department of hotel. Principal staff of various types of F&B operations. French terms related to F&B staff. Duties & responsibilities of F&B staff. Attributes of a waiter. Inter-departmental relationships.

UNIT-III **(9)**

FOOD SERVICE AREAS (F & B OUTLETS)

Specialty Restaurants, Coffee Shop, Cafeteria, Fast Food (Quick Service Restaurants), Banquets, Bar, Discotheque.

UNIT- IV **(9)**

ANCILLIARY DEPARTMENTS

Still Room/ Pantry, Silver Room/ Plate Room/ Store, Linen room, Kitchen stewarding/ Scullery.

UNIT-V F & B SERVICE EQUIPMENT **(9)**

Cutlery, Crockery, Glassware, Flatware, Hollowware, All Other Equipment Used in F&B Service.

French Term Related with Equipment

References:

1.Food and beverage Service -Singaravelavan, Oxford publication 2017

2.Food and Beverage , Sudhir Andrews

3.Food& Beverage Service- Lillicrap& Cousins, ELBS.

Weblinks:

1.https://www.ihmbbs.org/upload/CHAPTER1%20(THE%20HOTEL%20&%20CATERING%20INDUSTRY).pdf

2. https://www.ihmnotessite.net/f-bo-1staff-organisation

FRONT OFFICE OPERATION – I

Subject Code BMH105	Subject Name: FRONT OFFICE OPERATION – I	L	T	P		C
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:

1.To know the primary function of front office staff and to coordinate guest services, and review basic front office functions and responsibilities that allow staff to meet guest standards.

2.To know job tasks commonly found in Front Office and able to communicate with guest professionally.

COURSE OUTCOMES (COs)

CO1	1.To understand the hotel and its various classifications.
CO2	2.To learn about the various types of rooms in star hotels.
CO3	3.To comprehend the knowledge about the organizational structure of Front office and its various departments.
CO4	4.To acquire knowledge about the various types of guests.
CO5	5.To learn about the communication skills needed for the Front Office staff to handle guests.
CO6	6. To understand the Various sections of Front Office Department.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1			H	H		L
	CO2	H	M				
	CO3	L		M	H	M	H
	CO4	M		M			
	CO5		H			M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

Introduction to Hospitality Industry

The term 'Hotel', evolution & development of hospitality industry and tourism, Famous hotels worldwide. Classification of hotels. (based on various categories like size, location, clientele, length of stay, facilities, ownership),Organizational chart of hotels (Large, Medium, Small)

UNIT-II **(9)**

Front Office Department

Sections and layout of Front Office department .Co-ordination of front office with other departments of the hotel .Equipment's used a the Front desk(Manual and Automated).

UNIT-III **(9)**

Front Office Organization

Organizational chart of front office department (small, medium and large hotels) . Duties and responsibilities of various staff-Reception, Reservation, Bell captain , Bell-boys, GRE, Front Office Manager, Lobby Manager. Essential attributes of front office personnel. Rules of the house-for guests & staff

UNIT- IV **(9)**

Guest Types: FIT, VIP, Business Traveller's, GIT, Special Interest Tours, Domestic, and International.

UNIT-V (9)

Room Types: Types of rooms, concept of Executive/ Club floors. Food / Meal plans. Types of room rates. (Rack, FIT, crew, group, corporate, weekend etc.

Role of Front Office

Key control and key handling procedures, Rules of the house (for guest and staff), Black list, Bell Desk and Concierge-role & functions performed, Role of lobby manager, Hospitality Desk, role & functions, Black list

References:

1. Front OfficeManagement –S.K.Bhatnagar, Frank Brothers.

2. Hotel Front Office Operations and Management- JatashankarTewari,

3. Front Office operation & Administration – Dennis .L. Foster

4. Hotel Front Office Training Manual – Sudhir Andrews (Tata Mc.Graw Hill Publications)

Weblinks:

1. https://shodhganga.inflibnet.ac.in/bitstream/10603/166489/7/07_chapter%201.pdf

2. https://setupmyhotel.com/train-my-hotel-staff/front-office-training/743-front-office-introduction-operations-functions.htm

Accommodation Operation 1

Subject Code BMH106	Subject Name: Accommodation Operation 1	L	T	P	C
	Total Contact Hours – 45 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1.To induce in student a professional competence in providing accommodation to ordinary, VIP and VVIP guests in clean and well maintained rooms.

2. To develop a comprehensive knowledge in layout room, interior decoration, planning and selection of housekeeping articles.

3. To make the student understand about the various cleaning materials and agents used and the hygiene and sanitation aspects of department.

COURSE OUTCOMES (COs)

CO1	1.Toacquire knowledge of housekeeping department of a hotels and its organization structure.
CO2	2.To learn and understand the various functions of housekeeping department.
CO3	3.To gain knowledge about the various cleaning agents used in hotels.
CO4	4.To understand the Inter Departmental Cooperation between Housekeeping and other departments in the Hotel.
CO5	5.To acquire information about the responsibilities in handling HK Control desk.
CO6	6.To gain knowledge about key control, flower arrangement and horticulture.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6

2	CO1		H		M	H	M
	CO2	M		H			H
	CO3	L	L		L		
	CO4	H	M	L	M		M
	CO5			L		M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

CLEANING 0F GUEST ROOMS

Daily cleaning of room, Weekly cleaning/spring cleaning, Evening service, Systems and procedure involved, Guest room cleaning - Replenishment of guest supplies and amenities

UNIT-II **(9)**

HOUSEKEEPING CONTROL DESK

Importance, Responsibilities, Briefing, Debriefing, Handling telephone, Handling software.

UNIT-III **(9)**

ROUTINE SYSTEMS AND RECORS OF HOUSEKEEPING DEPARTMENT

Room occupancy report, Guest room inspection form, Check list, Floor register, Work order, Log shut, Room boys report/ Maid report, Guest special requisite register

UNIT- IV **(9)**

HOUSEKEEPING SUPERVISION, KEY AND KET CONTROL, LOST & FOUND

Importance of Inspection, Checklist of Inspection, Typical Areas neglected where special attention is required, Types of Keys, Electronic Key Card, Key Control, Importance of Lost and Found, Lost and Found Procedure, Lost and Found Register

UNIT-V **(9)**

PEST CONTROL, INDOOR PLANTS, HORTICULTURE

Importance of Pest Control in an Organization, Common Pests found in Hotels, Preventive & Control Measures, Selection and Care, Basic Gardening Tips, Tools & Equipment's, Landscape Designing

UNIT-VI **(9)**

FLOWER ARRANGEMENT

Flower Arrangement in Hotels, Equipment and material required for flower arrangement, Conditioning of plant material, Styles of flower arrangement, Flower Arrangement in Hotels. Principles of design as applied to flower arrangement

References:

1.Hotel Housekeeping Training manual- Sudhir Andrews

2.Hotel Housekeeping Management and Operations-Sudhir Andrews

3.Hotel Housekeeping Operations & Management -G.Raghubalan&SmriteeRaghubalan

4. The Professional Housekeeper -Madelim Schneider & Georgia Tucker - Doris Hatfield

Weblinks:

1. https://www.tutorialspoint.com/hotel_housekeeping/hotel_housekeeping_quick_guide
2. https://www.itslife.in/do-it-yourself/introduction-to-flower-arrangements

SECOND SEMESTER

DIPLOMA - CATERING SCIENCE AND HOTEL MANAGEMENT

SEMESTER - II

FRENCH - II

Subject Code BMH 201	Subject Name: French - II	L	T	P	C
	Total Contact Hours – 45 hours	4	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. Introduce the basics of the language to beginners.

2. To develop their knowledge as well as their communicative skills so as to be able to respond in simple everyday contexts.

COURSE OUTCOMES (COs)

CO1	. This course will provide students with a fundamental understanding of French language
CO2	2. Specifically, the five areas of assessment are: listening, reading, spoken interaction, spoken production, and writing.
CO3	3. Learn about contemporary French and Francophone institutions and mores.
CO4	4. Communicate and interact with other speakers of French in diverse situations.
CO5	5. Conversations involving everyday topics develop listening skills and understand the gist of a variety of communication modes (TV, video, radio, etc.)
CO6	

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H		M
	CO2	M	H				H

	CO3			H	H	M	
	CO4		M				M
	CO5	H				M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT1 SELF-INTRODUCTION 9

- Name
- Address
- Age
- Nationality
- Profession
- Verbs : Etre, Avoir
- Country
- Nationality

UNIT 2PRESENTING AND INTRODUCING ANOTHER PERSON 9

- Dialogues
- Greeting
- Adjectives
- Pronouns
- Adverbs

UNIT 3 CONVERSATIONS 9

- Class Room Conversations
- General conversations
- Asking for information
- At the Restaurant
- Verb Savoir/Faire

UNIT 4 CONTINENTAL CUISINE & DRINKS9

- Les Vin
- Culinary French
- Autres Plats Classiques
- Description Des Plats
- Basic rules of the Menu

UNIT 5 VOCABULARY 9

- Oral
- French –English
- English – French

Test Book:

Saison 1, Methode De Francais, Dider, Echo A1, Methode De Francais

Reference Book:

The Votre' Service – I

Web link:

www.languagehelpers.com › words › french › basic
2. www.fluentu.com › blog › simple-french-sentences

ENGLISH - II

Subject Code BMH 202	Subject Name: English - II	L	T	P	C
	Total Contact Hours – 45 hours	4	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. Demonstrate the ability to use professional written and oral communication skills and technology to successfully communicate.

2. To enable the learner to communicate effectively and appropriately in real life situations.

3. To develop Listening, Reading, Speaking and Writing.

COURSE OUTCOMES (COs)

CO1	1. Gain an introductory knowledge of the some of the issues explored in influential works of the English-language tradition.
CO2	2. Use the stylistic writer's strategies.
CO3	3. Read complex texts actively: recognize key passages; raise questions; appreciate complexity and ambiguity; comprehend the literal and figurative uses of language.
CO4	4. Practice writing as a process of motivated inquiry, engaging other writers' ideas through the use of quotations, paraphrase, allusions and summary.
CO5	5. Use sources well and cite them correctly.
CO6	6. Increase confidence in speaking publicly: articulate clear questions and ideas in class discussion; listen thoughtfully and respectfully to others' ideas; and prepare, organize, and deliver engaging oral presentations.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6

2	CO1	H			H		H
	CO2	M	M				H
	CO3			H	H	M	
	CO4		M				H
	CO5	H		H		M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT **1** **BUSINESS COMMUNICATION** 09

- Nature and Characteristics of business communication,
- Importance of Effective business communication,
- Objectives of business communication.
- Types/pattern of business communication.
- Principles of business communication.
- Media/Channels of business communication.
- Barriers to business communication and overcoming methods Framework forplanning business messages - Purpose, audience, structure, style

UNIT 2. WRITTEN COMMUNICATION 09

- Business report, business representation,
- Formal letter. Drafting effective letter, formats, style of writing,
- Use of jargons.
- Letter writing
- (letters of enquiry, complaint, apology, order, application accompanied byBio-data, resignation and appreciation.)
- Short formal reports (incidents, events, visits) Memos, notices, circulars

UNIT 3. INTERVIEWS 09

- Interviews - Types and uses.
- Techniques of handling interviews of different types.
- Group discussion, stress interview.
- Aptitude tests. Traits of a good interviewee,
- Resume and Job applications.

UNIT 4. MEETINGS 09

- Handling Meetings - Types of meetings,
- Structure of a meeting,
- Agenda & Minutes,
- conducting a meeting

UNIT 5. SPEECHES & GROUP PRESENTATION 09

- Drafting, a speech, presentation,
- Personal grooming,
- Paragraphs and creative writing,
- Extempore speaking.
- Realizing the difference between a team and a group.
- Audience orientation, group projects.
- Planning a presentation - Mind Mapping, Theme, Subject, Handling questionand feedback.

Reference books :
1 Bhaskar, W.W.S., AND Prabhu, NS., " English Through Reading", MacMillan,
2 Sharma, R.C. and Mohan K., Business Correspondence and Report Writing" - Tata McGraw Hill
3 Marey Ellen Guffey, Essentials of Business Communication, Thompson Press
4 Dale Carnegie, How to win Friends and Influence People,Pocket Books
5 Lesikar&Flatley, Basic Business Communication, Tata McGraw Hills
Web link:
1. www.easypacelearning.com › all-lessons › learning-basic.

2.www.learn-english-online.org › Lesson1 › Lesson1

FOOD PRODUCTION & PATTISSERIE-II

Subject Code BMH 203	**Subject Name: Food Production & Patisserie-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	3	1	0	4
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. This course aims at developing basic awareness of technical skills required in the production department.
2. It also gives a comprehensive insight in to the commodities required their characteristic uses and handling procedures.

COURSE OUTCOMES (COs)

CO1	1. Understand preparations methods
CO2	2. Understand the importance of cooking to minimum internal temperatures.
CO3	3. Comprehend the importance of hot and cold holding.
CO4	4. Understand cooling, storage, and reheating.
CO5	5. Understand the types of Indian grave
CO6	6. To gain the knowledge different cuts in meats

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H	H	
	CO2	M		H			H
	CO3	H			H	M	M

	CO4		M	M			
	CO5	H				M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I BASIC PRINCIPLES OF FOOD PRODUCTION 9

i) VEGETABLE AND FRUIT COOKERY

Introduction – classification of vegetables, Pigments and color changes, Effects of heat on vegetables, Classification of fruits, Uses of fruit in cookery, Salads and salad dressings

ii) STOCKS

Definition of stock, Types of stock, Preparation of stock, Recipes, Storage of stocks, Uses of stocks, Care and precautions

iii) SOUPS

Classification with examples, Basic recipes, Consommés, Garnishes and accompaniments

iv) SAUCES

Classification of sauces, Recipes for mother sauces, few derivatives for each

Unit-II 9

1) MEAT COOKERY

Introduction to meat cookery, Cuts of beef/veal, Cuts of lamb/muttons, Cuts of pork, Variety meats (offal's)

2) FISH COOKERY

Introduction to fish cookery, Classification of fish with examples, Cuts of fish, Selection of fish and shell fish, cooking of fish (effects of heat)

3) RICE, CEREALS & PULSES

Introduction, Classification and identification cooking of rice, cereals and pulses, Varieties of rice and other cereals

UNIT-III 9

Basic Indian gravies, its recipes and ingredients used in Indian gravies. Dishes prepared from each gravy. Indian Breads with its recipe and ingredients

UNIT-IV **9**

Hors'doeuvres - Meaning Types, single and horsdoeuvres varieties. Examples of Pastas – Different types of pasta, cooking of pasta styles of presenting pasta. Sauces which accompanies, Pasta dishes with recipes and their ingredients .

UNIT-V **9**

Milk& Milk products – preservation storage of milk pasteurization of milk cottage cheese, cream flavoured yoghurt, khova their preparation with recipe and storage. Reheating meaning points to be considered while reheating.

UNITVI CONDIMENTS & SPICES **9**

Introduction to Indian Spices - Spices used in Indian cookery - Role of spices in Indian cookery - Indian equivalent of spices. MASALAS - Blending of spices - Different masalas used in Indian cookery - Wet masalas - Dry masalas - Composition of different masalas - Varieties of masalas available in regional areas - Special masala blends - Special Equipment used in Indian cooking

Test book:

Book A: Thangam E Philip"Modern Cookery Volume I" 4th Edition 2006

Book B. Krishna Arora Theory of Cookery 6th Edition, Frank Brothers & Company 2007

Reference Books:

Book A: J. Indra Singh Kalra, prasard Das Gupta "Prashad with Cooking masters" Allied publishers limited.

Book B: John Campbell, David foskett and Victor ceserani "Practical Cookery" 11Th Edition.

Book C: David Foskett , Victor Ceserani& Ronald Kinton " The theory of catering " 10th Edition

Weblinks:

https://www.ihmnotessite.net/food-production

https://hm1year1semfp.blogspot.com/2019/01/ihm-hotel-management-food-production_12.html

FOOD AND BEVERAGE SERVICE-II

Subject Code BMH 204	Subject Name: Food and Beverage Service-II	L	T	P	C
	Total Contact Hours – 45 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. The course aims at developing a comprehensive knowledge and understanding of wines and its characters.

2. It also aims to enable the student to acquire professional competence at advance levels and to acquire the requisite technical skills in the principles of wine service and its related activities.

3. The knowledge to manage the professional preparation, presentation, and service of quality food.

COURSE OUTCOMES (COs)

CO1	1. Demonstrate application of food safety principles in the food production environment.
CO2	2. Design and analyze menus for foodservice operations produce a quality product in quantity.
CO3	3. Prepare and present food in a professional manner Operate basic foodservice equipment.
CO4	4. To gain the knowledge of Non-alcoholic beverages
CO5	5. Understand the different types of room service
CO6	6. To gain the knowledge of service of dessert

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H	H	
	CO2	M	H	H			H
	CO3	M			M		
	CO4		M	H		H	H

	CO5	H				M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I TYPES OF BREAKFAST SERVICE 9

Breakfast service: continental breakfast, English breakfast. Cover laying for continental and English breakfast. Afternoon tea service Types & its cover set up

UNIT-II MENU PLANNING

- Origin of Menu
- Objectives of Menu Planning
- Types of Menu
- Courses of French Classical Menu
- Sequence
- Examples from each course
- Cover of each course
- Accompaniments
- French Names of dishes
- Types of Meals
- Early Morning Tea
- Breakfast (English, American Continental, Indian)
- Brunch
- Lunch
- Afternoon/High Tea
- Dinner
- Supper

UNIT -III PREPARATION FOR SERVICE 9

- Organizing Mis-en-Scene
- Organizing Mis- en- Place

UNIT- IV TYPES OF FOOD SERVICE 9

- Silver service
- Pre-plated service
- Cafeteria service
- Room service
- Buffet service
- Gueridon service
- Lounge service

UNIT V SALE CONTROL SYSTEM 9

- KOT/Bill Control System (Manual)
- Triplicate Checking System
- Duplicate Checking System
- Single Order Sheet
- Quick Service Menu & Customer Bill

- Making bill
- Cash handling equipment.

Text Books:

Book A. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006.

Book B. Sudhir Andrews "Food and Beverage Service Training Manual" Tata McGraw-Hill Publishers – 2009

Reference book:

Food and beverage service -Singaravelavan, oxford publication 2010

Web link:

1.www.tutorialspoint.com › food_and_beverage_services

2.www.academia.edu › LEARNERS_MANUAL_FOOD_AND BEVERAGE SERVICE

FRONT OFFICE OPERATION -II

Subject Code BMH 205	**Subject Name: Front Office Operation-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**3**	**0**	**0**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. To explain the main activities that occurs in a hotel's front office.
2. To describe the process of forecasting hotel demand and establishing room rates.
3. To review the major sources of hotel reservations.
4. To explain the role of the front desk before, during, and after a guest checks into the hotel.

COURSE OUTCOMES (COs)	
CO1	**1.** Have an understanding of the modern day history of the hotel industry and the factors that drive the industry.
CO2	**2.** Able to articulate the difference in ownership and management in the hotel industry.
CO3	**3.** To have a basic understanding of customer service and the confidence level to handle customer complaints.
CO4	**4.** Have in understanding of the new technologies utilized in the hotel industry.

CO5		5. To understand the reservation procedure
CO6		6. To learn about the different software used in hotel industry

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	M			H	H	
	CO2	H	H	M			M
	CO3	H			M		M
	CO4		M	H		M	
	CO5	H				M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT 1. Pre-Arrival Procedures 9

- Pre arrival activities-Preparing an arrival list etc
- Procedure for VIP arrival.
- Procedure for group arrival(special arrangements, meal coupons, etc)

UNIT 2 Guest Arrival 9

- Types of registration.(Register, Loose Leaf, Registration Cards)
- Receiving guests.
- Arrival procedure for various categories of guests (Foreigners along with Cforms,
- FITs- walk in , with confirmed reservation)
- Notification of guest arrival.
- Welcome slip, Welcome call
- Criteria for taking advance.(Walk-ins, Scanty Baggage etc)
- Dealing with overbooking situation, walking a guest

UNIT 3. Guest Stay 9

- Rooming a guest (introduction to the hotel facilities, orientation of the room)
- Procedure for room change
- Safe deposit procedure.
- Guest History card
- Guest Services, Guest Relations
- Dealing with emergencies: medical, theft, fire, bomb threat, robbery, terroristattacks etc

UNIT 4. Guest Departure 9

- Departure notification
- Task performed at bell desk, cashier reception.
- Role of the front desk cashier

- Express check outs,
- Late check outs and charges

UNIT 5. Methods of Payment **9**

- Credits card handling
- Traveller cheques, Personal checks
- Handling cash - Indian, Foreign currency
- Other methods of payment (Travel agent, agent, Bill to Company etc--)
- Unpaid account balances

Reference books:

1. Hotel Front Office Training Manual. (Sudhir Andrews)

2. Principles of Hotel Front Office Operations (Sue Baker, P. Bradley, J. Huyton)

3. Hotel Front Office (Bruce Braham)

4. Managing Front Office Operations (Michael Kasavana, Charles Steadmon)

5. Front Office Procedures and Management (Peter Abbott)

Web link:

1.www.tutorialspoint.com › front_office_management ›

2.setupmyhotel.com › train-my-hotel-staff › front-office-...

FOOD SCIENCE AND NUTRITION -II

Subject Code BMH 206	**Subject Name: Food Science and Nutrition-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**3**	**0**	**0**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

To protect consumers adequately from illness or injury caused by food

To maintain confidence in internationally traded food.

COURSE OUTCOMES (COs)

CO1	Student will learn how to safeguard the food.
CO2	How to prevent against harmful hazards caused by microorganisms.
CO3	Student will learn the yeast morphology

CO4		To understand the importance of safety.
CO5		To understand the food hygiene.
CO6		Student will learn the food infections.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1				H	H	M
	CO2	H	H				H
	CO3		H	M	H		M
	CO4		M	H			
	CO5	M				M	M
3	Category	Professional Core (PC)					
4	Approval						

Unit –I BASIC ASPECT 9

- Definition in terms of Health, Nutrition and Nutrients; Importance of Food and
- Nutrients
- Definition and scope of food science

Unit- II CARBOHYDRATES 9

- Introduction and Classification.
- Effect of Energy and factors affecting Energy.
- Sources of Carbohydrate.
- Effect of Cooking on Carbohydrate.
- Health issues with Carbohydrate →Underweight and Obesity.

Unit- II LIPIDS 9

Introduction and Classification.

- Dietary sources and Functions.
- Effect of Cooking on Lipids Auto oxidation,
- Hydrogenation, Winterization and Smoking points.
- Cholesterol

Unit- III PROTEINS 9

- Introduction and Classification.
- Dietary Sources and Function.
- Effect of cooking on Proteins –Denaturation,
- Emulsification, Foamability, Coagulation.

UNIT-IV VITAMINS, MINERALS AND WATER 9

- Definition and Classification of Vitamins (A, D, E, K, B and C).
- Dietary Sources and Function of Vitamins.
- Definition and Classification of Minerals (Iron, calcium, Sodium, Iodine, Flourine)
- Dietary Sources and Functions of Minerals.
- Definition, Sources, Function.

UNIT-VI BALANCED DIET AND EVALUATION OF FOOD 5

- Definition and Importance.
- Factors affecting Balance Diet - (Age, Gender, Physiological state)
- Menu planning & its factors.
- Introduction of Evaluation of food - (objective & subjective)

UNIT- VII NEWER TRENDS IN FOOD SERVICE INDUSTRY 4

- Emulsion- Definition and Types.
- Flavours – Definition and Types.
- Browning – Definition, Types, Prevention

Reference books

1.Food And Nutritional Science With Objective Questions 2016 Edition by Verma P , CBS Publishers and Distributors

2. The Atlas of Food by Erik Millstone; Tim Lang; Marion Nestle (Foreword by)...

3. Dietary Reference Intakes by Jennifer J. ...

4. Handbook of Nutrition and Food, Third Edition by Carolyn D. ...

5. Manual of Nutritional Therapeutics by David H

Web link:

FOOD SCIENCE & NUTRITION

www.malecentrum.sk › data › att

FOOD PRODUCTION AND PATISSERIE PRACTICAL -I

Subject Code BMH 2L1	Subject Name: Food Production and Patisserie Practical-I	L	T	P	C
	Total Contact Hours – 45 hours	0	1	1	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Demonstrate a thorough understanding of Quantity food Production including the factors affecting the operation and develop culinary skills for employability & entrepreneurship.

COURSE OUTCOMES (COs)

CO1	Students would learn to make simple Indian and Continental dishes.
CO2	Students would acquire knowledge in various Indian dishes
CO3	Students would be equipped in their basic presentation skills
CO4	Understand the different types of stock and sauces
CO5	Knowledge of the different types of cuts in vegetables
CO6	Understand the kitchen equipment

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H	M	H	H	H	
	CO2		H	M			H
	CO3	H			H		M
	CO4	H	H	M		M	
	CO5	H				H	H
3	Category	Professional Core (PC)					
4	Approval						

Demonstration & Simple application:

1. Identification of cooking equipment.

2. Identification of different types of fats.

3. Cuts of vegetable in French style.

4. Blanching of tomato.

5. Preparation of basic stock.

6. Preparation of mother sauce.

7. Cuts of chicken and fish.

8. Basic Indian gravy

Individual students practical:

To formulate 10 sets of menu consisting of 5 basic and simple dishes from Indian cuisine,

Reference Books:

1. Modern cookery volume I & II

2. Practical Professional Cookery-Cracknell&Kaullmann

3. Theory of cookery – Krishna arora

Weblinks:

https://www.ihmnotessite.net/food-production

https://hm1year1semfp.blogspot.com/2019/01/ihm-hotel-management-food-production_12.html

FOOD AND BEVERAGE SERVICE PRACTICAL -I

Subject Code BMH 2L2	**Subject Name: Food and Beverage Service Practical - I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**0**	**1**	**3**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Identify the different equipment used in food and beverage service.

Identify the various room service management techniques.

Use the service spoon and fork for handling the food and beverage service.

COURSE OUTCOMES (COs)	
CO1	1. Demonstrate application of food safety principles in the food production environment.
CO2	2. Design and analyze menus for foodservice operations produce a quality product in quantity.

CO3		3. Prepare and present food in a professional manner Operate basic foodservice equipment.
CO4		4. To gain the knowledge of Non-alcoholic beverages
CO5		5. Understand the different types of table service
CO6		6. To gain the knowledge of service of dessert

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	M	M		H	H	M
	CO2		H			M	
	CO3	H		H	M		
	CO4		H	M			H
	CO5	H			H	H	H
3	Category	Professional Core (PC)					
4	Approval						

1 TABLE EXHIBITS/ LAYOUTS & SERVICE

- A LA CARTE Cover
- Table d' Hotel Cover
- English Breakfast Cover
- American Breakfast Cover
- Continental Breakfast Cover
- Indian Breakfast Cover A La Carte
- Afternoon Tea Cover/High Tea Cover

2 TRAY/TROLLEY SET-UP & SERVICE

- Room Service Tray Setup
- Room Service Trolley Setup

3. PROCEDURE FOR SERVICE OF A MEAL

- Taking Guest Reservations
- Receiving & Seating of Guests
- Order taking & Recording
- Order processing (passing orders to the kitchen)
- Sequence of service
- Presentation & Enchasing the Bill

- Presenting & collecting Guest comment cards
- Bidding Farewell to Guests

4. Social Skills

- Handling Guest Complaints
- Telephone manners
- Dining & Service etiquettes

5. Special Food Service - (Cover, Accompaniments & Service)

- Classical Hors d' oeuvre :
- Oysters, Caviar, Smoked Salmon, Pate de Foie Gras, Snails, Melon, Grapefruit,
- Asparagus
- Cheese
- Dessert (Fresh Fruit & Nuts)

6. Restaurant French

- Restaurant Vocabulary (English & French)
- French Classical Menu Planning
- French for Receiving, Greeting & Seating Guests
- French related to taking order & description of dishes

Text Books:

Book A. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006.

Book B. Sudhir Andrews "Food and Beverage Service Training Manual" Tata McGraw-Hill Publishers – 2009

Reference book:

Food and beverage service -Singaravelavan, oxford publication 2010

Web link:

1.www.tutorialspoint.com › food_and_beverage_services

2.www.academia.edu › LEARNERS_MANUAL_FOOD_AND BEVERAGE SERVICE

FRONT OFFICE PRACTICAL

Subject Code BMH 2L3	**Subject Name: Front Office Practical**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**0**	**0**	**3**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Describes front office procedures for handling guests on check in and registration.

Identify service requests that guests make at front desk and describe approaches to handling

	guest complaints. Enable effective guest handling by the concierge through proper procedures.

	COURSE OUTCOMES (COs)	
CO1		**1.** Have an understanding of the modern day history of the hotel industry and the factors that drive the industry.
CO2		**2.** Able to articulate the difference in ownership and management in the hotel industry.
CO3		**3.** To have a basic understanding of customer service and the confidence level to handle customer complaints.
CO4		**4.** Have in understanding of the new technologies utilized in the hotel industry.
CO5		5. To understand the reservation procedure
CO6		6. To learn about the different software used in hotel industry

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H	M	H	H	H	
	CO2		M	M		M	
	CO3				M	H	H
	CO4		H	M			H
	CO5	H		H			H
3	Category	Professional Core (PC)					
4	Approval						

U18LCDT205FRONT OFFICE – PRACTICALS

1. Handling room keys (issuing, receiving, missing keys, computerized key cards)

2 Preparing & filling up of Registration card.

3. Role play for check-in of different types of guests-FIT, walk-in, VIP,Groups

4. Role play of check-in of foreigners using C-form

5. Operating PMS for registration

6. Rooming a guest, dealing with change of room request.

7. Role play on situation handling like emergencies, walking a guest, dealing withoverbooking situations.

8. Role play of check out procedure

9. Using different methods of payment to settle bills.

Reference books:

1. Hotel Front Office Training Manual. (Sudhir Andrews)

2. Principles of Hotel Front Office Operations (Sue Baker, P. Bradley, J. Huyton)

3. Hotel Front Office (Bruce Braham)

4. Managing Front Office Operations (Michael Kasavana, Charles Steadmon)

5. Front Office Procedures and Management (Peter Abbott)

Web link:

1.www.tutorialspoint.com › front_office_management ›

2.setupmyhotel.com › train-my-hotel-staff › front-office-...

SECOND YEAR - THIRD SEMESTER

Diploma CATERING SCIENCE AND HOTEL MANAGEMENT

FOOD PRODUCTION AND PATISSERIE- III

Subject Code BMH301	Subject Name: FOOD PRODUCTION AND PATISSERIE- III	L	T	P	C
	Total Contact Hours – 45 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:

1.To acquainted with the history of Indian cuisine, its modem .developments and (Develop brief idea of various cuisines.

2.To learn and get knowledge of different varieties of Indian rice preparation and sweet preparation.

3.To study the menu knowledge and planning menu for schools, colleges, hospital, airline and outdoor catering.

4.To gain knowledge of tandoori cooking and tandoori marinating, recipes etc.

COURSE OUTCOMES (COs)

CO1	1.To acquire anindepth knowledge of Indian cuisine.
CO2	2.To gain knowledge about kitchen equipments .
CO3	3To absorb the various culinary techniques in tandoori cooking and recipes and use it.
CO4	4.To acquire information about different types of menu planning.
CO5	5.To understand the kitchen management and its various factors.
CO6	6.To gain knowledge about Indian rice and sweet preparation.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1		H		H		
	CO2	M		L			
	CO3			M	H	M	M

	CO4		M				
	CO5	H		L		M	L
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I (9)

Ingredients used in Indian cuisine, fats, oils, herbs, spices, condiment, Cereals, pulses, fruits, vegetables and nuts used in Indian cuisine. Cooking utensils used in Indian cuisine.

UNIT-II (9)

Indian rice preparation with recipe. Sweet preparation with its recipe and salad preparation with recipe

UNIT-III (9)

Tandoori cooking: Seasoning of pot, meaning, equipment as used its cleaning procedures Tandoori Margi nation, recipe for tandoori dishes for fish, chicken, mutton, prawns, and cottage cheese.

UNIT- IV (9)

Menu planning: points to be considered while preparing menu. Planning menu for schools colleges, hospital, transport, airline, railways and outdoor catering. Points to be taken in mind while talking an Outdoor catering

UNIT-V (9)

Kitchen management: Objectives, meal production, indenting, purchasing, storing. Cost control, yield, portion control, standard recipe, left over utilization

References:

1.Modern Cookery - Thangam E Philip" Volume I" 4th Edition 2016

2.Theory of Cookery - Krishna Arora"" 6th edition" Frank brothers & Company.

3.Theory of Catering - Victor Cesarani & Ronal Kinton , ELBS

Weblinks:

1. https://www.ihmnotessite.net/3-food-production
2. https://www.ihmnotessite.net/kitchen-management
3. https://www.ihmnotessite.net/6-fp-production-management

FOOD & BEVERAGE SERVICE-III

Subject Code BMH302	Subject Name: FOOD & BEVERAGE SERVICE-III	L	T	P		C
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:-

1.To develop a comprehensive knowledge and understanding of beverages service methods and service of wines.

2.To enable the student to acquire professional F&B Service competence at basic levels and to acquire the requisite technical skills in the principles of beverage service and its related activities.

COURSE OUTCOMES (COs)

CO1	1.To learn and get indepth knowledge in alcoholic beverages.
CO2	2.To gain knowledge about wine producing regions and production methods.
CO3	3.To get very good knowledge in different types of wine services
CO4	4.To gain information about the beer and its production methods.
CO5	5.To get a knowledge about spirits.
CO6	6.To acquire more information about the liquers .

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1		L		M	L	L
	CO2	M		L			
	CO3		M		H	H	H
	CO4			H		M	

	CO5	H				M	
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I (9)

ALCOHOLIC BEVERAGE

Introduction and definition, Production of Alcohol, Fermentation process, Distillation process, Classification with examples

UNIT-II (9)

WINES

Definition & History, Classification with examples, Table/Still/Natural, Sparkling, Fortified, Aromatized. Production of each classification. Old World wines (Principal wine regions, wine laws, grape varieties, production and brand names). France, Germany, Italy, Spain, Portugal, Food & Wine Harmony, Storage of wines

UNIT-III (9)

BEER

Introduction & Definition, Production of Beer, Storage, Types of Beer, Brand Names (National & International)

UNIT- IV (9)

Spirits

Introduction & Definition, Production of Spirit, Pot-still method, Patent still method, Production of Whisky, Rum, Gin, Brandy, Vodka, Tequilla

UNIT-V (9)

LIQUEURS

Definition & History. Production of Liqueurs. Broad Categories of Liqueurs (Herb, Citrus, Fruit/Egg, Bean & Kernel).Popular Liqueurs (Name, colour, predominant flavour & country of origin)

References:

1. Food and Beverage service - Dennis R. Lillicrap "" 9th Edition 2016
2. Bar and beverage book – C.Katsigris,Mary Poster
3. Food and beverage Service – Singaravelavan, Oxford Publications.

Weblinks:

1. https://www.kullabs.com/classes/subjects/units/lessons/notes/note-detail/6824
2. https://firstwefeast.com/drink/learn-how-to-brew-beer-with-these-fun-animated-gifs
3. https://s3.wp.wsu.edu/uploads/sites/2083/2016/02/Wino-101-basics.pdf

ACCOMMODATION OPERATION – I

Subject Code BMH303	**Subject Name: ACCOMMODATION OPERATION – I**	**L**	**T**	**P**		**C**
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:-1.To induce in student a professional competence in providing accommodation to ordinary, VIP and VVIP guests in clean and well maintained rooms.

2. To develop a comprehensive knowledge in layout room, interior decoration, planning and selection of housekeeping articles.

3. To make the student understand about the various cleaning materials and agents used and the hygiene and sanitation aspects of department.

COURSE OUTCOMES (COs)

CO1	1.To learn basic information about Linen room and its control.
CO2	2.To gain knowledge about the uniforms and layout of uniform room.
CO3	3.To get knowledge of sewing room and its various activities.
CO4	4.To understand about commercial and on-site laundry in housekeeping department.
CO5	5.To learn the laundry layout , dry cleaning and stain removal.
CO6	6.To understand the various equipments used in housekeeping department.

Mapping of Course Outcomes with Student **PROGRAMME Outcomes (POs)** (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low							
1	COs/POs	1	2	3	4	5	6
2	CO1		M	H		L	
	CO2	M					M
	CO3		L	M	H	M	
	CO4						H
	CO5	H			H		
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

LINEN ROOM

Activities of the linen room .Layout and equipment in the linen room .Selection criteria for various linen items and fabrics suitable for this purpose. Purchase of linen. Calculation of linen requirements .Linen control – procedure and records. Stocktaking- procedures and records .Recycling of discarded linen .Linen Hire .

UNIT-II **(9)**

UNIFORMS

Advantages of providing uniforms to staff .Issuing and exchange of uniforms, type of uniforms .Selection and designing of uniforms .Layout of Uniform room.

UNIT-III **(9)**

SEWING ROOM

Activities and areas to be provided. Equipment provided.

UNIT- IV **(9)**

LAUNDRY

Commercial and On-site Laundry .Flow process of Industrial laundering- OPL .Stages in the Wash Cycle .Laundry Equipment and Machines .Layout of the Laundry .Laundry Agents .Dry Cleaning .Guest Laundry/ Valet Service .Stain removal.

UNIT-V **(9)**

MODERN EQUIPMENTS

Equipments used in Housekeeping Department , Functions, Uses.

References:

1. Sudhir Andrews - Hotel Housekeeping Training manual

2. Sudhir Andrews Hotel Housekeeping Management and Operations

3.G.Raghubalan & Smritee Raghubalan - Hotel Housekeeping Operations & Management

Weblinks:

1. http://ihmdata.blogspot.com/2012/02/linen-room-ao-2nd-year.html
2. https://hmhub.me/layout-equipment-linen-room/
3. https://www.base-4.com/hotel-laundry-p1/

BAKERY & CONFECTIONARY –I

Subject Code BMH304	**Subject Name: BAKERY & CONFECTIONARY –I**	**L**	**T**	**P**		**C**
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:-

1.To develop a basic awareness of bakery and to impart the technical skills required in the Bakery department.

2.TO provide a comprehensive insight into the commodities required, their characteristic, uses and handling procedures.

3.To enable the student to acquire professional baking techniques& methods of baking

	products.

	COURSE OUTCOMES (COs)
CO1	1.To learn the different types of raw materials used as sweetening agents.
CO2	2.To gain knowledge of bread preparation and its varieties.
CO3	3.To learn the basic cake preparation and icing methods.
CO4	4.To acquire information about sponges and fatless cakes.
CO5	5.To understand the preparation of cookies and buns.
CO6	6.To gain the knowledge of Hot and cold desserts.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		L			
	CO2		H		H	M	H
	CO3			M		H	L
	CO4	L	M		L		
	CO5			H		H	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I (9)

Raw materials used in bakery, and their role, equipment are used in bakery. Uses of flour, fat, sugar, flavouring agents, sweetening agents, and other raising agents

UNIT-II (9)

Recipe for Simple bread, white and brown bread. Recipe for Bread rolls and French bread.

UNIT-III (9)

Cakes: preparation of simple cakes, Meaning of sponge, genoise, fatless cakes, swiss roll, fruitcake, and recipe for the above.

UNIT- IV (9)

Simple cakes tart, meaning and recipe for Nankhatai, pineapple cookies, tricolor cookies Swiss roll and its recipe. Recipe for chocolate cookies, plain round cookies and stuffed buns.

UNIT-V (9)

Hot and cold desserts, recipe for caramel custard, Bread and butter pudding. Recipe for queen of pudding, soufflé, mousse, bavarois, diplomat pudding, Steamed pudding, and Albert pudding.

References:

1. A Professional text to Bakery and Confectionery- John kingslee, First edition 2006.

2..Theory of cookery- Krishna Arora"" 6th edition" Frank brothers & Company

Weblinks:

1. file:///D:/Data/Downloads/Bakery%20Theory.pdf
2. http://ihmgwalior.blogspot.com/2012/10/bakery-theory-notes.html

COMPUTER APPLICATION IN HOTEL INDUSTRY

Subject Code BMH306	Subject Name: COMPUTER APPLICATION IN HOTEL INDUSTRY	L	T	P		C
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:

1. To create an awareness among students use and application of computers and information technology in hospitality industry.

2.To make them understand the use of computers in day today operation and to realize its advantages.

COURSE OUTCOMES (COs)

CO1		1.To learn the basic skills and practices for MS –DOS.
CO2		2.To know and understand the MS WORD.
CO3		3.To get very good knowledge for power point presentation.
CO4		4.To understand and practice the EXCEL and formula processing.
CO5		5.To learn about PowerPoint template.
CO6		6.To compute the excel formula.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H	M		H		M
	CO2	M		L		M	
	CO3		H	H	H		M
	CO4			M			
	CO5	L	H			M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I (9)

BASIC WINDOWS OPERATIONS

Creating Folders, Creating Shortcuts, Notepad, Calculator, Taskbar, Copying and Moving Files/Folders, Renaming Files/Folders, Deleting Files/Folders, Windows Explorer, Quick Menus, Control Panel

UNIT-II (9)

MS-WORD

Text manipulation, changing the font size, font type, and font style, making the text bold,

Underlining the text, aligning the text (Centre, justify, left, right), cut, copy, paste.

Paragraph indenting & spacing, bullets & numbering, spelling & grammar check, inserting a

Picture from clip art, auto shapes, and word art.

Table manipulation- creating tables, inserting & deleting rows & columns, changing width &

Height, changing table borders. Mail merge concept, printing formats.

UNIT-III **(9)**

MS-EXCEL

Entering the data, changing the fonts, changing row heights & column width, formatting the data and sorting the data.

UNIT- IV **(9)**

Formula processing- creating simple formula, using function (abs, sqrt, len, sum,round, avg, count, concatenate, find). Inserting & Formatting charts, inserting pictures, printing formats.

UNIT-V **(9)**

MS-POWER POINT

Creating simple presentations, saving, opening and existing presentation, creating a presentation using Auto content wizard & template. Using various auto- layouts, charts, table, bullets & clip art. Viewing an existing document in various views-outline view, slide view, slide show view, slide sorter view and note pages view.

References:

1. Microsoft office word 2007 Torben large frandsen

2. Microsoft office word 2008 Stephen moffat

Weblinks:

1.https://www.studocu.com/row/document/kca-university/information-technology/lecture-notes/ms-word-2007-practical-notes/1854650/view

2. https://www.lifewire.com/what-are-powerpoint-speaker-notes-2767471

3. https://zapier.com/blog/powerpoint-online-guide/

DIPLOMA- CATERING SCIENCE AND HOTEL MANAGEMENT

SEMESTER – IV

FOOD PRODUCTION & PATTISSERIE-IV

Subject Code BMH 401	**Subject Name: Food Production & Patisserie-IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

- To Know the history of Indian cooking and regional influences and differences of cooking methods
- To enable the students to know modern trends of kitchen management.
- To have knowledge of food production kitchen equipment.

COURSE OUTCOMES (COs)

CO1	Students will understand the characteristics of Chinese cuisine
CO2	To Understand the Mexican food culture and equipment.
CO3	Students will understand the characteristics of Thai cuisine.
CO4	To gain the knowledge of Italian equipment.
CO5	Students will understand the food preservations methods.
CO6	To understand the causes of food poisoning.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H	H	H
	CO2		H				
	CO3			H	H	H	M
	CO4	H	M		H		
	CO5	H		M		M	H

3	Category	Professional Core (PC)
4	Approval	

UNIT-I **9**

International and oriental cuisines. Chinese, Thai, its characteristic, ingredients used, equipment used, five course menus for the above cuisine.

UNIT-II **9**

Italian cuisine, Mexican cuisine, its characteristic, ingredients used, equipment used, five course menus for the above cuisine.

UNIT-III **9**

Quantity food production: Equipment: introduction, Objectives, Quality of equipment, Specification of equipment, List of manufactures, Care & Maintenance of equipment.

UNIT-IV **9**

Indian Cookery (Regional cooking styles), Introduction to Regional Cooking, Factors affecting eating habits, Heritage of Indian cuisine, Cooking from different states under geographical location, Historical background, Availability of raw materials (seasonal), States to be covered Andhra Pradesh, Bengal, Goa, Karnataka, Kashmir, kerala, Maharashtra, Punjab, & Tamilnadu. Cooking from different communities, style such as Parsee, chettinad, malabari, lucknow,

UNIT-V **9**

SALAD – Types of salad, simple and compound salad, salad dressing with recipes, sandwich – meaning types, types of bread used, filling and seasoning used. Storage of sandwich

Text book:

Book A: Thangam E Philip"Modern Cookery Volume I" 4th Edition 2006

Book B. Krishna Arora Theory of Cookery 6th Edition, Frank Brothers & Company 2007

Reference Books:

1. A Taste of India - Madhur Jaffery

2. Flavours of India - Madhur Jaffery

3 Cooking Delights of the Maharajas - Digvijay Singh

4. Rotis & Naans of India - Purobi Babber

Web link:

1.https://www.scribd.com/doc/90644423/International-Cuisines-IHM-Notes
2. https://www.ihmnotessite.net/6-fp-international-cuisine

FOOD AND BEVERAGE SERVICE-IV

Subject Code BMH 402	Subject Name: Food and Beverage Service-IV	L	T	P	C
	Total Contact Hours – 45 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1) Demonstrate appropriate service behaviors for a variety of guest types.

2) Understand the concept and techniques of good service and demonstrate the skill acquired.

3) Manage space and capacity, including use of reservations systems.

COURSE OUTCOMES (COs)

CO1	1) Program point-of-sale technology for service.
CO2	2) Understand the scope and usage of service mise en place
CO3	3) Participate in the operation and execution of in-room dining service.
CO4	4) Participate in the operation and execution of banquet dining service.
CO5	5) Participate in the operation and execution of restaurant dining service.
CO6	6) Provide responsible service of alcoholic and non-alcoholic beverages.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H	M		H	H	
	CO2	H	H	H			H
	CO3				M		

	CO4		H			M	M
	CO5	/M		H		M	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **9**

PLANNING & OPERATING VARIOUS F&B OUTLET

- Physical layout of functional and ancillary areas
- Objective of a good layout
- Steps in planning
- Factors to be considered while planning
- Calculating space requirement
- Various set ups for seating
- Planning staff requirement
- Menu planning
- Constraints of menu planning
- Selecting and planning of heavy duty and light equipment
- Requirement of quantities of equipment required like crockery, Glassware,
- Cutlery - steel or silver etc.
- Suppliers & manufacturers

2 FUNCTION CATERING

BANQUETS

- History
- Types
- Organisation of Banquet department
- Duties & responsibilities
- Sales
- Booking procedure
- Banquet menus

BANQUET PROTOCOL

- Space Area requirement
- Table plans/arrangement
- Service
- Toast & Toast procedures

INFORMAL BANQUET

- Reception
- Cocktail parties
- Convention
- Seminar
- Exhibition

Fashion shows

- Trade Fair

- Wedding
- Outdoor catering

3 FUNCTION CATERING BUFFETS

- Introduction
- Factors to plan buffets
- Area requirement
- Planning and organisation
- Sequence of food
- Menu planning
- Types of Buffet
- Display
- Sit down
- Fork, Finger, Cold Buffet
- Breakfast Buffets
- Equipment
- Supplies
- Check list

4 GUERIDON SERVICE

- History of Gueridon
- Definition
- Advantages & Disadvantages
- Types of trolleys
- Factor to create impulse, Buying – Trolley, open kitchen
- Gueridon equipment
- Gueridon ingredients

5. KITCHEN STEWARDING

- Importance
- Opportunities in kitchen stewarding
- Record maintaining
- Machine used for cleaning and polishing
- Inventory General consideration of operations

Text Books:

Book A. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006.

Book B. Sudhir Andrews "Food and Beverage Service Training Manual" Tata McGraw-Hill Publishers – 2009

Reference book:

Food and beverage service -Singaravelavan, oxford publication 2010

Web link:

1.www.tutorialspoint.com › food_and_beverage_services

2.www.academia.edu › LEARNERS_MANUAL_FOOD_AND BEVERAGE SERVICE

3.http://ihmkolkatafoodandbeveragenotes.blogspot.com/2015/05/gueridon-and-flambe-service.html

2. http://ihmkolkatafoodandbeveragenotes.blogspot.com/2015/05/banquets-and-outdoor-catering.html

ACCOMDATION OPERATION -II

Subject Code BMH 403	Subject Name: Accommodation Operation-II	L	T	P	C
	Total Contact Hours – 45 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

On completion of this course, participants will demonstrate an introductory knowledge of the key elements of Hospitality Industry Housekeeping Operations as practiced in the United States.

COURSE OUTCOMES (COs)

CO1	1. List and describe five normative characteristics associated with housekeeping employees.
CO2	2. Explain why delegation is the key to managerial success.
CO3	3. Describe, from the executive housekeeper's perspective, the planning that is required to open a new hotel.
CO4	4. List possible variables to consider when establishing workload criteria for a guestroom attendant.
CO5	5. Describe the use of conventional individual worker scheduling, and list its negative and positive aspects.
CO	6. Describe the role of the executive housekeeper as a materials administrator.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1		M	H	H	H	H
	CO2	H					
	CO3	H		H		H	M

	CO4		H				M
	CO5	H			M		
3	Category	Professional Core (PC)					
4	Approval						

UNIT-1 PLANNING AND ORGANISING THE HOUSE KEEPING DEPARTMENT
9

- Area inventory list
- Frequency schedules
- Performance and productivity standards
- Time and motion study in housekeeping operations
- Standard operating manuals – Job procedures
- Job allocation and work schedules
- Calculating staff strength & planning duty rosters, team work and leadership in HK
- Training in HKD, devising training programs for HK staff
- Inventory level for non-recycled items.

UNIT - 2 BUDGETS **9**

- Budget and budgetary control
- The budget process
- Planning capital budgets
- Planning operation budgets
- Operating Budgets- controlling expenses- income statement
- Purchasing systems- methods of buying
- Stock records- issuing and control

UNIT - 3 HOUSEKEEPING IN INSTITUTES OTHER THAN HOTELS9

- Hospitals
- Hostels
- Malls
- Residential establishments
- Offices
- Universities
- Other commercial areas

UNIT - 4 CONTACT SERVICES **9**

- Types of contract services
- Guidelines for hiring contract services
- Advantages and disadvantages of contract services

UNIT - 5. SAFETY AND SECURITY **9**

- Safety awareness and accident prevention
- Fire safety and fire fighting
- Crime prevention and dealing with emergency situation

UNIT 6. ENERGY AND WATER CONSERVATION IN HOUSEKEEPING OPERATIONS
9

REFERENCE BOOKS

1. Sudhir Andrews - Hotel Housekeeping Management and Operations

2. G.Raghubalan & Smritee Raghubalan - Hotel Housekeeping Operations & Management

3. Madelim Schneider & Georgia Tucker - The Professional Housekeeper

Weblinks:

4. http://ihmdata.blogspot.com/2012/02/linen-room-ao-2nd-year.html
5. https://hmhub.me/layout-equipment-linen-room/
6. https://www.base-4.com/hotel-laundry-p1/

BAKERY & CONFECTIONARY-II

Subject Code BMH 404	Subject Name: Bakery & Confectionary -II	L	T	P	C
	Total Contact Hours – 45 hours	2	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Understanding status of bakery and confectionary industry in India

To learn the technologies behind bakery and confectionary products.

To know about innovations in this sector.

COURSE OUTCOMES (COs)

CO1	To understand the different types of pastry.
CO2	To understand the knowledge of Pies dishes.
CO3	To learn the different types of Icings.
CO4	To understand the tart dishes.
CO5	Students get knowledge the various brown sugar recipes.
CO6	To understand the different types of sugar carving and jelly carving.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6

2	CO1	H		M	M	H	M
	CO2		H		H		
	CO3					M	H
	CO4	H		M			
	CO5		H	M		H	M
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **9**

Basic pastry dough, meaning, recipe for short crust pastry, Sugar pastry and choux pastry with two examples for the above with recipe.

UNIT-II **9**

Pies meaning, production of pies, rolling of pie dough, recipe for fruit pies.Recipe for fruit cream, chiffon, Tart Tartlets, procedure, for making tarts. Apfel Strudel and recipe for meringue.

UNIT-III **9**

Icing meaning and its uses. basic ingredients used. Fondant meaning and its types. parfait icing, royal icing with examples and recipe

UNIT-IV **9**

Recipe for toffees, boiled fudge. Recipe for pulled sugar, and brown sugar with recipes.

UNIT-V **9**

Bread carving, jelly carving, sugar carving, etc Ingredient and tools used in the carving

Test Books:

Book A.John kingslee “A Proffessional text to Bakery and Confectionery” First edition 2006.

Book B.Krishna Arora” theory of cookery” 6th edition” Fran brothers & Company

Reference Books:

Book C John Campbell, David foskett and Victor ceserani “Practical Cookery” 11Th edition.

Weblinks:

3. file:///D:/Data/Downloads/Bakery%20Theory.pdf
4. http://ihmgwalior.blogspot.com/2012/10/bakery-theory-notes.html

HOTEL LAW

Subject Code BMH 405	Subject Name: Hotel Law	L	T	P	C
	Total Contact Hours – 36 hours	3	0	0	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1.Acquaintance with the fundamental concepts hotel law

2.Acquaintance with the fundamental concepts of the general structure of Indian legal framework

3.Concept of consultation arrangement

COURSE OUTCOMES (COs)

CO1	1. Acquaintance with the fundamental concepts and Nature of international marketing
CO2	2. Awareness of the foreign market entry modes
CO3	3. Acquaintance with the fundamental Concept and the structure of international distribution systems
CO4	4.Practice on the Concept International promotion mix
CO5	5.Acquaintance with the fundamental concepts of India's Foreign Trade Policy
CO6	6.Awareness of the Shops and Establishments Acts.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H	M	
	CO2		M		M		
	CO3			H	M		M
	CO4	M					M
	CO5	M	M				H
3	Category	Professional Core (PC)					
4	Approval						

Unit - I **Business Ethics** **6**

- Meaning of Ethics, Morals & Values
- Distinction between Ethics & Moral Values
- Need for Ethics in Hotels
- Sources of Ethical Standards
- Factors influencing Business Ethics
- Benefits of Ethical Codes to Different Groups
- Distinction between Ethics & Social Responsibility
- Distinction between Values & Attitudes
- Distinction between Values & Behaviour
- Code of Ethics
- Need and practice of operational ethics in hospitality

UNIT 2 **Introduction to law:** 2

- Meaning & Definition of Law
- Objects of Law
- Importance of studying
- Branches of Law
- Sources of Indian Law

UNIT **3** **Indian Contract Act, 1872:** 4

- Meaning & Definition of Contract
- Essentials of a valid contract
- Types of contract
- Proposal or Offer & Acceptance
- Consideration
- Capacity of Parties
- Free Consent
- Performance of Contracts
- Discharge of a contract
- Breach of contract
- Indemnity & Guarantee

UNIT 4.

Sales of Goods Act, the Sale 1930 6

- Definition of Buyer, Seller, Goods, Delivery, Document
- Title to Goods, Property & Mercantile Agent
- Definition of a 'Contract of Sale of Goods'
- Essentials elements of a contract of sale
- Distinguish between a 'Sale' and an 'Agreement to Sell'
- Rights & Duties of buyers and sellers
- Definition of 'Condition & Warranty'
- Express & Implied Conditions and Warranties
- Rule of Caveat Emptor & its exceptions
- Un-paid Seller and his rights
- Right of Lien vs. Right of Stoppage-in-Transit

UNIT 5 **Food Adulteration Act** 6

- Food Services Order in force from time to
- time Principles of Food Laws regarding prevention of Food Adulteration
- Definition
- Authorities under the Act & their powers
- Procedure for taking a Sample Purchase Right
- Warranties, Guest Control Order or
- Essential Commodities & AGMARK etc.

UNIT 6 **Shops and Establishments Act** 4

- Procedure relating to registration of Hotels, Lodges, Eating Houses,
- Restaurants & other related Provisions

UNIT **7** **Licenses and Permits** 4

- Licenses and Permits for Hotels & Catering Establishments
- Procedure for Procurement
- By-laws of hotels & restaurants under Municipal Corporation
- Renewal, Suspension & Termination of Licenses

UNIT **8** **Environmental Protection Act** 4

- The Water (Prevention and Control of Pollution) Act, 1974
- The Air (Prevention and Control of Pollution) Act, 1981

REFERENCE BOOKS:

1N.D Kapoor, 'Mercantile Law', Sultan Chand, New Delhi

2Avatar Singh. 'Introduction to company Law', Eastern, Luck now

3Universal's Labour and industrial law manual.

Web link:

1.https://www.researchgate.net/publication/281267458_Contemporary_Hospitality_Industry_Hospitality_Law

2. http://docshare01.docshare.tips/files/31835/318351344.pdf

INTRODUCTION TO TOURISM

Subject Code BMH 406	**Subject Name: Introduction to Tourism**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**3**	**0**	**0**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Describe the characteristics of tourism.

	Define, understand, and explore a variety of tourism terminology and concepts. Identify evolving issues and trends in the tourism industry and discuss their implications for festivals and events. Define the interrelationship of the five sectors of the tourism industry and evaluate their role in supporting events.

	COURSE OUTCOMES (COs)	
CO1		Assess the environment in which community events take place.
CO2		Identify travel motivators and tourism generators.
CO3		Assess and appreciate the impact of tourism and events as a worldwide economic, environmental, cultural, political, and social force.
CO4		Describe the role and function of industry and government organizations that support tourism at the regional, national, and international level.
CO5		Identify tourism-related products at local, provincial and national level and describe their role in supporting events.
CO6		Demonstrate an ability to critically assess a variety of explanations of the nature and value of tourism.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H	M		H	M	
	CO2		H	H			M
	CO3	M			H	M	
	CO4		M	M		H	M
	CO5	H					
3	Category	Professional Core (PC)					
4	Approval						

UNIT I **9**

Definition and concept of Tourism- Nature, Definition, Characteristics, Tourism factors, and frame work of Tourism – Types of Tourism.

UNIT 2 **9**

Forms of tourism: religious, historical, social, adventure, health, business, conferences, conventions, incentives, sports and adventure, senior tourism, special interest tourism like culture or nature oriented, ethnic or 'roots' tourism .

UNIT 3 **9**

Travel agency, definition, functions of travel agency, setting up of travel agency, travel documentation, passport and visa formalities, currency control, foreign exchange

UNIT 4 **9**

Indian tourism products – monuments, fare and festivals, beach resort, hill station, monuments, pilgrimage centre .wild life sanctuary Impact of Tourism – Economics, social, physical and environmental changes.

UNIT 5 **9**

Tourism Organisations World Tourism Organization (WTO), • International Air Transport Association (IATA), • International Civil Aviation Organization (ICAO), • Pacific Area Travel Association (PATA), • India Convention Promotion Bureau (ICPB), • Federation of Hotel and Restaurant Association of India (FHRAI), • Travel Agent Association of India (TAAI), Universal Federation of Travel Agents Association (UFTAA).

REFERENCE BOOKS

1. Barkal and Mclik, Tourism – Past, Present and Future, London, 1995.
2. Kaul R. M. Dynamics of Tourism – A Triology, Vol I, New Delhi, 1997.
3. Seth, Pran Nath, Successful Tourism Practices, Vol I, New Delhi 1997.

Text book

1, Tourism and hotel industry in India by m.m.anand.

Web link:

1.https://www.economy.gov.ae/Publications/An%20Introduction%20to%20Tourism%200750619562.pdf

2.https://www.tutorialspoint.com/tourism_management/tourism_management_tutorial.pdf

FOOD PRODUCTION & PATISSERIE – II PRACTICAL

Subject Code BMH 4L1	Subject Name: Food Production & Patisserie – II Practical	L	T	P	C
	Total Contact Hours – 45 hours	0	0	3	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Theoretically and practically share the knowledge of some of the International cuisines, as well as of the factors contributing to the growth of the said cuisines.

Successfully broaden their understanding of International Cuisine culture and food, through further self-study and observation after the awareness generated through knowledge sharing in the class.

COURSE OUTCOMES (COs)

CO1	1. To acquire an in-depth knowledge of International cuisine.
CO2	2. To gain knowledge about Chinese cuisine
CO3	3To absorb the various culinary techniques in Thai cooking and recipes and use it.
CO4	4. To acquire information about different types of menu planning.

CO5		5. To understand the kitchen management and its various factors.
CO6		6. To gain knowledge about Italian Cuisine

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H	M	
	CO2		H			H	H
	CO3	H		H			M
	CO4		M		H	M	
	CO5	M					H
3	Category	Professional Core (PC)					
4	Approval						

BASIC TRAINING KITCHEN (INTERNATIONAL)

To formulate 10 sets of menu consisting of 5 dishes from the following regions

Spain

Italy

Chinese

America

Mexican

Scandinavia

Sri Lanka

Porticucal

Germany

Thai

Reference text

01. Modern Cookery Volume - II

02. Larousse Gastronomique - Cookery Encyclopedia - Paul Hamyln

03. Professional cooking - Wayne Gisslen

04. Cook Book (food for family & friends) - Madhur Jaffery

Web link:

1.https://www.scribd.com/doc/90644423/International-Cuisines-IHM-Notes

2. https://www.ihmnotessite.net/6-fp-international-cuisine

FOOD AND BEVERAGE SERVICE – II PRACTICAL

Subject Code BMH 4L2	**Subject Name: Food and Beverage Service – II Practical**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**0**	**0**	**3**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1.To develop a comprehensive knowledge and understanding of food and beverage outlets.
2.To enable the student to acquire professional F&B Service competence at basic levels and to acquire the requisite technical skills in the principles of beverage service and its related activities.

COURSE OUTCOMES (COs)

CO1	1. To learn and get in-depth knowledge in Food and Beverage Outlets.
CO2	2. To gain knowledge about Gueridon Service
CO3	3.To get very good knowledge in Buffet services
CO4	4. To get very good knowledge in Banquet functions and service.
CO5	5. To get a knowledge about spirits.
CO6	6. To acquire more information about the liquors.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		M	H		H

	CO2		H	M			M
	CO3	M				H	
	CO4		H		H		
	CO5	M		H		M	H
3	Category	Professional Core (PC)					
4	Approval						

1. Planning & Operating Food & Beverage Outlets

- Developing Hypothetical Business Model of Food & Beverage Outlets
- Case study of Food & Beverage outlets - Hotels & Restaurants

2. Function Catering – Banquets

- Planning & organizing Formal & Informal Banquets
- Planning & organizing Outdoor caterings

3. Function Catering – Buffets

- Planning & organizing various types of Buffet

4. Gueridon Service

- Organizing Mis-en-place for Gueridon Service
- Preparation of Following Dishes
- Crepe suzette
- Banana au Rhum
- Peach Flambe
- Rum Omelette
- Steak Diane
- Pepper Steak

5. Kitchen Stewarding

- Using & operating Machines
- Exercise – physical inventory

Reference Books:

Book A. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006

Book B. Sudhir Andrews "Food and Beverage Service Training Manual" Tata McGraw-Hill Publishers – 2009

Web link:

1.http://ihmkolkatafoodandbeveragenotes.blogspot.com/2015/05/gueridon-and-flambe-service.html

2. http://ihmkolkatafoodandbeveragenotes.blogspot.com/2015/05/banquets-and-outdoor-catering.html

ACCOMMODATION OPERATION – II PRACTICAL

Subject Code BMH 4L3	Subject Name: Accommodation Operation – II Practical	L	T	P	C
	Total Contact Hours – 45 hours	0	0	3	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Learn composition of a staffing matrix.

Gain knowledge of the efficient functioning of hotel operations in Housekeeping department.

COURSE OUTCOMES (COs)

CO1	1. List and describe five normative characteristics associated with housekeeping employees.
CO2	2. Explain why delegation is the key to managerial success.
CO3	2. To gain knowledge about Laundry activities in housekeeping department.
CO4	3.To get very good knowledge in various housekeeping software's,
CO5	4. To get very good knowledge in housekeeping maintenance activates.
CO6	5. To get a knowledge about Horticulture.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1		H				H
	CO2	H		H	M	M	
	CO3			H	H		M
	CO4	M					
	CO5		M		M		H
3	Category	Professional Core (PC)					

4	Approval	

1. Laundry machinery and equipment's

2. Stain removal

3. Reporting maintenance and follow ups

4. Handling housekeeping software's

(Anyone normally used in hospitality industry)

5. Horticulture

- Basic gardening plans
- Tools and Equipment
- Landscape Designing
- How to make a bonsai

6. Laundry Machinery and Equipment's

References:

1. Sudhir Andrews - Hotel Housekeeping Training manual

2. Sudhir Andrews Hotel Housekeeping Management and Operations

3.G.Raghubalan & Smritee Raghubalan - Hotel Housekeeping Operations & Management

Weblinks:

7. http://ihmdata.blogspot.com/2012/02/linen-room-ao-2nd-year.html
8. https://hmhub.me/layout-equipment-linen-room/
9. https://www.base-4.com/hotel-laundry-p1/

BAKERY AND CONFECTIONARY – II PRACTICAL

Subject Code BMH 4L4	**Subject Name: Bakery and Confectionary– II Practical**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	**0**	**0**	**3**	**3**
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

1. To develop a basic awareness of bakery and to impart the technical skills required in the

	Bakery department. 2. TO provide a comprehensive insight into the commodities required, their characteristic, uses and handling procedures. 3. To enable the student to acquire professional baking techniques& methods of baking products.

	COURSE OUTCOMES (COs)	
CO1		1. To learn the different types of raw materials used as sweetening agents.
CO2		2. To gain knowledge of bread preparation and its varieties.
CO3		3. To learn the basic cake preparation and icing methods.
CO4		4. To acquire information about sponges and fatless cakes.
CO5		5. To understand the preparation of cookies and buns.
CO6		6. To learn the different types of raw materials used as sweetening agents.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		M			
	CO2					M	H
	CO3	M	H		H		M
	CO4			H	M		
	CO5	M	M				H
3	Category	Professional Core (PC)					
4	Approval						

Menu: 1

Danish pastry Jam & Fruits

Croissants stuffed

Fruits pies

Menu: 2

Tarts

Fruits tarts

Cashew tarts

Menu: 3

Biscuits Chocolate

Cookies jam sweets

Salt cookies

Cookies

Menu: 4

Swiss roll

Genoese sponge

Chiffon cake

Jam and nut rolls

Menu: 5

Crossed bun

Pave Bun

Pizza base

Easter Masala bun

Menu: 6

Chocolate éclair

Jelly Jams

Easter Eggs

Jam Bun rolls

Menu: 7

Meringues

Large cake

Wedding cake

Menu: 8

Cakes caster sugar

Gateaux

Gateaux cake mix

Menu: 9

Brownies

Fruit pudding

Chocolate Fondant cakes

Menu: 10

Charlottes

Pan cake

Chocolate works

Reference Books:

Book A: Wayne Gisslen "Professional Baking" John wiley & sons, inc.
Book B: "The Encyclopedia of Baking A Practical Guide" Rebo Production
Book C: Bo Fribery "The Professional Pastry Chef" 3rd Edition International Thomson publishinf. Inc

Web links:

5. file:///D:/Data/Downloads/Bakery%20Theory.pdf
6. http://ihmgwalior.blogspot.com/2012/10/bakery-theory-notes.html

INDUSTRIAL EXPOSURE TRAINING REPORT

Subject Code BMH 5V1	Subject Name: Industrial Exposure Training Report	L	T	P	C
	No. of the days – 120	1	0	0	15
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:-

Develop an understanding of the hotel industry to focus emerging skills for employability & entrepreneurship.

Develop the skills of different specialty.

COURSE OUTCOMES (COs)

CO1	1. Objective of industrial Exposure Training is to provide to students the feel of the actual working environment and to gain practical knowledge and skills, which in turn will motivate, develop and build their confidence.
CO2	2. Industrial Training is also expected to provide the students the basis to identify their key operational area of interest.
CO3	3. on the job communication- effectively with guests, colleagues and staff from other departments of the hotel verbally including on telephone, in writing and body language
CO4	4. Actual use of information available discreetly ensuring safety, security and privacy of guest, colleagues and organization
CO5	5. Do hands on practices of computer application (Hotel Management System) related to Front Office procedures
CO6	6. Identify the characteristics and benefits of great customer service.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		M	H		M
	CO2		H			M	
	CO3	H		H		H	H
	CO4	H			H		

	CO5		H	H		H	M
3	Category	Professional Core (PC)					
4	Approval						

I Basic framework

The stages in Project Work are given below:

•Project guide will be allotted by the department to each student.

•The student has to pursue the training program in standard star category hotels

•Student has to maintain the project work diary.

•The IET training should be pursued in the hotel allotted by the department only.

•Student should prepare a Project Report at the end of his winter training & it has to be certified & approved by the guide (the Winter Report should conform to Standard Format laid down for Project Report).

•The student should submit the winter Report to the concerned college.

II Project work Requirements

•The winter training should be carried out individually and personally by the student.

•The winter Report, should demonstrate the learning's of the students.

III Submission of project proposal.

•An offer letter from the concerned hotel is required to be presented and it should be approved by the head of the department along with the training certificate as well as the final project report.

IV Submission of project report.

•The training work should be done personally by the student in conformity with the approved hotel.

•A certificate from the hotel should also be enclosed in the Project Report as provided in the format for project report. The Winter Report should be in the format prescribed for winter report.

•The student should submit hard bound copies of the project Report. None of the copies of the project report will be returned to the student.

•Two project reports along with a CD should be submitted to the Head of the department twenty days prior to the second semester examination.

V Format of the project report

5.1. Introduction to the place where the hotel is situated

5.2. Introduction to the hotel

5.3. Departments of the hotel

5.4. About the trainings & the learning's

5.5. Conclusion

5.6. Annexure

VI The format to be followed for the Report is as follows:

6.1. Paper: The Report shall be typed on white paper, size 210 X 297 mm,

6.2. Typing: The typing shall be in standard letter size, double spaced on one side of the paper only.

6.3. Margin: The typed sheet shall have the margins: Left 35 mm, Right 20 mm, and Bottom 20 mm.

6.4. Binding: The report shall be in soft binding manner.

6.5. Lettering: The lettering shall be inscribed, on the bound back and the front cover. The bound back shall contain the title and the name of the student in 3 mm size letters.

6.6. Front cover: The front cover shall contain the following details:

Top: The name of the hotel in block capitals of 6 mm size letters properly centered.

Centre: Full name of the candidate in block capitals of 3 mm size letters, properly centered.

Bottom: Name of the Institution, year of submission - all in block capitals of 3 mm size letters in separate lines with spacing and properly centered.

6.7. Blank sheet: At the beginning and the end of the report two white blank sheets shall be provided one for the purpose of binding and another to be left blank.

6.8. Title sheet: The title sheet shall be the first typed sheet and shall follow immediately the blank sheet.

6.9. Contents: The contents shall indicate the title of Chapters, Section and sub-sections etc., using the decimal notation with corresponding page numbers against them.

6.10. List of tables: The 'contents' shall be followed by a 'List of Tables' indicating the Table number, Table title and the corresponding page number. The Table number shall be in decimal notation indicating the Chapter number and the Table number in that Chapter. Any reference within the text shall be given by quoting the relevant number, e.g. Table 2.2.

6.11. Chapter numbering: The Chapter shall be numbered in Arabic numerals, Section and sub-section of any chapter shall be in decimal notation. All chapters shall begin on a new

page. The titles for chapters, sections, and sub-sections shall be in block capitals. The chapter number and title shall be properly centered at the top of the page and have three spaces between them.

6.12. Introduction to the place: The first chapters will be introduction Chapters. These chapters shall highlight the importance of place where the hotel is situated and where the places of importance and its heritage etc…

6.13 Work done: The work carried out by the student shall be presented in one with reference to the learning's.

6.14 Concluding chapters: This should include the training carried out by the student in different departments in the hotel with its relevant learning from each department.

6.15 Acknowledgements: Acknowledgements shall follow on a separate sheet. Acknowledgement shall indicate the extent to whose assistance has been received by the student in his/her work from various sources.

6.16 General formatting: Students are advised to refer APA formatting style. The reference for APA is available in http:apastyle.org.able plans/arrangement

FINAL YEAR - SIXTH SEMESTER

FOOD PRODUCTION AND PATISSERIE –V

Subject Code BMH 601	**Subject Name: FOOD PRODUCTION AND PATISSERIE –V**	**L**	**T**	**P**		**C**
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:

1. To learn the cold food preparations in Larder Kitchen.
2. Enable the students to know the modern trends of kitchen management.
3. To have knowledge of food production kitchen equipment.
4. Provide information about the forcemeat , compound butter and cold products..
5. Gain knowledge about the garnishes.

COURSE OUTCOMES (COs)

CO1	1.Students will understand about the larder kitchen and its various functions.
CO2	2.To realize the various aspects of kitchen organization and equipments.
CO3	3.Students will appreciate the characteristics of force meat.
CO4	4.To gain the information of garnishes and storage procedures.
CO5	5.To acquire knowledge about kitchen organization.

CO6		6.To understand the store management and meal production of portion control.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1		H		L		H
	CO2	M		L			
	CO3		L	M	H	H	
	CO4	H			M		
	CO5			L		M	L
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

Larder: Essentials of larder control, Importance and functions of larder in main kitchen, Relationship with other section of main kitchen, Duties and responsibilities of Larder chef, Equipment's and tools used in larder, Floor plan or layout of a larder.

UNIT-II **(9)**

Force meat: Meaning, uses, types and recipes. Panada: Meaning, uses, types and recipes. Compound butters: Meaning, uses, types and recipes and examples. Marinade: Different types and uses. Brine: Types and uses. Aspic jelly: Uses and preparation. Chaud Froid: Uses and preparation. Sauces: Types and preparation.

UNIT-III **(9)**

Garnishes: Importance, names of garnishes used with soup, fish, beef, veal, poultry and game.

Cold Preparation: Galantine, Ballantine, terrine, Pate terrine, mousse, soufflé, mousselines, Quenelles etc. Recipes for the above. Ice carving: Equipment, ice preparation, making a template, melting effects, storage.

UNIT- IV **(9)**

Kitchen organization: Allocation of work - Job description/Duty rosters, production planning, Production scheduling, production quality & quantity control, forecasting, budgeting. Kitchen stewarding: Importance of kitchen stewarding, Organization of the kitchen stewarding department, equipment found in kitchen stewarding department, work flow in kitchen stewarding, garbage disposal.

UNIT-V **(9)**

Kitchen Management: Objectives, Meal production, indenting, purchasing, store management, yield, portion control. Standard Recipe - Importance of standard recipe. Advantages and disadvantages. Left over utilization.

References:

1. Practical cookery - Ronald Kinton & Victor Ceserani - Hodder Starghton.
2. Theory of Catering - Ronald Kinton & Victor Ceserani - Hodder Starghton.
3. Food & Beverage Management - Bernard Davis & Sally stone - ELBS.
4. The Professional Chef (TV Edition) - Le Roi A. Polsom.
5. Larousse Gastronomique - Cookery Encyclopedia - Paul Hamyln.

Web links:

1.https://www.scribd.com/doc/44230031/Class-Notes-3-on-Forcemeat
2.https://www.facebook.com/304290423015822/posts/forcemeat-is-a-combination-of-meat-fat-seasonings-and-other-ingredients-that-are/640473039397557/
3.https://www.kullabs.com/classes/subjects/units/lessons/notes/note-detail/7452

FOOD AND BEVERAGE SERVICE-V

Subject Code BMH 602	**Subject Name: FOOD AND BEVERAGE SERVICE-V**	**L**	**T**	**P**		**C**
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:-

1. The course aims at developing a managerial skill of food & beverage manager in the hotel and catering industry.
2. It also aims to enable the student to acquire professional competence at managerial levels and to acquire the requisite technical skills in the principles of food & beverage service and its related activities.

COURSE OUTCOMES (COs)

CO1	1. The F&B organization hierarchy is learnt by students.
CO2	2. Understand the scope and managing of F& B outlets in star hotels.
CO3	3. Developing efficiency in supervisory skills in F&B sector .
CO4	4. Learning the various Standard Operating Procedures(SOPs) in restaurant, bars and banquets.
CO5	5. Acquiring the art of mixing and blending cocktails .
CO6	6. Gaining knowledge about bartending and its various techniques and tricks.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low							
1	COs/POs	1	2	3	4	5	6
2	CO1		H		M		L
	CO2	M		L		H	
	CO3		M		H		
	CO4			H		M	H
	CO5	H	L			L	
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

FOOD & BEVERAGE STAFF ORGANISATION

Categories of staff, Hierarchy, Job description and specification, Duty roaster.

UNIT-II **(9)**

MANAGING FOOD & BEVERAGE OUTLET

Supervisory skills, Developing efficiency, Standard Operating Procedure.

UNIT-III **(9)**

BAR OPERATIONS

Types of Bar

Cocktail, Dispense, Area of Bar, Front Bar, Back Bar, Under Bar (Speed Rack, Garnish Container, Ice well etc.), Bar Stock, Bar Control, Bar Staffing, Opening and closing duties.

UNIT- IV **(9)**

COCKTAILS & MIXED DRINKS

Definition and History, Classification, Recipe, Preparation and Service of Popular Cocktails

UNIT-V **(9)**

BAR TENDING

How to operate a successful bar. Bar sales, how to increase bar sales, bar customer requirement, Bar control procedures.

References:

1.Food and Beverage Service – Singaravelavan, Oxford Publications.

2. Food and Beverage service - Dennis R. Lillicrap “” 9th Edition 2016

3. Bar and beverage book – C.Katsigris,Mary Poster

Web links:

1. https://www.thespruceeats.com/bartending-tips-for-better-drinks-4105954
2.https://www.ihmnotessite.net/f-bo-4cocktails
3.https://www.ihmnotessite.net/f-bo-2managing-f-b-outlet

FRONT OFFICE MANAGEMENT

Subject Code BMH 603	**Subject Name: FRONT OFFICE MANAGEMENT**	**L**	**T**	**P**		**C**
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:-

1.To know the primary function of front office staff and to coordinate guest services, and review basic front office functions and responsibilities that allow staff to meet guest Standards.

2. To know job tasks commonly found in management and non-management positions in the front office (rooms division) of a large hotel.

COURSE OUTCOMES (COs)

CO1	1. To comprehend the role of Sales and Marketing in hotels.
CO2	2. To learn the hotel selling techniques and merchandising.
CO3	3. Acquireing information about establishing standards, monitoring performance, of entry-level front office employees.
CO4	4. To gain knowledge of yield management and forecasting techniques in hotel industry.
CO5	5. To understand the selection and recruitment of employees in hotels.
CO6	6. To understand the various characteristics of budget, labour cost and measures.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	L		H		L	
	CO2		M		H		M
	CO3			M		M	
	CO4	H	H				H

	CO5				H		
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

Sales & Marketing Department

Role of Sales & Marketing Department in hotels. Co-ordination with Front Office. Concept of MICE. MICE destinations

UNIT-II **(9)**

Hotel Sales

Selling concept. Selling techniques (upselling, cross-selling).Sales call, closing the call. Internal/in-house sales promotion, merchandising. Direct sales-travel agents, tour operators, hotel booking agencies, internet, tourist, information counter at airports, direct mail etc

UNIT-III **(9)**

Accommodations Management Aspects

Effective use of SOP's in front office department. Establishing standards, monitoring performance, Tariff decisions. Cost & pricing-Hubbart formula, Rule of the Thumb. Marginal/Contribution pricing. Occupancy & Revenue reports. Equipment-management & maintenance.

UNIT- IV **(9)**

Yield Management

Introduction & Concept. Differential Rates. Booking Horizons. Forecasting Bookings-monthly & weekly forecasts. Maximizing yield. Concept & usage of revenue management. Concept of ARR & Rev Par

UNIT-V **(9)**

Personnel Management

Calculating Staff Requirement, Duty Rotas. Selection & Requirement of employees – Attributes for staff at various levels of Hierarchy. Time & Motion study, work study & work measurements

UNIT-VI **(9)**

Financial Management & cost control

Budgets: Types – fixed, flexible, zero bases. Preparation of Budget. Revenue Budget for Front Office. Measures to reduce operating cost & labour cost

References:

1. Hotel Front Office Training Manual.- Sudhir Andrews
2. Principles of Hotel Front Office Operations - Sue Baker, P. Bradley, J. Huyton
3. Managing Front Office Operations- Michael Kasavana, Charles Steadmon

Weblinks:

1.https://www.siteminder.com/r/hotel-revenue-management-strategies/

2/https://www.hospitalitynet.org/file/152004649.pdf

3.https://etd.ohiolink.edu/!etd.send_file?accession=kent1416340922&disposition=inline

FOOD SERVICE FACILITY PLANNING

Subject Code BMH 604	Subject Name: FOOD SERVICE FACILITY PLANNING	L	T	P		C
	Total Contact Hours – 45 hours	3	0	0		3
	Prerequisite course :12 Std/Any subjects					
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.					

COURSE OBJECTIVES:

1. The course aims at developing the managerial skills in regard to waster management.
2. Provide in-depth knowledge about water, sanitation and maintenance aspects of hotel.
3. To provide knowledge about the planning and design of F&B outlets in hotel.
4. It also aims to enable the students to acquire professional competence at managerial level in energy management.
5. To acquire the requisite technical skills in the principle of food and beverage service and its related activities.

COURSE OUTCOMES (COs)

CO1	1.To enhance the knowledge of the students in setting up with food and beverage outlets in hotel with various facilities.
CO2	2.To provide in –depth knowledge of each and every step involved in the process and the maintenance and its various types.
CO3	3.To acquire information about the water, sanitation and garbage disposal systems in hotels.
CO4	4.To gain information about electrical systems and electrical safety devices.
CO5	5.To have an idea about solar energy and other energy management systems.
CO6	6.To acquired proper information about the building facilities in hotels with concepts and design.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		H			
	CO2		M		H		H
	CO3	L	L	L		H	
	CO4	H			L		H

	CO5				M	M	
3	Category	Professional Core (PC)					
4	Approval						

UNIT-I **(9)**

Maintenance Department

Importance of maintenance dept. in hotel industry. Organization of maintenance dept. in 3/4/5 Star Hotel. Duties and responsibilities of engineering dept.

Types of maintenance

a. Preventive maintenance
b. Breakdown maintenance
c. Predictive maintenance
d. Contract maintenance

UNIT-II **(9)**

Water, Sanitation and Waste treatment

Water purification methods. Methods of water softening (Ion exchange, Zeolite process). Cold and hot water distribution system. Various plumbing fixtures. Types of sanitary traps and their applications. Types of water closets and flushing. Classification of solid waste. Garbage collection and disposal system. Swimming pool maintenance

UNIT-III **(9)**

Electrical Systems

AC and DC system. Single and three phase system. Types of Electrical safety devices. Fuses. Earthling. Circuit breakers. Methods of lightning. Calculation of electricity bill

UNIT- IV **(9)**

Energy Management

Importance of energy conservation. Use of solar energy for various activities. Energy conservation program for Front office, Kitchen, F and B. Housekeeping, Laundry and Sanitation, Guestrooms

UNIT-V **(9)**

Designing of facilities

Designing of building and civil infrastructure – roof, exterior walls, elevator Shafts and landscaping designing of parking areas – standard parking space allotment, layout Considerations designing of lodging facilities – designing of guest room, suites, lobbies, Recreational facilities designing of food and beverage area –concept of designing food and Beverage production and service areas

References:

1. How to Plan & Operate a Restaurant - Dukas.P - Hayden book Co.
2. Profitable Food & Beverage Management Planning - Green E.F., Drake G.G. and Sweeney F.J
-- Hayden book Co.
3. Financial Management for the Hospitality Industry - Caiman M.M - Cbt Publishing Co.

Web links

1.http://vivekvermanotes.blogspot.com/2016/08/importance-of-maintenance-department-in.html

2.https://beeindia.gov.in/sites/default/files/guidebook-Hotel.pdf

FOOD PRODUCTION AND PATISSERIE – III PRACTICAL

Subject Code BMH6L1	Subject Name: Food Production and Patisserie – III Practical	L	T	P	C
	Total Contact Hours – 45 hours	0	1	3	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:

Students would be able to prepare simple Indian and European dishes.

Students would be equipped in their basic presentation skills.

COURSE OUTCOMES (COs)

CO1	Students would acquire knowledge in various continental dishes.
CO2	Demonstrate preparation of the basic mother sauces and variations of dishes made using them.
CO3	Discuss about the various cooking methods used in different regions
CO4	Demonstrate the ability to select proper ingredients cooking methods according to the continental cuisine.
CO5	Describe legal and financial requirements in commercial food establishments.
CO6	Demonstrate ability to lead and perform within the team.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		M		H	
	CO2		M		M		H
	CO3						
	CO4	H	H	H		M	
	CO5		M	H		H	M
3	Category	Professional Core (PC)					
4	Approval						

CONTINENTAL CUISINE (INDIVIDUAL)

To formulate 08 sets of menu consisting of six dishes from the following courses mentioned below.

Hors d oeuvre – simple or compound

Soup

Egg

Pasta/Rice

Fish

Mutton/Veal/Beef/Pork/Poultry/Furred game/Feathered game

Potatoes

Vegetables/Salads

Sweet

Savoury

INDIAN CLASSICAL (kabas, briyanis, dum etc)

Reference Text:

1. Practical cookery

2. The professional chef (IV edition)

3. Larousse gastronomique

4. Professional cooking

5. The complete guide to art of modern cookery.

Web links:

1.http://faculty.etsu.edu/odonnell/2011summer/engl3130/student_work/sauces_french_continental_cuisine.htm

2. https://www.ihmnotessite.net/food-production

FOOD AND BEVERAGE SERVICE– III PRACTICAL

Subject Code BMH6L2	Subject Name: Food and Beverage Service – III Practical	L	T	P	C
	Total Contact Hours – 45 hours	0	1	3	3
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:

Developing Organization structure of various food and beverage outlets.

Provide responsible service of alcoholic and non-alcoholic beverages.

COURSE OUTCOMES (COs)

CO1	Understand the mise-en-place for various Gueridon preparations and college events.
CO2	Learn the preparation of various items on Gueridon through demonstration and practice
CO3	Specialized Service of Gueridon preparation.
CO4	Students get knowledge in Bar Operations.
CO5	Students get knowledge in supervisory skills.
CO6	Display meeting with, greeting, and interacting positively with customers.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H			H		H
	CO2		H			M	
	CO3	M		H			M
	CO4		M	M	H		
	CO5					H	M
3	Category	Professional Core (PC)					
4	Approval						

1. F&B STAFF ORGANIZATION CLASS ROOM EXERCISE (CASE STUDY METHOD)

Developing Organization Structure of various Food & Beverage Outlets

Determination of Staff requirements in all categories

Making Duty Roster

Preparing Job Description & Specification

2. SUPERVISORY SKILLS

Conducting Briefing & Debriefing

- Restaurant, Bar, Banquets & Special events

Drafting Standard Operating Systems (SOPs) for various F & B Outlets

Supervising Food & Beverage operations

Preparing Restaurant Log

3. BAR OPERATIONS

Designing & Setting the bar

Preparation & Service of Cocktail & Mixed Drinks

Text Books:

Book A. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006

Book B Sudhir Andrews "Food and Beverage Management" Tata McGraw-Hill Publishers – 2008

Web links:

1.http://www.uou.ac.in/sites/default/files/slm/HM-401.pdf

2. https://www.ihmnotessite.net/food-beverag

7. U18AEDT6P1 PROJECT

Subject Code U18AEDT6P1	**Subject Name: Project**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45 hours	0	0	30	15
	Prerequisite course :12 Std/Any subjects				
	Course Designed by:- Dept of Tourism & Hospitality Mgmt.				

COURSE OBJECTIVES:

Develop a thorough understanding of the basic theoretical ideas and logic of research.

Build up a thorough understanding of the issues involved in planning, designing, executing, evaluating and reporting research within the stipulated period.

	COURSE OUTCOMES (COs)	
CO1		Design a scientific research protocol to solve various problems faced by the service providers of hospitality and tourism industry.
CO2		Demonstrate skills in employing various statistical methods to analyze research data.
CO3		Demonstrate the ability to write a research article or a technical research report independently.
CO4		Students get knowledge in different types of research.
CO5		Students get knowledge in report writing.
CO6		Students get knowledge in different types of research tools.

Mapping of Course Outcomes with Student

PROGRAMME Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	1	2	3	4	5	6
2	CO1	H		H		H	
	CO2		H				M
	CO3	M		M	H		
	CO4			M		M	H
	CO5		M		M		H
3	Category	Professional Core (PC)					
4	Approval						

I **Basic framework**

The stages in Project Work are given below:

•Project guide will be allotted by the department to each student.

•The student has to pursue the training program in standard star category hotels

•Student has to maintain the project work diary.

•The IET training should be pursued in the hotel allotted by the department only.

•Student should prepare a Project Report at the end of his winter training & it has to be certified & approved by the guide (the Winter Report should conform to Standard Format laid down for Project Report).

•The student should submit the winter Report to the concerned college.

II Project work Requirements

•The winter training should be carried out individually and personally by the student.

•The winter Report, should demonstrate the learning's of the students.

III **Submission of project proposal.**

•An offer letter from the concerned hotel is required to be presented and it should be approved by the head of the department along with the training certificate as well as the final project report.

IV **Submission of project report.**

•The training work should be done personally by the student in conformity with the approved hotel.

•A certificate from the hotel should also be enclosed in the Project Report as provided in the format for project report. The Winter Report should be in the format prescribed for winter report.

•The student should submit hard bound copies of the project Report. None of the copies of the project report will be returned to the student.

•Two project reports along with a CD should be submitted to the Head of the department twenty days prior to the second semester examination.

V **Format of the project report**

5.1. Introduction to the place where the hotel is situated

5.2. Introduction to the hotel

5.3. Departments of the hotel

5.4. About the trainings & the learning's

5.5. Conclusion

5.6 Annexure

VI **The format to be followed for the Report is as follows:**

6.1. Paper: The Report shall be typed on white paper, size 210 X 297 mm,

6.2. Typing: The typing shall be in standard letter size, double spaced on one side of the paper only.

6.3. Margin: The typed sheet shall have the margins: Left 35 mm, Right 20 mm, and Bottom 20 mm.

6.4. Binding: The report shall be in soft binding manner.

6.5. Lettering: The lettering shall be inscribed, on the bound back and the front cover. The bound back shall contain the title and the name of the student in 3 mm size letters.

6.6. Front cover: The front cover shall contain the following details:

Top: The name of the hotel in block capitals of 6 mm size letters properly centered.

Centre: Full name of the candidate in block capitals of 3 mm size letters, properly centered.

Bottom: Name of the Institution, year of submission - all in block capitals of 3 mm size letters in separate lines with spacing and properly centered.

6.7. Blank sheet: At the beginning and the end of the report two white blank sheets shall be provided one for the purpose of binding and another to be left blank.

6.8. Title sheet: The title sheet shall be the first typed sheet and shall follow immediately the blank sheet.

6.9. Contents: The contents shall indicate the title of Chapters, Section and sub-sections etc., using the decimal notation with corresponding page numbers against them.

6.10. List of tables: The 'contents' shall be followed by a 'List of Tables' indicating the Table number, Table title and the corresponding page number. The Table number shall be in decimal notation indicating the Chapter number and the Table number in that Chapter. Any reference within the text shall be given by quoting the relevant number, e.g. Table 2.2.

6.11. Chapter numbering: The Chapter shall be numbered in Arabic numerals, Section and sub-section of any chapter shall be in decimal notation. All chapters shall begin on a new page. The titles for chapters, sections, and sub-sections shall be in block capitals. The chapter number and title shall be properly centered at the top of the page and have three spaces between them.

6.12. Introduction to the place: The first chapters will be introduction Chapters. These chapters shall highlight the importance of place where the hotel is situated and where the places of importance and its heritage etc…

6.13 Work done: The work carried out by the student shall be presented in one with reference to the learning's.

6.14 Concluding chapters: This should include the training carried out by the student in different departments in the hotel with its relevant learning from each department.

6.15 Acknowledgements: Acknowledgements shall follow on a separate sheet. Acknowledgement shall indicate the extent to whose assistance has been received by the student in his/her work from various sources.

6.16 General formatting: Students are advised to refer APA formatting style. The reference for APA is available in http:apastyle.

Web link:

1. https://web.sonoma.edu/users/d/daniels/learningproject.html

2. https://newton.ex.ac.uk/handbook/PHY/forms/WLB010919-4.pdf

CURRICULUM AND SYLLABUS

(R 2015)

CHOICE BASED CREDIT SYSTEM

(Applicable to the batches admitted from July, 2015)

B.Sc – CHEMISTRY

I – VI SEMESTERS

SEMESTER I

Part	Category	Sub code	Sub Name	L	T	P	C
Theory							
Part I	HS	BAL 101	Tamil –I	4	0	0	4
		BAL 102	French – I				
		BAL 103	Hindi - I				
Part II	HS	BEH 101	English - I	4	0	0	4
Part III	MC	BCI 101	Core - 1 General Chemistry - I	3	2	0	4
	MC	BCI 102	Core -2 General Chemistry - II	3	2	0	4
	NMC	BMA103	Allied - I - Maths - I	3	2	0	4
	EEC		Library	0	0	1	0
Practical							
	MC	BCI 1L1	Core -3 - Chemistry Major Lab.	0	0	4	2
Total number of periods: 28				**Total numbers of credits: 22**			

SEMESTER II

Part	Category	Sub code	Sub Name	L	T	P	C
Theory							
Part I	HS	BAL201	Tamil – II	3	0	0	3
		BAL202	French - II				
		BAL203	Hindi – II				
Part II	HS	BEH 201	English - II	3	0	0	3
Part III	MC	BCI 201	Core - 4 - General Chemistry - III	3	2	0	4

	MC	BCI 202	Core - 5 - General Chemistry - IV	3	2	0	4
	NMC	BMA203	Allied - II Maths	3	2	0	4
Part IV	HS	BCI 204	Environmental Studies	2	0	0	2
	EEC	BBC 206	Value Education	2	0	0	2
Practical							
	MC	BCI 2L1	Core - 6 -Major Practical - II	0	0	4	2
Total number of periods: 29			**Total numbers of credits: 24**				

SEMESTER III

Part	**Category**	**Sub code**	**Sub Name**	**L**	**T**	**P**	**C**
Theory							
Part I	HS	BAL 301	Tamil – III	3	2	0	4
		BAL 303	Hindi – III				
		BAL 302	French - III				
Part II	HS	BEH 301	English - III	3	2	0	4
Part III	MC	BCI 301	Core - 7 - General Chemistry - 5	3	2	0	4
	NMC	PBS 302	Second Allied – I - Physics Paper - 1	3	2	0	4
Part IV	NME	**BCI 3E1 - Non Major Elective I**					
		BAL001	Basic Tamil – I, for those who studied other language under Part I	2	0	0	2
		BAL002	Special Tamil – I, for those who studied Tamil under Part I				
Practical							
	MC	BCI 3L1	Core -8 - Major Practical - 3	0	0	4	2
	NMC	PBS3L2	Second Allied - II - Physics Lab.	0	0	4	2
Total number of periods: 32			**Total numbers of credits: 22**				

SEMESTER IV

Part	**Category**	**Sub code**	**Sub Name**	**L**	**T**	**P**	**C**
Theory							
Part I	HS	BAL 401	Tamil – IV	2	2	0	3
		BAL 403	Hindi - IV				
		BAL 402	French - IV				
Part II	HS	BEH 401	English - IV	2	2	0	3
Part III	MC	BCI 401	Core - 9 -General Chemistry - 6	3	2	0	4

	NMC	PBS 402	Second Allied – III - Physics Theory	3	2	0	4
Part IV	NME	**BCI 4E2 - Non Major Elective (NME) II**					
		BAL003	Basic Tamil – II, for those who studied other language under Part I	2	0	0	2
		BAL004	Special Tamil – II, for those who studied Tamil under Part I				
	SBE	BCI 4E3	Skill Based Elective I	2	0	0	2
Practical							
	MC	BCI 4L1	Core 10 - Major Practical - 4	0	0	4	2
	NMC	PBS4L2	Second Allied - IV - Physics Lab.	0	0	4	2
Total number of periods: 30				**Total numbers of credits: 22**			

SEMESTER V

Part	**Category**	**Sub code**	**Sub Name**	**L**	**T**	**P**	**C**
Theory							
Part III	MC	BCI 501	Core - 11 - Organic Chemistry - I	3	2	0	4
	MC	BCI 502	Core - 12 - Inorganic Chemistry - I	4	0	0	4
	MC	BCI 503	Core - 13 - Physical Chemistry - I	3	2	0	4
	ME	BCI 5E6	Major Elective - I	4	0	0	4
Part IV	SBE	BCI 5E4	Skill Based Elective – II	2	0	0	2
	SBE	BCI5E5	Skill Based Elective – III	2	0	0	2
Practical							
	MC	BCI 5L1	Core - 1 4 Major Practical - 5	0	0	4	3
	MC	BCI5L2	Core - 1 5 Major Practical - 6	0	0	4	3
Total number of periods: 30				**Total numbers of credits: 26**			

SEMESTER VI

Part	**Category**	**Sub code**	**Sub Name**	**L**	**T**	**P**	**C**
Theory							
Part III	MC	BCI 601	Core - 16 -Organic Chemistry - II	3	2	0	4

	MC	BCI 602	Core - 17 - Inorganic Chemistry - II	3	2	0	4
	ME	BCI 6E7	Major Elective - II	4	0	0	4
Part IV	EEC	BCI 6V1	Extension Activities	0	0	2	1
Practical							
Part III	MC	BCI 6L1	Core - 18 - Major Practical - 7	0	0	6	3
Part III	EEC	BCI 6P1	PROJECT	0	0	10	8
Total number of periods: 32				**Total numbers of credits: 24**			

SUMMARY OF CURRICULUM STRUCTURE AND CREDIT & CONTACT HOUR DISTRIUTION

S.No	Sub Area	Credit as per Semester						No. of Credit	% of Credit
		I	II	III	IV	V	VI		
1	**Humanities and Social Studies (HS)**	8	8	8	6	0	0	**30**	21.90
2	**Major Core (MC)**	10	10	6	6	18	12	**62**	42.33
3	**Non Major Core (NMC)**	4	4	6	6	0	0	**20**	14.60
4	**Major Elective (ME)**	0	0	0	0	4	4	**8**	05.84
5	**Non Major Elective (NME)**	0	0	2	2	0	0	**4**	02.92
6	**Skill Based Elective (SBE)**	0	0	0	2	4	0	**6**	04.38
7	**Employability Enhancement Course (EEC), Project Work, Seminar, Internship, Term Paper, etc.**	0	2	0	0	0	8	**10**	08.03
	Total Credit	**22**	**24**	**22**	**22**	**26**	**24**	**140**	
	Total Contact Hour	**28**	**29**	**32**	**30**	**30**	**36**	**185**	

LIST OF ELECTIVES

MAJOR ELECTIVE – I (BCI5E6)

Sub Code	Sub Name	L	T	P	C
BCI001	Analytical Chemistry	4	0	0	4
BCI002	Polymer Chemistry	4	0	0	4
BCI003	Biochemistry	4	0	0	4

MAJOR ELECTIVE – II (BCI6E7)

Sub Code	Sub Name	L	T	P	C
BCI004	Kinetic & Spectroscopic Methods In Chemistry	4	0	0	4
BCI005	Industrial Chemistry	4	0	0	4
BCI006	Food Chemistry and Technology	4	0	0	4

NON MAJOR ELECTIVE (NME) I - BCI3E1

Sub Code	Sub Name	L	T	P	C
BAL001	Basic Tamil – I for those who studied other language under Part I	2	0	0	2
BAL002	Special Tamil – I for those who studied Tamil under Part I	2	0	0	2

NON MAJOR ELECTIVE (NME) II – BCI 4E2

Sub Code	Sub Name	L	T	P	C
BAL003	Basic Tamil – II for those who studied other language under Part I	2	0	0	2
BAL004	Special Tamil – II for those who studied Tamil under Part I	2	0	0	2

LIST OF SKILL BASED ELECTIVES (Choose any three courses – one in semester IV & two in semester V): BCI4E3, BCI5E4 & BCI5E5

S.NO	Sub Code	Sub Name	L	T	P	C
1	**BBA011**	BPO Management	**1**	**0**	**2**	**2**
2	**BBE002**	Desk Top Publishing	**1**	**0**	**2**	**2**
3	**BCA001**	Computer Application	**1**	**0**	**2**	**2**

4	**BCA002**	Graphical and Web Design	**1**	**0**	**2**	**2**
5	**BCA003**	Multimedia	**1**	**0**	**2**	**2**
6	**BCA004**	Networking and Maintenance	**1**	**0**	**2**	**2**
7	**BCA006**	Web Designing	**1**	**0**	**2**	**2**
8	**BSC001**	Animation	**1**	**0**	**2**	**2**
9	**BSC002**	Computer Hardware and Networking	**1**	**0**	**2**	**2**
10	**BSC003**	Computer Programming	**1**	**0**	**2**	**2**
11	**BSC004**	Computer Technology	**1**	**0**	**2**	**2**

SEMESTER – I

BAL101	**தமிழ் – I**				**L**	**T**	**P**	**C**		
	Total Contact Hours – 45				3	0	0	3		
	Prerequisite course – +2 Level Tamil									
	Course Coordinator Name& Department : முனைவர். த. கிறிஸ்டல் ரெஜி & தமிழ்த்துறை									
COURSE OBJECTIVES : இருபதாம் நூற்றாண்டு இலக்கியத்தை அறியச் செய்தல்										
COURSE OUTCOMES (COs)										
CO1	பாரதியார், பாரதிதாசன், கவிமணி ஆகியோரின் மரபுக்கவிதைகளை அறிவர்									
CO2	கண்ணதாசன், அப்துல்ரகுமான், நா.முத்துக்குமார் ஆகியோரின் புதுக்கவிதைகளை அறிவர்									
CO3	இருபதாம் நூற்றாண்டு உரைநடை கட்டுரைகளை அறிவர்									
CO4	இருபதாம் நூற்றாண்டு சிறுகதைக்கலையின் நுட்பத்தை அறிவர்									
CO5	இக்கால இலக்கிய வரலாற்றைப் பற்றி அறிவர்									
CO6	இருபதாம் நூற்றாண்டு இலக்கியத்தைப் பற்றி அறிவர்									
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO 3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அலகு 1 **9**

மரபுக்கவிதைகள்: பாரதியார் - தேசிய கீதங்கள் - தமிழ் நாடு - செந்தமிழ் நாடு, தமிழ்

பாரதிதாசன் - தமிழ் - இன்பத் தமிழ், எங்கள் தமிழ்

கவிமணி தேசிக விநாயகம் பிள்ளை - வாழ்க்கைத் தத்துவங்கள், வாழ்க்கை நிலையாமை

அலகு 2 **9**

புதுக்கவிதைகள்: கண்ணதாசன் - அழுகை, பிறப்பின் வருவது யாதெனக் கேட்டேன்!

அப்துல்ரகுமான் - கல்லின் காயம், பாருக்குள்ளே நல்ல நாடு

நா.முத்துக்குமார் - வளர்தலும் வளர்தல் நிமித்தமும், கை நீட்டினால் தண்ணீர் வரும் குழாய்

அலகு 3 **9**

கட்டுரைகள்: திரு.வி.கலியாணசுந்தரனார் - பாஷை வளர்வதெப்படி

அறிஞர் அண்ணா - வீட்டிற்கோர் புத்தகசாலை

வ.சுப. மாணிக்கம் - தேசிய மறை திருக்குறள்

அலகு 4 **9**

சிறுகதைகள்: வ.வே.சு. ஐயர் - குளத்தங்கரை அரசமரம் - 'தமிழ்ச் சிறுகதையின் தந்தை - தமிழின் முதல் சிறுகதை'

மௌனி - அழியாச்சுடர் - 'தமிழ்ச் சிறுகதையின் திருமூலவர்'

புதுமைப்பித்தன் - காஞ்சனை - 'தமிழ்ச் சிறுகதையின் மன்னன்'

அலகு 5 **9**

இக்கால இலக்கிய வரலாறு: இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு

இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு

இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

பாட நூல்கள்:

1. தி.சா.ராஜு, "பாரதியார் & பாரதிதாசன் கவிதைகள்", வானவில் பிரசுரம், 1977
2. சி.தேசிக விநாயகம் பிள்ளை, "கவிமணி கவிதைகள்", பூம்புகார் பதிப்பகம், 2011
3. கண்ணதாசன், "கவிஞர் கண்ணதாசன் கவிதைகள்", கண்ணதாசன் பதிப்பகம், 2012
4. அப்துல் ரகுமான், "கவிக்கோ கவிதைகள்', நேஷனல் பப்ளிஷர்ஸ், 2013
5. நா.முத்துக்குமார், "கவிதைகள்-அனா ஆவன்னா, பட்டாம்பூச்சி பதிப்பகம், 2016

6. இராமச்சந்திரன், "திரு.வி.க.வின் தேசபக்தன் கட்டுரைகள்",புவனேஸ்வரி பதிப்பகம்,2001
7. அண்ணா, 'சொற்பொழிவு-வீட்டிற்கோர் புத்தகசாலை', முத்தமிழ் நிலையம், 2008

பார்வை நூல்கள்:

1. ந.வேலுசாமி, "திருக்குறளை தேசிய நூலாக அறிவிக்க வேண்டும்", Coral Publisher, 2017
2. வ.வே.சு.ஐயர், "குளத்தங்கரை அரசமரம்", வ.உ.சி.நூலகம், 2007
3. மௌனி, "மௌனி படைப்புகள்", காலச்சுவடு பதிப்பகம், 2010
4. புதுமைப்பித்தன், "காஞ்சனை", அன்னம் பதிப்பகம், 2013

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BEH101	ENGLISH I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. SHEEBA - English				

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS

12

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald
2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019
3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

Course Coordinator **HOD**

BCI101	**CORE- 1 - GENERAL CHEMISTRY - I**	**L**	**T**	**P**	**C**
	Total Contact Hours - 75	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- –Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly

COURSE OUTCOMES (COs)

CO1	Remember the fundamental concept of periodic properties.
CO2	Understand about the theoretical concepts of organic Chemistry
CO3	Understand the properties and uses of Hydrocarbons and Alkynes
CO4	Apply the Kinetic theory of gases, postulates and importance of real gases
CO5	Apply the Real Gases deviation from ideal behaviour.
CO6	Analyze the preporties of colloids particle by electrical double layer and zeta potential.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I - ALKALI METALS & ALKALINE EARTH METALS 15

Alkali metals **:** Comparative study of the properties of Alkali metals Manufacture of NaOH – properties and uses of it – preparation, properties and uses of washing soda, baking soda, Sodium thiosulphate - **Alkaline earth Metals :** Comparative study of the properties of Alkaline earth metals; anomalous behavior Extraction of Calcium – properties and uses ; Preparation,

properties and uses of calcium carbide and superphosphate of lime; Diagonal relationship of the elements Li – Mg - **Carbon group:** Allotropic forms of Carbon; graphite; Preparation, properties and structure of hydrocyanic acid **- Silicon ;** Preparation, properties, structure and uses of silica – water glass – silanes – carborundum.

UNIT II : HYDROCARBONS I **15**

Theoretical Principles of Organic Chemistry: Polar effects: Inductive and electromeric effects – mesomerism and resonance – effect on chemical reactivity – principles for writing down VB resonance structures – resonance energy – steric inhibition of resonance – hyperconjugation - Hydrogen bonds: effect on physical properties - **Aliphatic Hydrocarbons I -** Alkanes: general methods of preparation – chain isomerism; The reactions of halogens with methane , nitration, sulphonation, oxidation, isomerisation and thermal decomposition of alkanes.

UNIT III: HYDROCARBONS II **15**

Aliphatic Hydrocarbons II: Alkenes: general methods of preparation of alkenes involving dehydration of alcohols, dehalogenation – orientation in E_2 elimination – cyclic mechanism – Wittig reaction – addition reactions with hydrogen, hydrogen halides – heterolytic mechanism – Markownikoff rule – Peroxide effects – hydration of alkenes – hydroboration – hydroxylation with $KMnO_4$ – ozonolysis – addition polymerization by free radical mechanisms – isomerisation of alkenes. Alkynes: Preparation of alkynes – acidity of alkynes – formation of acetylides – vinylation – hydration – polymerization of acetylene - Dienes : Structure and Properties of dienes : – stability of conjugated and isolated dienes – electrophilic addition to conjugated dienes – 1,4 addition – 1,4 addition versus 1,2 addition – free radical addition to conjugated dienes: orientation and reactivity - Diels-Alder reaction – free radical polymerization of dienes;

UNIT IV: GASEOUS STATE AND REAL GASES **15**

Gaseous State : Ideal Gases: Kinetic theory of gases – postulates – kinetic gas equation – derivation of Boyles law, Charles' law and Avogadro's law from it. Maxwell's distribution of molecular velocities – average velocity, most probable velocity and root mean square velocity – collision diameter, collision number, collision frequency and mean free path. **Real Gases:** Equations of states for real gases – Van der Waals equation, Dieterici equation, Berthelot equation, Clausius equation - The principle of Corresponding States – reduced equation of state - Inter molecular forces – types – London forces – interaction energy – nature of Van der Waals interactions.

UNIT V: COLLOIDAL STATE AND MACROMOLECULES **15**

Colloidal state: Classification of colloids – properties – electrical properties – electrical double layer – zeta potential – coagulation and protection - Hardy-Schulze rules – flocculation value – gold number electrokinetic properties – electrophoresis – electro osmosis – Donnan membrane equilibrium. Particle size determination by light scattering method – surfactants – types – micelles. Gels – preparative methods – types – thixotropy. **Macromolecules**: Classification – degree of polymerization – number average and weight average molecular weights – determination of molecular weights of macromolecules by viscometry and osmotic pressure methods.

TEXT BOOKS

1. J. D. Lee, Concise Inorganic Chemistry, 5th ed., Blackwell Science, London, 1996.
2. F. A. Cotton, G. Wilkinson and P. L. Guas, Basic Inorganic Chemistry, 3rd ed., John Wiley,1994.
3. B. Y. Paula, Organic Chemistry, 3rd Edition, Pearson Education, Inc.(Singapore), New Delhi, reprint, 2002.
4. S.K. Dogra and S. Dogra, Physical Chemistry Through Problems, New age international, 4th edition 1996.

REFERENCE BOOKS

5. J. E. Huheey, E. A. Kieter and R. L. Keiter, Inorganic Chemistry, 4th ed., Harper Collins, New York, 1993.
6. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rd ed., W. H. Freeman and Co, London,1999.
7. Jerry March, Advanced Organic Chemistry, 4th Edition, John Wiley And Sons, New York,1992.
8. S. H. Pine, Organic Chemistry, 5th Edition, McGraw Hill International Edition, Chemistry Series, New York, 1987.
9. Gilbert. W. Castellan, Physical Chemistry, Narosa publishing house, third edition 1985.

Course Coordinator **HOD**

BCI102	**CORE- 2 - GENERAL CHEMISTRY - II**	**L**	**T**	**P**	**C**
	Total Contact Hours - 75	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Mrs. S. Vinitha / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the basic properties and uses of alkali and alkaline earth metals
CO2	Understand about the basic principles in organic chemistry
CO3	Understand the bonding and antibonding by VB and MO theory
CO4	Apply the some simple inorganic molecules to find the shapes by VSPER theory
CO5	Apply the qualitative ideas of free electron, valence bond and band theories.
CO6	Analyze the properties of p- type and n - type semiconductors.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT.- I: BASIC CONCEPTS **15**

Atomic weight - equivalent weight- molecular weight -mole concept- stoichiometry - Periodic properties- atomic radii- ionic radii- covalent radii- ionisation potential- electron affinity and electronegativity.

UNIT II: PERIODIC PROPERTIES **15**

Atomic spectra and quantum theory of energy - black body radiation - photoelectric effect - Compton effect - Bohr model of the hydrogen atom - wave particle duality - Heisenberg

uncertainity principle - Quantum numbers - shapes of atomic orbitals - Pauli's exclusion principle - singlet and triplet electronic states - Aufbau principle - electronic configuration of atoms.

UNIT III: CHEMICAL BONDING I **15**

Covalent bond - nature of covalent bond and formation of σ and π bonds- hybridisation - bond energy - bond length - bond angle - electronegativity - polarity of bonds - dipole moment - VB and VSEPR theory - shapes of simple inorganic molecules and ions containing lone pairs and bond pairs - MO theories- bonding and antibonding orbitals - nonbonding orbitals - MO configurations of simple diatomic molecules (H2, He2, N2, O2, C2, B2,F2, CO, NO and their ions) - Comparison of VB and MO theories.

UNIT IV: CHEMICAL BONDING II **15**

General characteristics of electrovalent compounds - Types of ions - size effects - radius ratio and its limitations - packing of ions in crystals - Lattice energy - Born - Haber cycle - Polarising power and polarisability - Fajan's rules - hydration energy.

UNIT V: SOLID STATE CHEMISTRY **15**

Qualitative ideas of free electron, valence bond and band theories - defects in Solid state - p-type and n -type semiconductors - Hydrogen bonding: Its effect on the behaviour of molecules (both physical and chemical).

TEXT BOOKS

1. R. T. Morrison And R. N. Boyd, Organic Chemistry, 6th Edition, Printice-Hall Of India Limited, New Delhi, 1992.
2. T. W. Graham Solomons, Organic Chemistry, 6th edition, John Wiley and Sons, 1996.
3. B. Douglas, D. McDaniel and J. Alexander, Concepts and Models of Inorganic Chemistry,3rd ed., John Wiley, 1994.
4. P.W. Atkins, Physical Chemistry, 7th edition, Oxford university press, 2001.

REFERENCE BOOKS

5. T. Moeller, Inorganic Chemistry: A Modern Introduction, Wiley, New York, 1990.
6. J. D. Lee, Concise Inorganic Chemistry, 5th Ed., Blackwell Science, London, 1996.
7. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rd Ed., W. H. Freeman and Co, London,1999.
8. Sehan. N. Ege, Organic Chemistry, Structure And Reactivity, 3rd Edition, A.I.T.B.S., New Delhi, 1998.
9. Hendrickson, Cram And Hammond, Organic Chemistry, 3rd Edition, McGraw-Hill Kogakusha, Limited, 1970.
10. Francis A. Carey, Organic Chemistry, 3rd edition, Tata-McGraw Hill Publications, New Delhi, 1999.
11. Irving M. Klotz and Robert M. Rosenberg, Chemical Thermodynamics, John Wiley and sons, Inc. 1994.

Course Coordinator **HOD**

BMA103	MATHEMATICS - I	L	T	P	C
	Total Contact Hours – 60	4	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.P.Sumathi & Mathematics				

COURSE OBJECTIVES :- Knowledge and understanding are fundamental to studying mathematics and form the base from which to explore concepts and develop problem-solving skills.

COURSE OUTCOMES (COs)

CO1	Understand about the importance of algebraic functions
CO2	To explain about the theory of equation in mathematical derivation
CO3	Study about the importance of the matrices
CO4	To explain detail about the Trigonometric functions
CO5	Study about the differential calculus using various concepts
CO6	State and explain to the student to understand all concepts thoroughly.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT-I : ALGEBRA **12**

Partial Fractions, Binomial, Exponential and logarithmic Series (without Proof) - Summation -Simple problems

UNIT-II : THEORY OF EQUATIONS **12**

Polynomial Equations with real Coefficients - Irrational roots - Complex roots, Transformation of equation by increasing or decreasing roots by a constant - Reciprocal equations - Newton's method to find a root approximately - Simple problems.

UNIT-III: MATRICES **12**

Symmetric - Skew-Symmetric - Orthogonal and Unitary matrices - Rank of a matrix - Consistency of equations - Eigen roots and Eigen vectors – Cayley Hamilton theorem (without proof)-Verification and computation of inverse matrix.

UNIT-IV: TRIGONOMETRY **12**

Expansions of sinn θ, cosn θ, sinnθ, cosnθ, tannθ - Expansions of sin θ, cos θ, tan θ in terms of θ - Hyperbolic and inverse hyperbolic functions - Logarithms of complex numbers.

UNIT-V: DIFFERENTIAL CALCULUS **12**

Derivatives. n-th derivatives - Leibnitz theorem (without proof) and applications – Jacobians - Concepts of polar co-ordinates-Curvature and radius of curvature in Cartesian co-ordinates.

TEXT BOOKS

1. P.Duraipandian and S.Udayabaskaran, "Allied Mathematics, Vol. I & II", Muhil Publishers, Chennai.(1997)
2. 1. P.Balasubramanian and K.G.Subramanian, , "Ancillary Mathematics. Vol. I & II". Tata McGraw Hill, New Delhi. 1997
3. S.P.Rajagopalan and R.Sattanathan, "Allied Mathematics .Vol. I & II", Vikas Publications, New Delhi. 2005
4. P.R.Vittal, "Allied Mathematics", Margham Publications, Chennai. 2003

Books for Reference:

1. S. Narayanan and T.K. ManickavasagamPillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.

2. Allied Mathematics by Dr. A. Singaravelu.

Course Coordinator **HOD**

BCI1L1	CORE- 3 - MAJOR PRACTICAL - 1	L	T	P	C
	Total Contact Hours - 60	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- –Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand about its importance of chemical played important role
CO4	Apply the detail about practical importance to be aware of the concepts from the basis.
CO5	Apply the estimation of some inorganic ions by basic methods.
CO6	Analyse the importance of handling and precision of experimental skills.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						L	H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

VOLUMETRIC ANALYSIS – I

1. Estimation of Magnesium using EDTA.
2. Estimation of Zinc using EDTA
3. Estimation of Total Hardness of water by EDTA method
4. Estimation of borax - Standard Sodium Carbonate
5. Estimation of Sodium Hydroxide -Standard Sodium Carbonate
6. Estimation of HCl –standard oxalic acid.

7. Estimation of ferrous sulphate – Standard FAS.
8. Estimation of oxalic acid – Standard oxalic acid.

Students must write short procedure for the given estimation in ten minutes during the Examination and submit the paper for evaluation.

Students must write short procedure for the given estimation in ten minutes during the Examination and submit the paper for evaluation.

REFERENCE BOOKS

1. Sundaram, Krishnan, Raghavan, Practical Chemistry (Part II), S. Viswanathan Co. Pvt.,1996.
2. B.S. Furniss, A.J. Hannaford, P.W. G. Smith, A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.
3. N.S. Ganapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S.Viswanathan Co. Pvt., 1998.
4. Vogel's Text Book of Quantitative Chemical Analysis. 5th Edi., ELBS/Longman England, 1989.

Course Coordinator **HOD**

SEMESTER – II

BAL201	தமிழ் - II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department: முனைவர். த. கிறிஸ்டல் ரெஜி & தமிழ்த்துறை				

COURSE OBJECTIVES : சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	தூது,பள்ளு,குறவஞ்சி என்ற சிற்றிலக்கியங்கள் பற்றி அறிவர்
CO2	சைவ இலக்கியமான தேவாரம், திருவாசகம், அற்புதத்திருவந்தாதிப் பற்றி அறிவர்
CO3	வைணவ இலக்கியமான நாலாயிர திவ்யப் பிரபந்தம் பற்றி அறிவர்
CO4	பௌத்த, இசுலாம், கிறித்துவ சமய இலக்கியங்களைப் பற்றி அறிவர்
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறு பற்றி அறிவர்
CO6	சிற்றிலக்கியம் , சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அலகு 1 **9**

அழகர் கிள்ளைவிடு தூது - 1 - 20

முக்கூடற்பள்ளு - நாட்டு வளம் - 21,22,25,26,35

திருக்குற்றாலக் குறவஞ்சி - குறத்தி மலைவளம் கூறுதல் - 1 - 5

அலகு 2 **9**

அற்புதத்திருவந்தாதி - 1 - 5

தேவாரம் - திருவெண்காட்டுப் பதிகம் - திருஞானசம்பந்தர் - 1 - 10

திருவாசகம் - திருச்சாழல் - மாணிக்கவாசகர் - 1 - 10

அலகு 3 **9**

நாலாயிர திவ்யப் பிரபந்தம் - முதல் திருமொழி – பெரியாழ்வார் - 1 - 10
நாலாயிர திவ்யப் பிரபந்தம் - திருப்பாவை - ஆண்டாள் - 1 - 10
நாலாயிர திவ்யப் பிரபந்தம் - திருமாலை - தொண்டரடிப்பொடி ஆழ்வார் - 1 - 5

அலகு 4 **9**

ஆசிய ஜோதி - கருணைக் கடல் - அறவுரை கூறுதல் - 1 - 10
பராபரக்கண்ணி - குணங்குடி மஸ்தான் சாகிபு - 1 - 20
இயேசு காவியம் - பாடுகளின் பாதை - கண்ணதாசன்

அலகு 5 **9**

சிற்றிலக்கிய வரலாறு - சமய இலக்கிய வரலாறு

பாட நூல்கள்:

1. கதிர் முருகு, "அழகர் கிள்ளைவிடு தூது", சாரதா பதிப்பகம், 2011
2. கதிர் முருகு, "முக்கூடற் பள்ளு மூலமும் உரையும்", சாரதா பதிப்பகம், 2017
3. புலியூர்க் கேசிகன், "திருக்குற்றாலக் குறவஞ்சி", செண்பகா பதிப்பகம், 2010
4. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரி நிலையம், 2011
5. சோ.கந்தசாமி "பன்னிரு திருமுறை", உலகத் தமிழாராய்ச்சி நிறுவனம், 2008
6. த.கோவேந்தன்,"நாலாயிரத்திவ்யப்பிரபந்தம் எளிய உரையும்",சாரதா பதிப்பகம்,2015
7. கமலா முருகன், "ஆசிய ஜோதி மூலமும் உரையும்", சாரதா பதிப்பகம், 2012
8. கமலா முருகன், "பராபரக்கண்ணி மூலமும் உரையும்", சாரதா பதிப்பகம், 2013
9. கண்ணதாசன், "இயேசு காவியம்", கண்ணதாசன் பதிப்பகம், 2014

பார்வை நூல்கள்:

1. சு.ஆனந்தன், "தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2018
2. மா.ராசமாணிக்கனார், சமய இலக்கிய வரலாறு, காவ்யா பதிப்பகம், 2012
3. மு.பொன்னுசாமி, தமிழ் சிற்றிலக்கிய வரலாறு, பாரி நிலையம், 2008

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English				
COURSE OBJECTIVES:- To have a better understanding of the English language skills and its implementation it in day to day life activities.					
	COURSE OUTCOMES (COs)				

CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO 6	PO7	PSO 1	PSO 2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas 2. The Lion and the Lamb – Leonard Clark

UNIT 2: POEMS 1 **12**

The Solitary Reaper – William Wordsworth 2. Gift – Alice Walker

UNIT 3: SHORT STORIES 1 **12**

The Fortune-Teller – Karel Capek 2. The Postmaster – Rabindranath Tagore

UNIT 4: ONE-ACT PLAYS 1 **12**

. The Death Trap – Saki (H.H. Munro) 2. The Dear Departed: A Comedy in One-Act – Stanley Houghton

UNIT 5: COMMUNICATIVE GRAMMAR 1 12

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices Books Prescribed: Panorama: English for Communication by Board of Editors, Emerald.

TEXT BOOKS:

1. The Refugees by K.A.Abbas(A Short History of the English Novel by S. Diana Neill (Indian Reprint; Kalyani Publishers)
2. The Lion and the lamb by Leonard Clark,Penguin Publisher
3. The Death Trap by Saki, The Novels and Plays of Saki
4. The Dear Departed A Comedy in One-Act by Stanley Houghton
5. English for Communication by Board of Editors, Emerald.

REFERENCE BOOKS:

1. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan)
2. Ten Twentieth Century Indian Poets (ed. R. Parthasarathy)

Course Coordinator **HOD**

BCI201	**CORE- 4 - GENERAL CHEMISTRY - III**	**L**	**T**	**P**	**C**
	Total Contact Hours - 75	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- –Dr. G. Gurumoorthy / Chemistry				
COURSE OBJECTIVES:- To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.					

COURSE OUTCOMES (COs)	
CO1	Remember the basic properties and uses of nitrogen group elements
CO2	Understand the quantum mechanics of Black-body radiation and Planck's radiation law
CO3	Understand the Conformational analysis of butane – gauche and anti forms and cyclohexane.
CO4	Apply the Huckle's rule to determine the structure of benzene .
CO5	Apply the laws of thermodynamics, generalities and Zeroth law – kinds of energy
CO6	Analyse the First law of thermodynamics, properties of energy changes and properties of system

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I : Nitrogen Group **15**

Nitrogen group: Chemistry of hydrazine, hydroxylamine, hydrazoic acid and sodium bismuthate - Detection of arsenic – reactions of arsenites and arsenates - Oxygen group – a comparative study of oxygen family elements and compounds. Preparation, properties and uses of thionic acids and peracids of sulphur - Halogens – oxides and oxyacids of halogens – basic nature of iodine – chemistry of astatine - Pseudohalogens – preparation and properties and uses of Cyanogen and thiocyanogen and – comparison with halogens - Rare gases – structures of XeF_4, XeF_6, $XeOF_4$ and XeO_3.

UNIT II: Bond Properties **15**

Ionic Bond – formation of ionic bond and factors favouring its formation – lattice energy – Born-Haber cycle – characteristics of ionic compounds - Covalent bond – single and multiple bonds – characteristics of covalent compounds - VSEPR theory – shapes of simple inorganic molecules and ions containing lone pairs and bonds – polarizing power and polarisibility - Transition from

ionic to covalent character and vice versa – Fajan's rules - Coordinate bond: characteristics of coordinate covalent compounds.

UNIT III: Alicyclic compounds **15**

Nomenclature – methods of preparation of alicyclic compounds – Wurtz reaction – Diekmann ring closure - reaction of small ring compounds – cyclopropane and cyclobutane – Bayer's strain theory – heats of combustion and relative stabilities of cyclo alkanes – orbital picture of angular strain - Conformational analysis: Conformations of butane – gauche and anti forms - Conformations of cyclohexane – equatorial and axial forms – 1,2 diaxial interaction – fused ring systems – structure of cis and trans decalins.

UNIT IV: Aromatic Hydrocarbons and Aromaticity **15**

Benzene – resonance and resonance energy – molecular orbital picture of benzene – effect of substituents in benzene – classification of substituent groups – electrophilic aromatic substitution – mechanism – nitration, sulphonation, halogenation, Friedel-Craft acylation and alkylation – ortho-para ratio – preparation and reactions of alkyl benzenes – ring and side chain halogenations - Coal tar distillation products – petroleum fractionation – cracking – synthetic petrol – Fischer-Tropsh synthesis – octane number – cetane number – flash point – smoke point – anti-knocking agents - Polynuclear aromatic hydrocarbons – synthesis and reactions of naphthalene – anthracene and phenanthrene.

UNIT V: Thermodynamics I **15**

Types of systems – extensive and intensive variables – state and path functions –reversible and irreversible processes – zeroeth law of thermodynamics. Statement of the first law of thermodynamics – Joule mechanical equivalent of heat – internal energy – work done in isothermal reversible and irreversible processes – enthalpy – relationship between C_p and C_v – Joule-Thomson effect – Joule-Thomson coefficient – inversion temperature - **Thermo chemistry:** Hess's law and its applications – heats of reaction at constant volume and constant pressure – standard enthalpies of formation – enthalpy of combustion – measuring it with bomb calorimeter – enthalpy of neutralization – integral and differential heats of solution and dilution – temperature effects on enthalpy of reactions – Kirchoff equation – bond dissociation energy and its calculation from thermochemical data.

Text books

1. S.H. Maron and J.B. Lando, Fundamentals of Physical Chemistry, Macmillan limited, New York, 1966.
2. B.R. Puri and L.R. Sharma, Principles of Physical Chemistry, Shoban Lal Nagin chand and Co. 33rd edition, 1992.
3. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., 1996.
4. Bahl and Arun Bahl, Organic Chemistry, S. Chand and Sons, New Delhi, 2005.

Reference Books

5. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., Delhi, 1996.

6. J. E. Huheey, E. A. Kieter and R. L. Keiter, Inorganic Chemistry, 4th ed., Harper Collins,1993.
7. F. A. Cotton, G. Wilkinson, C. Murillo and M. Bochman, Advanced Inorganic Chemistry, 6th ed., John Wiley, New York, 1999.
8. T. Moeller, Inorganic Chemistry: A Modern Indroduction, Wiley, New York, 1990.
9. R. T. Morrison and R. N. Boyd, Organic Chemistry, 6th Edition, Printice-Hall Of India Limited, New Delhi, 1992.
10. B. Y. Paula, Organic Chemistry, 3rd Edition, Pearson Education, Inc.(Singapore), New Delhi, reprint, 2002.
11. T. W. Graham Solomons, Organic Chemistry, 6th edition, John Wiley and sons, 1996.
12. J. Rajaram and J.C. Kuriacose, Thermodynamics, Shoban Lal Nagin Chand and CO. 1986.
13. K. L. Kapoor, A Textbook of Physical chemistry, (volume-2 and 3) Macmillan, India Ltd, 1994.

Course Coordinator **HOD**

BCI202	**CORE- 5 - GENERAL CHEMISTRY - IV**	**L**	**T**	**P**	**C**
	Total Contact Hours - 75	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Mrs. S. Vinitha / Chemistry				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the basic concept of water technology and its applications.
CO2	Understand the electronic configuration and general characteristics of transition elements
CO3	Understand the inorganic compounds, Preparation, properties, structure and uses
CO4	Apply the electronic configuration and oxidation states of transition metals and their compounds
CO5	Apply the modern concepts of acids and bases by Arrhenius concept and Bronsted Lowry.
CO6	Analyse the hard and soft acids and bases (HSAB) by theoretical basis of hardness and softness

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT – I: PERIODIC PROPERTIES **15**

Atomic and ionic radii - factors influencing the magnitude of ionic radii - periodic variations of atomic and ionic radii - ionization energy - factors affecting the magnitude of ionization potential and its periodic variations - applications - electron affinity- factors influencing the magnitude of electron affinity - periodic variations - impact on chemical behavior- electronegativity -scales of

electronegativity - definition -periodic variations - correlation of ionization potential and electron affinity with electronegativity - applications in predicting and explaining the chemical behavior.

UNIT – II: TRANSITION ELEMENTS 15

Definition-electronic configuration - general characteristics of transition elements - comparison of the elements of first transition series (3d) with those of second(4d) and third(5d) series. Commercial forms of iron -manufacture of cast iron, wrought iron and steel - heat treatment of steels - classification of steels - passivity - rusting of iron and prevention of rusting.

UNIT – III: COMPOUNDS OF TRANSITION ELEMENTS 15

Preparation, properties, structure and uses of the following inorganic compounds titanium (IV) chloride – Zieglar Natta catalyst – vanadium pentoxide –potassium dichromate – potassium permanganate – Wilkinson's catalyst –potassium ferrocyanide – potassium ferricyanide – sodium nitro pruside – cuprous chloride – cupric chloride – auric chloride –mercurous chloride – mercuric chloride – distinction between mercurous and mercuric salts.

UNIT – IV: INNER TRANSITION ELEMENTS 15

Lanthanides – comparative study of lanthanide elements with respect to electronic configuration – atomic and ionic radii – oxidation states – complex formation and magnetic properties – lanthanide contraction – position in the periodic table -occurrence – principles of separation methods. Actinides – comparative study of actinide elements – comparison of lanthanides and actinides – position in the periodic table – extraction of thorium and uranium – sources of nuclear fuels in India.

UNIT – V: MODERN CONCEPTS OF ACIDS AND BASES 15

Arrhenius concept – Bronsted Lowry definition – Lux Flood definition – solvent system definition – Lewis definition – Usanovich definition – A generalized Acid Base concept – Hard and Soft Acids and Bases (HSAB) – classifications – theoretical basis of hardness and softness – classification of solvents – nonaquous solvents – liquid ammonia – liquid sulfurdioxide.

TEXT BOOKS

1. J. D. Lee, Concise Inorganic Chemistry, 5th ed., Blackwell Science, London, 1996.
2. F. A. Cotton, G. Wilkinson and P. L. Guas, Basic Inorganic Chemistry, 3rd ed., John Wiley,1994.
3. B. Y. Paula, Organic Chemistry, 3rd Edition, Pearson Education, Inc.(Singapore), New Delhi, reprint, 2002.
4. S.K. Dogra and S. Dogra, Physical Chemistry Through Problems, New age international, 4th edition 1996.

REFERENCE BOOKS

5. J. E. Huheey, E. A. Kieter and R. L. Keiter, Inorganic Chemistry, 4th ed., Harper Collins, New York, 1993.
6. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rd ed., W. H. Freeman and Co, London,1999.
7. Jerry March, Advanced Organic Chemistry, 4th Edition, John Wiley And Sons, New York,1992.
8. S. H. Pine, Organic Chemistry, 5th Edition, McGraw Hill International Edition, Chemistry Series, New York, 1987.
9. Gilbert. W. Castellan, Physical Chemistry, Narosa publishing house, third edition 1985.

Course Coordinator HOD

BMA203	MATHEMATICS –II	L	T	P	C
	Total Contact Hours – 60	4	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.P.Sumathi & Mathematics				

COURSE OBJECTIVES :-

To identify methods appropriate for solving problems. Apply methods to specific problems.

COURSE OUTCOMES (COs)

CO1	Understand about the relation and functions
CO2	To explain about the logic connectivity of the mathematical functions
CO3	Study about the importance of vector analysis
CO4	To explain detail about the steps involved in the differential equations
CO5	Study about the differentiation
CO6	State and explain to the student to understand all concepts thoroughly.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I - SETS, RELATIONS AND FUNCTIONS **12**

Sets- Sets- representation of sets- Types of sets- Operation on sets- Venn diagram. Relation- Types of relation- Equivalence relation. Function- types of functions- Composite of two functions- Composite of three functions.

UNIT II - MATHEMATICAL CONNECTIVES LOGIC **12**

Statements- Connectives- Conjunction- Disjunction- Negation- Tautology contradiction- Logical equivalence- tautological implications- arguments- validity of arguments – Normal forms – Principal disjunctive normal form - Principle conjunctive normal form.

UNIT III - VECTOR ANALYSIS 12

Scalar and Vector fields - Gradient, Divergence and Curl - Equations of motion in the vector notation - equations of motion (components) in Cartesian coordinates and spherical polar coordinates - equation of motion in the polar coordinates.

UNIT IV - - DIFFERENTIAL EQUATION 12

Differential Equation - Second order Differential Equation with constant coefficient. Problem based on R.H.S: e^{ax} ,x^n, $Sinax, Cosax$.

UNIT V - DIFFERENTIATION 12

Simple problems only – Maxima and minima of functions of single variable – Radius of curvature (Cartesian co– ordinate) – Partial differentiation – Euler's theorem.

TEXT BOOKS

1. Veerarajan. T, "Discrete Mathematics", 7 th Edition, Tata McGraw hill, 2006.[Unit I & II]
2. KayalalPachaiyappa & P.Duraipandian ,"Vector Analysis", S.Chand Publishing, 2014.
3. Smith &Bradlley "Calculus", 4th Edition, PHI 2007. [Unit IV – V]

Books for Reference:

1. S. Narayanan and T.K. ManickavasagamPillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.
2. Allied Mathematics by Dr. A. Singaravelu.

Course Coordinator **HOD**

BCI2L1	**CORE- 6 - MAJOR PRACTICAL - 2**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand about its importance of chemical played important role
CO4	Apply the detail about practical importance to be aware of the concepts from the basis.
CO5	Apply the estimation of some inorganic ions by basic methods.
CO6	Analyse the importance of handling and precision of experimental skills.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs /Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						L	H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

VOLUMETRIC ANALYSIS - II

1. Estimation of Ferrous Ammonium Sulphate using Standard Ferrous Ammonium Sulphate.
2. Comparison of strengths of Ferrous Ammonium Sulphates using Standard Potassium permanganate .
3. Comparison of strengths Potassium permanganates using Standard Ferrous Ammonium Sulphates
4. Comparison of strengths of Ferrous Sulphates using Standard Potassium permanganate .
5. Estimation of Copper -Standard Copper sulphate
6. Estimation of Potassium dichromate -Standard Potassium dichromate
7. Estimation of Copper by EDTA method.
8. Estimation of ferrous iron using Diphenyl amine / N-Phenylanthranillic acid as indicator.

Students must write short procedure for the given estimation in ten minutes during the Examination and submit the paper for evaluation.

Students must write short procedure for the given estimation in ten minutes during the Examination and submit the paper for evaluation.

REFERENCE BOOKS

1. Sundaram, Krishnan, Raghavan, Practical Chemistry (Part II), S. Viswanathan Co. Pvt.,1996.
2. B.S. Furniss, A.J. Hannaford, P.W. G. Smith, A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.
3. N.S. Ganapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S. Viswanathan Co. Pvt., 1998.
4. Vogel's Text Book of Quantitative Chemical Analysis. 5th Edi., ELBS/Longman England, 1989.

Course Coordinator **HOD**

BCI204	**Environmental Sciences**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES :-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and abiotic ecosystem.

COURSE OUTCOMES (COs)

CO1	Remember the fundamental concept of environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Understand the various environmental pollution, effects and prevention.
CO4	Apply the environmental legislations and environmental production act.
CO5	Apply the human rights, value education, environment and human health: women and child welfare, public awareness
CO6	Analyze the local area, local polluted site and local simple ecosystem.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L	H			H		H		
	CO2	H	L	H			H				
	CO3	H	L	H			H				
	CO4	H	L	H			H				
	CO5	H	L	H			H				
	CO6	H	L	H			H				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

Unit – I: Introduction to Environmental Sciences: Natural Resources: 6

Environmental sciences – relevance – significance – public awareness – forest resources – water resources – mineral resources – food resources – conflicts over resource sharing – exploitation – land use pattern – environmental impact – fertilizer – pesticide Problems - case studies.

Unit – II: Exosystem, Biodiversity and its conservation: 6

Ecosystem – concept – structure and function – producers, consumers and decomposers – food chain – food web – ecological pyramids – energy flow – forest, grassland, desert and aquatic ecosystem – definition – genetic, species and ecosystem diversity – biodiversity – definition – genetic, species and ecosystem diversity – values and uses of biodiversity – biodiversity at global, national (india) and local levels – hotspots, threats to biodiversity – conservation of biodiversity – insitu and ex-situ.

Unit – III: Environmental Pollution and Management 6

Environmental pollution – causes – effects and control measures of air, water , marine, soil, solid waste. Thermal, nuclear pollution and disaster management – floods, earth quake, cyclone and land slides, role of individuals in prevention of pollution – pollution case studies.

Unit – IV: Social issues – Human population: 6

Urban issues – energy – water conservation – environmental ethics – global warming – resettlement and rehabilitation issues – environmental legislations – environmental production act. 1986 – air, water, wildlife and forest B.C.A.: syllabus (CBCS) conservation act - population growth and explosion – human rights and value education – environmental health – HIV/AIDS – role of it in environment and human health – women and child welfare – public awareness – case studies.

Unit – V: Field Work:

Visit to a local area / local polluted site / local simple ecosystem – report submission.

Text book:

1. K. Kumarasamy, A. Alagappa Moses and M. Vesanthy, 2004, Environmental Studies, Bharathidasan University Pub, 1, Trichy.
2. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
3. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub., Trichy.

Reference book:

1. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
2. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub. Trichy.
3. G. TylerMiller, Scott Spoolman, 2018, Environmental science, 16th edition.

Course Coordinator **HOD**

BBC206	VALUE EDUCATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name & Department:- Ms. G. Vinothini, Commerce				

COURSE OBJECTIVES

To make the students learn about the features for life from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Recall the basic concept of human values, Social Value role of medias, Self-introspection – Self esteem
CO2	Understand the duties and responsibilities of individuals and role of media
CO3	Apply Salient features for life, : Truth, commitment,, honesty and integrity, forgiveness and love and also positive creative thinking
CO4	Demonstrate Universal declaration of Human rights, peace and nonviolence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship.
CO5	Analyze living and nonliving environmental balance, Ecological balance and conservations and enrichment
CO6	Manipulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	M					H		
	CO2	H	H	H		L					
	CO3	M	H	M	M						
	CO4	H	M	L							
	CO5	H	H	M			M				
	CO6	M	M	L							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		□					✓			
	Approval	Academic Council Meeting								

UNIT I **6**

Value education: Definition- relevance to present day – concept of human values – self introspection – Self esteem- duties and responsibilities of individuals- Social values- role of media in value building.

UNIT II **6**

Salient features for life: Truth, commitment,, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity and inclusiveness, Team work- positive creative thinking.

UNIT III **6**

Human rights: Universal declaration of Human rights- human rights violation – National integration – peace and non violence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship

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UNIT IV **6**

Environment and Ecological balance: Interdependent of all being – living and non living – the binding of man and nature – Environmental conservations and enrichment.

UNIT V **6**

Social evils : Corruption – cyber crime, terrorism, Alcoholism, Drug addiction, Dowry – Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.

TEXT BOOK

1. N. Arumugam, S. Mohana, Lr. Palkani- value based education- Saras Publication, 2009
2. DN Ghose, Value Education- dominant publishers, 2005
3. M.G. Chitakra, Education and Human values, A.P.H Publishing Corporation. New Delhi

REFERENCE BOOKS

1) For Life, for the future: Reserves and Remains – UNESCO Publications.
2) Values, A Vedanta kesari presentations, Sri Ramakrishna Math, Chennai

Course Coordinator **HOD**

SEMESTER – III

BAL301	**TAMIL – III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு & தமிழ்த்துறை				

COURSE OBJECTIVES :- காப்பிய இலக்கியம் மற்றும் நீதி இலக்கியத்தை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	ஐம்பெரும் காப்பியங்களை பற்றி அறிவர்
CO2	பிற்கால காப்பியங்களை பற்றி அறிவர்
CO3	முக்கால நீதி இலக்கியங்களை பற்றி அறிவர்
CO4	பிற்கால நீதி இலக்கியங்களை பற்றி அறிவர்
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றை பற்றி அறிவர்
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அலகு 1 **9**

சிலப்பதிகாரம்- இளங்கோவடிகள் - அடைக்கலக் காதை - 115-148, 201-219
மணிமேகலை - சீத்தலைச்சாத்தனார் -ஆபுத்திரன் திறம் அறிவித்த காதை -1 - 115
சீவக சிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார் இலம்பகம் -851 - 860

அலகு 2 **9**

கம்பராமாயணம் - **கம்பர்** - அயோத்திய காண்டம் - கங்கைப் படலம் - 10
தேம்பாவணி - வீரமாமுனிவர் - நாட்டுப் படலம் - 10
சீறாப்புராணம்-உமறுப்புலவர்- -மானுக்குப் பிணை நின்ற படலம் - 1- 10

அலகு 3 **9**

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10
நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10
இனியவை நாற்பது - பூதஞ் சேந்தனார் - 1 – 10

அலகு 4 **9**

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி - சிவப்பிரகாசர் - 8,12,18,24,39
புதிய ஆத்தி சூடி - பாரதியார் - 1- 25

அலகு 5 **9**

காப்பிய இலக்கிய வரலாறு , நீதி இலக்கிய வரலாறு

பாட நூல்கள்

1. ந.மு.வேங்கடசாமி நாட்டார், "சிலப்பதிகாரம்", ராமையா பதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணி மூலமும் உரையும்", சாரதா பதிப்பகம், 2014
3. கலைஞர் மு.கருணாநிதி, "திருக்குறள் கலைஞர் உரை", திருமகள் நிலையம், 2010

பார்வை நூல்கள்:

1. புலியூர்க் கேசிகன், "மணிமேகலை மூலமும் உரையும்", சாரதா பதிப்பகம், 2017
2. ஆசிரியர் குழு, "சீவக சிந்தாமணி மூலமும் உரையும்", சாரதா பதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2018
4. பத்மதேவன், "நாலடியார் மூலமும் உரையும்", கற்பகம் புத்தகாலயம், 2010
5. கதிர் முருகு, "நன்னெறி மூலமும் உரையும்", சாரதா பதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின் புதிய ஆத்திச்சூடி: ஒரு விளக்கவுரை" , 1999

Course Coordinator **HOD**

BEH301	**ENGLISH- III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				
COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills..					
COURSE OUTCOMES (COs)					
CO1	Remember and recollect the value of LSRW skills.				

CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		47th Academic Council Meeting								

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message - Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

Course Coordinator **HOD**

BCI301	**CORE – 7 - GENARAL CHEMISTRY- V**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department: - – Mrs. S. Vinitha / Chemistry				
COURSE OBJECTIVES :- To make the students learn about the chemistry from the basic and understood					

all theoretical background with all concepts understands thoroughly.											
COURSE OUTCOMES (COs)											
CO1	Remembaring knowledge about the properties and uses of the law of thermodynamics										
CO2	Understand about the theoretical concepts of atomic structure										
CO3	Understand the properties and uses of halogenated Hydrocarbons										
CO4	Apply the concept about the copper groups in transition elements										
CO5	Apply the importance of colloidal solution and liquids										
CO6	Analys time applications of Chemistry in day today life.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		47th Academic Council Meeting								

UNIT I: THERMODYNAMICS II **15**

Second law of thermodynamics: Need for the second law – Carnot cycle and statements of the second law – Carnot theorem and thermodynamic temperature scale. Concept of entropy – entropy changes during phase transitions – Trouton's rule – significance of entropy – entropy as a criterion of natural processes – Clausius inequality – entropy and disorder – entropy as a function of P, T and V – entropy of an ideal gas – entropy of mixing – thermodynamic equations of state – Maxwell's relations. Free energy concept: Maximum work and network – free energy functions – free energy as a criterion of natural processes – Gibbs-Helmholtz equations - The Third law: Nernst heat theorem – statement of the third law – evaluation of absolute entropies from third law – apparent exceptions to the third law.

UNIT II: INTRODUCTION TO ATOMIC STRUCTURE: 15

Failure of classical mechanics – Plank's quantum theory – photoelectric effect – Bohr theory of hydrogen atom – hydrogen spectrum – Rydberg's constant – Sommerfeld theory – DeBroglie equation – wave-particle duality – diffraction of electrons – Heisenberg's uncertainty principle – Compton effect. An elementary introduction to the postulates of quantum mechanics – the concept of operators and observables – the Schrodinger wave equation and the significance of ψ and ψ^2 – the concept of orbitals and shapes of atomic orbitals.

UNIT III: HALOGENATED HYDROCARBONS 15

Preparation of halo alkanes – Aliphatic nucleophilic substitution – mechanisms of S_N1, S_N2 and S_Ni reactions – effect of structure on substrate, solvent, nucleophilic and leaving group; Grignard reagents and its synthetic uses - Elimination reactions – Hoffmann and Saytzeff eliminations – E1 and E2 mechanisms – stereochemistry of E2 reactions in acyclic systems - Elimination versus Substitution. Aromatic nucleophilic substitution – benzyne mechanism and intermediate complex mechanism – effect of substituent on reactivity.

UNIT IV: COPPER GROUP – A COMPARATIVE STUDY 15

Alloys of copper – preparation and properties of CuCl and $CuCl_2$ – structure of Cu_2Cl_2 – chemistry of photography – preparation and properties of $AuCl_3$ – structure of $AuCl_3$ - Zinc group – a comparative study of zinc group elements - Extraction of mercury – properties and uses of mercury – amalgams – structure of mercurous ion.

UNIT – V: LIQUID AND COLLOIDAL STATES 15

Liquid state: Properties of liquids – vapour pressure – Trouton's rule – surface tension – surface energy – excess pressure in a drop – surface active agents – viscosity – effect of temperature on viscosity – Reynolds number – refractive index – specific refraction – molar refraction – optical activity – structure of liquids. Colloidal state - classification of colloids – properties – electrical properties – electrical double layer – zeta potential – coagulation and protection – Hardy – Schulze rules – flocculation value – gold number elctrokinetic properties – electrophoresis – electro osmosis – donnan membrane equilibrium - particle size determination by light scattering method – surfactants – types – micelles. Gels – preparative methods – types – thixotropy.

TEXT BOOKS

1. R. T. Morrison And R. N. Boyd, Organic Chemistry, 6th Edition, Printice-Hall Of India Limited, New Delhi, 1992.
2. T. W. Graham Solomons, Organic Chemistry, 6th edition, John Wiley and Sons, 1996.
3. B. Douglas, D. McDaniel and J. Alexander, Concepts and Models of Inorganic Chemistry,3rd ed., John Wiley, 1994.
4. P.W. Atkins, Physical Chemistry, 7th edition, Oxford university press, 2001.

REFERENCE BOOKS

1. T. Moeller, Inorganic Chemistry: A Modern Introduction, Wiley, New York, 1990.
2. J. D. Lee, Concise Inorganic Chemistry, 5th Ed., Blackwell Science, London, 1996.
3. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rd Ed., W. H. Freeman and Co, London,1999.
4. Sehan. N. Ege, Organic Chemistry, Structure And Reactivity, 3rd Edition, A.I.T.B.S., New Delhi, 1998.

Course Coordinator HOD

BCI3L1	**CORE- 8 - MAJOR PRACTICAL - 3**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	0	0	4	2
	Prerequisite course –				
	Course Coordinator Name & Department: -				

COURSE OBJECTIVES :- To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the knowledge about the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand bout its importanceof chemical played important role
CO4	Apply practical importance to be aware of the concepts from the basis.
CO5	Evaluate the importance of handling and precision of experimental skills
CO6	Analys the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		47^{th} Academic Council Meeting

SYSTEMATIC ORGANIC ANALYSIS

SYSTEMATIC ANALYSIS OF MONO FUNCTIONAL ORGANIC COMPOUNDS

Analysis of Simple Organic compounds

(a) characterization of functional groups

(b) confirmation by preparation of solid derivatives / characteristic colorreactions.

Note: Mono –functional compounds are given for analysis. In case of bi-functional compounds, students are required to report any one of the functional groups.

REFERENCES

1. N.S. Gnanapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S. Viswanathan Co. Pvt., 1998.
2. J.N. Gurthu and R. Kapoor, Advanced Experimental Chemistry (Organic), S. Chand and Co., 1987.
3. B.S. Furniss, A.J. Hannaford, P.W. G. Smith and A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.

Course Coordinator **HOD**

BPS302	ALLIED PHYSICS PAPER – I	L	T	P	C
	Total Contact Hours – 45	5	0	0	4
	Prerequisite course – Science / Mathematics Studied in Higher SecondaryStudies				
	Course Coordinator Name & Department: - Dr S. Anandhi / Physics				

COURSE OBJECTIVES :- To enhance the fundamental knowledge in Basic concepts of physics .To understand the concepts of Electrical and magnetic properties and study about various laws, circuits and analysis of different techniques

COURSE OUTCOMES (COs)

CO1	Remembering the basics of stress, strain, elastic constant, surface tension and viscosity
CO2	To learn the oscillation of time period using beam and microscope
CO3	To learn the Law of thermodynamic and adiabatic process
CO4	Remembering Faradays law and thermoelectric effects and Analyze the different types of induction coils
CO5	Evaluate the problems of electromagnetic circuits
CO6	Understand the diffraction, grating, telescope and microscope and their applications

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M		H			H		
	CO2			L		H					
	CO3	L	L	M	H	H					
	CO4	H		H		M					
	CO5	M	H	M		L					
	CO6	H	H	H	M						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		47th Academic Council Meeting

UNIT I - SIMPLE HARMONIC MOTION AND CIRCULAR MOTION

Composition of two Simple harmonic motions along a line and at right angles - Lissajous figures. Uniform circular motion - Acceleration of a particle in a circle - centripetal and centrifugal forces - centrifuge - motion of a Bicycle and a car around a circle - Banking on curved tracks.

UNIT II- PROPERTIES OF MATTER

Elasticity: Elastic constants - Bending of beams - young's modulus by nonuniform bending - energy stored in a Stretched wire - torsion in a wire - determination of rigidity modulus by torsional pendulum - Static torsion.

Viscosity: Coefficient of viscosity - Poissuelle's formula - Comparison of viscosities - burette method - Stoke's law - Terminal velocity - viscosity of highly viscous liquids - lubrication. Surface tension: Molecular theory of surface tension - Excess pressure inside a drop and bubble - surface tension by drop weight method - interfacial surface tension.

UNIT III - HEAT AND THERMODYNAMICS

Kinetic theory of gases - Vanderwaal's equation of state - Derivation of critical constants - Low temperature - Joule-Kelvin effect - Theory and applications - Liquification of gases - Linde's process - adiabatic demagnetisation - laws of thermodynamics - entropy - change of entropy in reversible and irreversible processes.

SOUNDTransverse vibration of a stretched string - Expression for the velocity of transverse waves - laws of transverse vibrations - A.C. Frequency measurement using sonometer - velocity of sound in a gas - ultrasonics - production and uses.

UNIT IV- ELECTRICITY AND MAGNETISM

Capacitor - energy of charged capacitors - Loss of energy due to sharing of charges - potentiometer - internal resistance of a cell and thermo emf measurement - Magnetic Field due to a current carrying conductor - Biot-Savart's law - field along the axis of a coil - force in a conductor carrying current in a magnetic field - Ballistic galvanometer - Circuit control and protective devices - switch - its types - fuses - circuit breaker - Relays.

UNIT V - GEOMETRICAL OPTICS Refraction - Normal refraction - Refractive index by microscope - by air cell - refraction at grazing incidence - grazing emergence in prisms - combination of two prisms to produce dispersion without deviation and deviation without dispersion - defects of images - coma, Distortion - Spherical and chromatic aberration in lenses.

BOOKS FOR STUDY AND REFERENCE:

1. Allied Physics by Dr.Dhanalakshmi Dr.Sabesan
2. Allied Physics by Kamalakkannan, Jayaraman.
3. Heat and thermodynamics by J.B. Rajam
4. Elements of properties of matter by Brij Lal and Subramanian
5. Mechanics by Narayanamoothy and others
6. Applied Electronics by R.S.Sedha.

Course Coordinator **HOD**

BPS3L2	**PHYSICS PRACTICAL I**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Designed by-Department of Physics				

COURSE OBJECTIVES:-

To gain the practical knowledge of measuring tools, bending of beams, time period of pendulum and surface tension of different liquids

COURSE OUTCOMES (COs)

CO1	Handling of basic practical tools such verinyre, screw gauge and microscope
CO2	Developing technical skills
CO3	Understand the concept of material science.
CO4	Understand the equations with real coefficients of different modules
CO5	To gain the knowledge of instrumentation techniques
CO6	Verification of laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M		H			H		
	CO2			L		H					
	CO3	L	L	M	H	H					
	CO4	H		H		M					
	CO5	M	H	M		L					
	CO6	H	H	H	M						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		47th Academic Council Meeting

LIST OF EXPERIMENTS FOR ALLIED PRACTICAL – I

1. Non-Uniform bending – Pin and Microscope.
2. Uniform bending-scale and Telescope.
3. Surface tension and Interfacial Surface tension by Drop weight Method.
4. Surface tension by Capillary rise Method.
5. Coefficient of viscosity of liquid – Variable Pressure head Method.
6. Thermal conductivity of a bad conductor – Lee's disc Method.
7. Spectrometer – Refractive index of a solid prism.
8. Spectrometer – Grating – Normal incidence.
9. Newton's Rings – 'R' determination.
10. Air wedge – Thickness of the given thin wire.

REFERENCES :

TEXT BOOKS:-

1. c.c ouseph, g.rangarajan- a text book of practical physics- s. viswanathan publisher- part i (1990)
2. c.c ouseph, c.rangarajan, r. balakrishnan- a text book of practical physics- s. viswanathan publisher-part ii (1996)

BOOKS FOR REFERENCE:-

1) s.l gupta and v.kumar- practical physics- pragati prakashan- 25th edition (2002).

Course Coordinator **HOD**

BAL001	BASIC TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name & Department :- ஸ்ரீதேவி & தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ் மொழியின் அடிப்படைக்கூறுகள் பற்றி அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ் எழுத்துக்களை அறிவர்
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளை அறிவர்
CO3	சொல்லமைப்பு பற்றி அறிவர்
CO4	சொற்களை உருவாக்கும் அறிவைப் பெறுவர்
CO5	சொற்களை தொடராக மாற்றும் திறனைப் பெறுவர்
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள் பற்றி தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval	Academic Council Meeting

அலகு – 1 **9**

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 **12**

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 **12**

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 **12**

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

.1 ஆறுமுகநாவலர், "தமிழ் இலக்கணம்", பாரி நிலையம், 2012
2. கழகப் புலவர் குழுவினர், "நன்னூல் – எழுத்ததிகாரம்", கழக வெளியீடு, 1996
3. கழகப் புலவர் குழுவினர், "நன்னூல் – சொல்லதிகாரம்", கழக வெளியீடு, 1996

பார்வை நூல்கள்

1. பவணந்தி முனிவர், "நன்னூல் - எழுத்ததிகாரம்", முல்லை நிலையம், 1994
2. சோம.இளவரசு,"நன்னூல் சொல்லதிகாரம்", : மெய்யப்பன் பதிப்பகம் , 2012
3. கூழங்கைத்தம்பிரான், "நன்னூல்", உலகத் தமிழாராய்ச்சி நிறுவனம், 1998

Course Coordinator **HOD**

BAL002	SPECIAL TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு & தமிழ்த்துறை				

COURSE OBJECTIVES :- பண்டைத் தமிழரின் நாகரிகமும் பண்பாடும் பற்றி அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழரின் அரசியல், தொழில், சமூக அமைப்பு பற்றி அறிவர்
CO2	தமிழர் திருமணமுறை, குடும்ப வாழ்வு பற்றி அறிவர்
CO3	தமிழரின் உணவு, உடை, உறைவிடம் பற்றி அறிவர்
CO4	தமிழரின் கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள் பற்றி அறிவர்
CO5	சங்ககால மருத்துவம், கட்டடக்கலைப் பற்றி அறிவர்
CO6	சங்ககால தமிழரின் நாகரிகம் பண்பாடு பற்றி தெளிவான அறிவைப் அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval	Academic Council Meeting

அலகு 1 **9**

நாகரிகமும் பண்பாடும் - சங்க காலத்து அரசியல் நிலை - சங்ககாலத் தொழிற்பிரிவினரும் சமூக அமைப்பும்

அலகு 2 **9**

பண்டைத் தமிழர் திருமணமுறை , நல்லறம் - குடும்ப வாழ்வு பற்றிய தமிழர் கொள்கை - பண்டையத் தமிழரின் உணவு, உடை, உறையுள்

அலகு 3 **9**

பண்டைத் தமிழரின் கல்விநிலை - பண்டைத் தமிழரின் வானியல் அறிவு - பண்டைத் தமிழரின் விளையாட்டும் பொழுதுபோக்கும்

அலகு 4 **9**

மகளிர் நிலை - சங்கத் தமிழரின் சமய வாழ்வு - சங்ககால விழாக்கள்

அலகு 5 **9**

இந்திய நாகரீகத்தில் தமிழ்ப் பண்பாட்டுக்கூறுகள் - மருத்துவக் கலை - தமிழகக் கோயில் கட்டிடக்கலை வளர்ச்சி

பாட நூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர் நாகரிகமும் பண்பாடும்", ஐந்திணைப் பதிப்பகம், 2010
2. பாவாணர், "பண்டைத் தமிழர் நாகரிகமும் பண்பாடும்", பூம்புகார் பதிப்பகம், 2012
3 கே.கே.பிள்ளை, "தமிழக வரலாறு மக்களும் பண்பாடும்", மணிவாசகர் பதிப்பகம், 2012

பார்வை நூல்கள்

1. நா. வானமாமலை, “தமிழர் பண்பாடும் தத்துவமும்”, அலைகள் வெளியீட்டகம், 2011

2. பேரின்பன், “தமிழர் வரலாறு:சில கேள்விகளும் தேடல்களும்”, அலைகள் வெளியீட்டகம், 2011

3. மா.இராசமாணிக்கனார், “தமிழக வரலாறும் தமிழர் பண்பாடும்”, செண்பகா பதிப்பகம், 2012

Course Coordinator **HOD**

SEMESTER-IV

BAL401	**TAMIL – IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு & தமிழ்த்துறை				

COURSE OBJECTIVES :- சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்
CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு 1 **9**

நற்றிணை - 10, 110, 129

குறுந்தொகை - 8, 25, 32

கலித்தொகை - 6, 37, 51

அலகு 2 **9**

புறநானூறு - 89, 109, 204

பதிற்றுப்பத்து - 42,46,49(5ம் பத்து)

அலகு 3 **9**

பொருநராற்றுப்படை - 151 - 213

பெரும்பாணாற்றுப்படை - 5 - 15,

- 170 - 184

அலகு 4 **9**

நெடுநல்வாடை - 1 - 25

பட்டினப்பாலை - 106 - 158

முல்லைப்பாட்டு - 1 - 28

அலகு 5 **9**

எட்டுத் தொகை வரலாறு - பத்துப்பாட்டு வரலாறு

பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணை மூலமும் உரையும்", உ.வே.சா நூல்நிலையம்,2013
2. புலியூர்க் கேசிகன், "குறுந்தொகை மூலமும் உரையும்", சாரதா பதிப்பகம், 2010
3. புலியூர்க் கேசிகன், "கலித்தொகை மூலமும் உரையும்", சாரதா பதிப்பகம், 2015

பார்வை நூல்கள்

1. புலியூர்க் கேசிகன், "புறநானூறு மூலமும் உரையும்", சாரதா பதிப்பகம், 2010
2. ஔவை சு.துரைசாமிப் பிள்ளை, "பதிற்றுப்பத்து உரை", சாரதா பதிப்பகம், 2008
3. கதிர் முருகு, "பத்துப்பாட்டு மூலமும் உரையும்", சாரதா பதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்க இலக்கியம்", மணிவாசகர் பதிப்பகம், 2006

Course Coordinator **HOD**

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				
COURSE OBJECTIVES:- To focus on the balanced development of the English language communication skills.					
COURSE OUTCOMES (COs)					
CO1	Remember the basic concepts of English literature				
CO2	Understand the importance of the English language.				
CO3	Apply the themes and values by comprehending the given text.				
CO4	Analyse the grammar and the literary texts.				
CO5	Evaluate the characters and the genre prescribed.				
CO6	Create comprehensive essays efficiently.				

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		47th Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle** - **Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar** - **Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Macbeth", Macmillan Publisher, 2014

Course Coordinator **HOD**

BCI401	**CORE- 9 - GENERAL CHEMISTRY - VI**				**L**	**T**	**P**	**C**			
	Total Contact Hours – 60				3	1	0	4			
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department: - Mrs. K. Kalpana / Chemistry										
COURSE OBJECTIVES :- To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.											
COURSE OUTCOMES (COs)											
CO1	Remember the knowledge about the properties and uses of coordination compounds										
CO2	Understand about the theoretical concepts of reactions of coordination compounds										
CO3	Understand properties and uses of alcohol, ether and carbonyl compounds										
CO4	Apply the detail about the concepts involved in carbonyl compounds										
CO5	Apply the importance of solution										
CO6	Analys the real time applications of Chemistry in day today life.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						

4	Approval		47th Academic Council Meeting

UNIT I - COORDINATION COMPOUNDS: 15

Types of ligands and examples – IUPAC nomenclature of complex compounds – isomerism in coordination compounds. Stability constant – determination by Job's method (principle only) - Detection of complexes in solution - Metal carbonyls: preparation and properties of mononuclear carbonyls – EAN rule in carbonyls – bonding in carbonyls – metal nitrosyls: classification, preparation and properties – bonding – brown ring compound - Theories Of Coordination Compounds: Valence bond and crystal field theories – molecular orbital and ligand field theories (an elementary treatment) – high spin and low spin complexes (octahedral and tetrahedral) – crystal field stabilization energy – magnetic properties of coordination complexes (spin contribution only).

UNIT II - REACTIONS OF COORDINATION COMPOUND: 15

Unimolecular and bimolecular nucleophilic substitution reactions: S_N1, S_N2 and S_N1CB mechanisms – trans effect – definition, explanation and synthetic uses - Applications of complexes in quantitative analysis – estimation of nickel using DMG and aluminium using oxine – structure of EDTA and its complexes – complexometric titrations – principles and applications – biologically important coordination compounds – chlorophyll, haemoglobin and vitamin B_{12}.

UNIT III: ORGANIC REAGENTS 15

Alcohols: Synthetic methods – distinction between primary, secondary and tertiary alcohols – polyhydric alcohols: chemistry of glycol and glycerol – cleavage reactions with periodic acid, lead tetra acetate and osmium tetroxide – unsaturated alcohols: preparation and properties of allyl alcohol - **Ethers:** Synthesis and reactions of ethers – cleavage by acids – anisole and 1,4-dioxane – epoxides: preparation and properties - Thioalcohols and thioethers: General methods of preparation of thioalcohols – properties and uses of ethyl mercaptan – general methods of preparation of thioethers – ethyl sulphide – mustard gas.

UNIT IV: CARBONYL COMPOUNDS 15

Carbonyl group – polarization of C= O bond – reactivity of carbonyl group – acidity of α-hydrogen – nucleophilic addition to carbonyl bond – HCN, $NaHSO_3$, NH_3, alcohols and Grignard reagents: condensation with hydrazine, phenyl hydrazine, semi carbazide – mechanism. Aldoximes and ketoximes – mechanism of aldol, Perkin, Knoevenegal and benzoin condensations – mechanisms of Claisen, Reformatsky, Wittig, Cannizarro and Dieckmann reactions – mechanisms of reduction with sodium borohydride, $LiAlH_4$. Wolff-Kishner and MPV reductions – mechanisms of haloform reaction and Michael addition.

UNIT V: SOLUTION 15

kinds of solutions and methods for expressing concentration – molarity, molality, mole fraction, normality, mass fraction, parts per million – ideal solutions – raoult's law - solubility of gases in liquids – henry's law - pressure – composition and temperature – composition diagrams – deviation from ideal behaviour for completely miscible liquid systems – fractional distillation – colligative properties - relation between colligative properties and molecular mass - abnormal molecular mass – vant hoff factor. thermodynamic derivation of kf and kb.

TEXT BOOKS

1. S.H. Maron and J.B. Lando, Fundamentals of Physical Chemistry, Macmillan limited, New York, 1966.
2. B.R. Puri and L.R. Sharma, Principles of Physical Chemistry, Shoban Lal Nagin chand and Co. 33rd edition, 1992.

3. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., 1996.
4. Bahl and Arun Bahl, Organic Chemistry, S. Chand and Sons, New Delhi, 2005.

REFERENCE BOOKS

5. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., Delhi, 1996.
6. J. E. Huheey, E. A. Kieter and R. L. Keiter, Inorganic Chemistry, 4th ed., Harper Collins,1993.
7. F. A. Cotton, G. Wilkinson, C. Murillo and M. Bochman, Advanced Inorganic Chemistry, 6th ed., John Wiley, New York, 1999.
8. T. Moeller, Inorganic Chemistry: A Modern Indroduction, Wiley, New York, 1990.

Course Coordinator **HOD**

BCI4L1	**CORE-10-MAJOR PRACTICAL – 4**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Mrs. K. Kalpana / Chemistry				

COURSE OBJECTIVES :- To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)	
CO1	Remember the knowledge about the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand and know about its importanceof chemical played important role
CO4	Apply the detail about practical importance to be aware of the concepts from the basis.
CO5	Apply the importance of handling and precision of experimental skills
CO6	Analys the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		47th Academic Council Meeting

ANALYSIS OF A MIXTURE CONTAINING TWO CATIONS AND TWO ANIONS OF WHICH ONE WILL BE AN INTERFERING.

I.CATIONS TO BE STUDIED:

Lead, Copper, Bismuth, Cadmium, Iron, Zinc
Manganese, Cobalt, Nickel, Barium, Calcium, Strontium and Ammonium.

II.ANIONS TO BE STUDIED:

Carbonate, Sulphate, Nitrate, Chloride, Bromide, Borate, Oxalate and Phosphate.

REFERENCE BOOKS:

1. Sundaram, Krishnan, Raghavan, Practical Chemistry (Part II), S. Viswanathan Co. Pvt.,1996.
2. B.S. Furniss, A.J. Hannaford, P.W. G. Smith, A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.
3. N.S. Ganapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S. Viswanathan Co. Pvt., 1998.
4. Vogel's Text Book of Quantitative Chemical Analysis. 5th Edi., ELBS/Longman England, 1989.
5.

Course Coordinator **HOD**

BPS402	ALLIED PHYSICS PAPER – II	L	T	P	C
	Total Contact Hours – 45	5	0	0	4
	Prerequisite course – Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr S. Anandhi / Physics				

COURSE OBJECTIVES:- This course is to high light the Modern Physics and digital Electronics

To enhance the fundamental knowledge in Basic concepts of physics and t o understand the concepts of Electrical and magnetic properties and study about various laws, circuits and analysis of different techniques

COURSE OUTCOMES (COs)	
CO1	Understand the basic concepts of wave mechanics.
CO2	To Learn about the principles of nuclear reactions.
CO3	Acquire knowledge about the renewable and non-renewable energies.
CO4	Understand the concepts of crystals and optical communication.
CO5	Understand the basic concepts of electronics.
CO6	Understand the basic concepts of utilization of commercial devices and some applications.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M		H			H		
	CO2			L		H					
	CO3	L	L	M	H	H					
	CO4	H		H		M					
	CO5	M	H	M		L					
	CO6	H	H	H	M						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		47^{th} Academic Council Meeting							

UNIT IELECTROSTATICS

Electrostatics Coulomb's inverse square law – Gauss theorem and its applications (Intensity at a point due to a charged sphere & cylinder) – Principle of a capacitor – Capacity of a spherical and cylindrical capacitors – Energy stored in a capacitor – Loss of energy due to sharing of charges - Capacitors in series and parallel – Types of capacitors.

UNIT II MAGNETISM

Magnetism Intensity of magnetization – Susceptibility – Types of magnetic materials – Properties of para, dia and ferromagnetic materials – Cycle of magnetization – Hysteresis – B-H curve – Applications of B-H curve – Magnetic energy per unit volume – Ferromagnets, ferrimagnets and their applications.

UNIT III ATOMIC PHYSICS

Atomic Physics Atom Models: Sommerfield's and Vector atom Models – Pauli's exclusion Principle – Various quantum numbers and quantization of orbits. X-rays: Continuous and Characteristic X-rays – Mosley's Law and importance – Bragg's law – Miller indices – Determination of Crystal Structure by Laue's Powder photograph method.

UNIT IV NUCLEAR PHYSICS

Nuclear Physics Introduction – Nucleus – Classification of Nuclei – Nuclear Size – Charge – Mass and Spin – Liquid drop model.Nuclear Radiations and their properties, particle accelerators – Betatron and Proton Synchrotron - Four types of reactions – Elementary particles and their classifications.

UNIT V DIGITAL ELECTRONICS

Digital Electronics Decimal – Binary – Octal and Hexa Decimal number systems and their Mutual Conversions – 1's and 2's complement of a Binary number and Binary arithmetic (Addition, Subtraction, Multiplication and Division) – Binary Subtraction by 1's and 2's complement method – Basic logic gates – AND, OR, NOT, NAND, NOR and EXOR gates –

NAND and NOR as universal building gates – Boolean Algebra – Laws of Boolean Algebra – De Morgan's Theorems – Their verifications using truth tables.

BOOKS FOR STUDY

1. R. Murugesan., Electricity and Magnetism. S. Chand & Co, New Delhi, Third Revised edition, 2001.
2. R. Murugeshan, Kiruthiga Sivaprasath, Modern Physics., S. Chand & Co, New Delhi, First edition, 1984,.
3. R. S. Sedha, A text book of Digital Electronics, S. Chand & Co, New Delhi, First edition ,2004.

BOOKS FOR REFERENCE

1. Narayanamurthi, Electricity and Magnetism, The National Publishing Co, First edition, 1988.
2. J. B. Rajam, Atomic Physics., S. Chand & Company Limited, New Delhi, First edition, 1990.
3. B. N. Srivastava, Basic Nuclear Physic, Pragati Prakashan, Meerut, 2005.
4. Albert Paul Malvino, Digital principles and Applications, McGraw-Hill International Editions, New York, 2002.

Course Coordinator **HOD**

BPS4L2	**PHYSICS PRACTICAL II**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Designed by-Department of Physics				

COURSE OBJECTIVES:-

To gain the practical knowledge of measuring tools, bending of beams, time period of pendulum and surface tension of different liquids

COURSE OUTCOMES (COs)

CO1	Handling of basic practical tools such verinyre, screw gauge and microscope
CO2	Developing technical skills
CO3	Understand the concept of material science.
CO4	Understand the equations with real coefficients of different modules
CO5	To gain the knowledge of instrumentation techniques
CO6	Verification of laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M		H			H		
	CO2			L		H					
	CO3	L	L	M	H	H					
	CO4	H		H		M					
	CO5	M	H	M		L					
	CO6	H	H	H	M						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		47th Academic Council Meeting							

ALLIED PRACICAL – II- LIST OF EXPERINCE

1. Logic Gates (AND, OR, NOT, NAND, NOR and EX-OR) Using IC's.

2. NAND and NOR as Universal Gates.

3. Verification of De-Morgan's Theorems.

4. Half –Adder and Half –Subtractor using logic gates.

5. Full Adder and Full Subtractor using logic gates.

6. Single Stage Amplifier.

7. Potentiometer-Measurement of Current.

8. Potentiometer-Calibration of low range voltmeter.

9. Carey Foster's Bridge- Specific Resistance.

10. Mathematical Operator-Addition, Subtraction using OP-Amp.

REFERENCES :

TEXT BOOKS:-

1. c.c ouseph, g.rangarajan- a text book of practical physics- s. viswanathan publisher- part i (1990)
2. c.c ouseph, c.rangarajan, r. balakrishnan- a text book of practical physics- s. viswanathan publisher-part ii (1996)

BOOKS FOR REFERENCE:-

1. S.L Gupta and V.K. kuumar- practical physics- pragati prakashan- 25th edition (2002).

Course Coordinator **HOD**

BAL003	**BASIC TAMIL – II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Basic Tamil – I				
	Course Coordinator Name & Department :- ஸ்ரீதேவி & தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ் மொழியின் அடிப்படைக்கூறுகள் பற்றி அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ் மொழியின் சொல் வகை, திணை, பால் பாகுபாடு பற்றி அறிவர்
CO2	அடுக்குத் தொடர், இரட்டைக் கிளவி, ண,ன,ர,ற,ள,ழ வேறுபாடு பற்றி அறிவர்
CO3	பத்திகளை சுருக்கியும் , விரிவாக்கி எழுதும் அறிவைப் பெறுவர்
CO4	சொற்களை கையாண்டு உரையாடுவது பற்றி பெறுவர்
CO5	கட்டுரை, கடிதம் எழுதும் அறிவைப் பெறுவர்
CO6	தமிழ் மொழியில் சரளமாக பேசும் எழுதும் திறனைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		Academic Council Meeting							

அலகு – 1 **12**

1.1 தமிழ் மொழி அறிமுகம்
1.2 சொல் வகைகள்
1.3 திணை, பால் பாகுபாடு

அலகு – 2 **12**

2.1 அடுக்குத் தொடர், இரட்டைக் கிளவி
2.2 ஒரு ஓர் வேறுபாடு
2.3 ண,ன,ர,ற,ள,ழ வேறுபாடு

அலகு – 3 **12**

3.1 பத்தியிலிருந்து வினாக்களுக்குரிய விடைகளை கண்டறியும் பயிற்சி
3.2 சுருக்கி வரைதல்
3.3 விரிவாக்கி எழுதுதல்

அலகு – 4 **9**

4.1 உரையாடல்
4.2 கட்டுரை
4.3 மடல் வரைதல்

பாட நூல்கள்

1. மருதூர் அரங்கராசன், “தவறின்றித் தமிழ் எழுத”, ஐந்திணைப் பதிப்பகம், 2012
2. ஞா.தேவநேயப்பாவாணர், “உயர்தரக் கட்டுரை இலக்கணம்”, கௌரா பதிப்பகம்,2013
3. க. கயிலாயநாதன், “தமிழ் மொழி விளக்கம்”, முல்லை நிலையம், 2006

பார்வை நூல்கள்

1. பாரதிதாசன், "தவறின்றித் தமிழ் எழுத", நாம் தமிழர் பதிப்பகம், 2013
2. ஆசிரியர் குழு, "கடிதம் வரைதல்', லியோ பப்ளிகேஷன்ஸ், 2013
3. பாவாணர், "கட்டுரை வரைவது எப்படி?", தமிழ்மண் பதிப்பகம், 2012

Course Coordinator **HOD**

BAL004	SPECIAL TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – **SPECIAL TAMIL – I**				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு & தமிழ்த்துறை				

COURSE OBJECTIVES :- நாட்டுப்புற வாழ்வியலை பற்றி அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	தாலாட்டு மற்றும் குழந்தைப் பாடல்கள் பற்றி அறிவர்
CO2	தொழிற்பாடல், காதல் பாடல் , கொண்டாட்டப் பாடல்கள் பற்றி அறிவர்
CO3	சங்ககால மக்களின் விடுகதை, நம்பிக்கை, சடங்குகள் பற்றி அறிவர்
CO4	பழமொழிகள் , நாட்டுப்புற மருத்துவம், சமய வழிபாடுகள் பற்றி அறிவர்
CO5	நாட்டுப்புற இலக்கிய வரலாறு பற்றி அறிவர்
CO6	வாய்மொழி இலக்கியம் மூலம் சங்ககால மக்களின் வாழ்வியலை அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval	Academic Council Meeting								

அலகு 1 **9**

தாலாட்டுப் பாடல் - குழந்தைப் பாடல் - விளையாட்டுப் பாடல்

அலகு 2

தொழிற்பாடல்கள் - காதல் பாடல்கள் - கொண்டாட்டப் பாடல்கள்

அலகு 3 **9**

விடுகதைகள் - நம்பிக்கைகள் - சடங்குகள்

அலகு 4 **9**

பழமொழிகள் - நாட்டுப்புற மருத்துவம் - சமய வழிபாடுகள்

அலகு 5 **9**

நாட்டுப்புற இலக்கிய வரலாறு

பாட நூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புற இயல் ஆய்வு", மணிவாசகர் பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புற இலக்கிய வரலாறு", காவ்யா பதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர் நாட்டுப்பாடல்கள்", நியூ செஞ்சுரி புக் ஹவுஸ், 2014

பார்வை நூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புற பாடல் வகைகள்", புலமை வெளியீடு, 1982
2. சரசுவதி வேணுகோபால், "தமிழக நாட்டுப்புறவியல்", தாமரை வெளியீடு, 1981
3. கழனியூரன், "நாட்டுப்புறவியல் கட்டுரைகள்", காவ்யா பதிப்பகம், 2014

Course Coordinator **HOD**

SEMESTER – IV

BCI501	**CORE- 11 - ORGANIC CHEMISTRY - I**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department: - – Dr. P. Paulraj / Chemistry				

COURSE OBJECTIVES: -

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)	
CO1	Remember the knowledge about the properties and uses of carboxylic acid
CO2	Understand about the theoretical concepts of tautomerisms
CO3	Understand about the properties and uses of Nitro compounds
CO4	Apply the detail about the phenolic groups and organic dyes
CO5	Apply the importance of nomenclature of amine and phenols
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/POs**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I - CARBOXYLIC ACIDS: 15

Nomenclature of Carboxylic acids– preparation and properties of formic, acetic and benzoic acid - Ionization of carboxylic acids – acidity constants – comparison of acid strength of substituted aliphatic acids – acid strength of substituted benzoic acids – Hammett and Taft equation - Dicarboxylic acids: Preparation and properties of oxalic, malonic, succinic, glutaric and adipic acids – action of heat – phthalic acid - Substituted carboxylic acids – Crotonic acid – Lactic acid and tartaric acids – salicylic acid.

UNIT II: ESTERS 15

Malonic and aceto acetic esters – synthetic uses of malonic and aceto acetic esters - Tautomerism – definition – keto-enol tautomerism – Identification of enol form and characteristic reactions of ketone and enol forms – estimation of enol form – amido-imido and nitro-acinitro tautomerisms - Oils and fats – definition – distinction between oil and fats – classification of oils – hydrogenation of oils – acid value, saponification value,Iodine value and RM value – soaps and detergents – manufacture of soap – cleaning action of soap and synthetic detergents.

UNIT III: NITRO COMPOUNDS: 15

Aliphatic nitro compounds: general methods of preparation and properties - Aromatic nitro compounds: Reduction of nitrobenzene in acidic, neutral and alkaline media. Conversion of nitrobenzene to ortho, para and meta dinitro benzenes – TNT.

UNIT IV: AMINES 15

Aliphatic and aromatic amines: relative basic characters. Separation of amine mixtures – distinction between primary, secondary and tertiary amines, aliphatic and aromatic amines. Ring substitution in aromatic amines, diazotisation and its mechanism – coupling – synthetic uses of diazonium salt. Diazomethane and diazoaceticester – preparation, structure and synthetic uses. Phenylene diamines. Sulphanilic acid, sulphanilamide, saccharin and chloramine-T - Amino acids and Proteins: Classification, preparation and properties of amino acids – Zwitterions isoelectric points – peptide synthesis – end group analysis.

UNIT V: PHENOLS: 15

Acidity of phenols – explanation on the basis of resonance stabilization. Ring substitution of phenols – orientation of phenolic group towards electrophiles– coupling with diazonium salts – Kolbe's reaction, Riemer-Tiemann reaction, Gattermann reaction – Laderer-Manese, Hoesh reaction. Catechol, resorcinol, quinol, pyrogallol, phloroglucinol and hydroxy quinol. α and β-naphthol.

TEXT BOOKS

1. R. T. Morrison And R. N. Boyd, Organic Chemistry, 6th Edition, Printice-Hall Of India Limited, New Delhi, 1992.
2. T. W. Graham Solomons, Organic Chemistry, 6th edition, John Wiley and Sons, 1996.
3. B. Y. Paula, Organic Chemistry, 3rd Edition, Pearson Education, Inc.(Singapore), New Delhi, reprint, 2002.
4. Bahl and Arun Bahl, Organic Chemistry, S. Chand and Sons, New Delhi, 2005.

REFERENCE BOOKS

5. Jerry March, Advanced Organic Chemistry, 4th Edition, John Wiley And Sons, New York,1992.
6. Hendrickson, Cram And Hammond, Organic Chemistry, 3rd Edition, McGraw-Hill Kogakusha, Limited, 1970.

7. Francis A. Carey, Organic Chemistry, 3rd edition, Tata-McGraw Hill Publications, New Delhi, 1999.
8. R. T. Morrison and R. N. Boyd, Organic Chemistry, 6th Edition, Printice-Hall Of India Limited, New Delhi, 1992.

Course Coordinator **HOD**

BCI502	**CORE – 12 - INORGANIC CHEMISTRY - I**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the knowledge about the introduction of nuclear chemistry
CO2	Understand about the theoretical concepts involved in nuclear Chemistry
CO3	Understand about the properties and uses of industrial chemistry
CO4	Apply the detail about the organometallic concepts
CO5	Apply the Organo metallic compounds to biological applications.
CO6	Analyze the structure of nanoparticles:nano cluster, nano rod, nanotube (CNT) and nanowire.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

UNIT I: SOLID STATE CHEMISTRY II **15**

Types of solids: crystalline, amorphous and poly crystalline – elements of crystal symmetry – unit cell – space lattice – types of lattice – crystal system – Bragg's equation – X-ray diffraction and crystal structure – Laue's and powder method – Miller indices – lattice energy and its determination by Born-Haber cycle – Born-Lande equation –Structure of inorganic solids –

limiting radius ratio – ionic solids of type AX – zinc sulphide, NaCl, CsCl – ionic solids of type AX_2 – CaF_2, rutile.

UNIT II: SOLID STATE CHEMISTRY II 15

Metallic bonding – theories of metallic bonding – electron gas, Pauling and band theories - Structure of alloys – substitutional and interstitial alloys – solid solutions – Hume-Rothary ratio - Defects in crystals – Frenkel and Schottky defects – metal excess and metal deficiency defects - Semi-conductors – extrinsic and intrinsic – n-type and p-type. Superconductivity.

UNIT III: TRANSITION METALS AND THEIR COMPOUNDS: 15

Group study of titanium, vanadium, chromium and manganese – general characteristics – electronic configuration and oxidation states – extraction of titanium and vanadium – chemistry of titanium (IV) and vanadium (V) compounds - Commercial forms of iron – manufacture of cast iron – properties – compounds of iron – potassium ferrocyanide, potassium ferricyanide, sodium nitroprusside and ferrocene. Cobalt: complexes of cobalt (II) and cobalt (III). Nickel – extraction – square planar complexes of nickel.

UNIT IV –NON CONVENTIONAL ENERGY SOURCES AND DEVISES 15

Nuclear fission and nuclear fusion reactions – differences between nuclear fission and nuclear fusion reactions – nuclear chain - Reactions – nuclear energy critical mass - super critical mass - sub - critical mass Light water nuclear reactor for power generation (block diagram only) – breeder reactor.Fuel cells – hydrogen – oxygen fuel cell - Batteries :Primary and secondary Batteries – differences between Primary and secondary Batteries - Secondary batteries :Lead–acid storage battery –working –uses.

UNIT V - SOME SPECIAL COMPOUNDS 15

Clathrates – examples – structure of quinol-water complex – characteristics - inorganic polymers – homo atomic and hetero atomic – borazines – silicones – composition – preparation, properties, structure and uses – metal alkyls – coordination polymers – phosphonitrilic polymers - Silicates – classification – disilicate anions – examples and structures of one, two and three dimensional silicates – beryls – asbestos – talc – mica – feldspar – zeolites and ultramarines.

TEXT BOOKS

1. J. D. Lee, Concise Inorganic Chemistry, 5th Ed., Blackwell Science, London, 1996.
2. F. A. Cotton, G. Wilkinson and P. L. Guas, Basic Inorganic Chemistry, 3rd ed., John Wiley,1994.
3. B. Douglas, D. McDaniel and J. Alexander, Concepts and Models of Inorganic Chemistry,3rd ed., John Wiley, 1994.
4. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., 1996.

REFERENCE BOOKS

5. J. E. Huheey, E. A. Kieter and R. L. Keiter, Inorganic Chemistry, 4th ed., Harper Collins, New York, 1993.
6. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rd ed., W. H. Freeman and Co, London,1999.
7. T. Moeller, Inorganic Chemistry: A Modern Introduction, Wiley, New York, 1990.
8. J. D. Lee, Concise Inorganic Chemistry, 5th Ed., Blackwell Science, London, 1996.

Course Coordinator **HOD**

BCI503	CORE – 13 - PHYSICAL CHEMISTRY - I	L	T	P	C
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. A. Manikandan/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the properties and uses of Thermodynamic concepts
CO2	Understand about the theoretical concepts of phase rule
CO3	Understand properties and uses of electrochemistry
CO4	Apply the detail about the electromotive force
CO5	Apply the importance of corrosion and its control
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I: THERMODYNAMICS IV: **15**

Systems of variable composition – partial molar properties – chemical potential of component in an ideal mixture – Gibbs-Duhem equation variation of chemical potential with T, P and X - Chemical equilibrium – thermodynamic derivation of the law of mass action thermodynamic interpretation of the Le Chatelier principle – the reaction isotherm – Van't Hoff's equation and

isochore – Clausius-Clapeyron equation and its applications - Solutions: ideal and non-ideal solutions – activity and activity coefficients – Raoult's law and Henry's law and deviations - Dilute solutions and colligative properties – thermodynamic relationships – determination of molecular weights of solutes – abnormal molecular masses - Nernst distribution law and applications.

UNIT II: PHASE RULE **15**

Phase equilibria: meaning of the terms phase, components and degrees of freedom – derivation of Gibbs Phase rule – phase equilibria of one component systems – water, CO_2 and sulphur systems - Two component systems: solid-liquid equilibria – simple eutectic Pb-Ag systems - Efflorescence and deliquescence - Liquid-liquid mixtures: partially miscible– liquid systems – phenol – water system – effect of impurities on CST – phenol-triethylamine–H_2O and nicotine-H_2O systems. Completely miscible mixtures fractional distillation – azeotropes temperature-composition diagrams – Immiscible liquids steam distillation.

UNIT III - ELECTROCHEMISTRY **15**

Introduction – Comparison of Metallic conduction with Electrolytic conduction – Arrhenius Ionic Theory – Debye Huckel Theory of strong electrolytes – Relaxation Effect – Electrophoretic Effect – Activity and activity coefficient - Conductivity of Electrolytes – Specific conductivity – Equivalent conductivity – Molar conductivity – measurement of conductance – Cell constant – variation of specific conductance with dilution – Variation of equivalent conductance with dilution – Curves for HCl, NaCl , $BaCl_2$ and CH_3COONa – degree of ionization.

UNIT IV - ELECTROMOTIVE FORCE **15**

Redox reactions – Electrode Potential – measurement of electrode potential – Nernst's equation for electrode potential – importance of electrode potential – electrochemical series – Electrochemical cell – representation of a Galvanic cell – Western Standard Cadmium cell – E.M.F. of an electrochemical cell –Concentration cell – applications – Reference electrodes – Hydrogen electrode – metal-metal ion electrodes – calomel electrode – ion selective electrode – Glass electrode – quinhydrone electrode – Potentiometric Titrations.

UNIT V - CORROSION AND ITS CONTROL **15**

Dry or Chemical Corrosion – oxidation corrosion –corrosion by other gases – liquid metal corrosion – Wet or Electrochemical corrosion – Mechanism of Wet or Electrochemical corrosion – Galvanic (or Bimetallic) Corrosion – Concentration cell corrosion – Passivity – Galvanic series – Factors influencing corrosion – Corrosion control – (Protection Against Corrosion)

TEXT BOOKS

1. S.H. Maron and J.B. Lando, Fundamentals of Physical Chemistry, Macmillan limited, New York, 1966.
2. B.R. Puri and L.R. Sharma, Principles of Physical Chemistry, Shoban Lal Nagin chand and Co. 33rd edition, 1992.
3. P.W. Atkins, Physical Chemistry, 7th edition, Oxford university press, 2001.
4. S.K. Dogra and S. Dogra, Physical Chemistry Through Problems, New age international, 4th edition 1996.

REFERENCE BOOKS

5. Gilbert. W. Castellan, Physical Chemistry, Narosa publishing house, third edition 1985.
6. Irving M. Klotz and Robert M. Rosenberg, Chemical Thermodynamics, John Wiley and sons, Inc. 1994.
7. J. Rajaram and J.C. Kuriacose, Thermodynamics, Shoban Lal Nagin Chand and CO. 1986.

8. K. L. Kapoor, A Textbook of Physical chemistry, (volume-2 and 3) Macmillan, India Ltd, 1994.

Course Coordinator **HOD**

BCI5L1	**CORE 14–MAJOR PRACTICAL – 5**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand about the importance of chemical played on important role
CO4	Apply the detail about practical importance to be aware of the concepts from the basis.
CO5	Apply the importance of handling and precision of experimental skills
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						L	H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

1. Conductometry-Acid-alkali titrations.
2. Conductometry-Precipitation titrations.
3. Conductometry-Displacement titrations.
4. Kinetics-Saponification of Ester-Determination of order of reaction.
5. Potentiometric titrations-Acid-alkali titrations.

6. Potentiometric titrations-Redox titrations.

REFERENCES:

1. Sundaram, Krishnan, Raghavan, Practical Chemistry (Part II), S. Viswanathan Co. Pvt.,1996.
2. B.S. Furniss, A.J. Hannaford, P.W. G. Smith, A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.
3. N.S. Ganapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S. Viswanathan Co. Pvt., 1998

Course Coordinator **HOD**

BCI5L2	**CORE 16–MAJOR PRACTICAL – 6**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand the importanceof chemical played on important role
CO4	Apply the detail about practical importance to be aware of the concepts from the basis.
CO5	Apply the importance of handling and precision of experimental skills
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						L	H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

Physical Chemistry Practical

1. Phase diagram – Naphthalene and biphenyl system.
2. Critical Solution Temperature – Determination of CST of phenol-water system and effect of impurity on CST – strength of sodium chloride.
3. Determination of Viscosity by Oswald Viscometer
4. To study the Adsorption of acid on Activated charcoal.
5. To determine the Concentration of KMnO4 / K2Cr2O7 by Colourimetry.
6. The Distribution coefficient of Benzoic acid distributed between water and kerosene
7. Determination of Equivalent conductance of a strong electrolyte
8. Determination of pH of a buffer solution potentiometrically using quinhydrone electrode
9. Determination of molecular weight - Rast's macro method
10. Determination of Equivalence Conductance of a strong Electrolyte

REFERENCES:

1. Sundaram, Krishnan, Raghavan, Practical Chemistry (Part II), S. Viswanathan Co. Pvt.,1996.
2. B.S. Furniss, A.J. Hannaford, P.W. G. Smith, A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.
3. Experimental Physical Chemistry by R.C.Das&B.Behera.
4. N.S. Ganapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S. Viswanathan Co. Pvt., 1998.

Course Coordinator **HOD**

BCI505	ELECTIVE – I - ANALYTICAL CHEMISTRY	L	T	P	C
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the properties and uses of analytical techniques
CO2	Understand about the method of laboratory safety
CO3	Understand the properties and uses of separation and purification techniques
CO4	Aapply the detail about the thermo analytical methods
CO5	Apply the importance of computer programming about the thermal analysis
CO6	Analyze the real time applications of thermal materials for using atomic spectroscopy techniques.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						√					
4	Approval		Academic Council Meeting								

UNIT–I: LABORATORY SAFETY **12**

Laboratory HygieneAnd Safety - Storageandhandlingofcorrosive,flammable,explosive,toxic,carcinogenicand - poisonous chemicals - SimpleFirstAidProcedureForAccidents Acidineye,alkaliineye,acidburns,bromineburns,poisoning,inhalationofgases,cutby glassesand heat burns - Errorsinchemicalanalysis,classificationoferrors,instrumentalerrors,personalerrors, constanterrorsand proportionalerrors–Correctionof determinate errors- Random errors. Precision,accuracy andrejectionofdataquestioned.

UNIT-II: EXTRACTION TECHNIQUES 12

SeparationandPurificationTechniques General principles involved in the separation ofprecipitates. Solvent extraction – Chromatography Principlesinadsorption,partitionandionexchange,paper,thinlayer,column,gasliquid chromatography. Electro-phorosis-Applications - DesiccantsVacuumdrying,distillation,fractionaldistillation,steamdistillation, Azeotropic Distillation, crystallization and sublimation– Principles and Techniques.

UNIT– III: ANALYTICAL METHODS I 12

Thermo analytical Methods - Principles involvedin thermo gravimetric analysis and differential thermal analysis- instrumentation - Characteristicsof TGA(CaC_2O_4,H_2O,$CuSO_4$,$5H_2O$)andDTAcurves($CaC_2O_4 .H_2O$) - FactorsaffectingTGA and DTA curves - Thermometric titration of HCLVs NaOH - Analytical Electrochemistry - Redox potential – measurement and application, interpretation of chemical behavior - Electrolyticseparations.Principlesofelectrodedeposition.Electro-gravimetric(estimation of copperand silver.)

UNIT– IV: ANALYTICAL METHODS II 12

Colorimetric Analysis Lawsofcolorimeters–instrumentation.Nessler'sand Photoelectriccolorimetricmethod– operation and applications. EstimationofNi, Cu and Fe - Basic principlesof flame photometry –Atomic absorption – Spectrophotometry – Estimation of Na, K andCa - OrganicEstimations Principle and methods to estimateglucose, ascorbic acid, phenol,aniline, ketone, oils and fats.Iodine value, saponification value, R.M value and acetyl value.

UNIT– V: ANALYTICAL TECHNIQUES 12

Introduction: Types of spectroscopy - Atomic spectroscopy – molecular spectroscopy – Explanation – differences between Atomic spectra – molecular spectra, Absorption spectrum and Emission spectrum, Photo physical laws - Lambert's law - Beer-Lambert's law –applications (determination of unknown concentration) - IR spectroscopy: Principle – instrumentation (block diagram only) – working - finger print region: UV-visible spectroscopy - Principle – instrumentation (block diagram only) – working – estimation of iron by colorimetry.

REFERENCE:

1. R.Gopolan, P.S.Subramanianand K. Rengarajan:–Elements of Analytical Chemistry, –Sultan Chand &sons, New Delhi.(1995)
2. B.K.Sharma;Instrumental Methods of chemical analysis, Goel Publishing House, Meerut (1999).
3. S.M.Khopkar ; Basic Concepts of Analytical ChemistryNew Age International (P)Ltd,New Delhi(1998)
4. Gurdeep Chatwal, Sham Anand;Instrumental methods of Chemical Analysis, Himalaya PublishingHouse, Mumbai (1998).
5. D.A.Skoog&D.M.West;Fundamentals ofAnalytical Chemistry W.B.Saunders, NewYork,(1982).
6. K.V.Raman; Computers in chemistryTata McGraw Hill Co., New Delhi(1993).

Course Coordinator HOD

BCI505	ELECTIVE – I - POLYMER CHEMISTRY	L	T	P	C
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the properties and introduction of polymer
CO2	Understand about the method of polymerization
CO3	Understand the properties and uses of polymer degradation
CO4	Apply the detail about the Industrial polymers
CO5	Apply the importance of polymer processing
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						√					
4	Approval		Academic Council Meeting								

UNIT 1 : INTRODUCTION TO POLYMER **12**

Monomers, Oligomers, Polymers and their characteristics - Classification of polymers : Natural synthetic, linear, cross linked and network; plastics, elastomers, fibres, Homopolymers and Co-polymers - Bonding in polymers : Primary and secondary bond forces in polymers ; cohesive

energy and decomposition of polymers - Determination of Molecular mass of polymers: Number Average molecular mass (Mn) and Weight average molecular mass (Mw) of polymers and determination by (i) viscosity (ii) Light scattering method (iii) Gel Permeation Chromatography (iv) osmometry and ultracentrifuging.

UNIT 2 : KINETICS AND MECHANISM FOR POLYMERIZATION 12

Chain growth polymerization : Cationic, anionic, free radical polymerization, Stereo regular polymers : Ziegler Natta polymers - Polycondensation-non catalysed, acid catalysed polymerization, molecular weight – distribution - Step growth polymers

Self study: Degrees of polymerization

UNIT 3 : TECHNIQUES OF POLYMERIZATION 12

Bulk, Solution, Emulsion, Suspension, Melt polycondensation, solution polycondensation interfacial and gas phase polymerization - Types of Polymer Degradation, Thermal degradation, mechanical degradation, photodegradation, Photo stabilizers.

Self study: Solid and gas phase polymerization

UNIT 4 : INDUSTRIAL POLYMERS: 12

Raw material, preparation, fibre forming polymers, elastomeric material - Thermoplastics : Polyethylene, Polypropylene, polystyrene, Polyacrylonitrile, Poly Vinyl Chloride, Poly tetrafluoro ethylene, nylon and polyester - Thermosetting Plastics : Phenol formaldehyde and expoxide resin - Elastomers : Natural rubber and synthetic rubber - Buna - N, Buna-S and neoprene - Conducting Polymers : Elementary ideas ; examples : poly sulphur nitriles, poly phenylene, polypyrrole and poly acetylene.

UNIT 5 : INTRODUCTION TO POLYMER PROCESSING : 12

Compounding: Polymer Additives: Fillers, Plasticizers antioxidants and thermal stabilizers fire retardants and colourants - Processing Techniques: Calendaring, die casting, compression moulding, injection moulding, blow moulding, extrusion moulding and reinforcing.

TEXT BOOKS :

1. V.R. Gowariker, Polymer Science, Wiley Eastern, 1995.
2. G.S. Misra, Introductory Polymer Chemistry, New Age International (Pvt) Limited, 1996.
3. F. N. Billmeyer, Textbook of Polymer Science, Wiley Interscience, 1971.
4. A. Kumar and S. K. Gupta, Fundamentals and Polymer Science and Engineering, Tata McGraw-Hill, 1978.

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Course Coordinator **HOD**

BCI505	ELECTIVE – I - BIOCHEMISTRY	L	T	P	C
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. M. Kumar / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the introduction of amino acid and proteins
CO2	Understand about the method of enzymes
CO3	Understand the properties and uses of lipids
CO4	Apply the detail about the carbohydrates
CO5	Apply the importance of nucleic acid
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						√					
4	Approval		Academic Council Meeting								

UNIT 1: **AMINO ACIDS AND PROTEINS** **12**

Living Cell – Plant and Animal cell - Cell membrane – organelles – functions of major subcellular components – Anabolism and catabolism and their relation to metabolism.**Amino acids** – classification –Synthesis of _-amino acids and their identification - Peptide bond-stereochemistry, synthesis of peptides by solution and solid phase techniques.**Proteins** – classification – properties-3D structure-determination of amino acid sequence –denaturation and renaturation of protein molecules - Separation and purification of proteins – dialysis – gel filtration – electrophoresis - Catabolism of amino acids: Transamination, oxidative deamination, decarboxylation. The urea cycle and other possibilities of detoxification of ammonia.

UNIT 2: ENZYMES **12**

Nomenclature, classification and properties-specificity, factors influencing enzyme action.Mechanism of enzyme action – Lock and Key model and induced fit models. Coenzymes – cofactors – prosthetic groups of enzymes (TPP, NAD, NADP, FAD, ATP) - Their importance in enzyme action - Mechanism of inhibition (competitive, non- and uncompetitive and allosteric) - Immobilization of enzymes. Enzyme specificity,

UNIT 3: LIPIDS **12**

Classification - neutral lipids, Phospho lipids (lecithines, cephalins, plasmalogens) andglycolipids – importance, synthesis and degradation - Fatty acids – saturated, unsaturated fatty acids, EFA. Properties – Hydrolysis-acid number, saponification number. Auto-oxidation (Rancidity), addition reactions-Iodine value, Polenske number, Reichert-Meissl number, acetyl number. Hydrogenation Cholesterol – biosynthesis. Bile salts derived from cholesterol - Metabolism: Oxidation of glycerol – _-oxidation of fatty acids; biosynthesis of lipids – synthesis of fatty acids and synthesis of triglycerides.

UNIT 4: CARBOHYDRATES **12**

Classification – reducing and non-reducing sugars. Glucose: structure-conformation –Stability - Carbohydrates of the cell membrane – starch, cellulose and glycogen. (Structure and utility) - Metabolism: Glycolysis and its reversal; TCA cycle. Relation between glycolysis and respiration. Principles of bioenergetics, electron transport chain and oxidative phosphorylation.

UNIT 5 NUCLEIC ACIDS **12**

Nucleosides and nucleotides – purine and pyrimidine bases. Nucleic acids Difference between DNA and RNA. Classification of RNA - Biosynthesis of DNA: Replication. Biosynthesis of mRNA: Transcription - Genetic code – mutations and mutants. DNA repair. Biosynthesis of proteins - DNA sequencing and PCR, recombinant DNA technology, DNA polymorphism.

TEXT BOOKS

1. Lehninger, Principles of Biochemistry, Fourth Edition, by David L. Nelson and Michael M. Cox, Worth Publishers, New York, 2005.
2. L. Veerakumari, Biochemistry, MJP publishers, Chennai, 2004.
3. Lubert Stryer, Biochemistry, W. H. Freeman and company, New York, 1975.
4. Robert L.Caret, Katherine J. Denniston, Joseph J. Topping, Principles and Applications of organic and biological chemistry, WBB publishers, USA, 1993.
5. J. L. Jain, Biochemistry, Sultan Chand and Co.1999
6. A. Mazur and B. Harrow, Text book of biochemistry, 10th Edition, W.B. Saunders Co., Philadelphia, 1971.
7. Paula Yurkanis Bruice, Organic chemistry, 3rd Edition, Pearson Education, Inc. (Singapore), New Delhi, reprint, 2002.
8. P. W. Kuchel and G. B. Ralston, Shaum Series, Theory and Problems of Biochemistry, McGraw-Hill Book Company, New York, 1988.

Course Coordinator **HOD**

SEMESTER - VI

BCI601	CORE – 16 - ORGANIC CHEMISTRY- II	L	T	P	C
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the introduction of the natural products
CO2	Understand about the method of molecular rearrangement
CO3	Understand the properties and uses of stereochemistry
CO4	Apply the detail about the carbohydrates
CO5	Apply the importance of heterocyclic chemistry
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I: NATURAL PRODUCTS **12**

Terpenes: classification – isoprene rule – geraniol, nerol and menthol - Alkaloids: general methods of isolation and general methods of structural determination – conine, piperine and

nicotine - Vitamins: source and biological importance of vitamins A_1, B_1 and C. Structural elucidation of vitamins A_1 and C.

UNIT II: MOLECULAR REARRANGEMENTS 12

Pinacol-pinacolone, Wagner-Meerwein, Beckmann, Benzidine, Hoffmann, Curtius, Benzilic acid, Claisen, Fries, Cope and oxy cope rearrangements - Reagents in organic synthesis: Lithium aluminium hydride and sodium borohydride – reduction of carbonyl compounds and carboxylic acids. Selenium dioxide – oxidation of carbonyl compounds. Aluminiumisopropoxide (MPV reduction). Wilkinson catalyst – hydrogenation of alkenes and alkynes. Tetra carbonyl nickel – carbonylation of alkenes, alkynes.

UNIT III: STEREO CHEMISTRY 12

Elements of symmetry and conditions for optical activity – asymmetric center – chirality – achiral molecule – meaning of (+) and (-); D and L notations – racemization, resolution, Walden inversion – asymmetric synthesis. Vant Hoff rule of optical super position and Fredenberg rule of shift - Projection formulae – Fisher, Flying wedge, Sawhorse and Newmann projection formulae – Cahn-lngold-Prelog rules – R and S notations of optical isomers with one asymmetric carbon – erythro and threo representations - Optical activity in biphenyls, allenes and spiranes - Geometrical isomerism – cis-trans, syn-anti, E-Z notations – maleic and fumaric acid, ketoximes – methods of distinguishing geometrical isomers (Dipole moment, dehydration, Cyclization) – method determining the configuration of geometrical isomers.

UNIT IV: CARBOHYDRATES 12

Classification, chemistry and constitution of glucose and fructose – determination of ring size – Haworth projection formula – configuration of monosaccharides – epimerisation, chain lengthening and chain shortening of aldoses – inter conversion of aldoses and ketoses - Disaccharides – chemistry and structure of maltose, lactose and sucrose - Starch and cellulose (structural elucidation not necessary).

UNIT V: HETEROCYCLIC COMPOUNDS 12

Introduction – molecular-orbital structure and aromatic characteristics of pyrrole, furan, thiophene and pyridine – methods of synthesis - chemical reactions with particular emphasis on the mechanism of electrophilic substitution – comparison of basicity of pyridine, piperidine and pyrrole. Condensed five and six membered heterocycles – preparation of indole, quinoline and isoquinoline with special reference to Fisher Indole, Skraup and Bischler Napieralski synthesis.

TEXT BOOKS

1. R. T. Morrison And R. N. Boyd, Organic Chemistry, 6th Edition, Printice-Hall Of India Limited, New Delhi, 1992.
2. T. W. Graham Solomons, Organic Chemistry, 6th edition, John Wiley and Sons, 1996.
3. B. Y. Paula, Organic Chemistry, 3rd Edition, Pearson Education, Inc.(Singapore), New Delhi, reprint, 2002.
4. Bahl and Arun Bahl, Organic Chemistry, S. Chand and Sons, New Delhi, 2005.

REFERENCE BOOKS

5. Jerry March, Advanced Organic Chemistry, 4th Edition, John Wiley And Sons, New York,1992.
6. S. H. Pine, Organic Chemistry, 5th Edition, McGraw Hill International Edition, Chemistry Series, New York, 1987.
7. Sehan. N. Ege, Organic Chemistry, Structure And Reactivity, 3rd Edition, A.I.T.B.S., New Delhi, 1998.
8. Hendrickson, Cram And Hammond, Organic Chemistry, 3rd Edition, McGraw-Hill Kogakusha, Limited, 1970.

Course Coordinator HOD

BCI602	CORE – 17 - INORGANIC CHEMISTRY - II	L	T	P	C
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Remember the knowledge about the introduction of nuclear chemistry
CO2	Understand about the theoretical concepts involved in nuclear Chemistry
CO3	Understand the properties and uses of industrial chemistry
CO4	Apply the detail about the organometallic concepts
CO5	Apply the importance of acids and bases.
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I - NUCLEAR CHEMISTRY I **15**

Nuclear forces – nuclear bonding and stability – nuclear shell structure theory – nuclear fluid theory – magic numbers – isotopic constitution of elements – separation of isotopes – gaseous diffusion, electromagnetic, distillation, electrolytic and chemical exchange methods – whole number rule and packing fraction – atomic masses – deviation of atomic masses from whole number – isobars, isotones and isomers.

UNIT II - NUCLEAR CHEMISTRY II **15**

Natural radioactivity – radioactive emanations – disintegration theory – rate of disintegration – half-life period – average life period – modes of decay – n/p ratio – group displacement law – detection and measurement of radioactivity – radioactive equilibrium – radioactive disintegration series – Geiger-Nuttal rule – age of earth - Nuclear transformation – artificial transmutation of elements – classification of nuclear reactions – nuclear fission – atomic bomb – nuclear fusion – hydrogen bomb – nuclear reactors – atomic power projects in India – radio carbon dating – radioactive waste disposal.

UNIT III - INDUSTRIAL CHEMISTRY **15**

Gaseous fuels – natural, gobar, coal, water gas, semi water gas and producer gas. LPG – industrial gases – manufacture and industrial uses of H_2, O_2, N_2 and dry ice. Fossil fuels – varieties of coal – petroleum refineries in India – petrochemicals – manufacture of petrochemicals from methane. Industrial organic synthesis of methyl alcohol, industrial alcohol, 1,3-butadiene and formaldehyde. Explosives and chemical weapons – characteristics and classification – nitro cellulose, PETN, DNB, TNT, EDNA and lead azide. Paints – characteristics – classification – constituents – requirements of a good paint – setting of paints. Pigments – characteristics and uses – white, red, lithopone and black.

UNIT IV: BIOLOGICAL MOLECULES **15**

Organo metallic complexes – olefinic complexes – anion of zeises salt – structure and bonding of acetylinic complexes and allylic complexes of transition metals - Bioinorganic molecules – haemoglobin, chlorophyll, cytochrome-c, ferridoxin – structural aspects and their role in electron transfer reactions - Mechanism and synthetic uses of: Palladium complex: Wacker oxidation - Rhodium complex: Wilkinson catalyst - Cobalt complex: hydroformylation of alkenes.

UNIT V –NANOCHEMISTRY **15**

Basics - distinction between molecules, nanoparticles and bulk materials; size-dependent properties. nanoparticles: nano cluster, nano rod, nanotube(CNT) and nanowire. Synthesis: precipitation, thermolysis, hydrothermal, solvothermal, electrodeposition, chemical vapour deposition, laser ablation; Properties and applications

.**TEXT BOOKS**

1. J. D. Lee, Concise Inorganic Chemistry, 5th ed., Blackwell Science, London, 1996.
2. F. A. Cotton, G. Wilkinson and P. L. Guas, Basic Inorganic Chemistry, 3rd ed., John Wiley,1994.
3. B. Douglas, D. McDaniel and J. Alexander, Concepts and Models of Inorganic Chemistry,3rd ed., John Wiley, 1994.
4. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., 1996.

REFERENCE BOOKS

1. J. E. Huheey, E. A. Kieter and R. L. Keiter, Inorganic Chemistry, 4th ed., Harper Collins, New York, 1993.
2. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rd Ed., W. H. Freeman and Co, London,1999.
3. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., Delhi, 1996.
4. F. A. Cotton, G. Wilkinson, C. Murillo and M. Bochman, Advanced Inorganic Chemistry, 6th ed., John Wiley, New York, 1999.

Course Coordinator **HOD**

BCI6L1	CORE - 19 - MAJOR PRACTICAL - VI	L	T	P	C
	Total Contact Hours - 60	6	0	0	3
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. A. Manikandan / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the need of chemistry practical and its toxicity
CO2	Understand about the uses of experiments in our day today life
CO3	Understand the importanceof chemical played on important role
CO4	Apply the detail about practical importance to be aware of the concepts from the basis.
CO5	Apply the importance of handling and precision of experimental skills
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						L	H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

GRAVIMETRIC ANALYSIS:

1. Estimation of Lead as lead chromate.
2. Estimation of Barium as barium chromate.
3. Estimation of Nickel as Nickel -DMG complex.
4. Estimation of Copper as copper (I) thiocyanate
5. Estimation of Magnesium as magnesiumoxinate

6. Estimation of Barium as barium sulphate.
7. Estimation of Iron as Iron (III) oxide.

PREPARATION OF ORGANIC COMPOUNDS (SINGLE STAGE)

1. Para-bromo actenalide from acetanilide (bromination)
2. Para-nitroactenalide from acetanilide (nitration)
3. 2,4,6-tribromo aniline from aniline (bromination)
4. Benzophenone oxime from benzophenone (addition)O-
5. Chlorobenzoic acid from anthranilic acid (Sandmayer reaction)
6. Salicyclic acid from methylsalicylate (Hydrolysis)

References

1. N.S. Gnanapragasam and G. Ramamurthy, Organic Chemistry – Lab manual, S. Viswanathan Co. Pvt., 1998.
2. J.N. Gurthu and R. Kapoor, Advanced Experimental Chemistry (Organic), S. Chand and Co., 1987.
3. B.S. Furniss, A.J. Hannaford, P.W. G. Smith and A.R. Tatchell, Vogel's Text Book of Practical Organic Chemistry. 5th Edn., Pearson Education, 2005.

Course Coordinator **HOD**

BCI603	ELECTIVE – 2 - KINETIC & SPECTROSCOPIC METHODS IN CHEMISTRY	L	T	P	C
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr. P. Paulraj/ Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the introduction of chemical kinetics
CO2	Understand about the theoretical concepts of catalyst
CO3	Understand the properties and uses of molecular spectroscopy
CO4	Apply the detail about the spectral techniques
CO5	Apply the importance of photochemistry
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						√					
4	Approval		Academic Council Meeting								

UNIT I: CHEMICAL KINETICS **15**

Concept of rate of reactions – factors influencing rate of reaction – Rate law, rate constant, order and molecularity of reactions – differential and integral forms of rate equations for zero, first and second order reactions – third and fractional order reactions (no derivation) – half life period – pseudo first order reactions - Methods for the determination of order of reactions – integration

method, differentiation method, graphical method, half–life method, and Oswald's isolation method - Experimental methods involved in the following kinetics of reactions: titrimetry, monometry, polarimetry, dilatometry and spectrophotometric techniques with examples - Effect of temperature on rates of reactions – temperature coefficient – Arrhenius equation – activation energy – calculation of Arrhenius parameters. Simple collision theory and its limitations – an elementary treatment of activated complex theory and its thermodynamic formulation – Unimolecular reactions – Lindemann hypothesis – thermal chain reactions – hydrogen–bromine reaction.

UNIT II - CATALYSIS **15**

Acid–base catalysis – types and mechanisms – primary salt effect in ionic reactions - Enzyme catalysis – Characteristics of enzymes – factors affecting enzyme catalysis – derivation of Michaelis-Menton equation - Surface Chemistry – mechanism of catalytic action – unstable intermediate compound formation theory – adsorption or contact theory. Catalytic promoters and poisons - Adsorption isotherms – derivation of Freundlich and Langmuir adsorption isotherms – use of B.E.T. isotherm in surface area determination (derivation not required).

UNIT III - MOLECULAR SPECTROSCOPY I **15**

Various types of spectra and the energy changes - Microwave spectroscopy – theory of rotational spectra of diatomic molecules – Stark effect – symmetric top molecules and asymmetric top molecules – isotopic effect – applications. calculation of bond length – its limitations - Infrared spectroscopy – theory of vibration-rotation spectra – types of vibration – force constant - Raman spectroscopy – Raman effect – theory – pure rotational Raman spectra – vibrational Raman spectra – comparison of IR and Raman spectra – structural determinations of simple molecules.

UNIT IV - MOLECULAR SPECTROSCOPY II **15**

UV and Visible spectroscopy – Vibrational Coarse structure – Frank Condon Principle – The Fortrat diagram – Pre-dissociation - NMR spectroscopy – basic principles – chemical shift and spin-spin coupling – coupling constant – chemical shift reagents. ESR spectroscopy – basic principles – hyperfine splitting - Mass spectrometry – basic principles of mass spectrum – molecular peak, base peak, metastable peak – fragmentation – nitrogen rule – determination of molecular formulae with examples – identification of alcohols, aldehydes, aromatic hydrocarbons.

UNIT V – PHOTOCHEMISTRY **15**

Classification of photochemical reactions – Characteristics of photochemical reactions – comparison with thermochemical reactions – Laws of photochemistry – quantum yield – examples of reactions of simple and high quantum yield – primary and secondary processes – photochemical chain reactions hydrogen–chlorine reaction – photolysis of aldehydes and ketones – actinometry - Photosensitization – chemiluminescence – photosynthesis – photodimerisation of anthracene. Fluorescence and phosphorescence – quenching of fluorescence and Stern–Volmer equation - Interaction of high–energy radiation with matter – radiolysis of water – hydrated electron.

REFERENCES

1. Physical and Theoretical Chemistry, C.D.George, P.M.Thomas and C.D.Joseph (1966).

2. Text Book of Physical Chemistry, P.L.Soni, O.P.Dharmara, U.N. Dash, Sultan Chand & Sons, New Delhi.
3. Principles of Physical Chemistry, B.R.Puri, L.R.Sharma, M.S.Pathania, Shoban Lal Nagin Chand & Co. New Delhi.
4. Physical Chemistry, P.W.Atkins, J.D.Paula, Oxford University Press, Oxford.
5. Physical Chemistry 3/e, G.W.Castellan, Narosa Publishing House, New Delhi.
6. Physical Chemistry 5/e, Ira N. Levine, Tata McGraw-Hill Publishing Co Ltd, New Delhi.
7. Chemical Kinetics 3/e, K.J.Laidler, Harper & Row, Publishers, New York.

Course Coordinator **HOD**

BCI603	ELECTIVE – 2 – INDUSTRIAL CHEMISTRY	L	T	P	C
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- – Dr A. Manikandan / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the generation of energy from various types of fuels
CO2	Understand about the chemicals in improvement of agricultural crops
CO3	Understand about the methods employed for purification of water for industry and home
CO4	Apply the detail about the Pollution occurring from various sources and resulting toxic effects
CO5	Apply the importance of concepts involved in the pollutant technology
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L				M		H		
	CO2	H	L				H				
	CO3	H	L				H				
	CO4	H	L				M				
	CO5	H	L				M				
	CO6	H	L				H				
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						√					
4	Approval		Academic Council Meeting								

UNIT-1: INDUSTRIAL FUELS **15**

Energy: Sources: non-renewable, classification of fuels: solid, liquid and gaseous. Calorific value of fuels and its determination - **Solid fuels:** Coal: types – properties and uses – lignite, sub-bituminous coal, bituminous coal and anthracite. Coking and non-coking coal - **Liquid fuels:** Refining of crude petroleum and uses of fractions. Hydrodesulphurisation. Cracking: thermal and catalytic (fixed bed and fluidised bed cataylsis). Octane number. Production and uses of tetraethyl lead, ETBE and MTBE - **Gaseous fuels:** Natural gas and gobar gas: production, composition and uses., Gobar electric cell.

UNIT-2: CHEMISTRY AND AGRICULTURE 15

Fertilizers: NPK, representation,superphosphate, triple superphosphate, uses of mixed fertilizers - Micronutrients and their role, biofertilizers, plant growth harmones – **Pesticides:** Classification of pesticides with examples - Insectides; stomach poisons, contact insecticides, fumigants. Manufacture and uses of insecticides. DDT, BHC (gammaxane: Conformation of gamma isomer) pyrethrin - Mention of aldrin, dieldrin,endrin and pentachlorophenel (and its Na salts) and Biopesticides - Herbicides: Manufacture of 2,4-D and 2,4,5-T - Fungicides: Preparation of Bordeaux mixture. Mention of lime-sulphur, creosote oil and formula - **Sugar industry:** Double sulphitation process. Refining and grading of sugar. Saccharin: synthesis and use as a sugar substitute - aspartame. Ethanol: manufacture from molasses by fermentation.

UNIT-3: WATER TREATMENT 15

Introduction: Sources of water. Hardness of water-temporary or carbonate hardness, permanent hardness or non-carbonate hardness. Units of hardness, disadvantages of hard water – In domestic, in industry and in steam generation in boilers. Effect of iron and manganese in water - Estimation of hardness – EDTA method – Estimation of total hardness – O. Hehner's method or alkali titration method - **Water softening methods:** Industrial purpose Lime – soda process, Zeolite process; Ion-exchange - Demineralisation – deionization process. Mixed – bed deionization - Domestic purpose - Removal of suspended impurities. Removal of microorganism – Chlorination – Break point chlorination. Reverse osmosis. Desalination - Waste water treatment

UNIT-4:POLLUTION AND CHEMICAL TOXICOLOGY 15

Pollution: Air pollution - Acid rain. Green house effect (global warming), ozone layer depletion - photochemical oxidants. Control of air pollution. Water pollution – organic pollutants, Chemical oxygen demand (COD), Biological oxygen demand (BOD), total organic carbon. International standards for water and air quality and regulations - **Chemical toxicology:** Effect of toxic chemicals on enzymes. Lead, mercury and cyanide pollution and their biochemical effects. Carbon monoxide, sulfur dioxide, oxides of nitrogen, ozone – biochemical effects - **Quality control:** ISI specification. Patent: Purpose and procedures.

UNIT-5: SEMINAR TOPICS 15

Glass, Cement, Dyes, Paints, Special paints, Lubricants and greases, Refractories, Abrasives, Plastics, Perfumes and flavoring industries, Fermentation industries, Explosives, Pulp and paper industries, Rubber industries, Pharmaceutical industries, Food and food products industries, Photographic product industries, Ceramic industries, Petrochemicals.

REFERENCE BOOKS

1. Norris Shreve, R. and Joseph a. Brink, Jr. Chemical Process Industries, 4th Ed.;Mc Graw Hill Kogakusha, Ltd: 1977.
2. George t. Austin. Shreve's Chemical Process Industries, 5th Ed.; Mc Graw Hill: 1984.
3. Subba rao, n. S. Biofertilizers in Agriculture; Oxford and IBH Publishing Co.: New Delhi, 1982.
4. Jain, P. C. And Jain, M. Engineering Chemistry, 10th Ed.; Dhanpat Rai And Sons:Delhi, 1993
5. Kuriakose, j. C. And rajaram, j. Chemistry in Engineering and Technology. Vol 2.; Tata Mc Graw Hill: New Delhi, 1988.
6. Stanley E. Mahanen, Jugal, Kishore, Agrawal,Practicals in Engineering Chemistry; Oxford and IBH Publishing Co., New Delhi, 1976.

Course Coordinator **HOD**

BCI603	ELECTIVE – 2 – FOOD CHEMISTRY AND TECHNOLOGY	L	T	P	C
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:- Dr G. Padmapriya / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.

COURSE OUTCOMES (COs)

CO1	Rememberthe knowledge about the Introduction of Food Chemistry
CO2	Understand about the chemicals in constituents of food
CO3	Understand about the methods employed for introduction of food additives
CO4	Apply the detail about the Nutrition and Balanced Diet
CO5	Apply the importance of concepts Food Adulteration And Hygiene
CO6	Analyze the real time applications of Chemistry in day today life.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L				M		H		
	CO2	H	L				M				
	CO3	H	L				M				
	CO4	H	L				H				
	CO5	H	L				M				
	CO6	H	L				M				
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						√					
4	Approval		Academic Council Meeting								

UNIT I: INTRODUCTION **15**

Food: source, functions of food – food groups – food guide – basic five food groups,

usage of the food guide – food in relation to health – objectives of cooking - **Water:** Purification processes – Ion exchangers, reverse osmosis, activated charcoal treatment. Use of chlorination, ozone, and UV light disinfection. Specification of drinking water. Water borne diseases – microbiological examination. Sources and detection - **Milk**: Composition and effectiveness as a diet. Fat content in milk, whole and skimmed - Effect of cooking and heat processing of milk – pasteurization. Preservation of milk - Deep freeze preservation, dairy products – cheese, butter, ghee and kova. Spray drying technique – milk powder, infant food preparation. Lactose intolerance Milk substitutes – vegetable milk. Toned milk.

UNIT 2: CONSTITUENTS OF FOODS 15

Proteins: amino acids – peptides – proteins, modification of food products through heat processing .Effect of cooking – steaming or cooking under pressure of legumes - Enzymes: Nomenclature, classification – Apo, holo and coenzymes. Enzymes used in food processing - **Carbohydrates:** Classification, structure and reactions of monosaccharides, glucose, fructose, structure of sucrose, maltose, lactose and starch.Artificial sweetening agents.

UNIT 3: FOODS AND FOOD ADDITIVES: 15

Food additives: Artificial sweeteners – saccharin, cyclomate, asparatame – food flavours – esters, aldehydes and heterocyclic compounds. Antioxidants. Food colours – changes in cooking..Restricted use. Spurious colours. Emulsifying agents, preservatives – leavening agents.Baking powder –Yeast. Taste enhancers – MSG-vinegar - **Modern food**: Mushroom cultivation and types, spirulina composition. Snack foods - Production of bread, bun and biscuits. Raw materials, methods and machinery required - Candy manufacturing. Caramellisation. Fast foods. Instant foods. Dehydrated foods - Oleoresin of spices. Condiments.

UNIT 4: NUTRITION AND BALANCED DIET 15

Nutrition – calorific value of food stuff – RQ of food (Respiratory quotient of food) – basal metabolic rate – factors influencing BMR, specific dynamic action (SDA) of food - **Thermogenic effect** – energy requirements of individuals – diet and its components – theprotein requirements – biological value of proteins, supplementary value of proteins. Diseases associated with protein malnutrition - Nutritional value of carbohydrates. – Fibers in the diet, dietary sugars – nutritional aspects of lipids.

UNIT I: FOOD ADULTERATION AND HYGIENE 15

Adulterants: Common adulterants in different foods – milk and milk products, vegetableoils, and fats, spices and condiments, cereals, pulses, sweetening agents and beverages. Contamination with toxic chemicals – pesticides and insecticides. Principles involved in the analysis of detection and prevention of food adulteration - **Microbial growth:** growth curve of bacteria. Effect of environmental factors on growth of microorganisms. pH, water activity, oxygen availability temperature – beneficial effect of micro organisms Food borne illness – bacteria, virus, moulds and parasites. (Any two illness each) - **Food preservation and processing :**Food deterioration, methods of preservation and processing - **Quality control:** Specifications and standards: PFA, FPO, FDA, drug license, WHO standards, ISI specifications**,** packing and label requirements, essential commodities act, consumer protection act. AGMARK.

REFERENCE BOOKS

1. Swaminathan M. Advanced Text Book on Food and Nutrition ,Volume I and II Printing and Publishing Co., Ltd., Bangalore. 1993.
2. Norman N. Potter ,Food Science, CBS Publishers And Distributors, New Delhi. 1994.
3. Lillian Hoagoland Meyer, Food Chemistry, CBS Publishers And Distributors, New Delhi.1994.
5. Owen R Fennema, Food Chemistry, Marcel Decker Inc., New York. 1996.
6. Srilakshmi B., Food Science, New Age International Pvt. Ltd. Publishers, III Ed. 2003.
7. Ramakrishnan S., Prasannam K.G and Rajan R–Principles. Text book of Medical Biochemistry. Orient Longman ltd. Iii ed. 2001.
8. Shakuntala Manay N. And Shadaksharaswamym. Foods: Facts and Principles. New Age International Pvt. Ltd. Publishers, II Ed. 2002.

Course Coordinator **HOD**

BCI 6P1	**PROJECT (DISSERTATION AND VIVA-VOCE)**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	20	10
	Prerequisite course – Chemistry				
	Course Coordinator Name & Department: Dr. A. Manikandan/Chemistry				

COURSE OBJECTIVES:-

To facilitate the students to understand the current scenario in science and technology and to present the research report on their findings as per the acceptable format.

COURSE OUTCOMES (COs)

CO1	Rememberthe concept and objectives, nature, types and methods of project.
CO2	Understand the process and steps involved in preparation of project work, research gap
CO3	Understand the research design, and methodology , sampling techniques & sampling design
CO4	Apply the statistical tools in the project for data analysis
CO5	Create the major findings, suggestions and conclusion
CO6	Analyze the model for project report.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						L	M	H
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

PROJECT (DISSERTATION AND VIVA-VOCE) 10

The project topics are to be finalized to the students at the end of the second semester with a time schedule to carryout various stages of work. During the semester vocation, the data

Collection may be commenced. The theme selected by each student for the Dissertation should be related to various methodologies and techniques pertaining to Science and technology.. Each candidate should submit three copies of dissertation as per the guidelines to the department concerned.

	Marks
Dissertation	**150**
Viva- Voce Examination	**50**

Course Coordinator **HOD**

BBA011	**BUSINESS PROCESS OUTSOURCING- MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours– 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name& Department:- Ms.D.K.Sowmiyalaskshmi,BBA				

COURSE OBJECTIVES:-

- To familiarize the students with the basic fundamentals of BPO.
- To impart knowledge on type of BPO and call centers .
- To enable the students onthe conceptHealthcare BPO & Transaction BPO.
- To peep into the concept of Human Resource BPO and the career opportunities in BPO.

COURSE OUTCOMES(COs)

CO1	Describe the basic fundamentals of BPO.
CO2	Discuss and develop the awareness about Types of BPOs and Call Centers
CO3	Identify the concept of Health care BPOs
CO4	Examine the concept of Transaction BPOs
CO5	Develop the confidence in Human Resource BPO and career opportunities in BPOs
CO6	Formulate the Types of Transaction Processing BPO in India

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H							H		
	CO2				H						
	CO3			H							
	CO4		M								
	CO5	M									
	CO6		H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
								✓		

4	Approval		Academic Council Meeting

UNIT-I **6**

Business Process Outsourcing– Basics – Benefits of BPO– BPO companies in India.

UNIT-II **6**

BPO Industry – Employment Opportunities– types of BPO – Call centers– Types of Call Centers–
Issues and Problems.

UNIT-III **6**

Health Care-BPO - Structure of foreign Health Care sector– Future Trends and Threats.

UNIT-IV **6**

Transaction Processing BPO– Elements of Back Office services– Types of Transaction Processing
BPO in India.

UNIT-V **6**

Human Resource BPO-Reasons for outsourcing HR– Activities involved in HR BPO– HR Outsourcing Trends– Carrier in HR BPO.

Text Books:

1. John K. Holvey, Borboro Murphy Melby, Business Process Outsourcing–Wiley Publisher-2007
2. SarikaKulkarni –Business Process Outsourcing–Jai co Publishing house – 2005
3. .RickL.Click, Thomas N.Duening,BusinessProcess Outsourcing–John Willey &sons,Publisher
2004

Reference Books:

1. Deepak Shikapur – BPO DIGEST– Ameya (Inspiring books) – 2004.
2. Clifton – System analysis for business data processing– Prentice hall Publications.
3. Anandkumar, V. &Biswas, S., 2008. Business Process Outsourcing, Sage Publications Pvt. Ltd

Course Coordinator **HOD**

	DESKTOP PUBLISHING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
BBE002	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic Principles and development of publishing and printing.
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software. Different Hardware and Software with• their uses. Types of Software i.e. System, - Application etc. Different types of Input & Output devices. Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

REFERENCE BOOKS:-

1. G. Dalin. M. Sc software engineering, HSI PUBLICATIONS

CourseCoordinator **HOD**

BCA001	COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professiona l Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers

- Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. Computers today by S.K. Basandra, Galgotia Publications.
2. Fundamentals of Information Technology by Alexis Leon & Mathews LEON, Vikas publishing house, New Delhi.
3. Dos quick reference by Rajeev Mathur, Galgotia Publications.

Course Coordinator **HOD**

BCA002	GRAPHICAL AND WEB DESIGNING	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
CO3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part IIISubstream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed

Course Coordinator **HOD**

BCA003	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. John Villamil-Casanova, Louis Molina, An introduction to multimedia.
2. Mohammad Dastbaz, Desgning Interactive Multimedia Systems.
3. Bohdan O. Szuprowicz, Multimedia Networking.
4. Stephen McGloughlin, Multimedia on the web.

Course Coordinator **HOD**

BCA004	NETWORKING AND MAINTENANCE	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part IIISubstream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses ,

Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES.
2. Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill.
3. Computer Installation and Servicing.
4. The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance.
5. Troubleshooting, Maintaining and Repairing PCs, Stephen J Bigelow ,TataMCGraw Hill Publication ,Troubleshooting Maintaining and Repairing PCs.

Course Coordinator **HOD**

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department:-V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Define the web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relate the Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive*
2. *Disabilities*, Cambridge Disability Law and Policy Series, 2015.
3. Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.
4. Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without,* Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).
5. Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.
6. Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.

Course Coordinator **HOD**

BSC001	ANIMATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

ANIMATION

UNIT - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

UNIT - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

UNIT- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill
2. The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.

Course Coordinator **HOD**

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
									✓		
4	Approval	Academic Council Meeting									

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

1. Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.
2. Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.
3. PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.
4. PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

Course Coordinator **HOD**

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String – String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.
2. Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.
3. Kernighan., B.W and Ritchie, D.M, " The C Programming Lanaguage", Second Edition, Pearson Education, 2006.

Course Coordinator **HOD**

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name &Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and

data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena.

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky.

3. Computer Architecture and Organization – J. P. Hayes.

Course Coordinator **HOD**

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

FACULTY OF ARTS & SCIENCE

B.Sc. Computer Science– CURRICULUM

Semester I:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL10X	Tamil *****/ Hindi /French	6	3	3	30	70	100
Part II	BEH101	English	6	3	3	30	70	100
Part III	BSC101	Problem Solving techniques	5	4	3	30	70	100
	BSC102	Digital Logic and Fundamentals	6	4	3	30	70	100
	BSC103	Mathematics I	6	3	3	30	70	100
	BSC1L1	**Practical – I : Programming Lab**	**6**	**2**	**3**	**40**	**60**	**100**
		Total	**35**	**19**				**600**

Semester II:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL20X	Tamil / Hindi /French	5	3	3	30	70	100
Part II	BEH201	English	5	3	3	30	70	100
Part III	BSC201	Data Structures	5	4	3	30	70	100
	BSC202	Programming in C++	5	4	3	30	70	100
	BSC203	Mathematics – II	5	3	3	30	70	100
	BSC2L1	**Practical – II: Programming in C++ Lab**	**6**	**2**	**3**	**40**	**60**	**100**
Part IV	BCI204	Environmental Studies	2	2	3	30	70	100
	BBC206	Value Education	2	2	3	30	70	100
		Total	**35**	**23**				**800**

Semester III:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL30X	Tamil / Hindi /French	6	3	3	30	70	100
Part II	BEH301	English	6	3	3	30	70	100
Part III	BSC301	Computer Architecture	5	4	3	30	70	100
	BSC302	Visual Programming	5	4	3	30	70	100
	BSC303	Statistical Methods	5	3	3	30	70	100
	BSC3L1	**Practical – III : Visual Programming Lab**	**6**	**2**	**3**	**40**	**60**	**100**
Part IV	BSC3E1	Non Major Elective I – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.	2	2	3	30	70	100
		Total	**35**	**21**				**700**

Semester IV:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL40X	Tamil / Hindi /French	5	3	3	30	70	100
Part II	BEH401	English	5	3	3	30	70	100
Part III	BSC401	Operating Systems	5	4	3	30	70	100
	BSC402	Programming in JAVA	5	4	3	30	70	100
	BSC403	Software Engineering	5	3	3	30	70	100
	BSC4L1	**Practical – IV : Programming in JAVA Lab**	**6**	**2**	**3**	**40**	**60**	**100**
Part IV	BSC4E2	Non Major Elective II – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.	2	2	3		70	100
	BSC4E3	Skill Based Elective I	2	4	3	30	70	100
		Total	**35**	**25**				**800**

Semester V:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Tot al
Part III	BSC501	Cloud Computing	5	4	3	30	70	100
	BSC502	Web Technology	5	4	3	30	70	100
	BSC503	Programming in ASP .NET	5	4	3	30	70	100
	BSC5E4	**Major Elective – I :** • Software Project Management • Computer Graphics • Data Mining and Data Warehousing	4	3	3	30	70	100
	BSC5L1	**Practical – V : Programming in ASP .NET Lab**	**6**	**3**	**3**	**40**	**60**	**100**
	BSC5L2	**Practical – VI : Web Technology Lab**	**6**	**3**	**3**	**40**	**60**	**100**
Part IV	BSC5E5	Skill Based Elective – II	2	4	3	30	70	100
	BSC5E6	Skill Based Elective - III	2	4	3	30	70	100
		Total	**35**	**29**				**800**

Semester VI:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part III	BSC601	Database Technology	6	4	3	30	70	100
	BSC602	Multimedia Systems	6	4	3	30	70	100
	BSC603	Software Testing	6	4	3	30	70	100
	BSC6E8	**Major Elective – II :** • Network Programming • C# • Open Source Software	5	3	3	30	70	100
	BSC6L1	**Practical – VII : Elective II Lab**	**6**	**3**	**3**	**40**	**60**	**100**
Part V	BSC6V1	Extension Activities	-	1	-	-	-	-
			1	1	3	30	70	100
		Total	**35**	**23**				**700**
		GRAND TOTAL		**140**				**4400**

Note :

	Internal Marks	**External Marks**
1. Theory	30	**70**
2. Practical	**40**	**60**

3. *** Examination at the end of the next semester.

LIST OF SKILL BASED ELECTIVES:

1. Animation
2. BPO Management
3. Call Centre Management –Voice & Non Voice
4. Computer Application
5. Computer Hardware and Networking
6. Computer Programming
7. Computer Technology
8. Customer Relationship Management
9. Desk Top Publishing
10. Graphical and Web Design
11. Multimedia

BAL101	TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :-இருபதாம் நூற்றாண்டு இலக்கியம் மற்றும் மொழி வரலாற்றை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	இருபதாம் நூற்றாண்டு கவிதைஇலக்கியத்தைப் பற்றி அறிவர்
CO2	இருபதாம் நூற்றாண்டுகட்டுரைஇலக்கியத்தைப் பற்றி அறிவர்
CO3	இருபதாம் நூற்றாண்டுசிறுகதைஇலக்கியத்தைப் பற்றி அறிவர்
CO4	இக்கால இலக்கிய வரலாறுபற்றி அறிவர்
CO5	மொழி வரலாறு – செம்மொழிபற்றி அறிவர்
CO6	தற்கால இலக்கியத்தில் ஆழ்ந்த அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அலகு -1 இருபதாம் நூற்றாண்டு கவிதைகள் 9

1. பாரதியார் -யாமறிந்த மொழிகளிலே 2. பாரதிதாசன்-நீங்களே சொல்லுங்கள்!
3. கண்ணதாசன் -அழுகை 4. பெருஞ்சித்திரனார்- தமிழா நீ எங்கே?
5. தமிழ் ஒளி - (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல் ரகுமான் - கல்லின் காயம்

அலகு -2 உரைநடை (I) 4 கட்டுரைகள் 9

1. மனிதனும் அழகும் - திரு.வி.க.2. வீட்டிற்கோர் புத்தகசாலை-அறிஞர் அண்ணா
3. பொறியியல் தமிழ் - நா. மால் முருகன்
4. தேசியமறை திருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 உரைநடை (II) சிறுகதை - 4 கதைகள் 9

1. நட்சத்திரக் குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம் – ஜெயகாந்தன்4. கடவுளும் கந்தசாமிப் பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 இக்கால இலக்கிய வரலாறு 9

1. இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு
2. இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு
3. இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

அலகு -5 மொழி வரலாறு 9

1. தமிழ்மொழி வரலாறு 2. உலகச் செம்மொழிகளின் வரலாறு
3. தமிழுக்கும் உலகச் செம்மொழிகளுக்குமான உறவு வரலாறு

பாடநூல்

1. இருபதாம் நூற்றாண்டு கவிதை, உரைநடை, சிறுகதை(அலகு-3) பாரத் பல்கலைக்கழக வெளியிடு

பார்வை நூல்கள்

1. சு. ஆனந்தன்,"தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ் அமைப்புற்றவரலாறு", வியாபார ஐக்கிய சங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ் வரலாறு", பூம்புகார் பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல் தாய்மொழி", பூம்புகார் பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டு விளக்கம்" , பூம்புகார் பதிப்பகம்,2006

Course Coordinator HOD

BAL10X	**Hindi**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name &Department:- Dr. K. MustakHusaain / Department of Hindi				
COURSE OBJECTIVES :- To understand , read, write and speak Hindi language with grammatical.					
COURSE OUTCOMES (COs)					
CO1	Remember the behavior				

CO2	Understand the importance of money by story
CO3	Apply the concept of Hindi grammar
CO4	Analyze the usage of translation from English to Hindi
CO5	Evaluatethe unseen passage to answer the questions
CO6	Create the knowledge in Hindi Language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I **9**

NAVEEN GADYA CHAYANIKA – 2 - Bholaram ka jeev - Mehamaan se Bhagavaanbachaaye - NumberovaliThijori – Kaffan - Gunda

UNIT II **9**

NON DETAILED TEXT: KAHANI KUNJ - Stories: 6 – 10 only

UNIT III **9**

GRAMMAR: SHABDA VICHAR ONLY - NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS - Theoretical & Applied

UNIT IV **9**

TRANSLATION - English – Hindi only - ANUVADH ABHYAS – III - 1 – 15 Lessons Only

UNIT V **9**

COMPREHENSION - 1 Passage from ANUVADH ABHYAS – III (16 – 30)

TEXT BOOKS:
UNIT 1 - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017
UNIT II - Govind Prakashan, SadharBagaar, Mathura, Uttar Pradesh – 281001 - Editor: Dr V.P. Amithab
UNIT III - Vyakaran Pradeep by Ramdev - Hindi Bhavan, 36, Tagor Town, Allahabad – 211002.
UNIT IV - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017.
UNIT V - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

Course Coordinator HOD

BAL10X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				
COURSE OBJECTIVES :- Initier les étudiants aux principes de base et à la pratique de la communication orale et écrite.					
COURSE OUTCOMES (COs)					

CO1	Comprendre les bases de la langue.
CO2	Analyser les modèles de phrases et former la grammaire.
CO3	Pour apprendre les bases de la grammaire ainsi que ses principes.
CO4	Se souvenir de l'anatomie des conjugaisons.
CO5	Créer des dialogues et des conversations par eux-mêmes dans la langue et pratiquer des compétences orales et écrites.
CO6	Se souvenir des règles nécessaires de la langue

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I - Vous comprenez

9

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail!
9

Masculine Singular and Feminine singular - Conjugaison des verbes (present tense) -

Les articles définis.

UNIT III En se detend?

9

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir)

UNIT IV Racontez-moi

9

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage!

9

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!- Article
partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

ENGLISH I

BEH101	**ENGLISH I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. SHEEBA - English				

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.	
COURSE OUTCOMES (COs)	
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

Course Coordinator HOD

BSC101	**PROBLEM SOLVING TECHNIQUES**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- S.Surya/BCA				

COURSE OBJECTIVES :- Learners will be familiar with the basic programming in C concepts.											
COURSE OUTCOMES (COs)											
CO1	Remember the basic and the process of problem solving.										
CO2	Understand the problem including assumptions and definitions										
CO3	Choose the suitable loop statements and decision making statements to solve the problem.										
CO4	Identify and employ techniques for generating possible solutions										
CO5	Analyze and Identify criteria by which to evaluate possible solutions.										
CO6	Examine an application and choice of a solution against alternatives										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	M	L								
	CO4	H	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval										

Unit – I: PROGRAMMING TECHNIQUES

Steps Involved in Computer Programming – Problem Definition – Outlining The Solution – Flow Chart – Developing Algorithms – Efficiency of Algorithms - Analysis of Algorithms.

Unit – II: FUNDAMENTAL ALGORITHMS

Exchanging the Values – Counting – Summation of Set of Number – Factorial Computation – Sine Computation – Fibonacci Sequence – Reversing the Digits of an Integer – Base Conversion – Character to Number Conversion.

Unit – III: FACTORING METHODS

Finding the Square Root of a Number – Smallest Divisor of an Integer – GCD of Two Integers – Generating Prime Numbers – Computing the Prime Factors of an Integer – Generation of Pseudo-Random Numbers – Raising a Number to a Large Power – Computing the Nth Fibonacci Number.

Unit – IV: ARRAY TECHNIQUES

Array Order Reversal – Array Counting or Histogramming – Finding the Maximum Number in a Set – Removal of Duplicates from an Ordered Array – Partitioning an Array – Finding the kth Smallest Element – Longest Monotone Subsequence.

Unit – V: MERGING, SORTING AND SEARCHING

Two Way Merge - Sorting by Selection, Exchange, Insertion, and Partitioning - Binary Search – Hash Searching.

TEXTBOOK

1. Dormer R G, "How to Solve it by Computer", Prentice Hall of India, 1997

REFERENCES

1. Michael Schneider, Steven W. Weingart, David M. Perlman, "An Introduction to Programming and Problem Solving with Pascal", Wiley Eastern Limited, New Delhi, 1982.

Course Coordinator HOD

BSC102	**DIGITAL LOGIC AND FUNDAMENTALS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.S.Gomathi Sakthi/ BCA				
COURSE OBJECTIVES :-					

Learners will be familiar with the given fundamental principles of digital electronics, semiconductor memories, A/D and D/A converters											
COURSE OUTCOMES (COs)											
CO1	Apply the principles of Boolean algebra to manipulate and minimize logic expressions.										
CO2	Use K-maps to minimize and optimize two-level logic functions up to 5 variables.										
CO3	Learning the operation of latches, flip-flops, counters, registers, and register transfers.										
CO4	Analyze the operation of sequential circuits built with various flip-flops.										
CO5	Understand the concepts of micro-operations and building blocks of digital systems										
CO6	Ability to apply the concepts of Master Slave flip flops ,counters and Registers for a real time application										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	L								
	CO2	H	L								
	CO3	H	L						H		
	CO4	H	-								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

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UNIT-1:

Number systems – Conversion from one number to another – Compliments – Binary codes –

Binary logic – Logic gates – Truth tables. Boolean Algebra – Axioms – Simplification of Boolean functions – Karnaugh Map method (up to 5 variables) – Tabulation method.

UNIT- 2:

Adders – Sub tractors – Code Converter – Multilevel NAND and NOR circuits – Binary parallel Adder – Decimal Adder - Decoders – Encoders – Multiplexes – Demultiplexer – Design of circuits using Multiplexers/Decoders.

UNIT- 3:

Flip Flops – RS, JK,D and T Flip Flops –Excitation Table - Registers – Shift Registers – Counters – Ripple Counters – Synchronous Counters – Design of Counters.

UNIT- 4:

Memory Unit – Bus Organization – ALU – Design of ALU – Status Register – Effects of Output carry – Microprogramming – Design of Specific Arithmetic Circuits.

UNIT- 5:

Accumulator – Design of Accumulator – Computer configuration – Instruction and Data formats – Instruction sets – Timing and Control – Execution of instruction – Design of computer – Hardwired control – PLA Control and Microprogram control.

Recommended Texts:

1. M.M. Mano, Digital Logic Computer Design, Pearson Education.

Reference Books:

1. Givone, 2002, Digital Principles Design, Tata McGraw Hill, New Delhi.
2. V. Rajaraman, 2002, Fundamental of Computers, Third Edition, PHI, New Delhi.
3. T.C. Bartee, 1991, Computer Architecture and Logical Design, Mc Graw Hill.

Course Coordinator HOD

BSC103	MATHEMATICS –I	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary				
	Course Coordinator Name & Department :- Dr.P.Sumathi&Mathematics				

COURSE OBJECTIVES :-

- Learners will be familiarized with certain concepts in Set theory, Matrices and Theory of Equations.
- To direct the students to develop problem solving skills based on the concepts ofTrigonometry and Differential Equations.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in Newton's forward and backward.
CO2	Understand the concept of Cayley - Hamilton theorem.
CO3	Apply suitable Hyperbolic and inverse hyperbolic functions.
CO4	Analyze the algorithm for trigonometric series and using the theorems in real time applications.
CO5	Evaluate maxima and minima of functions of two variables.
CO6	Create a real time application reciprocal equation.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	M	H		
	CO2	M	H	-	-	-	-	M			
	CO3	H	M	-	-	-	-	M			
	CO4	H	H	-	-	-	-	M			
	CO5	M	H	-	-	-	-	M			
	CO6	H	H	-	-	-	-	M			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT-I : SET THEORY

Sets, Subsets, Equal sets Universal sets, Finite and Infinite sets, Operation on sets, Union Intersection and complements of sets, Cartesian product, Cardinality of sets, Simple applications.

UNIT–II : MATRICES AND DETERMINANTS

Determinants: Definitions, Minors, cofactors, Properties of determinants, Application of determinant in finding the area of triangle, Solving a system of linear equations Cramer's rule.

Matrices: Definitions, Types of Matrices, Addition, Subtraction, Scalar Multiplication and Product of Matrices, Adjoint, Inverse. Solving a system of linear equation using matrix inverse.

UNIT–III : DIFFERENTIATION

Derivatives of a function, derivatives of sum, differences, Product and quotient of functions, Derivatives of polynomial, trigonometric, Exponential, Logarithmic, Inverse trigonometric and Implicit functions, Logarithmic differentiation, Chain Rule and Differentiation by substitution.

UNIT-IV : INTEGRATION

Indefinite Integrals, Method of integration by substitution by parts, Partial fractions, Integration of algebraic and transcendental functions, Reduction formulae for simple and trigonometric functions, Definite integral as limit of sum, Fundamental theorem of integral calculus, evaluation of definite integrals by substitution, Using properties of definite integrals.

UNIT-V: ORDINARY DIFFERENTIAL EQUATION

Higher order linear differential equations with constant coefficients, Method of variation of parameters, Cauchy's and Legendre's linear equations.

TEXT BOOK:

1. P.R.Vital, "Mathematical Foundation", Margham Publishing.2001

REFERENCES:

1. "Engineering Mathematics"-Dr.M.K.Venkatraman, National Publishing co, Chennai.
2. "Integral Calculus", T.K.Manickavasagam Pillai, SVPublications. 2004
3. "Elements of Discrete Mathematis" by C.L.Liu, MGH. 2014
4. "Ordinary Differential Equations" Sivarama Krishna Das And Vijayakumari, Viji's Academy. 2012

Course Coordinator HOD

BSC1L1	**PROGRAMMING IN C LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Applications / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.S.Surya /BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic concepts of C programming. Practice the use of statements to implement the arrays, functions and pointers & Gain skills to handle strings and files.

COURSE OUTCOMES (COs)

CO1	Construct programs that demonstrate effective use of C statements.
CO2	To perform the matrix operations.
CO3	Develop programs using predefined and user defined functions.
CO4	Implement C features including arrays, structures, pointers and files.
CO5	Perform sorting and searching using C programs.
CO6	Implement the arrays, functions and pointers

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

	MATRIX MANIPULATION
1.	Addition & subtraction.
2.	Multiplication.
3.	Transpose, and trace of a matrix.
4.	Determination of Matrix.
5.	Inverse of Matrix.
	SUMMATION OF SERIES
6.	Sin (x)
7.	cos (x)
8.	Exp (x) (Comparison with built in functions)
	STRING MANIPULATIONS
9.	Counting the no. of vowels, consonants , words, white spaces in a line of text and array of lines
10.	Reverse a string & check for palindrome.
11.	Substring detection, count and removal.
12.	Finding and replacing substring
	RECURSION
13.	nPr and nCr
14.	GCD of two numbers.
15.	Fibonacci series.
16.	Maximum and minimum..
17.	Tower of Hanoi.
	SORTING AND SEARCHING
18.	Insertion and Sort
19.	Bubble Sort.
20.	Linear Search
21.	Binary Search

BAL201	TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL – I				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	சிற்றிலக்கியமான தூது,பள்ளு ,குறவஞ்சி பற்றி அறிந்துகொள்வர்
CO2	சைவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO3	வைணவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO4	பௌத்த, இசுலாம், கிறித்துவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறுபற்றி அறிந்துகொள்வர்
CO6	சிற்றிலக்கியம் மற்றும்சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval	Academic Council Meeting

முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35
திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 **9**
அற்புதத்திருவந்தாதி - 1 - 5
திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10
மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 **9**
பெரியாழ்வார் - முதல்திருமொழி - 1 - 10
ஆண்டாள் - திருப்பாவை - - 1 - 10
தொண்டரடிப்பொடிஆழ்வார் - திருமாலை - 1 - 5

அலகு4 **9**
ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10
பராபரக்கண்ணி- குணங்குடிமஸ்தான்சாகிபு - 1 - 20
இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 **9**
சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாட நூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

Course Coordinator HOD

	Hindi	L	T	P	C
BAL20X	**Total Contact Hours – 45**	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				

COURSE OBJECTIVES: - To understand and improve the skills in the Language of Hindi	
COURSE OUTCOMES (COs)	
CO1	Remember of Ramayana In Sabari part
CO2	Understand the historical stories
CO3	Apply the concept of translation
CO4	Analyzeand develop the letter writing skills
CO5	Evaluateand develop the speaking skills
CO6	Create knowledge in letter writing and speaking skills

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**

MODERN POETRY - SHABARI

UNIT II **09**

ONE ACT PLAY - EKANKI SANKALAM

UNIT III **09**

TRANSLATION - HINDI – ENGLISH ONLY

UNIT IV **09**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **09**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - LokbharathiPrakashan ,1 Floor, DuebariBuilding,Mahathma Gandhi Marg, Allahabad – 1.
UNIT II – Publishers – Vani Prakasam, New Delhi-110002
UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator HOD

BAL20X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES :-

Présenter aux élèves la complexité de la grammaire et comment la surmonter avec des règles simples.

COURSE OUTCOMES (COs)

CO1	Être capable d'interpréter la langue.
CO2	Se familiariser avec les approches méthodologiques de l'étude des textes littéraires et culturels, telles que la lecture attentive, la contextualisation socio-historique et la théorie littéraire et culturelle.
CO3	Acquérir une maîtrise avancée du français parlé et écrit.
CO4	Encourager le développement de compétences en linguistique, en traduction et en études comparatives.
CO5	Se souvenir de l'anatomie des conjugaisons au passé.
CO6	Pour évaluer le texte donné de manière critique et améliorer les compétences en communication.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I -Quelle journee! **9**

La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! **9**

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)
Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? 9

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? 9

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est-Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! 9

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				

	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English

COURSE OBJECTIVES:- To have a better understanding of the English language skills and its implementation it in day to day life activities.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb

– Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

Course Coordinator HOD

	DATA STRUCTURE	**L**	**T**	**P**	**C**
: BSC201	Total Contact Hours – 60	3	1	0	4
	Prerequisite course –Computer Science / Mathematics Studied in Higher Secondary				

	studies
	Course Coordinator Name &Department:-Ms.V.Ramya/BCA

COURSE OBJECTIVES:-

Learners will be familiar with basic data structure and algorithm analysis. Learners will understand the applications of data structure & able to apply the problem solving techniques using data structure.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in fundamental data structure
CO2	Understand the concept of algorithmic design and implementation
CO3	Apply suitable data structure for developing a real time application
CO4	Analyze the algorithm for its complexity and performance
CO5	Apply data structures and algorithms on which file structures and data bases are based
CO6	Analyze an real time application using a suitable data structure

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PS O2	PSO7
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

Unit 1:

Data Structures: Definition of a Data Structure – Primitive and Composite data types, Asymptotic notations, Arrays, Operation on arrays, Order lists

Unit 2:

Stacks - Applications of Stack - Infix to Postfix Conversion, Recursion, Maze Problems - Queues - Operations on Queues, Queue Applications, Circular Queue.

Unit 3:

Singly Linked List - Operations, Application - Representation of a Polynomial, Polynomial Addition; Doubly Linked List - Operations, Applications Ordering of Books in Library (Alphabetical Ordering).

Unit 4:

Trees and Graphs: Binary Trees - Conversion of Forest to Binary Tree, Operations - Tree Traversals; Graph - Definition, Types of Graphs, Hashing Tables and Hashing Functions, Traversal - Shortest Path; Dijkstra's Algorithm.

Unit 5:

Algorithm - Definition - Examples - Complexity - Divide and Conquer - Binary Search - Maximum and Minimum - Merge Sort.

Books For Study:

1. E.Horowitz and S.Shani Fundamentals of Data Structures in C++, Galgotia Pub. 1999.
2. Horowitz, S. Sahni, and S. Rajasekaran, Computer Algorithms, Galgotia Pub. Pvt. Ltd., 1998.
3. R. Kruse C.L. Tondo and B. Leung, Data Structures and Program design in C, PFU, 1997.

Course Coordinator HOD

BSC202	**PROGRAMMING IN C++**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.N.Mathimagal/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic programming in C++ concepts and to demonstrate the differences between traditional imperative design and object-oriented design.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts and elementary of C++ programs.
CO2	Understand algorithmic thinking and apply it to programming.
CO3	Gain knowledge to use problem-solving techniques.
CO4	Analyze the programming with different operators
CO5	Ability to apply OOPs concepts
CO6	Used to implement real time application using suitable logic programming in C++

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT 1:

Principles of Object Oriented Programming (OOP): Software Evolution-OOP Paradigm-Basic Concepts of OOP-Benefits of OOP- Object Oriented Languages-Applications of OOP

UNIT 2:

Introduction to C++; Tokens, Keywords, Identifiers, Variables, Operators, Manipulators, Expressions and Control Structures in C++; Pointers - Functions in C++ - Main Function - Function Prototyping - Parameters Passing in Functions - Values Return by Functions - Inline Functions - Friend and Virtual Functions

UNIT 3:

Classes and Objects; Constructors and Destructors; and Operator Overloading and Type Conversions - Type of Constructors - Function overloading

UNIT 4:

Inheritance: Single Inheritance - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Hybrid Inheritance. Pointers, Virtual Functions and Polymorphism; Managing Console I/O operations

UNIT 5:

Working with Files: Classes for File Stream Operations - Opening and Closing a File - End-of-File Deduction - File Pointers - Updating a File - Error Handling during File Operations - Command-line Arguments.

Books For Study:

1. Herbert Schildt, 1999, C++ - The complete Reference, Third Edition, Tata McGraw – Hill.
2. E. Balagurusamy,1995,Object Oriented Programming with C++, Tata McGraw-Hill Publishing Company Ltd.
3. E.Horowitz and S.Shani,1999,Fundamentals of Data Structures in C++ , Galgotia Pub.
4. Robert Lafore, Object Oriented Programming in Microsoft C++, Galgotia publications.

Course Coordinator HOD

BSC203	MATHEMATICS –II	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary				
	Course Coordinator Name & Department :- Dr.P.Sumathi&Mathematics				

COURSE OBJECTIVES :-

- Learners will be familiarized with certain concepts in Integral calculus, ordinary Differential Equations and Laplace Transforms.
- To direct the students to develop problem solving skills based on the concepts of vector differentiation and vector integration.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in Bernoulli's formula
CO2	Understand the concept of equations with constant coefficients
CO3	Apply suitable ideas in Vector differential operator∇
CO4	Analyze the algorithm in inverse Laplace transforms
CO5	Evaluate the problems in Stoke's and Green's theorems
CO6	Create an real time application of surface and volume integrals

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	M	H		
	CO2	M	H	-	-	-	-	M			
	CO3	H	M	-	-	-	-	M			
	CO4	H	H	-	-	-	-	M			
	CO5	M	H	-	-	-	-	M			
	CO6	H	H	-	-	-	-	M			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT- I : BASIC STATISTICS

Measure of central tendency, Preparing frequency distribution table, Mean, Mode, Median, Measure of dispersion, Range, Variance and standard deviations, Correlation and regression.

UNIT- II : MATHEMATICAL LOGIC

Propositions, Logical connectives and compound statements, Truth values and truth table, Statement pattern and Logical equivalence, Tautology, contradiction, Contingency, validity of arguments, Predicates.

UNIT- III : INTRODUCTION TO NUMBERS AND SEQUENCES

Natural number, Whole number, Integers, Rational numbers, Irrational numbers, Real numbers, Complex numbers, Prime integers, Decimal number system, Binary number system, Sequences, Types of sequence and series.

UNIT- IV : COMBINATORIES

Review of permutations and combinations, Mathematical Induction, Pigeon hole principle, Principle of Inclusion and Exclusion, Generating function, Recurrence relations.

UNIT- V : GRAPH THEORY

Definition and types of graphs, Incidences and degree of vertices, Isomorphism of graphs, Connected and Disconnected graphs, walk, Paths and circuits, Directed graph, Tree, Elementary results(Properties or Theorems) of graphs, Connected graphs and Trees(Without Proof).

TEXT BOOK:

1. "Discrete Mathematical Structures", R.M.Somasundaram, Prentice-Hall of India Pvt.Ltd (August 15, 2004)

REFERENCES:

1. Gupta S.P and Kapoor V.K., "Fundamentals of Mathematical Statistics", Sultan Chand and Sons, New Delhi, 1995.
2. Graybill, "Introduction to Statistics", Mc Graw Hill.
3. "Graph Theory with Applications to computer science", Narsing Deo.
4. "Discrete Mathematics", P.Sivarama Krishna Das and Vijayakumari, Viji's Academy,2012.
5. "Basic Mathematics", Mittal and Agarwal.

Course Coordinator HOD

BSC2L1	**PROGRAMMING IN C++ LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Applications / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms. N.Mathimagal/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic programming in C++ concepts and to gain knowledge to create real time application.

COURSE OUTCOMES (COs)

CO1	Implement the basic concept of object oriented programming
CO2	Ability to implement virtual and friend functions.
CO3	Develop the programs for Stack and Queue
CO4	Analyze and implement the expressions for real time applications
CO5	Perform the Linked list operations.
CO6	Ability to use different searching and sorting methods for real time applications.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					

4	Approval	Academic Council Meeting

S.NO	LIST OF PROGRAMS	
1.	Functions Using	i). Call by Value
		ii). Call by Reference.
		iii). Recursive Call.
		iv). Returning different Data Types.
2.	In-line function, Overloaded function and Default arguments.	
3.	Operator overloading (Unary and Binary).	
4.	Class and All types of Constructors	
5.	Static function and Array of objects with static data	
6.	Friend function and Friend class	
7.	i). Simple and Multilevel inheritance	
	ii). Implementing derived class constructors.	
8.	i). Function overriding	
	ii). Creating objects using Pointers	
9.	Virtual functions, pure virtual functions and Abstract class.	
10.	Dynamic polymorphism	
11.	Function Template and Class Template	
12.	I/O Streams with text file and data file.	

Course Coordinator HOD

BCI204	**ENVIRONMENTAL STUDIES**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name &Department:- – Mrs. S. Vinitha / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and a biotic ecosystem.

COURSE OUTCOMES (COs)

CO1	Gain the knowledge about the environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Apply its properties and uses of Hydrocarbons and Alkynes
CO4	Analyze the impact of population and Urbanization to affect the system of habitat loss
CO5	Evaluate the Social issues by our conservation act
CO6	Create the organic environmental approach to protect our habitat for the next generation.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	3	3	1	1	3		
	CO2	3	3	1	2	2	3	3		
	CO3	3	2	2	2	3	2	3		
	CO4	3	2	3	1	1	3	3		
	CO5	2	3	3	2	3	1	3		
	CO6	3	3	2	2	3	3	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT-I

NATURAL RESOURCES:

The multidisciplinary nature of Environmental Studies;

Definition, scope and importance. Need for public awareness.

Natural resources: Nenewable and Non- renewable resources;

Natural resources and associated problems.

Forest resources: Use ami over exploitation, deforestation, case studies, timber extraction, mining, dams and their effects on forests and tribal people.

Water resources: Use and over utilization of surface and ground water, floods, drought, conflicts over water, dams – benefits and problems.

Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case study.Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sounds, case studies.Land resources: Land as resources, land degradation, man induced landslides, soil erosion and desertification.Role of individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT-II

ECOSYSTEM : 9

Concepts of an ecosystem-structure and function of and ecosystem-producers, consumers and decomposers-energy flow in ecosystem-ecological-Succession-Food chains, food webs and ecological pyramids-introduction, types, characteristics features, structure and function of the following ecosystem – Forest ecosystem Grass land ecosystem, Desert ecosystem, Aquatics ecosystem(Ponds, stream,lakes,rivers,oceans,estuaries)

UNIT-III

BIODIVERSITY AND ITS CONSERVATION: 9

Introduction – Definition: genetic, species and ecosystem diversity- Biogeographical classififcation of India- Value of Biodiversity: consumptive use, productive use, social, ethicial, aesthetic and option values – Biodiversity at global, national, local levels –India as a mega diversity nation –Hotspots of wildlife conflicts- Endangered and endemic species of India- Conservation od biodiversity In-Situ and Ex-Situ conservation of biodiversity.

ENVIRONMENTAL POLLUTION:

Definition, causes, effects and control measures of – Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, and Nuclear hazards. Solids waste Management:

causes effects and control measures of urban and industrial wastes –Role of an individual in earth quake, cyclone and landslides.

UNIT-IV

SOCIAL ISSUES AND THE ENVIRONMENT: 9

From unsustainable to sustainable development, urban problems related to energy. Water conservation, rain water harvesting, watershed management, resettlement and rehabilitation of people, its problems and concerns. Case studies. Environmental ethics: Issues and possible solutions. Climate change, holocaust. Case studies. Water land reclamation- Environment Protection Act- Air(Prevention and control of pollution) Act –Wildlife protection act- Forest conservation Act- Issues involved in enforcement of environmental legislation – Public awareness.

UNIT-V

HUMAN POPULATION AND THE ENVIRONMENT: 9

Population growth, variation among nations- population explosion- family welfare Programme-Environment and human health. Human values- value Education –HIV/AIDS.

Women and child welfare- Role of Information Technology in Environment and Human health –Case studies.

TEXT BOOKS

1. Sharma.B.K. and Kaur, *Environmental Chemistr*y, Goel Publishing House, Meerut, 1994.

2. De.A.K., *Environmental Chemistry* , New Age International (p) lt., , New Delhi, 1996.

3. Kurian Joseph & R. Nagendran, *Essential of Environmental Studies,* Pearson Education, 2004.

REFERENCE BOOKS

1. Dara S.S., *A Text Book of Environmental Chemistry and pollution control*, S.Chand & Company Ltd.,New Delhi, 2004.

2. Jeyalakshmi.R, *Principles of Environmental Science*, 1st Edition, Devi Publications, Chennai 2006.

3. Kamaraj.P & Arthanareeswari.M, *Environmental Science – Challenges and Changes*, 1st Edition, Sudhandhira Publications, 2007.

4. Arivalagan.K, Ramar.P & Kamatchi.P, *Principles of Environmental Science*, 1st Edition, Suji Publications, 2007.

Course Coordinator HOD

BBC206	**VALUE EDUCATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name &Department:- Ms. G. Vinothini, Commerce				

- **COURSE OBJECTIVES**
- To enable the students to understand the Social values.
- To provide knowledge on the features forlife.
- To acquire the knowledge on Humanrights.
- To impart the knowledge on Environment and Ecologicalbalance.
- To educate the knowledge on Socialevils..

COURSE OUTCOMES (COs)

CO1	Recall the basic concept of human values, Social Value role of medias, Self-introspection – Self esteem
CO2	Understand the duties and responsibilities of individuals and role of media
CO3	Apply Salient features for life, : Truth, commitment,, honesty and integrity, forgiveness and love and also positive creative thinking
CO4	Demonstrate Universal declaration of Human rights, peace and nonviolence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship.
CO5	Analyze living and nonliving environmental balance, Ecological balance and conservations and enrichment
CO6	Manipulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M					H		
	CO2	H	H	H		L					
	CO3	M	H	M	M						
	CO4	H	M	L							
	CO5	H	H	M			M				
	CO6	M	M	L							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		☐					✓			

	Approval	Academic Council Meeting	

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UNIT-I: Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

UNIT-II: Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT-III: Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development.

UNIT-IV: Social values - Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms.

UNIT-V: Effect of international affairs on values of life/ Issue of Globalization - Modern warfare - Terrorism. Environmental issues - mutual respect of different cultures, religions and their beliefs.

Reference Books:

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995)

2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.

3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.

4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)

5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.

6. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

Course Coordinator HOD

BAL30X	TAMIL – III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தைஅறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	ஐம்பெரும் காப்பியங்களைபற்றி அறிவர்
CO2	பிற்கால காப்பியங்களைபற்றி அறிவர்
CO3	முக்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO4	பிற்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றைபற்றி அறிவர்
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 **9**

சிலப்பதிகாரம்-இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219

மணிமேகலை- சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115
சீவகசிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம்- 851 - 860

அலகு2 **9**

கம்பராமாயணம்- **கம்பர்-** அயோத்தியகாண்டம்- கங்கைப்படலம் - 10
தேம்பாவணி- வீரமாமுனிவர்- நாட்டுப்படலம் - 10
சீறாப்புராணம்-உமறுப்புலவர்--மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 **9**

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10
நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10
இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 **9**

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி- சிவப்பிரகாசர் - 8,12,18,24,39
புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 **9**

காப்பியஇலக்கியவரலாறு , நீதிஇலக்கியவரலாறு

பாட நூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

Course Coordinator HOD

BAL30X	Hindi	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				

	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana in Panchavati part
CO2	Understand the history of Hindi literature
CO3	Apply the concept of Hindi grammatical speech
CO4	Analyze and develop the translation skills
CO5	Evaluate and develop the unseen passage skills
CO6	Create the skills in Hindi language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**

POETRY - PANCHAVATI

UNIT II **09**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **09**

ALANKAR – Anupras – Yamak - Slesh - VakrokthiUpama – Rupak – Drishtanth - Virodhabas.

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

By MaithilisharanGupt, AnuvadhAbhyas – III

Reference Books:

Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BAL30X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES :-

Développer les aspects techniques de la langue et des nuances grammaticales variées pour interpréter le sujet.

COURSE OUTCOMES (COs)

CO1	Transmettre les différents aspects qui composent la langue.
CO2	Pour apprendre certains faits, procédures, pratiquer certaines structures grammaticales et pratiquer des stratégies de communication.
CO3	Pour apprendre la culture des natifs de la langue.
CO4	Analyser les différences entre la grammaire de base et avancée.
CO5	Se souvenir de l'interdépendance entre les conjugaisons
CO6	Comprendre les restrictions grammaticales.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I Vivement demain! **9**
Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? **9**
Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? **9**
Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme! **9**
Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-
La forme ((en + participle present))

UNIT V On se retrouve ! **9**
Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present - Passe compose-Imparfait et future

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH301	**ENGLISH- III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills..

	COURSE OUTCOMES (COs)
CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message - Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

BSC301	**COMPUTER ARCHITECTURE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.S.Anupriya/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic concepts of Computer Architecture and to understand the working of computer Systems & its basic principles.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in basics of Computer and instruction sets
CO2	To understand the concept of Pipeline and its types
CO3	Apply the concept to design a hardware component
CO4	Analyze the various Input/ Output Operations & its data transfer
CO5	Understand the architecture design of a computer & its type of memory
CO6	Used to design real time application using different computer architecture

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

Unit 1: Central Processing Unit:
General registers and stack organization – instruction formats- Addressing modes – Data Transfer and Manipulations – Program Control – RISC.

Unit 2: Pipelining:
Arithmetic, Instruction and RISC pipelining – Vector Processing, Array Processor.

Unit 3: Computer Arithmetic :
Addition and Subtraction – Multiplication and Division Algorithms- floating Point on decimal arithmetic operations.

Unit 4: Input/Output Organization :
Peripheral Devices – I/O interfaces – asynchronous data transfer – modes of transfer – priority interrupt – DMA – I/O processors – Serial Communications.

Unit 5: Memory Organization :
Memory hierarchy – Main memory – Auxillary memory – associative, cache and virtual memory – interconnection structures – Inter- processor arbitration.

Books For Study:

1. Morris Mano – Computer System Architecture Third Edition – PHI – 1994.
2. J.P.Hayes – Computer system Architecture – Mc-Grawhill – 1988.

Reference Books:

1. V C. Hamacher, Z .G. Vraesic, S. G. Zaky, "Computer Organization", Tata McGraw Hill. 1996.
2. Vincent P Heuring Harry F Jordan, "Computer system Design and Architecture", Addison Westey, 1999.
3. David A. Patterson and John L. Henessy, "Computer Organization and Design", Harcourt as/s PTE Ltd, 2nd edition 1999.
4. Thomas c Bartee, "Computer Architecture and Logic Design", International Edition 1991, McGraw Hill.

Course Coordinator HOD

BCA302	VISUAL PROGRAMMING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:-Ms.V.Ramya/BCA				

COURSE OBJECTIVES:-

Learners create and develop simple application program that connect with database using visual Basic. Learners develop practical, professional-quality programs using appropriate Visual Basic programming methods.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in basic concepts of Visual Programming
CO2	Express the use of the event-driven model
CO3	Generalize knowledge of user interface design
CO4	Analyze to implement applications using an object-oriented methodology
CO5	Validate to perform operations and store results
CO6	Comprehend an application using visual programming concepts.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO2
2	CO1	2	3	1	1	2	3	3			
	CO2	3	2	1	1	1	2	3			
	CO3	3	2	2	1	1	1	3			
	CO4	2	1	1	2	1	2	3			
	CO5	3	3	1	1	1	1	3			
	CO6	3	3	1	1	2	1	3			

3	Category	Humanities& Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Anyother	Project/Term Paper/ Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT 1:
Customizing a form/ writing simple programs/ tool box/ creating controls/ name property/ command button/ access keys/ image controls / text boxes/ labels / message boxes/ grid/ edit tools/ variables/ data types/ strings /numbers

UNIT 2:
Displaying information/ determinate loops /indeterminate loops/ conditionals/ built in functions/ functions and procedures

UNIT 3:
Lists /arrays/ sorting and searching/ records/ control arrays/ combo boxes/ grid control/ projects with multiple forms/ do events and sub main/ error trapping.

UNIT 4:
VB objects/ dialog boxes/ common controls / menus/ MDI forms / testing / debugging / optimization/ working with graphics

UNIT 5:
Monitoring mouse activity/ file handling/ file system controls/ file system objects/com/ole / automation / DLL servers / ole drag and drop

REFERENCE BOOKS

1. Gary Cornell / visual basic 6 from the ground up / TMH
2. Noel Jerke / visual basic complete ref / TMH

Course Coordinator HOD

BSC303	**STATISTICAL METHODS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary				
	Course Coordinator Name & Department :- Dr.P.Sumathi&Mathematics				

COURSE OBJECTIVES :-

- Learners will be familiarized with certain concepts in Measures of central tendency, Correlation.
- To direct the students to develop problem solving skills based on the concepts of Sample spaceand Statistical hypothesis.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in coefficient of variation
CO2	Understand the concept of karlpearsons spearman's rank correlation
CO3	Apply algorithms in Regression Equation for two variables
CO4	Analyze the algorithm for Correlation and Proportional.
CO5	Evaluate the solution of variance
CO6	Create an real time application of randomization

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	M	H		
	CO2	M	H	-	-	-	-	M			
	CO3	H	M	-	-	-	-	M			
	CO4	H	H	-	-	-	-	M			
	CO5	M	H	-	-	-	-	M			
	CO6	H	H	-	-	-	-	M			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT – I: MEASURES OF CENTRAL TENDENCY **12**

Measures of central tendency- Arithmetic Mean, Median, Mode, Geometric Mean, Harmonic Mean and their properties. Measures of Dispersion- Range,Quartile Deviation mean deviation, Standard deviation, combinedStandard deviation, coefficient of variation.Measures of Skewness , Karl Pearson's Bowley's, Kelly's and coefficient of skewness and kurtosis based on moments.

UNIT – II: CORRELATION **12**

Correlation – methods of studying correlation- graphical method- karlpearsons spearman's rank correlation- regression analysis– construction of Linear Regression Equation for two variables.

UNIT – III: PROBABILITY **12**

Sample space- events- Probability- Addition and Multiplication Theorem of Probability – conditional probability-Bayes' theorem of Probability. Mathematical expectations- Addition Multiplication theorem-Simple problems.

UNIT – IV:TESTING OF HYPOTHESIS. **12**

Statistical hypothesis –types of error- Test of significance- Small sample and large sample test based on normal t, F, χ – Square of mean-Standard Deviation-Correlation and Proportional.

UNIT - V: DESIGN OF EXPERIMENTS **12**

Basic Principle of design of experiments – randomization, replication and local control in design of experiments – (CRD,RBD,LSD) analysis of variance – one way, two way classification and Latin square design.

Text Book:

1. Gupta S.C and V.K. Kapoor, "Fundamentals of Mathematical Statistics", Sultan & Sons, New Delhi. (2013) .

References:

1. Gupta SP, "Statistical Methods", Sultan & Sons, New Delhi (1995)
2. Kapoor and Saxena, "Mathematical Statistics", Chand & Co, New Delhi.

Course Coordinator HOD

BSC3L1	VISUAL PROGRAMMING LAB	L	T	P	C
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:-Ms.P.Jennifer/BCA				

COURSE OBJECTIVES:

Learners use the graphical user interface programming language which has a bulk of inbuilt user friendly tools for understanding programming language concepts and helps to enhance the intellectual skills of learners.

COURSE OUTCOMES (COs)

CO1	Ability to Perform a program using the development tools
CO2	Ability to handle and analyze fundamental computer programming operations
CO3	Examining, creating, and debugging programming projects using an IDE.
CO4	Validating user input through various input tools
CO5	Manipulate programs that include multiple forms and basic menu environment.
CO6	Comparing and contrasting source code and executable results

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	1	2	1	1	3		
	CO2	3	3	2	1	1	2	3		
	CO3	3	3	2	1	1	1	3		
	CO4	3	2	1	1	2	1	3		
	CO5	2	3	2	1	2	1	3		
	CO6	3	2	1	2	1	2	3		

3	Category	Humanities& Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Anyother	Project/Term Paper/ Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

S.NO	**LIST OF PROGRAMS**
1.	SDI
2.	MDI
3.	Drawing inside View Windows, Device Context
4.	Message Map
5.	Event Handling
6.	Graphics Devices, Colors and Fonts
7.	Dialog Controls
8.	Static and Dynamic Controls
9.	Creating Pop-Up menus
10.	Tool Bar and Status Bar
11.	SDI with Serialization

Course Coordinator HOD

BSC3E1	BASIC TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ் எழுத்துக்களைஅறிவர்
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளைஅறிவர்
CO3	சொல்லமைப்புபற்றிஅறிவர்
CO4	சொற்களை உருவாக்கும்அறிவைப்பெறுவர்
CO5	சொற்களை தொடராக மாற்றும்திறனைப்பெறுவர்
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 **12**

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 **12**

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 **12**

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

1.ஆறுமுகநாவலர்,“தமிழ் இலக்கணம்”, பாரிநிலையம், 2012
2. கழகப்புலவர்குழுவினர்,“நன்னூல்–எழுத்ததிகாரம்”, கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,“நன்னூல்–சொல்லதிகாரம்”, கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,“நன்னூல்”,உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

Course Coordinator HOD

BSC3E1	**SPECIAL TAMIL – I**	**L**	**T**	**P**	**C**
	Total Contact Hours –		0	0	
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- பண்டைத்தமிழரின்நாகரிகமும்பண்பாடும்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்										
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்										
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்										
CO4	தமிழரின்கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றி அறிவர்										
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றி அறிவர்										
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு1

நாகரிகமும்பண்பாடும் -சங்ககாலத்துஅரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்

அலகு2

பண்டைத்தமிழர்திருமணமுறை ,நல்லறம் - குடும்பவாழ்வுபற்றியதமிழர்கொள்கை - பண்டையத்தமிழரின்உணவு, உடை, உறையுள்

அலகு3

பண்டைத்தமிழரின்கல்விநிலை - பண்டைத்தமிழரின்வானியல்அறிவு - பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4

மகளிர் நிலை - சங்கத் தமிழரின் சமய வாழ்வு - சங்ககால விழாக்கள்

அலகு5

இந்திய நாகரீகத்தில் தமிழ்ப் பண்பாட்டுக்கூறுகள் - மருத்துவக் கலை - தமிழகக் கோயில் கட்டிடக்கலை வளர்ச்சி

பாடநூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2010
2.பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2012
3கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", மணிவாசகர் பதிப்பகம், 2012

பார்வைநூல்கள்

1. நா. வானமாமலை, "தமிழர்பண்பாடும்தத்துவமும்", அலைகள்வெளியீட்டகம், 2011
2. பேரின்பன், "தமிழர்வரலாறு:சிலகேள்விகளும்தேடல்களும்", அலைகள்வெளியீட்டகம்,2011
3. மா.இராசமாணிக்கனார், "தமிழகவரலாறும்தமிழர்பண்பாடும்", செண்பகாபதிப்பகம், 2012

Course Coordinator HOD

BAL40X	**TAMIL – IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES :- சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்					
COURSE OUTCOMES (COs)					
CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்				
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்				

CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்										
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்										
CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்										
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 **9**

நற்றிணை - 10, 110, 129

குறுந்தொகை - 8, 25, 32

கலித்தொகை - 6, 37, 51

அலகு2 **9**

புறநானூறு - 89, 109, 204

பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 **9**

பொருநராற்றுப்படை - 151 - 213

பெரும்பாணாற்றுப்படை - 5 - 15,

- 170 - 184

அலகு4 **9**

நெடுநல்வாடை - 1 - 25
பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 **9**

எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

Course Coordinator HOD

BAL40X	Hindi	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. Mustak Husaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)	
CO1	Rememberthe skills of the leadership
CO2	Understand and develop the skills to overcome the mistake
CO3	Apply the concept of Hindi essay writing
CO4	Analyzeand develop the translation skills
CO5	Evaluate the unseen passage skills
CO6	Create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**
DRAMA – Andher Nagari

UNIT II **09**
NOVEL - GABAN - Premchand

UNIT III **09**
GENERAL ESSAY

UNIT IV **09**
TRANSLATION - HINDI – ENGLISH

UNIT V **09**
COMPREHENSION

Text Books:

ByBharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas – III

Reference Books:

UNIT 1 - Publisher–Vani Prakashan, New Delhi – 110 002.
UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002

UNIT III – Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra -282002
UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17
UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator HOD

BAL40X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name &Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES :-

Initier les étudiants aux niveauxavancés de la langue.

COURSE OUTCOMES (COs)

CO1	Pour apprendre la culture des natifs de la langue dans la configuration avancée.
CO2	Comprendre la structure grammaticaleintégraleenfrançais.
CO3	Encourager le développement de compétencesenlinguistique
CO4	Évaluerl'ensemble des compétencesorales et écrites
CO5	Se souvenir de la construction du langage
CO6	Pour améliorer la maîtriseavancée de la langue

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								
	CO2	H	M								

	CO3	H	M						H		
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I Vousplaisantez! **9**
Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien! **9**
Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verb)

UNIT III A vos risqué et perils! **9**
Le subjonctif Present- La construction passive pourmetreenvaleurl'object direct de l' action

UNIT IV C'est tout un programme! **9**
Les pronom possessives -Les adjectifs et les pronomsindefinis-Les pronomdemonstratifs:
Les constructions --celui+de

UNIT V C'est la fete ! **9**
Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXT BOOKS:
A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				

COURSE OBJECTIVES:- To focus on the balanced development of the English language communication skills.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of English literature
CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L								

	CO2	H	L						H			
	CO3	H	L									
	CO4	H	L									
	CO5	H	L									
	CO6	H	L									
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Eng Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)		Any other	Project/Term Paper/ Seminar/ Internship (PR)	
		✓										
4	**Approval**	Academic Council Meeting										

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle** - **Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar** - **Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Macbeth", Macmillan Publisher, 2014

Course Coordinator HOD

BSC401	**OPERATING SYSTEMS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.V.Brindha/BCA				

COURSE OBJECTIVES :-

Learners can know about essential part of any computer system with the help of an operating system. The purpose of this course is providing a clear understanding of the concepts that underlie operating systems.

COURSE OUTCOMES (COs)

CO1	Remember the concepts to gain knowledge about an operating system and the role it plays
CO2	Understand the high-level structure of operating systems, applications, and the relationship between them.
CO3	Applying various knowledge of the services provided by operating systems. Exposure to some details of major OS concepts.
CO4	Analyzing about the behaviour of the different scheduling, memory management and file systems.
CO5	Evaluate to understand clearly the concept of Virtual memory and learn about techniques to manage and recovery from the deadlock.
CO6	Used to create different types of I/O system.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	2	2	1	1	2	3		
	CO2	2	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	2		
	CO4	2	2	2	3	2	2	3		
	CO5	2	2	2	1	1	1	3		
	CO6	3	3	3	2	2	2	2		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT – 1:

Introduction: Views – Goals – Types of system – OS structures – Components – Services – System Structure – Layered Approach – Virtual Machines – System Design and Implementation. Process Management: Process – Process Scheduling – Cooperating Process – threads – Inter-process communication CPU Scheduling: CPU schedulers – Scheduling Criteria – Scheduling Algorithms.

UNIT – 2:

Process Synchronization: Critical- Section Problem – Synchronization Hardware – Semaphores – Classical Problems of synchronizing – Critical Region – Monitors. Deadlock: Characterization – Methods for Handling Deadlocks – Deadlocks Prevention – Avoidance – Detection – Recovery.

UNIT – 3:

Memory Management: Address Binding – Dynamic Loading and Linking – Overlays – Logical and Physical Address Space – Contiguous Allocation – Internal & External Fragmentation. Non-Contiguous Allocation. Paging and Segmentation Schemes – Implementation – Hardware-Protection – Sharing – Fragmentation.

UNIT – 4:

Virtual Memory: Demand paging – Page Replacement – Page Replacement Algorithms – Thrashing. File system: File concepts – Access Methods – Directory Structures – Protection Consistency Semantics – File System Structures – Allocation Methods – Free Space Management.

UNIT – 5:

I/O System: Overview – I/O Hardware – Application I/O Interface – Kernal I/O Subsystem – Transforming I/O Requests to Hardware Operations – Performance. Secondary Storage Structures: Protection – Goals – Domain – Access matrix – The Security Problem – Authentication – Threats – Threat Monitoring – Encryption.

Books for study

1. Silberschatz P.B Galvin, Gange., "Operating System Concepts", 6th Edn., Addision – Wesley Publishing Co.,2002.

Reference:

1. H.M. Deital, An Introduction to Operating System, second edition, Addision Wesley, 1990.

Course Coordinator HOD

BSC402	**PROGRAMMING IN JAVA**				**L**	**T**	**P**	**C**			
	Total Contact Hours - 60				3	1	0	4			
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.										
	Course Coordinator Name &Department :- Ms.V.Ramya/BCA										
COURSE OBJECTIVES:- Learners will be familiar with the basic programming in JAVA concepts and the ability to write a computer program to solve specified problems using Java structure.											
COURSE OUTCOMES (COs)											
CO1	Remember the basic concepts of object-oriented programming										
CO2	Understand the classes and objects										
CO3	Gain knowledge to create packages										
CO4	Used to create Java SDK environment to create, debug and run simple Java programs.										
CO5	Apply the concept of network programming										
CO6	Examine a event driven programming using applets										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								

	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/TermPaper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

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UNIT – 1:
Introduction to Java – Features of Java – Object Oriented Concepts – Lexical Issues – Dat Types – Variables – Arrays – Operators – Control Statements.

UNIT – 2:
Classes – Objects – Constructors – Overloading method – Static and fixed methods – Inner Classes – String Class – Inheritance – Overloading methods – Using super – Abstract class.

UNIT – 3:
Packages – Access Protection – Importing packages – Exception Handling – Throw and Throws – Thread – Synchronizing – Messaging – Runnable Interface – Inner thread Communication – Deadlock – Suspending, Resuming and stopping threads – Multithreading.

UNIT – 4:
I/O streams – File Streams – Applets-String Buffer-Char Array-Java Utilities-Code Documentation.

UNIT - 5:

Networks basics-Select Programming-Proxy Servers-TCP/IP Sockets-Net Address-URL-Datagrams-Working with windows using AWT Classes-AWT Controls-Layout Managers and

Menus.

REFERENCES:

1. Cay S.Horstmann, Gary Cornell-Core Java 2 Volume 1 – Fundamentals,5th PHI,2000.
2. P.Naughton and H.Schildt –Java2 (The Complete References)-Third Edition,TMH 1999.
3. K.Arnold and J.Gosling- The Java Programming Language – Second Edition,Addison Wesley,1996.

Course Coordinator HOD

BSC403	**SOFTWARE ENGINEERING**				**L**		**T**		**P**	**C**	
	Total Contact Hours – 60				4		0		0	4	
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department :- Dr.S.Thirunirai Senthil/BCA										
COURSE OBJECTIVES :- Helps the learners to understand theories, methods, and technologies applied for professional software development.											
COURSE OUTCOMES (COs)											
CO1	Gain knowledge about the fundamentals of Software Engineering.										
CO2	Understand the Planning of a software Project										
CO3	Applying various Software Cost Estimation Techniques										
CO4	Analyze the various software design techniques										
CO5	Comprehend the Coding and testing part of the project.										
CO6	Understand the Software Quality Assurance and software maintenance tools										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO 2	PSO 3
2	CO1	H	L								

	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT 1:

Introduction to Software Engineering : Definitions – Size Factors- Quality and Productivity Factors – Managerial Issues- Planning a software Project: Defining the Problem – Developing a Solution – Strategy – Planning the Development Process – Planning an Organization Structure – Other Planning Activities.

UNIT 2:

Software Cost Estimation : Software cost factors – Software Cost Estimation Techniques – Staffing – Level Estimation – Estimating Software Maintenance Costs – The Software Requirements Specification – Formal Specification Techniques – Languages and Processors for Requirements Specification.

UNIT 3:

Software design: Fundamental Design Concepts – Modules and Modularization Criteria – Design Notations – Design Techniques – Detailed Design Considerations – Real-Time and Distributed System Design – Test Plans – Milestones, Walkthroughs, and Inspections.

UNIT 4:

Implementation issues : Structured Coding Techniques – Coding Style – Standards and Guidelines – Documentation guidelines – Type checking – Scooping Rules – Concurrency Mechanism.

UNIT 5:

Quality Assurance – Walkthroughs and Inspections – Static Analysis – Symbolic Execution –

Unit Testing and Debugging – System Testing – Formal Verification: Enhancing Maintainability during Development – Managerial aspects of Software Maintenance – Source Code Metrics – Other Maintenance Tools and Techniques.

REFERENCE:

1. R.S.Pressman,Software Engineering , Fourth Ed , McGraw Hill,1997.

Course Coordinator HOD

BSC4L1	**PROGRAMMING IN JAVA LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Applications / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.V.Ramya/BCA				
COURSE OBJECTIVES :- Ability to develop application using java SDK environment,AWT and Applet					
COURSE OUTCOMES (COs)					
CO1	Comprehend a simple java program using OOPs concepts				
CO2	Ability to use an interface.				
CO3	Examine packages and apply exception handling in real time application				
CO4	Implement the concept of thread				
CO5	Understand applications using AWT and Applet.				
CO6	Ability to handle Frames & Layout				
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low					

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

S.NO	JAVA PROGRAMS
1.	Finding area and Perimeter of a circle. Use Buffered Reader Class.
2.	Substring Removal from a String. Use String Buffer Class
3.	Determining the order of numbers generated randomly using Random Class
4.	Implementation of Point Class for Image Manipulation
5.	Usage of Calendar Class and manipulation
6.	String Manipulation using Char Array
7.	Database Creation for storing e-mail addresses and manipulation

8.	Usage of Vector Classes
9.	Implementation Thread based applications & Exception Handling.
10.	Application using synchronization such as thread based,Class based and synchronized
11.	Statements.
	APPLET
12.	Working with Frames and various controls
13.	Working with Dialogs and Menus.
14.	Working with Panel and Layout.
15.	Incorporating Graphics.
16.	Working with Colors and Fonts.

Course Coordinator HOD

BSC4E2		**BASIC TAMIL – II**					**L**	**T**	**P**	**C**	
		Total Contact Hours – 45					3	0	0	3	
		Prerequisite course – Basic Tamil - I									
		Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை									
COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழ்மொழியின்சொல்வகை, திணை, பால்பாகுபாடுபற்றிஅறிவர்										
CO2	அடுக்குத்தொடர், இரட்டைக்கிளவி, ண,ன,ர,ற,ள,ழவேறுபாடுபற்றிஅறிவர்										
CO3	பத்திகளைசுருக்கியும், விரிவாக்கிஎழுதும்அறிவைப்பெறுவர்										
CO4	சொற்களைகையாண்டுஉரையாடுவதுபற்றிபெறுவர்										
CO5	கட்டுரை, கடிதம்எழுதும்அறிவைப்பெறுவர்										
CO6	தமிழ்மொழியில்சரளமாகபேசும்எழுதும்திறனைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**

2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு –1 **12**

1.1 தமிழ் மொழி அறிமுகம்

1.2 சொல் வகைகள்

1.3 திணை, பால் பாகுபாடு

அலகு – 2 **12**

2.1 அடுக்குத் தொடர், இரட்டைக் கிளவி

2.2 ஒரு ஓர் வேறுபாடு

2.3 ண,ன,ர,ற,ள,ழ வேறுபாடு

அலகு – 3 **12**

3.1 பத்தியிலிருந்து வினாக்களுக்குரிய விடைகளை கண்டறியும் பயிற்சி

3.2 சுருக்கி வரைதல்

3.3 விரிவாக்கி எழுதுதல்

அலகு – 4 **9**

4.1 உரையாடல்

4.2 கட்டுரை

4.3 மடல் வரைதல்

பாட நூல்கள்

1. மருதூர் அரங்கராசன்,“தவறின்றித் தமிழ் எழுத”, ஐந்திணைப்பதிப்பகம், 2012
2. ஞா.தேவநேயப்பாவாணர், “உயர்தரக் கட்டுரை இலக்கணம்”, கௌராபதிப்பகம்,2013
3. க. கயிலாயநாதன்,“தமிழ் மொழி விளக்கம்”, முல்லைநிலையம், 2006

பார்வை நூல்கள்

1. பாரதிதாசன், "தவறின்றித்தமிழ்எழுத", நாம்தமிழர்பதிப்பகம், 2013
2. ஆசிரியர்குழு, "கடிதம்வரைதல்', லியோபப்ளிகேஷன்ஸ், 2013
3. பாவாணர், "கட்டுரைவரைவதுஎப்படி?", தமிழ்மண்பதிப்பகம், 2012

Course Coordinator HOD

Course Coordinator HOD

BSC4E1	**SPECIAL TAMIL – II**	**L**	**T**	**P**	**C**
	Total Contact Hours –		0	0	
	Prerequisite course – **SPECIAL TAMIL – I**				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- நாட்டுப்புறவாழ்வியலைபற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தாலாட்டுமற்றும்குழந்தைப்பாடல்கள்பற்றிஅறிவர்
CO2	தொழிற்பாடல், காதல்பாடல், கொண்டாட்டப்பாடல்கள்பற்றிஅறிவர்
CO3	சங்ககாலமக்களின்விடுகதை, நம்பிக்கை, சடங்குகள்பற்றிஅறிவர்
CO4	பழமொழிகள், நாட்டுப்புறமருத்துவம், சமயவழிபாடுகள்பற்றிஅறிவர்
CO5	நாட்டுப்புற இலக்கிய வரலாறுபற்றிஅறிவர்
CO6	வாய்மொழிஇலக்கியம்மூலம்சங்ககாலமக்களின்வாழ்வியலைஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓					✓			
4	Approval		Academic Council Meeting							

அலகு1 **9**

தாலாட்டுப்பாடல்- குழந்தைப்பாடல்- விளையாட்டுப்பாடல்

அலகு2

தொழிற்பாடல்கள் - காதல்பாடல்கள்- கொண்டாட்டப்பாடல்கள்

அலகு3 **9**

விடுகதைகள் - நம்பிக்கைகள் -சடங்குகள்

அலகு4 **9**

பழமொழிகள் -நாட்டுப்புறமருத்துவம் - சமயவழிபாடுகள்

அலகு5 **9**

நாட்டுப்புற இலக்கிய வரலாறு

பாடநூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புறஇயல்ஆய்வு", மணிவாசகர்பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014

பார்வைநூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புறபாடல்வகைகள்", புலமைவெளியீடு, 1982
2. சரசுவதிவேணுகோபால், "தமிழகநாட்டுப்புறவியல்", தாமரைவெளியீடு, 1981
3.கழனியூரன், "நாட்டுப்புறவியல்கட்டுரைகள்", காவ்யாபதிப்பகம், 2014

Course Coordinator HOD

BSC501	**CLOUD COMPUTING**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.V.Brindha/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with world-leading IT technology with high international standard of service. Learners will understand the expertise of service.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in identifying the technical foundations of cloud systems architectures.
CO2	Understand the problems and solutions to cloud application problems.
CO3	Apply principles of best practice in cloud application design and management.
CO4	Analyze and define technical challenges for cloud applications and assess their importance.
CO5	Apply the implementation service with a quality control from project imitation to production
CO6	Examine an real time application using Cloud Computing by using various services.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	-								

	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
						✓					
4	Approval	Academic Council Meeting									

UNIT I FUNDAMENTALS OF GRID ANDCLOUD COMPUTING 12

Fundamentals – Cloud computing – History of Cloud Computing – Cloud Architecture – Cloud Storage – Why cloud computing Matters – Advantages of Cloud computing – Disadvantages of Cloud Computing – Companies in the Cloud Today – Cloud Services.

UNIT II DEVELOPING CLOUD SERVICES 12

Web-Based Application – Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Software as a Service – Platform as a Service – Web Services – On-Demand computing – Discovering Cloud Services Development Services and Tools – Amazon Ec2- Google App Engine – IBM Clouds.

UNIT III CLOUD COMPUTING FOR EVERY ONE 12

Centralizing Email communications – collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud computing for the Community – Collaborating on Group Projects and Events – Cloud Computing for theCorporation.

UNIT IV USINGCLOUDSERVICES 12

Collaborating on Calendars, Schedules and Task Management – Exploring Online Scheduling Applications – Exploring Online Planning and Task Management – Collaborating on Event Management – Collaborating on Contact Management – Collaborating on Project Management – Collaborating on Word Processing – Collaborating on Databases – Storing and Sharing Files – Evaluating Web Mail Services – Evaluating Web Conference Tools – Collaborating via Social Networks and Groupware – Collaborating via Blogs and Wikis.

UNIT V GRIDCOMPUTING 12

OGSA – Sample Use Cases – OGSA Platform Components – OGSI – OGSA Basic Services. Globus Toolkit – Architecture – Programming Model – High Level Services – OGSI.Net. Middleware Solutions.

TEXT BOOKS

1. Michael Miller, Cloud Computing : Web-Based Applications That Change the Way You Work and Collaborate Online, Que Publishing, August2008.

REFERENCE BOOKS

1.Haley Bear, Cloud Computing Best Practices for Managing and Measuring Processes for On-demand Computing, Applications and Data Centersin the Cloud with SLAs

Course Coordinator HOD

BSC502	**WEB TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.V.Ramya /BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic concepts of web technology and Understand the various steps in designing a creative and dynamic website.

COURSE OUTCOMES (COs)

CO1	Remember the basic internet concepts
CO2	Gain knowledge to design dynamic and interactive web pages
CO3	Ability to create Events and functions in java script
CO4	Apply Dynamic HTML to create website
CO5	Understand the fundamentals of XML
CO6	Apply to the website by connecting with data base for real time application .

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	H	L								
	CO6	M	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT – 1:

Internet Basic – Introduction to HTML – List Creating Table – Linking document – Frames - Graphics to HTML Doc – Style sheet – style sheet basic – Add style to document – Creating style sheet rules – Style sheet properties – Font – Text – List – Color and Background color – Box – Display properties.

UNIT – 2:

Introduction to JavaScript – Advantage of JavaScript – JavaScript syntax – Data type – Variable – Array – Operator and Expression – Looping Constructor – Function – Dialog box.

UNIT – 3:

JavaScript document object model – Introduction – object in HTML – Event Handling – Window object – Document object – Browser Object – Form Object – Navigator object – Screen object – Build in object – User defined object – Cookies.

UNIT – 4:

ASP.NET Languages structure – Page event, Properties & Compiler Directives. HTML server controls – Anchor, Tables, Forms, Forms, Files. Basic web server Controls – Label, Textbox, Button, Image, Links, Check & Radio button, Hyperlink. Data list Web server controls – Check box list, Radio button list, Drop down list, List box, and Data grid, Repeater.

UNIT – 5:

Request and Response Objects, Cookies, Working with Data – OLEDB connection class, Command class transaction class, data adaptor class, data set class. Advanced Issues – Email, Application Security – Authentication, IP Address, Secure by SSL & Client Certificates.

Reference Books:-

1. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, JavaScript, Perl CGI, BPB Publications.
2. Jaworski, Mastering JavaScript, BPB Publications, 1999
3. T. A Powell, complete Reference HTML (Third Edition), TMH, 2002.
4. G. Buczek, ASP.NET Developers Guide, TMH, 2002.

Course Coordinator HOD

BSC503	**PROGRAMMING IN ASP .NET**						**L**	**T**	**P**	**C**	
	Total Contact Hours - 60						3	1	0	4	
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA										
COURSE OBJECTIVES :- Learners will be familiar with basics of the ASP .NET. Learners will understand the design and implementation of the complete applications over the web											
COURSE OUTCOMES (COs)											
CO1	Gain knowledge in developing and creating ASP .Net Applications										
CO2	Understand the usage of web controls and forms										
CO3	Apply development products of Microsoft Visual Studio.Net® products										
CO4	Analyze the implementation and connect the automated system to a database stored on a web server.										
CO5	Analyze how to link and publish Visual Studio.Net® applications to reflect a web application.										
CO6	Examine an real time application using ASP .NET										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	L								
	CO6	H	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT I INTRODUCTION TO .NET FRAMEWORK

Genesis of .Net – Features of .Net - .Net binaries – Microsoft Intermediate Language – Meta Data - .Net types and .net name spaces – Common Language Runtime – Common Type System – Common Language Specification - .Net Applications using command line compiler and visual studio .net IDE.

UNIT II BASICS OF ASP. NET

Introducing ASP .NET – Creating and deploying ASP .NET applications – Web forms – Web controls – working with events – Rich web controls – Custom web controls – Validation controls – Debugging ASP .NET pages.

UNIT III ADVANCED ASP .NET

ASP .NET configuration – Business objects – HTTP Handlers – Caching in ASP .NET – ASP .NET security – Localizing ASP .NET applications – Deployment projects.

UNIT IV BUILDING WEB SERVICES

Introduction to web services – Web services Infrastructure – SOAP – Building a web service – Deploying and publishing web services – Finding web services – Consuming web services.

UNIT V ADO .NET

Basics of ADO .NET – Changes from ADO – Data Table – Data Views – Data Set – Data Relation Type – ADO .NET Managed Providers – OlEDB and SQL Managed Providers – OlEDB Data Adapter Type.

TEXT BOOKS:

1. Andrew Troelsen – **"C# and the .Net Platform"** – Apress – 2001.(Unit I and II)
2. Mridula Parihar, et. al. – **"ASP .NET Bible"** – Wiley-dreamtech India Pvt. Ltd. – 2002

REFERENCE BOOKS:

1. David S. Platt – **"Introducing .Net"** – Microsoft Press – 2002.
2. Alex Homer et. al. – **"Professional ASP .NET 1.1"** – Wiley-dreamtech India Pvt. Ltd. – 2004.
3. Rebecaa M. Riordan – **"ADO .Net step by step" -** Microsoft Press.

Course Coordinator HOD

BSC5E4	**Major Elective – I :** **Software Project Management**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	0	0	4	2
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA				

COURSE OBJECTIVES :-

Learners will gain basic concepts in information system and the benefits with these systems in modern society

COURSE OUTCOMES (COs)

CO1	Implement the basic concept of Microsoft office applications
CO2	Understand the technical code to implement windows applications
CO3	Apply the programs using predefined functions
CO4	Analyze Tables and Manipulations
CO5	Develop applications that connect design templates
CO6	Examine web pages

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

Unit I:

Introduction to Software Project Management-Software project versus other types of project-problems –Management control-stakeholders-Requirement specification –Information and control in organization-Introduction to step wise project planning –select –Identify scope and objectives –identify project infrastructure- Analyze project characteristics- Products and activities – Estimate effort for each activity – Identify activity risks – Allocate resources – Review / Publicize plan – Execute plan and lower of planning – Project evaluation – Introduction – Strategic assessment – Technical assessment – Cost benefit analysis – cash flow forecasting – Cost benefit evaluation techniques – Risk evaluation.

Unit II:

Selection of an appropriate project approach – choosing technologies – Technical Plan contents list – Choice of Process models – Structured methods – Rapid application development – Waterfall Model – Process Model – Spiral Model – Software Prototyping – Ways of Categorizing Prototypes – tools – incremental delivery – selecting process model – Software effort estimation – Introduction – Where_Problems with over and under estimates – Basis for Software estimating – Software effort estimation technique – expert judgement – Albercht function point analysis – Function points Mark II – object points – Procedural code oriented approach – COCOMO – Activity planning – Objectives – Project schedules – projects and activities – sequencing and scheduling activities – network planning models – formulating a network model – using dummy activities – representing lagged activities – adding time dimension – forward pass – backward pass – identifying the critical path – Activity float – shortening project duration – identifying critical activities – precedence networks.

Unit III:

Risk Management- nature of risk- managing- identification-analysis- reducing-evaluating- z values. Resource allocation- nature of resources- requirements-scheduling- critical paths-counting the cost-resource schedule- cost schedule- scheduling sequence. Monitoring and control- creating the frame work- collecting the data- visualizing the progress- cost monitoring-earned value- prioritizing, monitoring-Change control.

Unit IV:

Managing contracts- types of contract- stages in contract placement- terms of a contract-contract management- acceptance. Managing people and organizing teams- organizational behaviour background- selecting the right person for the job- instruction in the best methods-motivation-decision making-leadership-orga nizational structures. Software quality- importance- defining – ISO 9126- practical measures- product versus process quality management- external standards-techniques to help enhance software quality.

Unit V :

Ethics in Information Technology – an Overview of ethics – Ethics for IT professionals and IT users, Computer and internet crime – privacy-workplace monitoring – advanced surveillance

technology.

Recommended Texts:-

1. B. Hughes and M. Cotterell, 2005, Software Project Management, 4th Edition, Tata McGraw Hill, NewDelhi.
2. W. Royce,1998, Software Project Management: A Unified Frame Work, Addison Wesley, Boston
3. G.Reynolds, 2003, Ethics in Information Technology, Thomson Learning, Singapore.

Reference Books

1. K. Heldman, 2005, Project Management Professionals, 3rd Edition, Wiley Dreamtech
2. Bhforooz & Hudson, 2004, Software Engineering, Oxford Press.

Course Coordinator HOD

BSC5E4	**COMPUTER GRAPHICS**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.V.Ramya /BCA				

COURSE OBJECTIVES :-

Learners will begin to understand what visual communications are and how they have developed over history

COURSE OUTCOMES (COs)

CO1	Remember the general software architecture of programs that use 3D computer graphics.
CO2	Gain knowledge to design hardware system architecture for computer graphics
CO3	Ability to use a current 3D graphics API (e.g., OpenGL or DirectX).
CO4	Ability to use the underlying algorithms, mathematical concepts, supporting computer graphics
CO5	Understand the fundamentals of Composite 3D homogeneous matrices for translation, rotation, and scaling transformations
CO6	Apply to the algorithms, mathematical concepts for real time application .

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	H	L								
	CO6	M	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT 1:

Introduction to graphic devices - picture representation, display devices , display adapters, Types of printers , Plotters & input devices

UNIT 2:

Transformations - Basic 2D & 3D transformations - translation , scaling , rotation , reflection, shearing, Multiple transformations, Rotation about an axis parallel to a coordinate axis, Rotation about an arbitrary axis in space, Affine and perspective Geometry , Orthographic projections and Axonometric projections

UNIT 3:

Raster Scan Graphics - Bresenham's line and circle drawing algorithms, scan conversion, RLE, Frame buffer, Scan converting polygons - Edge fill and Seed fill algorithms, Anti aliasing and Half toning

UNIT 4:

Clipping and Display file Compilation - Sutherland - Cohen line clipping algorithm, Windowing and View porting - Segmented display file, structure and compilation. - Hidden Surface and hidden Line Removal - Backface removal algorithm, Z- buffer, Warnock algorithm, Hidden line elimination.

UNIT 5:

Plane Curves and Space Curves - Curve Representation, Non-parametric and parametric curves, representation of space curves, Cubic Spline, Parabolic Blended curves, Bezier curves and B-spline curves.

Recommended Text Books

1. D. F. Rogers, J. A. Adams, 2002, Mathematical elements for Computer Graphics, 2nd Edition, Tata McGraw-Hill, New Delhi.
2. D. F. Rogers, 2001, Procedural elements for Computer Graphics, 2nd Edition, Tata McGraw-Hill, New Delhi.

Reference Books

1. W.M. Neumann and R. F. Sproull, Principles of Interactive Computer Graphics, Tata McGraw-Hill, New Delhi.
2. D. Hearn and M. P. Baker, 2004, Computer Graphics (C Version), 2nd Edition, Pearson Education.
3. S. Harrington, 1989, Fundamentals of Computer Graphics, Tata McGraw-Hill, New Delhi.
4. Foley, Van Dan, Feiner, Hughes, 2000, Computer Graphics, Addison Wesley, Boston.

Course Coordinator HOD

BCA5E4	**Major Elective I : DATA MINING AND DATA WAREHOUSING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.S.Anupriya/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the concepts of data ware house and data mining, which gives a complete description about the principles, used, architectures, applications, design and implementation of data mining and data ware housing concepts.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in mathematical foundations of data mining tools
CO2	Understand how to gather and analyze large sets of data to gain useful business
CO3	Understand and implement classical models and algorithms in data warehouses and data mining.
CO4	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering. Analyzing and demonstrating basic data mining algorithms, methods, and tools
CO5	Master data mining techniques in various applications like social, scientific and environmental context.
CO6	Develop skill in selecting the appropriate data mining algorithm for solving practical problems

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	h	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				
4	Approval	Academic Council Meeting								

UNIT I Data Warehouse

Data Warehouse roles and structures – What can a data warehouse do? The Cost of Warehousing data – Data Stores, Warehouses and Marts – The Data Warehouse environment – Data warehouse characteristics – The Data Warehouse architecture – Metadata, Metadata Extraction – Implementing the Data Warehouse – Designing and building the Data Warehouse – The data warehouse project plan – Data warehouse architecture, specification and development- Data Warehouse project success factors.

UNIT II Introduction to Data Mining:

Basic Data Mining tasks – Data mining versus knowledge discovery in data bases – Data Mining issues – Data Mining Metrics – Social implications of data mining - Data Mining from a database perspective – Data Mining Techniques – Introduction – A statistical perspective on Data Mining – Similarity measures – Decision trees – Neural networks – Genetic algorithms.

UNIT III Classification

Introduction – Statistical based algorithms – Distance based algorithms – Decision tree based algorithms – Neural networks based algorithms – Rule based algorithms – Combining Techniques.

UNIT IV Clustering

Introduction – Similarity and distance measures – Outliers – Hierarchical algorithms – Partitional algorithms – Clustering large data bases – Clustering with categorical attributes – Association Rules – Introduction – Large Item – sets – Basic Algorithms.

UNIT V Web Mining, Spatial Mining, Temporal Mining

Web Mining – Introduction – Web Content Mining – Web Structure Mining – Web Usage Mining. Spatial Mining – Introduction – Spatial Data: Overview – Spatial Data Mining primitives – Generalization and Specialization – Spatial Rules – Spatial Classification algorithm – Spatial Clustering Algorithms. Temporal Mining – Introduction – Modeling temporal events.

REFERENCE BOOKS:

1. Margaret H.Dunham. “Data Mining Introductory and Advanced Topics”. Pearson Education – 2003.
2. George M. Maracas’. “Modern Data Warehousing, Mining and Visualization: Core concepts”, Pearson Education – 2003.

Course Coordinator HOD

BCA5L1	**PROGRAMMING IN ASP .NET LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA				

COURSE OBJECTIVES :-

Learners will gain ability to design and implement the complete applications over the web

COURSE OUTCOMES (COs)

CO1	Implement the basic concept of console applications like string manipulation, exception handling.
CO2	Understand the technical code to implement windows applications
CO3	Apply the programs using predefined functions
CO4	Analyze Web Applications
CO5	Develop applications that connect database
CO6	Examine web pages using ASP .NET

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	-							H	
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

S.NO	ASP.NET PROGRAMS
1.	Working with MSIL, Metadata and Namespace
2.	Usage of CLR, CTS and CLS.
3.	.Net application using command line complier.
4.	.Net application using visual studio .net IDE.
5.	Simple ASP .Net Applications.
6.	Creating web forms application projects.
7.	Usage of web controls.
8.	Working with events
9.	Usage of Rich web controls.
10.	Usage of validation controls

Course Coordinator HOD

BSC5L2	WEB TECHNOLOGY LAB	L	T	P	C
	Total Contact Hours - 30	0	0	4	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Mr. R.Balamurugan - Dept of CS				

COURSE OBJECTIVES :-

Learners will gain knowledge to handle basic web concepts and to create a dynamic website.

COURSE OUTCOMES (COs)

CO1	Implement the basic internet concepts using html.
CO2	Ability to design dynamic and interactive web pages.
CO3	Develop web pages using CSS
CO4	Ability to create Events and functions in java script
CO5	Apply Dynamic HTML to create website
CO6	Develop an application using HTML tags and javaScript.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
2	**CO1**	**H**	**L**						**H**		
	CO2	**H**	**L**								
	CO3	**H**	**L**								
	CO4	**H**	**L**								
	CO5	**H**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

S.NO	LIST OF PROGRAMS
1.	Create a simple page introducing your-self, how old you are, what you do, what you like and dislike. Modify the introduction to include a bullet list of what you do and put a list on the 5 things you like most and dislike is numbered lists. Create another page about your favoritehobby, and link it to (and from) your main page. Centersomething, and put a quote on one of your pages.
2.	Put an existing image on a web page. Create a table, use a heading and at least one use of row span / col span. Colour a page and some text within the page. Link to another site.
3.	Create a new file called index.html.
4.	Put the normal HTML document structure tags in the file.
5.	Give a title.
6.	At the bottom of the page (i.e. the last thing between the body tags) put the following:
7.	A horizontal rule.
8.	A link to your email-address (with your name between the tag); remember to put the link to your email address within address tags.
9.	A line break.
10.	The Date (I have this same structure at the bottom of this page)
11.	Above this Block (which is called the footer), put a title in heading tags.
12.	Add some text describing you. (You can split this into multiple headings and paragraphs if you want).
13.	Write a script to create an array of 10 elements and display its contents.

Course Coordinator HOD

BSC601	**DATABASE TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA				

COURSE OBJECTIVES:-

Learners can easily know about the information of the database technology is an essential part of any computer system. The purpose of this course is providing a clear understanding of the concepts that underline Database Technology

COURSE OUTCOMES (COs)

CO1	Remember the fundamental elements of relational database management
CO2	Understand the basic concepts of relational data model, entity-relationship model, Relational database design, relational algebra and SQL.
CO3	Apply various ER-models to represent simple database application scenarios
CO4	Analyze the ER-model to relational tables, relational database and formulate SQL queries on data.
CO5	Examine to improve the database design by normalization.
CO6	Used to apply the database system architecture.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					

4	Approval	Academic Council Meeting

UNIT 1

Database concepts / basic concepts / constraints / keys ER diagram / reduction or ER schema / UML/ design of an ER database schema / relational model / relational algebra / views / relational database / SQL / structure / set quotation / sub queries / join relation / DDL / DML / embedded SQL,QBE.

UNIT 2

Integrity & security / domain constraints / referential integrity / assertion / triggers / authorization in SQL / relational database design / 1, 2, 3, 4, BCNF normal forms / decomposition

UNIT 3

Object relational data model / nested relations / complex types / inheritance / reference / types / querying with complex / types / functions & procedures / object oriented versus object relational / intro to xml concepts.

UNIT 4:

Storage and file structure / physical storage media / file organization, data dictionary storage, query processing / selection operation / sorting / join operation transaction / concepts / state / atomicity and amiability / Serialisability / transaction definition in sql / concurrency control / protocols / protocols / deadlock handling

UNIT 5

Database system architecture / centralized & client server architecture / server system architecture / case study / oracle.

Text Book:

1. A. Silberschatz, H.F. Korth and S. Sudharshan, 2006, Database System Concepts, 5th Edition, Tata McGraw Hill, New Delhi.

REFERENCE BOOKS:

1. Silbersehatz, h.f. korth and sudharshan / database system concepts / iv ed / mcgraw hill
2. Jeffrey .d. ullman / principles of database systems / galgotia
3. C.J.date / an introduction to database system / 3

Course Coordinator HOD

BSC602	**MULTIMEDIA SYSTEMS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO 2**	**PSO3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

Introductory Concepts: Multimedia – Definitions, CD-ROM and the Multimedia Highway, Uses of Multimedia, Introduction to making multimedia – The Stages of project, the requirements to make good multimedia, Multimedia skills and training, Training opportunities in Multimedia. Motivation for multimedia usage, Frequency domain analysis, Application Domain.

Unit 2:

Multimedia-Hardware and Software: Multimedia Hardware – Macintosh and Windows production Platforms, Hardware peripherals – Connections, Memory and storage devices, Media software – Basic tools, making instant multimedia, Multimedia software and Authoring tools, Production Standards.

Unit 3:

Multimedia – making it work – multimedia building blocks – Text, Sound, Images, Animation and Video, Digitization of Audio and Video objects, Data Compression: Different algorithms concern to text, audio, video and images etc., Working Exposure on Tools like Dream Weaver, Flash, Photoshop Etc.,

Unit 4:

Multimedia and the Internet: History, Internet working, Connections, Internet Services, The World Wide Web, Tools for the WWW – Web Servers, Web Browsers, Web page makers and editors, Plug-Ins and Delivery Vehicles, HTML, VRML, Designing for the WWW – Working on the Web, Multimedia Applications – Media Communication, Media Consumption, Media Entertainment, Media games.

Unit 5 :

Multimedia-looking towards Future: Digital Communication and New Media, Interactive Television, Digital Broadcasting, Digital Radio, Multimedia Conferencing, Assembling and delivering a project-planning and costing, Designing and Producing, content and talent, Delivering, CD-ROM technology.

1. Recommended Texts

1. S. Heath, 1999, Multimedia & Communication Systems, Focal Press, UK.
2. T. Vaughan, 2007, Multimedia: Making it work, 7th Edition, Tata McGraw Hill, New Delhi.
3. K. Andleigh and K. Thakkar, 2000, Multimedia System Design, PHI, New Delhi.

2. Reference Books

1. Keyes, "Multimedia Handbook", TMH, 2000.
2. R. Steinmetz and K. Naharstedt, 2001, Multimedia: Computing, Communications & Applications, Pearson, Delhi.
3. S. Rimmer, 2000, Advanced Multimedia Programming , PHI, New Delhi

Course Coordinator HOD

BSC603	SOFTWARE TESTING	L	T	P	C
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course - - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Dr.S.Thirunirai Senthil/BCA				

COURSE OBJECTIVES :- Learners will gain knowledge in fundamental concepts of software testing

COURSE OUTCOMES (COs)

CO1	Gain knowledge in software testing methods.
CO2	Have an ability to design and conduct a software test process for a software project.
CO3	Have an ability to identify the needs of software test automation and develop a test tool to support test automation**.**
CO4	understand and identify various software testing problems, and solve these problems by designing and selecting software test models
CO5	Gain skills to communicate with their teammates to conduct their practice-oriented software testing projects
CO6	Create Test planning and process documents

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	3	2	3	1	1	3		
	CO2	2	3	2	1	3	2	3		
	CO3	3	2	1	3	2	1	2		
	CO4	3	1	3	3	3	3	2		
	CO5	1	2	2	2	1	1	1		
	CO6	2	1	1	1	3	2	2		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT I Introduction

Software testing – Role of software testing – A structural approach to testing – Test strategy – Methods for developing test strategy Testing methodologies.

UNIT II Life Cycle Testing Approach

Test Plan – Requirements testing – Walk through test tool – Risk Matrix test tool – Testing for requirements phase and design phase – Design renew test tool – Test data and volume test tools.

UNIT III Installation

Installation phase testing – Tools for acceptance test – Software acceptance process – Software maintenance – Methodologies for testing – Training and change installation.

UNIT IV Testing Methods

Tools and techniques – Cost estimate – For testing – Testing phase of life cycle – Point accumulation tracking system – Performance analysis of testing – Inspection plan and test plan documents.

UNIT V Testing Strategies

Rapid Prototyping – Spiral testing – Tool Selection Processes – Structural system Testing – documentation of test results – Test effectiveness evaluation – Test measurement process – Test metrics.

TEXT BOOKS:

1. William Perry, “Effective Methods for Software Testing”, John Wiley & Sons, USA, 1995.
2. Ron Patton, “Software Testing”, Techmedia.

Course Coordinator HOD

BSC6E7	**INTERNET PROGRAMMING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite – UG Level				
	Course Coordinator Name & Department:-				

COURSE OBJECTIVES:-

the insights of the Internet programming and how to design and implement complete applications over the web

COURSE OUTCOMES (COs)

CO1	Remember data communication system, components and the purpose of layered architecture.
CO2	Understand the design an almost error-free database structure to reflect the automated system.
CO3	Describe the Use the development products of Microsoft Visual Studio.Net® products
CO4	implement and connect the automated system to a database stored on a web server.
CO5	Illustrate how to link and publish Visual Studio.Net® applications to reflect a web application.
CO6	Analyze an real time application firewall design principles

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L						H		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					

4	Approval	Academic Council Meeting

UNIT- I

Introduction to Computers Programming Language types History of Internet Personal Computers History of World Wide Web- Micro software .NET JavaWebresources.

UNIT – II

Web Browsers- Internet Explorer- connecting to Internet Features of Internet explorer6 Searching the Internet- online help and tutorials- File Transmission Protocol (FTP) Browser settings.

UNIT- III

Attaching a file, Electronic mail Creating an E-mail id Sending and Receiving mails-attaching a file- Instance messaging - other web browsers

UNIT IV

Introduction to HTML headers - Linking- Images-special characters and line breaks- unordered lists- simple HTML programs.

UNIT - V

E-marketing consumer tracking Electronic advertising search engine-CRMcredit card payments Digital cash and e-wallets micro payments-smart card

Textbook

1. Internet and World Wide Web Third edition H.M.Deital, P.J. Deital and A.B.Goldberg-PHI

Reference Books:-

1. The Internet- Complete Reference Harley hahn, Tata McGraw hill

Course Coordinator HOD

BSC6E7	Major Elective- II **OBJECT ORIENTED ANALYSIS AND DESIGN**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Dr.S.Thirunirai Senthil/BCA				

COURSE OBJECTIVES :-

Learners will gain knowledge in object oriented modeling, class diagram, use case and component diagram.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in design the problem domain using unified object approach.
CO2	Understanding the identification and categorize business, access and view layer objects of the application.
CO3	Apply the knowledge in creating Use case diagram, class diagram.
CO4	Analyze the Component Diagrams and Deployment Diagrams
CO5	Analyze the construction of software system by applying various modeling techniques
CO6	Examine an real time application by applying OOAD concepts

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				

4	Approval	Academic Council Meeting

UNIT-I Introduction

System Development - Object Basics - Development life cycle - Methodologies-Patterns – Frameworks- Unified Approach -UML.

UNIT-II Class and Object

Use - Case Models - Object Analysis - Object relations - Attributes – Method - Class and object responsibilities - case studies.

UNIT-III Design Processing

Design Processes - Design Anxious - class design - Object Storage - Object interoperability - Case Studies.

UNIT-IV User Interface Designing

User interface Design -View layer classes – Micro - level Processes - View layer Interface - Case Studies.

UNIT-V Testing And Debugging

Quality Assurance Tests - Testing Strategies - Object orientation of testing -Test Cases - Test Plans - Continuous testing – Debugging Principles - System usability -Measuring user satisfaction -Case studies.\

TEXT BOOKS:

1. Ali Bahrami – "Object Oriented System Development" – McGraw Hill International Edition -1999.
2. R. S. Pressman - "Software Engineering" -Fourth Edition –McGraw Hill international Edition - 1997.

REFERENCE BOOKS:

1. Pierre – Alain Miller – "instant UML"-Work Press-1997.
2. Grady Booch, James Rumbaugh,Ivar Jacobson, "The Unified Modeling Language, User Guide", Addison-
   Wesley Longman, 1999.
3. Graig Larman,"Applying UML and Patterns", Addison Wesley, 2000.

Course Coordinator HOD

BSC6E7	Major Elective- II **MOBILE COMPUTING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:-				

COURSE OBJECTIVES:-

Learners gain knowledge in Network management for mobile and wireless networks

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts and features of mobile networks.
CO2	Comprehend the knowledge in the working of wireless communication protocols.
CO3	Describe and analyze the Multiplexing concepts in medium access control
CO4	Demonstrate broadcast systems
CO5	Illustrate and apply the concept of Wireless ATM
CO6	Analyze Mobile Network layer & Adhoc networks

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L							H	
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

MOBILE COMPUTING

UNIT I Introduction

Introduction of Mobile Communication - Application - History - Market for Mobile Communications - Open Research topics - Simplified Reference Model - Overview - Wireless Transmission - Frequencies for Radio Transmission - Signal - Antennas - Signal Propagation - Multiplexing - Modulation - Spread Spectrum -Cellular Systems.

UNIT II Medium Access Control

Medium Access Control - Motivation for Specialized MAC - SDMA - FDMA - TDMA - CDMA - Comparisons - GSM - DECT -TETRA - UMTS and IMT - 2000 - Satellite Systems - History Applications - Basics - Routing- Localization - Handover.

UNIT III Broadcast Systems

Broad casting Systems - Overview - Cyclic Repetition - Digital audio Broadcasting - Digital Video Broadcasting - Wireless LAN - Infrared Vs Radio Transmission - Infrastructure and Ad hoc networks - IEEE 802.11 - HIPERLAN - Bluetooth.

UNIT IV Wireless ATM

Wireless ATM - Motivation - Working group- WATM Reference model - Functions - Radio access layer - Handover- Location Management - Addressing - Quality of Service - Access Point layer- Handover- Location Management - Addressing - Quality of Service - Access Point control Protocol.

UNIT V Mobile Network Layers

Mobile Network Layer- Mobile IP - Dynamic host Configuration Protocol - Ad hoc Networks - Mobile Transport layer - Transitional TCP - Indirect TCP - Snooping TCP - Mobile TCP - Transmissions - Transaction - Support for Mobility.

TEXT BOOKS:

1. "Mobile Communications" - Jochen Schiller, Pearson Education Asia Publication.

REFERENCE BOOK:

1. William C. Y Lee, "Mobile Cellular Telecommunication system"- Mcgraw Hill International Edition, 1990.
2. T. S. Rapport, "Wireless Communication" prentice hall NJ 2002

Course Coordinator HOD

BSC6E8	**NETWORK PROGRAMMING**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.V.Ramya/BCA				

COURSE OBJECTIVES :- Learners will understand the use of client/server architecture in application development and use elementary and advanced socket system calls

COURSE OUTCOMES (COs)

CO1	Gain knowledge in networking.
CO2	Understand the network protocols
CO3	Be familiar with several common programming interfaces for network communication.
CO4	Apply advanced knowledge of programming for network communications.
CO5	Understand and evaluate knowledge of the TCP/UDP Sockets.
CO6	Ability to create an application using sockets and network programming

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	1	3	1	1	3		
	CO2	1	3	2	1	3	2	1		
	CO3	3	2	3	3	2	1	2		
	CO4	3	1	3	2	3	3	2		
	CO5	1	2	3	2	1	2	1		
	CO6	2	1	1	2	3	2	2		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				
4	Approval	Academic Council Meeting								

UNIT-I : Introduction to Network Programming:
OSI model, Unix standards, TCP and UDP & TCP connection establishment and Format, Buffer sizes and limitation, standard internet services, Protocol usage by common internet application.

UNIT-II: Sockets :
Address structures, value – result arguments, Byte ordering and manipulation function and related functions Elementary TCP sockets – Socket, connect, bind, listen, accept, fork and exec function, concurrent servers. Close function and related function.

UNIT-III : TCP client server :
Introduction, TCP Echo server functions, Normal startup, terminate and signal handling server process termination, Crashing and Rebooting of server host shutdown of server host.

UNIT – IV: I/O Multiplexing and socket options:
I/O Models, select function, Batch input, shutdown function, poll function, TCP Echo server, getsockopt and setsockopt functions. Socket states, Generic socket option.

UNIT- V : Elementary UDP sockets:
Introduction UDP Echo server function, lost datagram, summary of UDP example, Lack of flow control with UDP, determining outgoing interface with UDP. Elementary name and Address conversions: DNS, gethost by Name function, Resolver option.

TEXT BOOKS:

1. UNIX Network Programming, Vol. I, Sockets API, 2nd Edition. - W.Richard Stevens, Pearson Edn. Asia.
2. UNIX Network Programming, 1st Edition, - W.Richard Stevens. PHI.

REFERENCES:

1. UNIX Systems Programming using C++, T CHAN, PHI.
2. UNIX for Programmers and Users, 3rd Edition Graham GLASS, King abls, Pearson Education
3. Advanced UNIX Programming 2nd Edition M. J. ROCHKIND, Pearson Education.

Course Coordinator HOD

BSC6E8	**C#**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- V.Brindha/BCA				

COURSE OBJECTIVES :-

Learners will gain practical knowledge to use the features of Dot Net Framework along with the features of C#

COURSE OUTCOMES (COs)

CO1	Gain knowledge to Implement simple console application programs using C#
CO2	Understand to develop applications using OOPs concepts
CO3	Create dynamic web pages.
CO4	Design window based applications using various controls
CO5	Develop web based applications by connecting a database with Data control
CO6	Create and deploy web based applications using web controls

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	1	1	1	2	3	2		
	CO2	2	3	1	2	1	3	2		
	CO3	3	1	2	1	2	1	1		
	CO4	1	2	3	2	3	2	3		
	CO5	1	3	2	3	1	2	3		
	CO6	3	2	3	3	2	1	1		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT –I : The .net Framework:

Introduction, common language runtime, common type system, common language specification, the base class library, the .net class library, Intermediate language, Just in time compilation, garbage collection, assemblies, web services, COM, localization.

UNIT –II : C# Basics:

Introduction, data types, identifiers, variables, constants, C# statements, OOPs concept, array and strings, operators, control statements, classes and objects, access modifiers, overloading, inheritance, overriding, interfaces.

UNIT –III :

Visual studio IDE features, introduction to Window forms, components, control: textbox, label, linklabel, status bar, checkedlistbox, combobox, listbox, listview, radiobutton, button, panel, groupbox, dialog box, menu control, properties, methods, events of controls.

UNIT –IV :

ADO.net, the component model, creating database connection, database command, data repeater, connecting to data sources, choosing a .net data provider, manage a connection, building command objects, executing commands, building datasets and datatables, data adapter .

UNIT- V:
Case Study.

Text Book:

1. C# Programming for beginners By Mahesh Chand

Reference Books:

1. The Complete Visual C# Programmer's Guide
2. A Programmer's Introduction to C# 2.0, Third Edition
3. C# and the .NET Platform, Second Edition.

Course Coordinator HOD

BSC6E8	**OPEN SOURCE SOFTWARE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- V.Brindha/BCA				

COURSE OBJECTIVES :-

Learners will have an overview of the historical and modern context and operation of free and open source software (FOSS) communities and associated software projects.

COURSE OUTCOMES (COs)

CO1	Gain knowledge to install and run open-source operating systems
CO2	Understand to gather information about Free and Open Source Software projects from software releases and from sites on the internet
CO3	Create and modify one or more Free and Open Source Software packages.
CO4	Ability to use a version control system and to interface with version control systems used by development communities
CO5	Ability to contribute software to and interact with Free
CO6	Create and deploy Open Source Software development projects.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	1	1	1	2	3	2		
	CO2	2	3	1	2	1	3	2		
	CO3	3	1	2	1	2	1	1		
	CO4	1	2	3	2	3	2	3		
	CO5	1	3	2	3	1	2	3		
	CO6	3	2	3	3	2	1	1		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

Unit 1: History and Emergence of Open Source Software:
The philosophy of OSS, Richard Stallman, The Cathedral and the Bazaar (CatB), commercial software vs OSS, free software vs freeware. Open source development models. Application Programming Interface (API). GNU Project**,** Free Software Foundation**.**

Unit 2: Community Building:
Importance of Communities in Open Source Movement. JBoss Community. Developing blog, group, forum, social network for social purpose. **Open Standards:** National Information Standards Organization (NISO), The Digital Library Federation (DLF). The Dublin Core Metadata Initiative. MARC standards, Resource Description and Access (RDA). Open Archives Initiative. OAI-PMH. Search / Retrieval via URL (SRU), SRW/CQL. Java Platform, Enterprise Edition (Java EE).

Unit 3: Open Source Licenses:

GNU General Public License (GPL) version 2,3, GNU Lesser General Public License (LGPL) version 2.1,3, GNU Affero General Public License (AGPL) version 3, Apache License, Version 2.0, Artistic License 2.0, etc.

Unit 4: Operating System:
The Linux operating system and its use both for desktops and as server software. **Webserver:** Apache HTTP Server and its flavors. WAMP server (Windows, Apache, MySQL, PHP). Open Source MySQL. Apache, MySQL, PHP, JAVA as development platform.

Unit 5: Open Source Software:
Category of Open Source Software. OSS for podcasts, RDBMS, online social networks, etc. open source bibliometric softwares like pajek, ucinet, etc

References

1) http://directory.fsf.org/GNU/
2) http://www.diglib.org
3) http://www.entirelyopensource.com/
4) http://www.niso.org/`
5) The Dublin Core Metadata Initiative <http://dublincore.org/>
6) MARC standards <http://www.loc.gov/marc/>
7) Resource Description and Access (RDA) <http://www.rdaonline.org/>
8) WAMP server (Windows, Apache, MySQL, PHP) <http://www.wampserver.com/en/>
9) Open Source MySQL <http://www.mysql.com/>
10) Search / Retrieval via URL (SRU) <http://www.loc.gov/standards/sru/>

Course Coordinator HOD

BCA6L1	**NETWORK PROGRAMMING LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	0	0	4	2
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.S.Surya/ Dept of CS				

COURSE OBJECTIVES :-

Learners will understand the use of client/server architecture in application development and use elementary and advanced socket system calls

COURSE OUTCOMES (COs)

CO1	Implement simple networking concepts
CO2	Identify the application using Client Server Communication
CO3	Implement programs using TCP and UDP based sockets.
CO4	Compare interaction between Echo Server and Echo Client
CO5	Apply protocols in real time programs.
CO6	Examine the application to retrieve Remote Data File & RPC

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	**CO1**	H	L						H	M	
	CO2	H	-								
	CO3	H	-								
	CO4	H	-								
	CO5	M	L								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				

4	Approval	Academic Council Meeting

S.NO.	LIST OF PROGRAMS
1.	IP Address of Local Machine
2.	Ping Server
3.	Echo Server and Echo Client
4.	Client Server Communication Using Object
5.	Time and Date Server
6.	TCP Server
7.	UDP Server
8.	Chat Server
9.	Address Resolution Protocol
10.	Multiple Client Handling
11.	Retrieving Remote Data File
12.	Remote Procedure Call

Course Coordinator HOD

BCA6L1	**C# Lab**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	0	0	4	2
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Dr.S.Brintha Rajakumari /Dept of CS				

COURSE OBJECTIVES :-

Learners will gain practical knowledge to use the features of Dot Net Framework along with the features of C#

COURSE OUTCOMES (COs)

CO1	Implement simple console application programs using C#
CO2	Develop applications using OOPs concepts
CO3	Design dynamic web pages.
CO4	Design window based applications using various controls
CO5	Analyze web based applications by connecting a database with Data control
CO6	Apply concept to deploy web based applications

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	**CO1**	H	L							M	L
	CO2	H	L								
	CO3	M	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				
4	Approval	Academic Council Meeting								

S.NO.	LIST OF PROGRAMS
Console Applications	
1	Classes and Objects
2.	Jagged Array
3.	Overloading
4.	Overriding
5.	Interface
6.	Structure
7.	Constructor
8.	Sealed Class
9.	Delegates
10.	Exception Handling
WebBased Applications	
11.	Navigation Control
12.	Validation Control
13.	Login Control
14.	Repeater Control
15.	Data Control

Course Coordinator HOD

BBA011	BUSINESS PROCESS OURTSOURCING - MANAGEMENT	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 studied in Higher Secondary Studies				
	Course Coordinator Name &Department: -Ms.D.K.Sowmiyalakshmi, Business Administration				

COURSE OBJECTIVES: -

To familiarize the students with the basic fundamentals of BPO.
To impart knowledge on types of BPO and call centers .
To enable the students on the concept Health care BPO & Transaction BPO.
To peep into the concept of Human Resource BPO and the career opportunities in BPO

COURSE OUTCOMES (COs)

CO1	Underline the basic fundamentals of BPO.
CO2	Discuss the awareness about the models of BPO.
CO3	Initiate the concept of Health Care BPO.
CO4	Identify the elements of Transaction processing BPO.
CO5	Evaluate the career opportunities in BPO.
CO6	Formulate the challenges faced by BPO industry.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	H						H	M	L
	CO2	M	L								
	CO3	L	H								
	CO4	H	H								
	CO5	H	H								
	CO6	M	L								

3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part III Project	Part V Extension Activity
						✓		

4	Approval	Academic Council Meeting

BPO MANAGEMENT

Unit I

Business Process Outsourcing – Basics – Benefits of BPO – Growth Drivers – BPO Models and Types of Vendors – Offshore BPO – Evolution Destinations – Challenges of Off shoring – BPO Companies in India.

Unit II

BPO Industry – Employment Opportunities – Employee Structure – Skill Set Required – Compensation Levels – Contact Centre BPO – Types of Call Centres – Technology – Components and working of a Call center – Issues and Problems – Case Study – Intelenet Global.

Unit III

Healthcare BPO – Structure of the American Healthcare Sector – Activity Profile – Future Trends and Threats – Case Study – Cbay Systems. Transaction Processing BPO - Elements of Back – Office Serivces – Financial Services – Insurance – Case Studies – Datamatics – Hinjuja TMT. Human Resource BPO – Reasons for outsourcing HR – Activities involved in HR BPO – HR Outsourcing Trends – Career in HR BPO – Emerging BPO Domains – Media and Entertainment BPO – Publishing BPO.

Text Books:-

Business Process Outsourcing Sarika Kulkarni Jaico Publishing House, Delhi 2005

Reference Books:-

BPO DIGEST Deepak Shikapur Ameya (Inspiring Books) 2004.

Course Coordinator HOD

	DESKTOP PUBLISHING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
BBE002	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

Course Coordinator HOD

BCA001	COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

Course Coordinator HOD

BCA002	GRAPHICAL AND WEB DESIGNING	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
O3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part I Tamil/Linguist	Linguistic	Part III Core	Part III Substream	Part III Project	Advanced Tamil/ EVS/VE/ SBE/	Extension			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

Course Coordinator HOD

BCA003	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

Course Coordinator HOD

BCA004	NETWORKING AND MAINTENANCE	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**

Course Coordinator HOD

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

Course Coordinator HOD

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO 2**	**PSO3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	

4	Approval	Academic Council Meeting

ANIMATION

Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

Course Coordinator HOD

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
									✓		
4	Approval	Academic Council Meeting									

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

Course Coordinator HOD

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String – String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**

Course Coordinator HOD

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

Course Coordinator HOD

Syllabus – B.Sc - Maths

SEMESTER I

S.No.	CATEGORY	SUB. CODE	SUBJECT	L	T	P	C
THEORY							
1.	HS	BAL101	Tamil – I	3	2	0	4
		BAL102	French – I	3	2	0	4
		BAL103	Hindi – I	3	2	0	4
2.	HS	BEH101	English – I	3	2	0	4
3.	MC	BMA105	Algebra-1	3	1	0	4
4.	MC	BMA106	Trigonometry	3	1	0	4
5.	NMC	BMA107	Mathematical Statistics-1	5	2	0	3
PRACTICAL							
6.	NMC	BMA1L1	Mathematical Statistics Practical-1	0	0	4	2
7.			Library	0	0	1	-
Total Contact Hours: 30 Total Credits: 21							

II SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	L	T	P	C
THEORY							
1.	HS	BAL201	Tamil –II	2	2	0	3
		BAL202	French-II				
		BAL203	Hindi-II				
2.	HS	BEH201	English-II	2	2	0	3
3.	MC	BMA205	Calculus	3	1	0	4
4.	MC	BMA206	Analytical geometry	3	1	0	4
5.	NMC	BSC203	Mathematical Statistics-2	4	0	0	3
6.	HS	BCI204	Environmental Studies	2	0	0	2
7.	EEC	BBC206	Value Education	2	0	0	3
PRACTICAL							
8.	**NMC**	BMA2L1	Mathematical Statistics practical-2	0	0	4	2
Total Contact Hours: 28 Total Credits: 24							

III SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	L	T	P	C
THEORY							
1.	HS	BAL301	Tamil –III	3	2	0	4
		BAL302	French-III				
		BAL303	Hindi-III				
2.	HS	BEH301	English-III	3	2	0	4
3.	MC	BMA305	Differential Equation and Laplace transforms	3	1	0	4
4.	MC	BMA306	Numerical Analysis	3	1	0	4
5.	NMC	BPS302	Physics -1	3	1	0	4
6.	NME	BAL001	Non Major Elective I – for those who studied Tamil under Part I a) Basic Tamil for other language students	2	0	0	2
		BAL002	b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.				
PRACTICAL							
8.	**NMC**	BPS3L2	**Physics Practical-1**	0	0	4	2
9			Library	1			
Total Contact Hours:29 Total Credits: 24							

IV SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	L	T	P	C
THEORY							
1.	HS	BAL401	Tamil –IV	2	2	0	3
		BAL402	French-IV				
		BAL403	Hindi-IV				
2.	HS	BEH401	English-IV	2	2	0	3
3.	MC	BMA405	Vector calculus, Fourier series and Fourier Transforms	3	1	0	4
4.	MC	BMA406	Fluid Dynamics	3	1	0	4
5.	NMC	BPS402	Physics -2	4	0	0	4
6.	NME	BAL003	Non Major Elective II – for those who studied Tamil under Part I Basic Tamil for other language students	2	0	0	2

		BAL004	Special Tamil for those who studied Tamil upto 10th +2 but opt for other languages in degree programme.				
7.	SBE	BMA4E3	Skill Based Elective I	2	0	0	2
PRACTICAL							
8.	NMC	BPS4L2	Physics Practical-2	0	0	4	2
Total Contact Hours: 28			**Total Credits: 24**				

SEMESTER V

S.No.	**CATEGORY**	**SUB. CODE**	**SUBJECT**	**L**	**T**	**P**	**C**
THEORY							
1.	MC	BMA501	Real Analysis	3	2	0	4
2.	MC	BMA502	Algebraic Structures	3	2	0	4
3.	MC	BMA503	Operation research	3	2	0	4
4.	MC	BMA504	Unix and C programming	4	0	0	4
5	ME	BMA5E4	Major Elective 1	4	0	0	4
6.	SBE	BMA5E5	Skill Based Elective – II	2	0	0	2
7.	SBE	BMA5E6	Skill Based Elective - III	2	0	0	2
PRACTICAL							
8.	**MC**	BSC5L1	**C** programming Lab	0	0	4	2
Total Contact Hours: 31			**Total Credits:26**				

VI SEMESTER

S.No.	**CATEGORY**	**SUB. CODE**	**SUBJECT**	**L**	**T**	**P**	**C**
THEORY							
1.	MC	BMA601	Complex Analysis	3	2	0	4
2.	MC	BMA602	Graph theory	3	2	0	4
3.	ME	BSC6E7	Major Elective – II :	3	1	0	4
4.	ME	BSC6E8	Major Elective – III :	3	1	0	4
PRACTICAL							
5.	MC	BMA6P1	Mini project	0	0	14	6
6.	EEC	BMA6V11	Extension Activities	**0**	**0**	**2**	**1**
Total Contact Hours: 34			**Total Credits: 23**				

LIST OF ELECTIVES

MAJOR ELECTVES: I

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
BMA001	DISCRETE MATHEMATICS	3	1	0	4
BMA002	STATICS	3	1	0	4
BMA003	GROUP THEOREY	3	1	0	4

MAJOR ELECTVES: II

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
BMA004	BIO – STATISTICS	3	1	0	4
BMA005	NUMBER THEOREY	3	1	0	4
BMA006	MODREN ALGEBRA	3	1	0	4

MAJOR ELECTVE-III

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
BMA007	MECHANICS	3	1	0	4
BMA008	SPECIAL FUNCTION	3	1	0	4
BMA009	ASTRONOMY	3	1	0	4

NON MAJOR ELECTIVE (NME) I - BCI3E1

Sub Code	Sub Name	L	T	P	C
BAL001	Basic Tamil – I for those who studied other language under Part I	2	0	0	2
BAL002	Special Tamil – I for those who studied Tamil under Part I	2	0	0	2

NON MAJOR ELECTIVE (NME) II – BCI 4E2

Sub Code	Sub Name	L	T	P	C
BAL003	Basic Tamil – II for those who studied other language under Part I	2	0	0	2
BAL004	Special Tamil – II for those who studied Tamil under Part I	2	0	0	2

LIST OF SKILL BASED ELECTIVES (Choose any three courses – one in semester IV & two in semester V):

S.NO	Sub Code	Sub Name	L	T	P	C
1	**BBA011**	BPO Management	**1**	**0**	**2**	**2**
2	**BBE002**	Desk Top Publishing	**1**	**0**	**2**	**2**
3	**BCA001**	Computer Application	**1**	**0**	**2**	**2**
4	**BCA002**	Graphical and Web Design	**1**	**0**	**2**	**2**
5	**BCA003**	Multimedia	**1**	**0**	**2**	**2**
6	**BCA004**	Networking and Maintenance	**1**	**0**	**2**	**2**
7	**BCA006**	Web Designing	**1**	**0**	**2**	**2**
8	**BSC001**	Animation	**1**	**0**	**2**	**2**
9	**BSC002**	Computer Hardware and Networking	**1**	**0**	**2**	**2**
10	**BSC003**	Computer Programming	**1**	**0**	**2**	**2**
11	**BSC004**	Computer Technology	**1**	**0**	**2**	**2**

SEMESTER-I

BAL101	TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :-இருபதாம் நூற்றாண்டு இலக்கியம் மற்றும் மொழி வரலாற்றை அறியச் செய்தல்	
COURSE OUTCOMES (COs)	
CO1	இருபதாம் நூற்றாண்டு கவிதைஇலக்கியத்தைப் பற்றி அறிவர்
CO2	இருபதாம் நூற்றாண்டுகட்டுரைஇலக்கியத்தைப் பற்றி அறிவர்
CO3	இருபதாம் நூற்றாண்டுசிறுகதைஇலக்கியத்தைப் பற்றி அறிவர்
CO4	இக்கால இலக்கிய வரலாறுபற்றி அறிவர்
CO5	மொழி வரலாறு – செம்மொழிபற்றி அறிவர்
CO6	தற்கால இலக்கியத்தில் ஆழ்ந்த அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval	Academic Council Meeting

அலகு -1 **இருபதாம் நூற்றாண்டு கவிதைகள்** 9

1. பாரதியார் -யாமறிந்த மொழிகளிலே 2. பாரதிதாசன்-நீங்களே சொல்லுங்கள்!
3. கண்ணதாசன் -அழுகை 4. பெருஞ்சித்திரனார்- தமிழா நீ எங்கே?
5. தமிழ் ஒளி - (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல் ரகுமான் - கல்லின் காயம்

அலகு -2 **உரைநடை** (I) 4 **கட்டுரைகள்** 9

1. மனிதனும் அழகும் - திரு.வி.க.2. வீட்டிற்கோர் புத்தகசாலை-அறிஞர் அண்ணா
3. பொறியியல் தமிழ் - நா. மால் முருகன்
4. தேசியமறை திருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 **உரைநடை** (II) **சிறுகதை** - 4 **கதைகள்** 9

1. நட்சத்திரக் குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம் – ஜெயகாந்தன்4. கடவுளும் கந்தசாமிப் பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 **இக்கால இலக்கிய வரலாறு** 9

1. இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு
2. இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு
3. இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

அலகு -5 **மொழி வரலாறு** 9

1. தமிழ்மொழி வரலாறு 2. உலகச் செம்மொழிகளின் வரலாறு
3. தமிழுக்கும் உலகச் செம்மொழிகளுக்குமான உறவு வரலாறு

பாடநூல்

1. இருபதாம் நூற்றாண்டு கவிதை, உரைநடை, சிறுகதை(அலகு-3) பாரத் பல்கலைக்கழக வெளியிடு

பார்வை நூல்கள்

1. சு. ஆனந்தன்,"தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ் அமைப்புற்றவரலாறு", வியாபார ஐக்கிய சங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ் வரலாறு", பூம்புகார் பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல் தாய்மொழி", பூம்புகார் பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டு விளக்கம்" , பூம்புகார் பதிப்பகம்,2006

CourseCoordinator **HOD**

BAL102	FRENCH I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Department De Française				

COURSE OBJECTIVES:-

To introduce students to basic principles and practice of oral and written communication.

COURSE OUTCOMES (COs)

CO1	To ***recall*** the basics of the language.
CO2	To ***analyze*** the sentence patterns and form the grammar.
CO3	To ***learn*** the basics of grammar along with its principles.
CO4	To ***remember*** the anatomy of conjugations.
CO5	To ***create*** dialogs and conversation on their own within the language & to practice oral and written skills.
CO6	To ***remember*** the necessary rules of the language

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

UNIT I - Vous comprenez **9**

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail! **9**

Masculine Singular and Feminine singular - Conjugaison des verbes (present tense) - Les articles définis.

UNIT III En se detend? **9**

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir

UNIT IV Racontez-moi **9**

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage! **9**

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!-Article partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

BAL103	HINDI-I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				

COURSE OBJECTIVES:-

To introduce students to basic principles and practice of oral and written communication.

COURSE OUTCOMES (COs)

CO1	Remember the behavior
CO2	Understand the importance of money by story
CO3	Apply the concept of Hindi grammar
CO4	Analyze the usage of translation from English to Hindi
CO5	Evaluate the unseen passage to answer the questions
CO6	Create the knowledge in Hindi Language

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

UNIT I **9**

NAVEEN GADYA CHAYANIKA – 2 - Bholaram ka jeev - Mehamaan se Bhagavaan bachaaye - Numberovali Thijori –Kaffan - Gunda

UNIT II **9**

NON DETAILED TEXT: KAHANI KUNJ - Stories: 6 – 10 only

UNIT III9

GRAMMAR: SHABDA VICHAR ONLY - NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS - Theoretical & Applied

UNIT IV9

TRANSLATION - English – Hindi only - ANUVADH ABHYAS – III - 1 – 15 Lessons Only

UNIT V **9**

COMPREHENSION - 1 Passage from ANUVADH ABHYAS – III (16 – 30)

TEXT BOOKS:

UNIT 1 - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017
UNIT II - Govind Prakashan, Sadhar Bagaar, Mathura, Uttar Pradesh – 281001 - Editor: Dr V.P. Amithab
UNIT III - Vyakaran Pradeep by Ramdev - Hindi Bhavan,36, Tagor Town, Allahabad – 211002.
UNIT IV - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017.
UNIT V - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

CourseCoordinator **HOD**

BEH101	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. SHEEBA - English				

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I–POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald
2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019
3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

CourseCoordinator **HOD**

BMA105	CORE- 1 – ALGEBRA-I	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. K. Ramalakshmi &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)

CO1	Apply the concepts of matrices, in solving a system of linear equations
CO2	Be familiar with the theory of equations
CO3	Get exposed to the transformation of equations
CO4	State and explainSymmetric - Skew symmetric, - Hermitian - Skew Hermitian - Orthogonal and Unitary Matrices
CO5	To explain Exponential and Logarithmic series
CO6	To explain detail about Highest Power of a Prime Number p contained in *n!*- Fermat's and Wilson's Theorem

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT-I: THEORY OF EQUATIONS **12**

Polynomial Equations - Symmetric Functions of roots in terms of Coefficients - Sum of r-th powers of roots - Reciprocal Equations - Transformation of Equations.

UNIT-II: THEORY OF EQUATIONS **12**

Descarte's Rule of Signs - Approximate Solutions of Polynomials by Horner's method - Newton - Raphson method of Solution of a Cubic Polynomial.

UNIT-III: SUMMATION OF SERIES **12**

Summation of series using Binomial - Exponential and Logarithmic series (Theorems without proofs) - Approximation using Binomial & Exponential series.

UNIT-IV: MATRICES **12**

Symmetric - Skew symmetric, - Hermitian - Skew Hermitian - Orthogonal and Unitary Matrices - Cayley-Hamilton Theorem (without proof) - Eigen Values - Eigen Vectors–Similar Matrices - Diagonalisation of a Matrix.

UNIT-V: ELEMENTARY NUMBER THEORY **12**

Prime Number - Composite Number - Decomposition of a Composite Number as a Product of Primes uniquely (without proof) - Divisors of a Positive Integer - Congruence Modulo *n* - Euler Function (without Proof) - Highest Power of a Prime Number p contained in *n!*- Fermat's and Wilson's Theorems (statements only) - simple problems.

Text Books

1. T.K.Manickavachagam Pillai, T.Natarajan and K.S.Ganapathy "Algebra, Volume I & II", S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai. 2004

Reference Books

1. P.Kandaswamy, K.Thilagavathy, "Mathematics for B.Sc. Vol -I, II, III & IV", S.Chand & Company Ltd., New Delhi-55. 2004
2. S.Arumugam "*Algebra*", New Gamma Publishing House, Palayamkottai. 2003
3. A.Singaravelu, *"Algebra and Trigonometry"*, Vol.-I & II", Meenakshi Agency, Chennai. 2003
4. S.Sudha, "*Algebra and Trigonometry*", Emerald Publishes, Chennai. 1998

CourseCoordinator **HOD**

BMA106	CORE- 2 - TRIGONOMETRY	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Kavitha &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)

CO1	Expand trigonometric functions and also find the summation of T-series
CO2	Be familiar with the Expansion of Inverse Circular Functions
CO3	Study about theSummation of Trigonometric Series: When the angles are in A.P
CO4	Get exposed to the Relation between Hyperbolic Functions - Inverse Hyperbolic Function
CO5	Get exposedRelation between Hyperbolic Functions
CO6	Study aboutGregory Series

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT-I **12**

Expansions of cos nθ , sin nθ - Expansion of tan nθ in terms of tan θ - Expansion of tan(A+B+C+ …) - Formation of Equations.

UNIT-II **12**

Powers of sines and cosines of θ in terms of functions of multiples of θ - expansions of sin θ and cos θ in a series of ascending powers of θ - Expansion of Inverse Circular Functions.

UNIT-III: Hyperbolic Functions **12**

Definition – Relation between Hyperbolic Functions - Inverse Hyperbolic Functions.

UNIT-IV **12**

Resolution into Factors - simple problems only - DeMoivre's Property on the Circle and Cote's Property on the Circle. Logarithm of complex quantities. (Problems only)

UNIT-V **12**

Summation of Trigonometric Series: When the angles are in A.P, C+iS method of summation - Method of Differences -

Gregory Series - Euler Series. .

Recommended Text

1. S.Narayanan and T.K.Manickavachagam Pillai, "*Calculus",* S.Viswanathan Printers & Publishers Pvt. Ltd. Chennai. (2004)

Reference Books

1. P.Kandaswamy, K.Thilagavathy (2004), "Mathematic for B.Sc. Vol.-I, II, III & IV", S.Chand& Company Ltd., New Delhi-55.
2. P.Duraipandian and Laxmi Duraipandian (1984), "*Trigonometry",* Emerald Publishers, Chennai.
3. B.S.Grewal. (2002), "*Higher Engineering Mathematics",* Khanna Publishers. New Delhi.
4. S.L.Loney. (1982), "*Plane Trigonometry* Part II", Cambridge University Press, London.
5. A.Singaravelu (2003), "*Algebra and Trigonometry",* Vol.-I Meenakshi Agency, Chennai.
6. P.R.Vittal. (2004), "*Trigonometry",* Margham Publications, Chennai.

CourseCoordinator **HOD**

BMA107	ALLIED –I MATHEMATICAL STATISTICS –I	L	T	P	C
	Total Contact Hours – 45	5	2	0	3
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Kavitha &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

To enable the students to know the importance of Statistics and its applications.

COURSE OUTCOMES (COs)

CO1	Expand Measures of central tendency- Mean, Median, Mode, Geometric Mean, Harmonic Mean and Quartiles.
CO2	To explain about the theoretical concepts Probability- Axiomatic and Classical Probability
CO3	Study about the Concept of Random Variable ,Discrete and Continuous
CO4	Study about the Bivariate Probability Distribution Discrete and Continuous
CO5	Understand about the Correlation, Types of Correlation, Karl Pearson's Co-efficient of correlation, Rank Correlation
CO6	Study about Probability- Axiomatic and Classical Probability

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						□					
4	Approval		Academic Council Meeting								

Unit – I **9**

Measures of central tendency- Mean, Median, Mode, Geometric Mean, Harmonic Mean and Quartiles. Measures of Dispersion- Quartile Deviation and Standard deviation, Measures of Skewness and Kurtosis.

Unit – II **9**

Correlation – Definition, Types of Correlation, Karl Pearson's Co-efficient of correlation, Rank Correlation Co-efficient – Linear Regression Equation.

Unit – III **9**

Probability- Axiomatic and Classical Probability – Simple problems. Addition and Multiplication Theorem of Probability – Bayes' theorem of Probability. Simple problems .

Unit – IV **9**

Concept of Random Variable –Discrete and Continuous, Distribution Functions, Probability Mass Function, Probability Density Function and Mathematical Expectations.

Unit - V **9**

Bivariate Probability Distribution - Discrete and Continuous, Marginal and Conditional Distributions, Moment Generating Function.

Text Book:

1. Gupta S.C and V.K. Kapoor, "Fundamentals of Mathematical Statistics", Sultan & Sons, New Delhi. (2013)

Reference:

1. Gupta SP, "Statistical Methods", Sultan & Sons, New Delhi (1995)
2. Kapoor and Saxena, "Mathematical Statistics", Chand & Co, New Delhi.

CourseCoordinator **HOD**

BMA1L1	ALLIED - P I MATHEMATICAL STATISTICS– Practical I	L	T	P	C
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Siva &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.To enable the students to know the importance of Statistics and its applications.

COURSE OUTCOMES (COs)

CO1	Understand about the need of Statistics practical
CO2	To explain about the uses of experiments in our day today life
CO3	To give extreme practice to handle and explain thoroughly about concepts
CO4	Calculation of Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic and Quartiles for raw data and grouped data.
CO5	Calculation of Karl Pearson's co-efficient of Correlation, Spearman's rank correlation.
CO6	Study about Forecasting the values-algebraic and graphical methods.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

Experiments covering the following topics.

Formation of frequency distribution using tally marks, diagrammatic and graphical representation of data. Calculation of Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic and Quartiles for raw data and grouped data.

Computation of Mean Deviation, variance, Standard Deviation, Co-efficient of Variation, Karl Pearson's and Bowley's Co-efficient of Skewness.

Calculation of Karl Pearson's co-efficient of Correlation, Spearman's rank correlation. Construction of Regression lines, Forecasting the values-algebraic and graphical methods.

Solving problems using Bayes' theorem of probability.Finding Expected values, Probabilities, moments for univariate and bivariate probability distributions.

TEXT BOOK:

1.Gupta S.C and V.K. Kapoor, “Fundamentals of Mathematical Statistics”, Sultan & Sons, New Delhi. (2013) .

REFERENCES:

1.Gupta SP, “Statistical Methods”, Sultan & Sons, New Delhi (1995).
2.Kapoor and Saxena, “Mathematical Statistics”, Chand & Co, New Delhi.

CourseCoordinator **HOD**

SEMESTER-II

BAL201	TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL – I				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச்செய்தல்	
COURSE OUTCOMES (COs)	
CO1	சிற்றிலக்கியமான தூது,பள்ளு ,குறவஞ்சி பற்றி அறிந்துகொள்வர்
CO2	சைவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO3	வைணவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO4	பௌத்த, இசுலாம், கிறித்துவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறுபற்றி அறிந்துகொள்வர்
CO6	சிற்றிலக்கியம் மற்றும்சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு1 9

அழகர்கிள்ளைவிடுதூது - 1 - 20

முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35

திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 9

அற்புதத்திருவந்தாதி - 1 - 5

திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10

மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 9

பெரியாழ்வார் - முதல்திருமொழி - 1 - 10

ஆண்டாள் - திருப்பாவை - - 1 - 10

தொண்டரடிப்பொடிஆழ்வார் - திருமாலை - 1 - 5

அலகு4 9

ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10

பராபரக்கண்ணி- குணங்குடிமஸ்தான்சாகிபு - 1 - 20

இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 9

சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாட நூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

CourseCoordinator **HOD**

BAL202	**FRENCH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Department De Française				

COURSE OBJECTIVES:-

To introduce students to the complexity of the grammar and how to overcome it with simple rules.

COURSE OUTCOMES (COs)	
CO1	To being able to interpret the language.
CO2	To familiarize wBith methodological approaches in the study of literary and cultural texts, such as close reading, socio-historical contextualization, and literary and cultural theory.
CO3	To obtain advanced proficiency in spoken and written French.

CO4	To encourage the development of skills in linguistics, translation, and comparative studies.
CO5	To remember the anatomy of conjugations in past tense.
CO6	To evaluate the given text critically and enhance communication skills.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I -Quelle journee! 9

La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! 9

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)
Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? 9

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? 9

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est-Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! 9

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

BAL203	**HINDI-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				
COURSE OBJECTIVES:- To understand and improve the skills in the Language of Hindi					
COURSE OUTCOMES (COs)					
CO1	Remember of Ramayana In Sabari part				
CO2	Understand the historical stories				
CO3	Apply the concept of translation				
CO4	Analyzeand develop the letter writing skills				

CO5	Evaluateand develop the speaking skills										
CO6	Create knowledge in letter writing and speaking skills										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
4	Approval		Academic Council Meeting								

UNIT I **09**

MODERN POETRY - SHABARI

UNIT II **09**

ONE ACT PLAY - EKANKI SANKALAM

UNIT III **09**

TRANSLATION - HINDI – ENGLISH ONLY

UNIT IV **09**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **09**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - Lokbharathi Prakashan ,1 Floor, Duebari Building,Mahathma Gandhi Marg, Allahabad – 1.
UNIT II – Publishers – Vani Prakasam, New Delhi-110002

UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator HOD

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English				
COURSE OBJECTIVES:-To have a better understanding of the English language skills and its implementation it in day to day life activities.					
COURSE OUTCOMES (COs)					
CO1	Remember and recall the concepts of English language				
CO2	Understand the necessity of grammar in Communication				

CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
CO1	H	L						H		
CO2	H	L								
CO3	H	L								
CO4	H	L								
CO5	H	L								
CO6	H	L								

Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
	✓								

Approval	Academic Council Meeting

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb – Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, “English Communication”, S.CHAND Publishing, 2016
3. Rabindranath Tagore, “The Postmaster”, Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, “An Evening in Calcutta”, HarperCollins, 2015
2. Stanley Houghton, “Five one act plays”, Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, “Strings of Gold (Part- II)”, MacMillan, 2016

CourseCoordinator **HOD**

BMA205	**CORE- 3–CALCULUS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. K. Ramalakshmi &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)	
CO1	Solve problems using expansion of functions
CO2	Apply integral calculus in solving problems
CO3	Have a clear understanding of analytical geometry

CO4	Have a thorough knowledge of conics
CO5	To study the Maxima and minima of functions of 2 variables
CO6	To understand Double integration - Double integration in polar coordinates

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

Unit I **12**

Introduction to differentiation - Successive differentiation - n^{th} derivative – Leibnitz formula for nth derivative of a product – Partial differentiation – total differential Coefficient– Homogeneous functions – Euler's theorem.

Unit II **12**

Maxima and minima of functions of 2 variables – Lagrange's method of undetermined multipliers – simple problems.

Unit III **12**

Introduction to integration - Methods of integration – Integration by parts - Bernoulli's formula.

Properties of definite integrals-reduction formulae for standard integrals..

Unit IV **12**

Double integration - Double integration in polar coordinates – Change of order of integration- Triple integration in Cartesian coordinates – Areas as double integral – Volume as triple integral.

Unit V **12**

Areas in polar coordinates - Length of the curve (Cartesian and polar coordinates) – Area of surface of revolution (Cartesian and polar coordinates).

Text Book(s)

1) H. Jeromeskeisler "Elementary Calculus: An Infinitesimal Approach", Prindle Weber & Schmidt, revised Edition December, 2013. (Unit II).
2) S.Narayanan, T.K. Manickavachagam Pillai, "Calculus", S.Viswanathan Publications Pvt. Ltd, 1997). (Unit - I, III, IV)
3) Dr.S. Sudha, "Calculus", Emerald Publishers, 1998. (Unit V)

References:

1. P. Kandasamy and Thilagavathy, "Mathematics", Volume 1 S. Chand, New Delhi, 2004.
2. Thomas and Finney, "Calculus", Pearson Education, 9th Edition, 2006.

CourseCoordinator **HOD**

BMA206	**CORE- 4 -ANALYTICAL GEOMETRY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Kavitha &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)	
CO1	To learn about analytical geometry two dimensional in polar coordinates.
CO2	Study coplanarity of straight-line-shortest distance
CO3	To have knowledge about sphere, cone and cylinder
CO4	To understand about straight lines in three dimensional.
CO5	To learnStandard equation of sphere and equation of S.D between two lines-simple problems.

CO6	Be familiar with conicoides										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I – CONICS **12**

Polar coordinates equation of a conic – directrix - chord tangent-normal- simple problems - only in deriving equation of a conic.

UNIT II – STRAIGHT LINES **12**

Straight lines - coplanarity of straight-line-shortest distance (S.D) and equation of S.D between two lines-simple problems.

UNIT III – SPHERE **12**

Standard equation of sphere-results based on the properties of a sphere-tangent plane to a sphere- equation of a circle.

UNIT IV – CONE AND CYLINDER **12**

Cone whose vertex is at the origin- envelope cone of a sphere- right circular cone-equation of a cylinder-right circular cylinder.

UNIT V – CONICOIDES **12**

Nature of a conicoid - standard equation of central conicoid –enveloping cone tangent plane-condition for tangency – director Sphere- director plane

TEXT BOOKS

1. Durai Pandian.P, “Text book of Analytical Geometry-2 Dimensional”, Asia Publishing House, 1968.
2. N.P. Bali, “Solid Geometry”, Laxmi Publications (P) Ltd, 2005.

REFERENCES

1. S.Narayanan, T.K.Manickavasgam Pillai, “Calculus – I & II”, Viswanathan Publications, 2004.
2. M.L. Khanna, “Solid Geometry”, Jai Prakashan Nath & Co Publishers, Meerut, 2008.
3. P.R.Vittal, “Coordinate Geometry”, Margham Publishers, 2003.
4. G.B. Thomas & R.L. Finney, “Calculus & Analytic Geometry”, Addison Wesley, Mass (Indian Print), 1998.

CourseCoordinator **HOD**

BSC203	**ALLIED - II MATHEMATICAL STATISTICS–II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	3
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. R. Ishwariya &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.To enable the students to know the importance of Statistics and its applications.

COURSE OUTCOMES (COs)	
CO1	Understand about the Discrete Distribution- Bernoulli, Binomial, Poisson and Geometric distributions-Moments and M.G.F.
CO2	To explain about the uses of experiments in our day today life
CO3	To give extreme practice to handle and explain thoroughly about concepts
CO4	Discrete Distribution- Bernoulli, Binomial, Poisson and Geometric distributions-Moments and M.G.F.

CO5	To learn Test of Significance for large Samples- Single Mean, difference between mean
CO6	To impart knowledge on the very imperative part of Statistics -Discrete and Continuous Distributions and Tests of Significance.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						□				
4	Approval		Academic Council Meeting							

Unit – I **9**

Discrete Distribution- Bernoulli, Binomial, Poisson and Geometric distributions-Moments and M.G.F.

Unit – II **9**

Continuous distributions – Normal, exponential and uniform distributions- Moments and M.G.F.

Unit – III **9**

Beta Distribution of First and Second kind and Gamma Distribution – Definition and Derivation of MGF and moments. 't' , F and Chi-square distributions (Derivation of the probability density function only)

Unit – IV **9**

Test of Significance for large Samples- Single Mean, difference between mean, proportion and difference between proportions and difference between two standard deviations.

Unit – V **9**

Test of significance for Small Samples- 't' test for single mean, Difference between means, Simple Correlation. Paired 't' test. Chi-square test for goodness of fit and independence of attributes and F-test.

Text Book:

1. Gupta S.C. and V.K. Kapoor, "Fundamental of Mathematical Statistics", Sultan & Sons. New Delhi.2013. Units I to III
2. Gupta S.C. and V.K. Kapoor, "Fundamental of Applied Statistics", Sultan & Sons. New Delhi.2013. Units IV and V.

Book for Reference:

1. Kapoor and Saxena, "Mathematical Statistics", Chand & Co, New Delhi
2. Gupta SP, "Statistical Methods", Sultan & Sons, New Delhi (1995)

CourseCoordinator **HOD**

BMA2L1	ALLIED - P II MATHEMATICAL STATISTICS – II	L	T	P	C
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Kavitha &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

To enable the students to know the importance of Statistics and its applications.

COURSE OUTCOMES (COs)	
CO1	Understand about the need of Statistics practical
CO2	To explain about the uses of experiments in our day today life
CO3	To give extreme practice to handle and explain thoroughly about concepts
CO4	Discrete Distribution- Bernoulli, Binomial, Poisson and Geometric distributions-Moments and M.G.F.

CO5	To learn Test of Significance for large Samples- Single Mean, difference between mean
CO6	To impart knowledge on the very imperative part of Statistics -Discrete and Continuous Distributions and Tests of Significance.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				
4	Approval		Academic Council Meeting							

Experiments covering the following topics:

Drawing Simple random samples, systematic samples from a finite population and finding mean and variances. 5

Fitting of Binomial and Poisson discrete distributions. Fitting of Normal distribution(area method only). 5

Tests of significance based on large samples for proportions, means and variance using Normal distribution.5

Tests of significance based on small samples for single mean, two means, simple correlation, single variance, equality of two variances. 5

Chi-square test for goodness of fit and independence of attributes. 5

Analysis of Variance for CRD, RBD and LSD. 5

TEXT BOOK:

1. Gupta S.C. and V.K. Kapoor, "Fundamental of Mathematical Statistics", Sultan & Sons. New Delhi.2013. Units I to III.
2. Gupta S.C. and V.K. Kapoor, "Fundamental of Applied Statistics", Sultan & Sons. New Delhi.2013. Units IV and V.

REFERENCES:

1.Kapoor and Saxena, "Mathematical Statistics", Chand & Co, New Delhi

2.Gupta SP, “Statistical Methods”, Sultan & Sons, New Delhi (1995).

CourseCoordinator **HOD**

BCI204	**Environmental Sciences**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES :-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and abiotic ecosystem.

COURSE OUTCOMES (COs)	
CO1	Remember the fundamental concept of environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Understand the various environmental pollution, effects and prevention.
CO4	Apply the environmental legislations and environmental production act.
CO5	Apply the human rights, value education, environment and human health: women and child welfare, public awareness
CO6	Analyze the local area, local polluted site and local simple ecosystem.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L	H			H		H		
	CO2	H	L	H			H				
	CO3	H	L	H			H				
	CO4	H	L	H			H				
	CO5	H	L	H			H				
	CO6	H	L	H			H				
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

Unit – I: Introduction to Environmental Sciences: Natural Resources: 6

Environmental sciences – relevance – significance – public awareness – forest resources – water resources – mineral resources – food resources – conflicts over resource sharing – exploitation – land use pattern – environmental impact – fertilizer – pesticide Problems - case studies.

Unit – II: Exosystem, Biodiversity and its conservation: 6

Ecosystem – concept – structure and function – producers, consumers and decomposers –food chain – food web – ecological pyramids – energy flow – forest, grassland, desert and aquatic ecosystem – definition – genetic, species and ecosystem diversity – biodiversity – definition – genetic, species and ecosystem diversity – values and uses of biodiversity – biodiversity at global, national (india) and local levels – hotspots, threats to biodiversity –conservation of biodiversity – insitu and ex-situ.

Unit – III: Environmental Pollution and Management 6

Environmental pollution – causes – effects and control measures of air, water , marine, soil, solid waste. Thermal, nuclear pollution and disaster management – floods, earth quake, cyclone and land slides, role of individuals in prevention of pollution – pollution case studies.

Unit – IV: Social issues – Human population: 6

Urban issues – energy – water conservation – environmental ethics – global warming – resettlement and rehabilitation issues – environmental legislations – environmental production act. 1986 – air, water, wildlife and forest B.C.A.: syllabus (CBCS) conservation act - population growth and explosion – human rights and value education – environmental health – HIV/AIDS – role of it in environment and human health – women and child welfare – public awareness – case studies.

Unit – V: Field Work:

Visit to a local area / local polluted site / local simple ecosystem – report submission.

Text book:

1. K. Kumarasamy, A. Alagappa Moses and M. Vesanthy, 2004, Environmental Studies, Bharathidasan University Pub, 1, Trichy.
2. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
3. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub., Trichy.

Reference book:

1. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
2. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub. Trichy.
3. G. TylerMiller, Scott Spoolman, 2018, Environmental science, 16th edition.

Course Coordinator **HOD**

BBC206	**VALUE EDUCATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name & Department:- Ms. G. Vinothini, Commerce				

COURSE OBJECTIVES:-

- To enable the students to understand the Social values.
- To provide knowledge on the features for life.
- To acquire the knowledge on Human rights.
- To impart the knowledge on Environment and Ecological balance.
- To educate the knowledge on Social evils.

COURSE OUTCOMES (COs)	
CO1	List out the Formation and Essential Elements of Contract.
CO2	Determine the Self esteem, duties and responsibilities of individuals, Social values
CO3	Apply to create peace and non violence and Dr. APJ Abdul Kalam's ten points for Enlightened citizenship
CO4	Determine the Environment and Ecological balance
CO5	Measure the Knowledge on Environmental conservations and enrichment
CO6	Formulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	H	H	H	L	M	H	M		
	CO2	H	M	H	M	L	H	H		
	CO3	H	L	M	M	H	H	L		
	CO4	M	H	H	H	H	L	H		
	CO5	H	M	H	M	M	L	H		
	CO6	M	M	H	H	H	M	L		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓							✓	
4	Approval	Academic Council Meeting								

UNIT I **6**

Value education: Definition- relevance to present day – concept of human values – self introspection – Self esteem- duties and responsibilities of individuals- Social values- role of media in value building.

UNIT II **6**

Salient features for life: Truth, commitment,, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity and inclusiveness, Team work- positive creative thinking.

UNIT III **6**

Human rights: Universal declaration of Human rights- human rights violation – National integration – peace and non violence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship

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UNIT IV **6**

Environment and Ecological balance: Interdependent of all being – living and non living – the binding of man and nature – Environmental conservations and enrichment.

UNIT V **6**

Social evils : Corruption – cyber crime, terrorism, Alcoholism, Drug addiction, Dowry –

Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.

TEXT BOOK

1. N. Arumugam, S. Mohana, Lr. Palkani- value based education- Saras Publication, 2009
2. DN Ghose, Value Education- dominant publishers, 2005
3. M.G. Chitakra, Education and Human values, A.P.H Publishing Corporation. New Delhi

REFERENCE BOOKS

1) For Life, for the future: Reserves and Remains – UNESCO Publications.
2) Values, A Vedanta kesari presentations, Sri Ramakrishna Math, Chennai

Course Coordinator **HOD**

SEMESTER-III

BAL301	TAMIL – III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES :- காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தைஅறியச் செய்தல்					
COURSE OUTCOMES (COs)					
CO1	ஐம்பெரும் காப்பியங்களைபற்றி அறிவர்				
CO2	பிற்கால காப்பியங்களைபற்றி அறிவர்				
CO3	முக்கால நீதி இலக்கியங்களைபற்றி அறிவர்				
CO4	பிற்கால நீதி இலக்கியங்களைபற்றி அறிவர்				
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றைபற்றி அறிவர்				
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்				

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 9

சிலப்பதிகாரம்-இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219
மணிமேகலை- சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115
சீவகசிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம்- 851 - 860

அலகு2 9

கம்பராமாயணம்- **கம்பர்**- அயோத்தியகாண்டம்- கங்கைப்படலம் - 10
தேம்பாவணி- வீரமாமுனிவர்- நாட்டுப்படலம் - 10
சீறாப்புராணம்-உமறுப்புலவர்--மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 9

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10
நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10
இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 9

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி- சிவப்பிரகாசர் - 8,12,18,24,39
புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 9

காப்பியஇலக்கியவரலாறு , நீதிஇலக்கியவரலாறு

பாட நூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

Course Coordinator HOD

BAL302	FRENCH III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Department De Française				

COURSE OBJECTIVES:-

To develop the technical aspects of the language and varied grammatical nuances to interpret the subject matter.

COURSE OUTCOMES (COs)

CO1	To impart the various aspects that makeup the language.
CO2	To learn some facts, procedures, practice certain grammatical structures, and practice communicative strategies.
CO3	To learn the culture of the language natives.
CO4	To analyze the differences between the basic and advanced grammar.
CO5	To remember the interlink between the conjugations
CO6	To understand grammatical strictures.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	H	L	M	-	M	-	H		
	CO2	H	H	L	M	-	-	-			
	CO3	H	M	H	H	-	H	-			
	CO4	H	M	M	M	-	-	-			
	CO5	M	M	M	H	-	H	-			
	CO6	H	H	H	M	-	M	-			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	

4	Approval		Academic Council Meeting							

UNIT I Vivement demain! **9**

Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? **9**

Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? **9**

Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme! **9**

Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-La forme ((en + participle present))

UNIT V On se retrouve ! **9**

Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present -Passe compose-Imparfait et future

TEXT BOOKS:
A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

BAL303	**HINDI III**						**L**	**T**	**P**	**C**	
	Total Contact Hours – 45						3	0	0	3	
	Prerequisite course – Grade 12										
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi										
COURSE OBJECTIVES:- To understand and improve the skills in the Language of Hindi											
COURSE OUTCOMES (COs)											
CO1	Remember of Ramayana in Panchavati part										
CO2	Understand the history of Hindi literature										
CO3	Apply the concept of Hindi grammatical speech										
CO4	Analyzeand develop the translation skills										
CO5	Evaluate and develop the unseen passage skills										
CO6	Create the skills in Hindi language										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**

POETRY - PANCHAVATI

UNIT II **09**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **09**

ALANKAR – Anupras – Yamak- Slesh - Vakrokthi Upama – Rupak – Drishtanth - Virodhabas.

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

By Maithilisharan Gupt, Anuvadh Abhyas – III

Reference Books:

Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BEH301	ENGLISH- III	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:-To enhance the reading, writing, listening and speaking of the English language skills..

COURSE OUTCOMES (COs)

CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message -Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007
2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012
2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

CourseCoordinator **HOD**

BMA305	CORE-5 DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Siva &Mathematics				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understand thoroughly

COURSE OUTCOMES (COs)

CO1	Solve first order and of higher degree differential equations
CO2	Solve second order differential equations
CO3	Form PDEs by different methods
CO4	Solve differential equations of Lagrange's type and also by the method of
CO5	Multipliers
CO6	Be thorough with applications of Laplace transform, particularly solving

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

UNIT I - SOLVING ORDINARY DIFFERENTIAL EQUATIONS **12**

First order but of higher degree equations - solvable for p, solvable for x, solvable for y, Clairaut's form - simple problems.

UNITII – DIFFERENTIAL EQUATIONS WITH CONSTANT COEFFICIENTS **12**

Second Order Differential Equations with Constant Coefficients - Second Order Differential Equations with Variable Coefficients - Method of Variation of Parameters - Simple Problems.

UNIT III - FORMATION AND SOLVING PDE **12**

Formation of P.D.E by eliminating arbitrary constants and arbitrary functions; Complete Integral; Singular Integral; General Integral; the standard types f(p,q) = 0, f(x,p,q) = 0, f(y,p,q) = 0, f(z,p,q) = 0, f(x,p) = f(y,q); Clairaut's form ; Equation reducible to standard types - simple problems; Charpit's method.

UNIT IV - HOMOGENEOUS LINEAR DIFFERENTIAL EQUATIONS **12**

Lagrange's Equation Pp + Qq = R; Method of multipliers; Homogeneous linear differential equation - solutions - simple problems.

UNIT V – LAPLACE TRANSFORMS **12**

Laplace Transform; Inverse Laplace Transform (usual types); Convolution theorem; Applications of Laplace Transform to solution of first and second order linear differential equations (constant coefficients) and simultaneous linear differential equations - simple problems.

TEXT BOOK

1. P. Kandasamy, K. Thilagavathy, “Mathematics for B. Sc Branch – I, Volume 3”, 1st Edition, S. Chand and Co.Ltd., New Delhi, 2004

REFERENCES

1. M. K. Venkataraman and S. Krishnan, “Engineering Mathematics, The National Publishing Co., 2010.
2. Dipak Chatterjee, “Integral Calculus and differential equations”, TATA McGraw S Hill Publishing Company Ltd., 2000.
3. Narayanan, T.K. Manichavasagam Pillai, “Calculus, Vol. I”, S. Viswanathan Printers Pvt. Limited, 2007.
4. Dr. S. Sudha, “Differential Equations & Integral Transforms”, Emerald Publishers, 2002.

CourseCoordinator **HOD**

BMA306	CORE-6 NUMERICAL ANALYSIS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Siva &Mathematics				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understand thoroughly

COURSE OUTCOMES (COs)

CO1	Solve equations numerically by direct and iterative methods
CO2	Be familiar with interpolation and numerical differentiation & integration
CO3	Be exposed to best approximations and spline approximations
CO4	Solve equations using predictor – corrector methods
CO5	Be thorough with elliptic, parabolic and hyperbolic equations
CO6	To solve Finite difference solution for the second order differential equation

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

UNIT – I SOLUTION OF EQUATION AND EIGEN VALUE PROBLEM 12

Methods of false position, Newton – Raphson method for single variable and simultaneous equation with two variables, solutions of a linear system by Gaussian, Gauss – Jordan, inverse of a matrix by Gauss – Jordan method, Eigen value of a matrix by power and Jacobi method.

UNIT – II INTERPOLATION AND APPROXIMATION 12

Interpolation with Newton forward and backward differences, Newton's divided differences, Lagrange's polynomial, central difference-Gauss Forward and Backward formula and Bessel's formula.

UNIT – III NUMERICAL DIFFERENTATION AND INTEGRATION 12

Numerical differentiation upto second order based on NFF and NBF, numerical integration by Trapezoidal and Simpson's (both $1/3^{rd}$ and $3/8^{th}$) rules, Weddles's Rule.

UNIT – IV INITIAL VALUE PROBLEMS FOR ODEs 12

Single step methods – Tailor series, Euler and modified Euler methods, Runge – Kutta method of 4^{th} order and 2nd order differential equations - Multistep methods – Milne and Adam's – Bashforth predictor and corrector methods.

UNIT – V BOUNDRY VALUE PROBLEMS FOR ODEs 12

Finite difference solution for the second order differential equation, finite difference solutions for one dimensional heat equation (both implicit and explicit) one dimensional wave equation.

TEST BOOKS:

1. Grewal, B.S. "Higher Engineering Mathematics (36^{th} edition)" Khanna Publication Delhi 2001.

REFERENCE BOOKS:

1. Jain K.K. Iyengar, S.R.K and Jain, R.K. Numerical Methods for Scientific and Engineering Computation 3^{rd} edition, New Age International Publications and Co. 1993.
2. Sastry SS. "Introductory Methods of Numerical Analysis" PHI. 2005.
3. Venkatraman.MK "Numerical Methods", NPC Chennai.
4. Dixit JB."Numerical Methods" University Science Press, New Delhi

CourseCoordinator HOD

BPS302	**ALLIED PHYSICS PAPER – I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	5	0	0	4
	Prerequisite course – Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr S. Anandhi / Physics				

COURSE OBJECTIVES:- To enhance the fundamental knowledge in Basic concepts of physics To understand the concepts of Electrical and magnetic properties and study about various laws, circuits and analysis of different techniques

COURSE OUTCOMES (COs)	
CO1	Remembering the basics of stress, strain, elastic constant, surface tension and viscosity
CO2	To learn the oscillation of time period using beam and microscope
CO3	To learn the Law of thermodynamic and adiabatic process
CO4	Remembering Faradays law and thermoelectric effects and Analyze the different types of induction coils
CO5	Evaluate the problems of electromagnetic circuits
CO6	Understand the diffraction, grating, telescope and microscope and their applications

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium,
1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	H	M	M		H			H	
	CO2			L		H				
	CO3	L	L	M	H	H				
	CO4	H		H		M				
	CO5	M	H	M		L				
	CO6	H	H	H	M					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	

4	Approval	47th Academic Council Meeting

UNIT I - SIMPLE HARMONIC MOTION AND CIRCULAR MOTION 12

Composition of two Simple harmonic motions along a line and at right angles - Lissajous figures. Uniform circular motion - Acceleration of a particle in a circle - centripetal and centrifugal forces - centrifuge - motion of a Bicycle and a car around a circle - Banking on curved tracks.

UNIT II- PROPERTIES OF MATTER 12

Elasticity: Elastic constants - Bending of beams - young's modulus by nonuniform bending - energy stored in a Stretched wire - torsion in a wire - determination of rigidity modulus by torsional pendulum - Static torsion.

Viscosity: Coefficient of viscosity - Poissuelle's formula - Comparison of viscosities - burette method - Stoke's law - Terminal velocity - viscosity of highly viscous liquids - lubrication. Surface tension: Molecular theory of surface tension - Excess pressure inside a drop and bubble - surface tension by drop weight method - interfacial surface tension.

UNIT III - HEAT AND THERMODYNAMICS 12

Kinetic theory of gases - Vanderwaal's equation of state - Derivation of critical constants - Low temperature - Joule-Kelvin effect - Theory and applications - Liquefaction of gases - Linde's process - adiabatic demagnetization - laws of thermodynamics - entropy - change of entropy in reversible and irreversible processes.

SOUNDTransverse vibration of a stretched string - Expression for the velocity of transverse waves - laws of transverse vibrations - A.C. Frequency measurement using sonometer - velocity of sound in a gas - Ultrasonics - production and uses.

UNIT IV- ELECTRICITY AND MAGNETISM 12

Capacitor - energy of charged capacitors - Loss of energy due to sharing of charges - potentiometer - internal resistance of a cell and thermo emf measurement - Magnetic Field due to a current carrying

conductor - Biot-Savart's law - field along the axis of a coil - force in a conductor carrying current in a magnetic field - Ballistic galvanometer - Circuit control and protective devices - switch - its types - fuses - circuit breaker - Relays.

UNIT V - GEOMETRICAL OPTICS **9**

Refraction - Normal refraction - Refractive index by microscope - by air cell - refraction at grazing incidence - grazing emergence in prisms - combination of two prisms to produce dispersion without deviation and deviation without dispersion - defects of images - coma, Distortion - Spherical and chromatic aberration in lenses.

BOOKS FOR STUDY AND REFERENCE

1. Allied Physics by Dr.Dhanalakshmi Dr.Sabesan

2. Allied Physics by Kamalakkannan, Jayaraman.

3. Heat and thermodynamics by J.B. Rajam

4. Elements of properties of matter by Brij Lal and Subramanian

5. Mechanics by Narayanamoothy and others

6. Applied Electronics by R.S.Sedha.

CourseCoordinator **HOD**

BAL001		BASIC TAMIL – I				L	T	P	C		
		Total Contact Hours – 45				3	0	0	3		
		Prerequisite course – +2 Level Tamil									
		Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை									
COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழ் எழுத்துக்களைஅறிவர்										
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளைஅறிவர்										
CO3	சொல்லமைப்புபற்றிஅறிவர்										
CO4	சொற்களை உருவாக்கும்அறிவைப்பெறுவர்										
CO5	சொற்களை தொடராக மாற்றும்திறனைப்பெறுவர்										
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		Academic Council Meeting							

அலகு –1 9

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 12

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 12

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 12

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

1.ஆறுமுகநாவலர்,"தமிழ் இலக்கணம்", பாரிநிலையம், 2012
2. கழகப்புலவர்குழுவினர்,"நன்னூல்–எழுத்ததிகாரம்", கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,"நன்னூல்–சொல்லதிகாரம்", கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,"நன்னூல்",உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

Course Coordinator HOD

BAL002	SPECIAL TAMIL – I	L	T	P	C
	Total Contact Hours –		0	0	
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- பண்டைத்தமிழரின்நாகரிகமும்பண்பாடும்பற்றிஅறியச்செய்தல்	
COURSE OUTCOMES (COs)	
CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்
CO4	தமிழரின்கல்வி, வாணியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றி அறிவர்
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றி அறிவர்
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		Academic Council Meeting							

அலகு1

நாகரிகமும்பண்பாடும் -சங்ககாலத்துஅரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்

அலகு2

பண்டைத்தமிழர்திருமணமுறை ,நல்லறம் - குடும்பவாழ்வுபற்றியதமிழர்கொள்கை - பண்டையத்தமிழரின்உணவு, உடை, உறையுள்

அலகு3

பண்டைத்தமிழரின்கல்விநிலை - பண்டைத்தமிழரின்வானியல்அறிவு -பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4

மகளிர் நிலை - சங்கத் தமிழரின் சமய வாழ்வு - சங்ககால விழாக்கள்

அலகு5
இந்திய நாகரீகத்தில் தமிழ்ப் பண்பாட்டுக்கூறுகள் - மருத்துவக் கலை - தமிழகக் கோயில் கட்டிடக்கலை வளர்ச்சி

பாடநூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2010
2.பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2012
3கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", மணிவாசகர் பதிப்பகம், 2012

பார்வைநூல்கள்

1. நா. வானமாமலை, "தமிழர்பண்பாடும்தத்துவமும்", அலைகள்வெளியீட்டகம், 2011
2. பேரின்பன், "தமிழர்வரலாறு:சிலகேள்விகளும்தேடல்களும்", அலைகள்வெளியீட்டகம்,2011
3. மா.இராசமாணிக்கனார், "தமிழகவரலாறும்தமிழர்பண்பாடும்", செண்பகாபதிப்பகம், 2012

Course Coordinator HOD

BPS3L2	**PHYSICS PRACTICAL I**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Designed by-Department of Physics				

COURSE OBJECTIVES:-
To gain the practical knowledge of measuring tools, bending of beams, time period of pendulum and surface tension of different liquids

COURSE OUTCOMES (COs)	
CO1	Handling of basic practical tools such verinyre, screw gauge and microscope
CO2	Developing technical skills
CO3	Understand the concept of material science.
CO4	Understand the equations with real coefficients of different modules
CO5	To gain the knowledge ofinstrumentation techniques
CO6	Verificationof laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	H	M	M		H			H	
	CO2			L		H				
	CO3	L	L	M	H	H				
	CO4	H		H		M				
	CO5	M	H	M		L				
	CO6	H	H	H	M					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	47th Academic Council Meeting								

LIST OF EXPERIMENTS

1. Non-Uniform bending – Pin and Microscope.

2. Uniform bending-scale and Telescope.

3. Surface tension and Interfacial Surface tension by Drop weight Method.

4. Surface tension by Capillary rise Method.

5. Coefficient of viscosity of liquid – Variable Pressure head Method.

6. Thermal conductivity of a bad conductor – Lee's disc Method.

7. Spectrometer – Refractive index of a solid prism.

8. Spectrometer – Grating – Normal incidence.

9. Newton's Rings – 'R' determination.

10. Air wedge – Thickness of the given thin wire.

TEXT BOOKS:-

1) C.C OUSEPH, G.RANGARAJAN- A TEXT BOOK OF PRACTICAL PHYSICS- S. VISWANATHAN PUBLISHER- PART I (1990)
2) C.C OUSEPH, C.RANGARAJAN, R. BALAKRISHNAN- A TEXT BOOK OF PRACTICAL PHYSICS- S. VISWANATHAN PUBLISHER-PART II (1996)

BOOKS FOR REFERENCE:-

1) S.L GUPTA AND V.KUMAR- PRACTICAL PHYSICS- PRAGATI PRAKASHAN- 25TH EDITION (2002).

CourseCoordinator **HOD**

SEMESTER-IV

BAL401	TAMIL – IV	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :-	சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்
COURSE OUTCOMES (COs)	
CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்
CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அலகு1 9

நற்றிணை - 10, 110, 129
குறுந்தொகை - 8, 25, 32
கலித்தொகை - 6, 37, 51

அலகு2 9

புறநானூறு - 89, 109, 204
பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 9

பொருநராற்றுப்படை - 151 - 213
பெரும்பாணாற்றுப்படை - 5 - 15,
- 170 - 184

அலகு4 9

நெடுநல்வாடை - 1 - 25
பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 9

எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

CourseCoordinator **HOD**

BAL402	**FRENCH IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Department De Française				
COURSE OBJECTIVES:- To introduce students to the advanced levels of the language.					
COURSE OUTCOMES (COs)					
CO1	To learn the culture of the language natives in advanced setup.				
CO2	To understand the integral grammar structure in French.				
CO3	To encourage the development of skills in linguistics				

CO4	To evaluate the Oral and Written skill set
CO5	To remember the language construction
CO6	To enhance advanced fluency in language

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

UNIT I Vous plaisantez! **9**

Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien! **9**

Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verbe)

UNIT III A vos risqué et perils! **9**

Le subjonctif Present- La construction passive pour metre en valeur l'object direct de l' action

UNIT IV C'est tout un programme! **9**

Les pronom possessives -Les adjectifs et les pronoms indefinis-Les pronom demonstratifs:
Les constructions --celui+de

UNIT V C'est la fete ! **9**

Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

BAL403	**HINDI-IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				
COURSE OBJECTIVES:- To understand and improve the skills in the Language of Hindi					
COURSE OUTCOMES (COs)					
CO1	Remember the skills of the leadership				
CO2	Understand and develop the skills to overcome the mistake				
CO3	Apply the concept of Hindi essay writing				

CO4	Analyze and develop the translation skills
CO5	Evaluate the unseen passage skills
CO6	Create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
								✓			
4	Approval		Academic Council Meeting								

UNIT I **09**

DRAMA – Andher Nagari

UNIT II **09**

NOVEL - GABAN - Premchand

UNIT III **09**

GENERAL ESSAY

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

ByBharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas – III

Reference Books:

UNIT 1 - Publisher–Vani Prakashan, New Delhi – 110 002.
UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002
UNIT III – Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra -282002
UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17
UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				
COURSE OBJECTIVES:-To focus on the balanced development of the English language communication skills.					
COURSE OUTCOMES (COs)					
CO1	Remember the basic concepts of English literature				

CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Eng Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda - Hilaire Belloc**- Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There - Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle - Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar - Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018

2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Mac
4. beth", Macmillan Publisher, 2014

CourseCoordinator HOD

BMA405	**VECTOR CALCULUS, FOURIER SERIES AND FOURIER TRANSFORMS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Siva &Mathematics				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understand thoroughly

COURSE OUTCOMES (COs)

CO1	Familiar with physical interpretation of divergence and curl of a vector
CO2	Be exposed to evaluating line, surface and volume integrals
CO3	Be thorough with the study of Fourier series expansions

CO4	Be familiar with half range Fourier series and harmonic analysis
CO5	Be thorough with properties and theorems on Fourier transforms with even functions
CO6	Be exposedConvolution theorem of Fourier transforms

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

UNIT I – VECTOR CALCULUS **12**

Gradient, Divergence of a scalar point function and curl of a vector point function directional derivative, unit normal to a surface, Solenoidal and irrational vectors – physical interpretation of divergence and curl of a vector point function.

UNIT II – LINE AND VOLUME INTEGRAL **12**

Line surface and volume integrals - theorems of Gauss, Stokes and Greens (with proof) - simple problems.

UNIT III – FOURIER SERIES **12**

Fourier series- definition - Fourier Series expansion of periodic functions with Period 2π and period $2l$ – Use of odd & even functions in Fourier Series

UNIT IV - HALF RANGE COSINE AND SINE SERIES **12**

Half-range Fourier series – definition- Development in Cosine series & in Sine series Change of interval.

UNIT V - FOURIER TRANSFORM **12**

Dirichlet's conditions, Fourier integral formula (with proof), Fourier transform, Inverse Theorem for Fourier transform, Fourier sine and cosine transforms and their inversion formulae. Linearity property of Fourier transforms, Change of scale property, Shifting theorem, Modulation theorem, Convolution theorem of Fourier transforms, Parseval's identity.

TEXT BOOK

P.R.Vittal & V.Malini, "Vector Calculus, Fourier Series and Fourier Transforms", Margham Publications, 2004.

REFERENCES

1. S.Narayanan and T.K.Manickavachagam Pillai, "Vector algebra and Analysis", S.Viswanathan Pvt. Ltd., 1995.
2. S.Narayanan and T.K.Manickavachagam Pillai, "Calculus, Volume III", Vijay Nicole Imprints Pvt. Ltd., Chennai, 2004.
3. A.R.Vasistha and R.K.Gupta, "Integral Transforms", Krishna Prakashan Media Pvt. Ltd., New Delhi, 2011.
4. S. Narayanan, R. Hanumantha and T. K. Manickavachagam Pillai, "Ancillary Mathematics, Volume I & II", S.Viswanathan Printers, Chennai, 2007.

CourseCoordinator **HOD**

BMA406	**CORE – 8 - FLUID DYNAMICS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Designed by – Department of Mathematics				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understand thoroughly

COURSE OUTCOMES (COs)

CO1	Familiar with Differential equation of fluid statics and Accelerating fluids in the absence of shear stress
CO2	Be exposed toKinematics and stress–strain rate relationship in fluids-Translation-Rotation-Navier-Strokes
CO3	Be thorough with the study of Mathematical model of fluid motions. Integral equations
CO4	Be familiar with Boundary Layer Flow and Flow in pipes
CO5	To study One dimensional compressible flow. Isentropic flow, Adiabatic constant area flow
CO6	Familiar withBoundary Layer Flow and Flow in pipes

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

Unit I **12**

Definition of Fluid, Physical classification and types of flow. Differential equation of fluid statics and Accelerating fluids in the absence of shear stress.

Unit II **12**

Mathematical model of fluid motions. Integral equations-Conservation of Mass. Momentum- Newton's II law of Motion. Angular Momentum-First law of thermodynamics(Statement, Proof & problems). Second law of thermodynamics

Unit III **12**

Kinematics and stress–strain rate relationship in fluids-Translation-Rotation-Navier-Strokes Equation-Energy Equation. Relationship between Momentum-Energy, Thermodynamics & Bernoulli Equation.

Unit IV **12**

Boundary Layer Flow and Flow in pipes. External flow, Internal Flow. Thermal aspects of Viscous flow.

Unit V **12**

One dimensional compressible flow. Isentropic flow, Adiabatic constant area flow. Frictionless constant area flow. Isothermal flow with friction. Incompressible flow.

Text Books

1. Bansal.R.K, "A Textbook of Fluid Dynamics". Laxmi Publications, New Delhi. 2008

References

1. Walther Kaufmann, "Fluid Dynamics" , Tata McGraw-Hill, 1963.
2. Vijay Gupta, Santosh K. Gupta, "Fluid Mechanics and its Applications", Wiley Eastern Ltd., 1984.
3. Sawhney G.S, "Fundamentals of Fluid Dynamics" 2nd Edn. I.K. International Publishing House. (2011)
4. William F.Hughes & John A.Brighton. "Fluid Dynamics", Schaum's Series. TMH. 2004

CourseCoordinator **HOD**

BPS402	**ALLIED PHYSICS PAPER – II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	5	0	0	4
	Prerequisite course – Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr S. Anandhi / Physics				

COURSE OBJECTIVES:- This course is to high light the Modern Physics and digital Electronics

To enhance the fundamental knowledge in Basic concepts of physics and t o understand the concepts of Electrical and magnetic properties and study about various laws, circuits and analysis of different techniques

COURSE OUTCOMES (COs)	
CO1	Understand the basic concepts of wave mechanics.

CO2	To Learn about the principles of nuclear reactions.
CO3	Acquire knowledge about the renewable and non-renewable energies.
CO4	Understand the concepts of crystals and optical communication.
CO5	Understand the basic concepts of electronics.
CO6	Understand the basic concepts of utilization of commercial devices and some applications.

Mapping of Course Outcomes with Program outcomes
(POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium,
1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	H	M	M		H			H	
	CO2			L		H				
	CO3	L	L	M	H	H				
	CO4	H		H		M				
	CO5	M	H	M		L				
	CO6	H	H	H	M					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT –I IELECTROSTATICS 12

Electrostatics Coulomb's inverse square law – Gauss theorem and its applications (Intensity at a point due to a charged sphere & cylinder) – Principle of a capacitor – Capacity of a spherical and cylindrical capacitors – Energy stored in a capacitor – Loss of energy due to sharing of charges - Capacitors in series and parallel – Types of capacitors.

UNIT II –MAGNETISM 12

Magnetism Intensity of magnetization – Susceptibility – Types of magnetic materials – Properties of para, dia and ferromagnetic materials – Cycle of magnetization – Hysteresis – B-H curve – Applications of B-H curve – Magnetic energy per unit volume – Ferromagnets, ferrimagnets and their applications.

UNIT III -ATOMIC PHYSICS 12

Atomic Physics Atom Models: Sommerfield's and Vector atom Models – Pauli's exclusion Principle – Various quantum numbers and quantization of orbits. X-rays: Continuous and Characteristic X-rays – Mosley's Law and importance – Bragg's law – Miller indices – Determination of Crystal Structure by Laue's Powder photograph method.

UNIT –IVNUCLEAR PHYSICS 12

Nuclear Physics Introduction – Nucleus – Classification of Nuclei – Nuclear Size – Charge – Mass and Spin

– Liquid drop model.Nuclear Radiations and their properties, particle accelerators – Betatron and Proton Synchrotron - Four types of reactions – Elementary particles and their classifications.

UNIT –VDIGITAL ELECTRONICS 12

Digital Electronics Decimal – Binary – Octal and Hexa Decimal number systems and their Mutual Conversions – 1's and 2's complement of a Binary number and Binary arithmetic (Addition, Subtraction, Multiplication and Division) – Binary Subtraction by 1's and 2's complement method – Basic logic gates – AND, OR, NOT, NAND, NOR and EXOR gates – NAND and NOR as universal building gates – Boolean Algebra – Laws of Boolean Algebra – De Morgan's Theorems – Their verifications using truth tables.

BOOKS FOR STUDY

1. R. Murugesan., Electricity and Magnetism. S. Chand & Co, New Delhi, Third Revised edition, 2001.

2. R. Murugeshan, Kiruthiga Sivaprasath, Modern Physics., S. Chand & Co, New Delhi, First edition, 1984,.

3. R. S. Sedha, A text book of Digital Electronics, S. Chand & Co, New Delhi, First edition ,2004.

BOOKS FOR REFERENCE

1. Narayanamurthi, Electricity and Magnetism, The National Publishing Co, First edition, 1988.

2. J. B. Rajam, Atomic Physics., S. Chand & Company Limited, New Delhi, First edition, 1990.

3. B. N. Srivastava, Basic Nuclear Physic, Pragati Prakashan, Meerut, 2005.

4. Albert Paul Malvino, Digital principles and Applications, McGraw-Hill International Editions, New York, 2002.

CourseCoordinator HOD

BAL003	BASIC TAMIL – II				L	T	P	C			
	Total Contact Hours – 45				2	0	0	2			
	Prerequisite course – Basic Tamil – I										
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை										
COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழ்மொழியின்சொல்வகை, திணை, பால்பாகுபாடுபற்றிஅறிவர்										
CO2	அடுக்குத்தொடர், இரட்டைக்கிளவி, ண,ன,ர,ற,ள,ழவேறுபாடுபற்றிஅறிவர்										
CO3	பத்திகளைசுருக்கியும், விரிவாக்கிஎழுதும்அறிவைப்பெறுவர்										
CO4	சொற்களைகையாண்டுஉரையாடுவதுபற்றிபெறுவர்										
CO5	கட்டுரை, கடிதம்எழுதும்அறிவைப்பெறுவர்										
CO6	தமிழ்மொழியில்சரளமாகபேசும்எழுதும்திறனைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3

2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு –1 9

1.1 தமிழ் மொழி அறிமுகம்

1.2 சொல் வகைகள்

1.3 திணை, பால் பாகுபாடு

அலகு – 2 9

2.1 அடுக்குத் தொடர், இரட்டைக் கிளவி

2.2 ஒரு ஓர் வேறுபாடு

2.3 ண,ன,ர,ற,ள,ழ வேறுபாடு

அலகு – 3 9

3.1 பத்தியிலிருந்து வினாக்களுக்குரிய விடைகளை கண்டறியும் பயிற்சி

3.2 சுருக்கி வரைதல்

3.3 விரிவாக்கி எழுதுதல்

அலகு – 4 9

4.1 உரையாடல்

4.2 கட்டுரை

4.3 மடல் வரைதல்

பாட நூல்கள்

1. மருதூர் அரங்கராசன்,"தவறின்றித் தமிழ் எழுத", ஐந்திணைப்பதிப்பகம், 2012

2. ஞா.தேவநேயப்பாவாணர், "உயர்தரக் கட்டுரை இலக்கணம்", கௌராபதிப்பகம்,2013

3. க. கயிலாயநாதன்,"தமிழ் மொழி விளக்கம்", முல்லைநிலையம், 2006

பார்வை நூல்கள்

1. பாரதிதாசன், "தவறின்றித்தமிழ்எழுத", நாம்தமிழர்பதிப்பகம், 2013

2. ஆசிரியர்குழு, "கடிதம்வரைதல்', லியோபப்ளிகேஷன்ஸ், 2013

3. பாவாணர், "கட்டுரைவரைவதுஎப்படி?",தமிழ்மண்பதிப்பகம், 2012

Course Coordinator HOD

BAL004	SPECIAL TAMIL – II				L	T	P	C			
	Total Contact Hours –				2	0	0	2			
	Prerequisite course – SPECIAL TAMIL – I										
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை										
COURSE OBJECTIVES :- நாட்டுப்புறவாழ்வியலைபற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தாலாட்டுமற்றும்குழந்தைப்பாடல்கள்பற்றிஅறிவர்										
CO2	தொழிற்பாடல், காதல்பாடல், கொண்டாட்டப்பாடல்கள்பற்றிஅறிவர்										
CO3	சங்ககாலமக்களின்விடுகதை, நம்பிக்கை, சடங்குகள்பற்றிஅறிவர்										
CO4	பழமொழிகள், நாட்டுப்புறமருத்துவம், சமயவழிபாடுகள்பற்றிஅறிவர்										
CO5	நாட்டுப்புற இலக்கிய வரலாறுபற்றிஅறிவர்										
CO6	வாய்மொழிஇலக்கியம்மூலம்சங்ககாலமக்களின்வாழ்வியலைஅறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓					✓				
4	Approval		Academic Council Meeting								

அலகு1

தாலாட்டுப்பாடல்- குழந்தைப்பாடல்- விளையாட்டுப்பாடல்

அலகு2

தொழிற்பாடல்கள் - காதல்பாடல்கள்- கொண்டாட்டப்பாடல்கள்

அலகு3 9
விடுகதைகள் - நம்பிக்கைகள் -சடங்குகள்

அலகு4 9
பழமொழிகள் -நாட்டுப்புறமருத்துவம் - சமயவழிபாடுகள்

அலகு5 9
நாட்டுப்புற இலக்கிய வரலாறு

பாடநூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புறஇயல்ஆய்வு", மணிவாசகர்பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014

பார்வைநூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புறபாடல்வகைகள்", புலமைவெளியீடு, 1982
2. சரசுவதிவேணுகோபால், "தமிழகநாட்டுப்புறவியல்", தாமரைவெளியீடு, 1981
3.கழனியூரன், "நாட்டுப்புறவியல்கட்டுரைகள்", காவ்யாபதிப்பகம், 2014

Course Coordinator HOD

BPS4L2	PHYSICS PRACTICAL II	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Designed by-Department of Physics				

COURSE OBJECTIVES:-

To gain the practical knowledge of measuring tools, bending of beams, time period of pendulum and surface tension of different liquids

COURSE OUTCOMES (COs)

CO1	Handling of basic practical tools such verinyre, screw gauge and microscope
CO2	Developing technical skills
CO3	Understand the concept of material science.
CO4	Understand the equations with real coefficients of different modules
CO5	To gain the knowledge ofinstrumentation techniques
CO6	Verificationof laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	H	M	M		H			H	
	CO2			L		H				
	CO3	L	L	M	H	H				
	CO4	H		H		M				
	CO5	M	H	M		L				
	CO6	H	H	H	M					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	47th Academic Council Meeting								

ALLIED PRACICAL – II- LIST OF EXPERINCE

1. Logic Gates (AND, OR, NOT, NAND, NOR and EX-OR) Using IC's.

2. NAND and NOR as Universal Gates.

3. Verification of De-Morgan's Theorems.

4. Half –Adder and Half –Subtractor using logic gates.

5. Full Adder and Full Subtractor using logic gates.

6. Single Stage Amplifier.

7. Potentiometer-Measurement of Current.

8. Potentiometer-Calibration of low range voltmeter.

9. Carey Foster's Bridge- Specific Resistance.

10. Mathematical Operator-Addition, Subtraction using OP-Amp.

References

TEXT BOOKS:-

3) C.C OUSEPH, G.RANGARAJAN- A TEXT BOOK OF PRACTICAL PHYSICS- S. VISWANATHAN PUBLISHER- PART I (1990)
4) C.C OUSEPH, C.RANGARAJAN, R. BALAKRISHNAN- A TEXT BOOK OF PRACTICAL PHYSICS- S. VISWANATHAN PUBLISHER-PART II (1996)

BOOKS FOR REFERENCE:-

2) S.L GUPTA AND V.KUMAR- PRACTICAL PHYSICS- PRAGATI PRAKASHAN- 25TH EDITION (2002).

CourseCoordinator **HOD**

SEMESTER V

BMA501	REAL ANALYSIS-I	L	T	P	C
	Total Contact Hours – 60	3	2	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Kavitha &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)

CO1	Be thorough with real and complex fields
CO2	Be familiar with metric spaces
CO3	Understand thoroughly the convergence of the sequences and series
CO4	Get exposed to the limits of functions and in detail, derivatives of higher order
CO5	To study Pointwise convergence of sequences of functions–Uniform convergence of sequences of functions – Consequences of uniform convergence
CO6	State and explain Derivatives, Rolle's Theorem

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

Unit I : **Continuous functions on Metric Spaces** **12**

Functions continuous at a point on the real line, Reformulation, Functions continuous on a metric space, Open sets, Closed sets, Discontinuous functions on the real line.

Unit II: Connectedness Completeness and compactness **12**

More about open sets, connected sets, Bounded sets and totally bounded sets, Complete metric spaces, Compact metric spaces

Unit III: **12**

Continuous functions on a compact metric space, Continuity of inverse functions, Uniform continuity. Sets of measure zero, Definition of the Riemann integral, Existence of the Riemann integral (Statement of theorem only) –Properties of Riemann integral

Unit IV: Calculus **12**

Derivatives, Rolle's Theorem, Law of mean, Fundamental theorems of calculus, Taylor's theorem.

Unit V :Sequences and Series of Functions **12**

Pointwise convergence of sequences of functions–Uniform convergence of sequences of functions – Consequences of uniform convergence – Convergence and uniform convergence of series of functions – Integration and differentiation of series of functions.

Text Book:

1. Richard R. Goldberg ,"Methods of Real Analysis", Oxford and IBH Publishing Co., 2nd Edn. 1976.

References

1. Walter Rudin, "Transforms and Partial Differential Equations", fifth revised edition, , Mc-Graw Hill international edition, 1976.
2. K. ChandrasekharaRao, K.S Narayan, "Real analysis, Volume II",, S. Viswanathan Printers& Publishers Pvt. Ltd, 2008.
3. Shanti Narayan, M.D. Raisinghania, "Elements of Real Analysis", S. Chand & Company Ltd., Twelfth Revised Edition, 2011.
4. Kenneth A. Ross, "Elementary Analysis: The theory of Calculus", Springer, 2010.
5. Qamrulhasan Ansari, "Metric Spaces", , Narosa Publishing House, 2010.

CourseCoordinator **HOD**

BMA502	CORE – 10 ALGEBRAIC STRUCTURES	L	T	P	C
	Total Contact Hours – 60	3	2	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Siva &Mathematics				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understand thoroughly

COURSE OUTCOMES (COs)

CO1	Be familiar with group theory
CO2	Be thorough with subgroups and quotient groups
CO3	Study the characteristics of the rings and fields
CO4	Study further aspects of quotient rings and fields
CO5	Be exposed to basic concepts of bases
CO6	To understand Derivatives, Rolle's Theorem

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Group Theory: Groups–Subgroups–Counting Principle–Normal Subgroups

UNIT II **12**

Homomorphism – Automorphisms – Cayley's theorem – Permutation groups.

UNIT III **12**

Ring Theory: Definition and examples of Rings–Some special classes of rings–Homomorphism.

UNIT IV **12**

Ideals and Quotient rings: More ideals and Quotient ideals–field of quotients of an integral domain.

UNIT V **12**

Euclidean rings: A particular Euclidean ring–Polynomial Rings–Polynomials over the rational field.

Text Book:

1. Herstein. I.N. "Topics in Algebra", Second Edition, Wiley Student Edition, 2009.

References

1. M.L. Santiago, "Modern Algebra", Tata McGraw-Hill Publishing Co. Ltd.
2. M. Artin, "Algebra", Prentice Hall of India, 1991.
3. P.B. Bhattacharya, S.K. Jain & S. R. Nagpaul, "Basic Abstract Algebra" [IInd Edition], Cambridge Univ. Press, 1997 [Indian Edition].

CourseCoordinator **HOD**

BMA503	CORE – 11OPERATIONS RESEARCH	L	T	P	C
	Total Contact Hours – 60	3	2	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr. M. Siva &Mathematics				

COURSE OBJECTIVES :-

To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understand thoroughly

COURSE OUTCOMES (COs)

CO1	Solve LPP using different techniques
CO2	Be familiar with the formulation of different types of problems
CO3	Be exposed to queueing theory
CO4	Be familiar with game theory
CO5	Study PERT – CPM calculations
CO6	To Explained Queuing system

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I - LINEAR PROGRAMMING PROBLEM **12**

Formulation of LPP. Graphical Method – Simplex Method – Artificial Variable Techniques, Big-M Method of solving LPP

UNIT II - ASSIGNMENT PROBLEM **12**

Mathematical Formulation of an Assignment Problem – Assignment Algorithm - Unbalanced Assignment Models – Travelling Salesman Problems – Transportation Problems – Optimum solution.

UNIT III – QUEUEING THEOREM **12**

Queuing Theory – Introduction – Queuing system – Characteristics of Queuing system – symbols and Notation –

Classifications of queues – Problems in (M/M/1): (∞/FIFO); (M/M/1): (N/FIFO); (M/M/C): (∞/FIFO); (M/M/C): (N/FIFO) Models.

UNIT IV – GAME THEORY **12**

Game Theory – Two person zero sum game – The Maximin – Minimax principle – problems - Solution of 2 x 2 rectangular Games – Domination Property – (2 x n) and (m x 2) - graphical method – Problems.

UNIT V – SCHEDULING PROBLEMS **12**

Network scheduling by PERT / CPM – Introduction – Network and basic components– Rules of Network construction – Time calculation in Networks – CPM. PERT – PERT calculations – Problems.

TEXT BOOK

1. Kandiswarup, P.K.Gupta, Man Mohan, "Operations Research", Sultan Chand & Sons Education Publications, New Delhi, 12th Revised edition, 2004.

REFERENCES

1. .V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, "Resource Management Techniques", A.R.Publications, 2012.
2. Prem Kumar Gupta D. S. Hira, "Operations Research", 5th Edition, S. Chand & Company Ltd., Ram Nagar, New Delhi, 1998.
3. Hamdy Taha, "Operations Research", PHI India Publication.

CourseCoordinator **HOD**

BMA504	CORE – 12 UNIX AND C PROGRAMMING	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- R. Balamurugan & CS				

COURSE OBJECTIVES :-

At the end of this course, students shall be able to this computer lab course aims to provide strong logical thinking and error-free syntax

COURSE OUTCOMES (COs)

CO1	Be familiar with the Standard Error - More on Commands.
CO2	Be familiar with Working with Directories
CO3	Be exposed toconditional statements
CO4	Be familiar with Functions, Passing arguments to a function
CO5	Study single dimension
CO6	To Explained Matrix manipulations

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		Academic Council Meeting							

UNIT I – UNIX **12**

Introduction - History - Basic Commands - Working with Files - Working with Directories - Filename Substitution - Standard Input / Output and I/O Redirection - Pipes - Standard Error - More on Commands.

UNIT II - C LANGUAGE – INTRODUCTION **12**

Introduction- Identifiers and keywords, Constants and variables, Declarations – Expressions and statements, Types of operators - Library functions Input statements - Output statements.

UNIT III - CONDITIONAL STATEMENTS **12**

Conditional statements-If …else - Switch. Case - Looping - While, DO While - Break and continue, Comma operator, go to statement.

UNIT IV – FUNCTIONS **12**

Functions-Definitions and prototypes - Passing arguments to a function - Storage class variables.

UNIT V – ARRAYS **12**

Arrays –single dimension- Arrays with two dimensions- Matrix manipulations - String operations.

TEXT BOOKS

1. Stephen G. Kochan and Patrick Wood, *UNIX Shell Programming*, Sams Publishing, 2003.
2. E.Balagurusamy, "*Programming in ANSI C"*, Tata McGraw Hill, 2008.

REFERENCE BOOKS

1. Arnold Robbins, "*Unix in a Nutshell"*, O'Reilly, 2005.
2. Kanetkar Y, "*Let us C"*, BPB Publications, 1995.
3. Deitel H.M. and Deitel .P.J, "*How to Program C"*, Prentice Hall India, 2001.
4. Kamthane, Ashok N, "*Programming in C"*, Pearson Education, 2013.
5. YashavantKanetkar, *Exploring C*, BPB Publications, 2003.

CourseCoordinator **HOD**

BSC5L1	CORE – 13C PROGRAMMING LAB	L	T	P	C
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Designed by – Department of Mathematics				

COURSE OBJECTIVES :-

At the end of this course, students shall be able to this computer lab course aims to provide strong logical thinking and error-free syntax

COURSE OUTCOMES (COs)

CO1	To learn the codes writing and.
CO2	To master the debugging techniques
CO3	Be exposed toconditional statements
CO4	Be familiar with Functions, Passing arguments to a function
CO5	To present the results in neat form in C++ Language.
CO6	Understand about Program to evaluate sin(x), cos(x)

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

List of Experiments to be Implemented in C language.

1. Program to print the following output using **for** loop
   1
   22
   333
   4444
   ……
   ……
2. Program to evaluate the following function to 0.0001% accuracy.

a)sin(x) **b**) cos(x) **c**) exp(-x)

b)

3. Program to find roots of a quadratic equation.
4. Program to sort the array of numbers and then to find median value.
5. Program to read an integer number and then to print in the reverse order and also to find the sum of all the digits.
8. Program to create structure, which consists of EMPLOYEE details like ID Number, Name, Designation, Basic Salary, DA, others. Then to calculate DA, HRA and PF depending on the basic salary and print gross salary, deduction, net salary.
9. Program to read two Matrices of different Data Types such as integers and floating point numbers and then to find the sum, difference, and product of the above two matrices.
10. Program to check whether the given string is a palindrome.
11. Program to solve ODE using Euler's method, R-K method.
12. Program to interpolate a value using Lagrange interpolation formula.
13. Program to find integral value using Simpson's formula.
14. Lagrange interpolation.
15. Trapezoidal and Simpson one-third rules.

REFERENCES

1. E. Srinivasa Reddy, "C Programming & Numerical Analysis", Pearson Education India, 2010.
2. Xavier, C, "C Language and Numerical Methods", New Age International publishers, 2003.
3. J. G. Kori, "Numerical Methods in 'C'", Firewall Media publishers, 2002.

CourseCoordinator **HOD**

	DISCRETE MATHEMATICS	L	T	P	C
BMA001	**Total Contact Hours – 60**	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.P.Sumathi&Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)

CO1	Understand the Generating Functions
CO2	Understand the Tautological Implications
CO3	Understand the Functionally Complete sets
CO4	Understand the properties of Lattices
CO5	Understand the Boolean Algebra
CO6	Understand the Normal Forms , Principal Normal Forms.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

UNIT- I MATHEMATICAL INDUCTION, RECURRENCE RELATIONS AND GENERATING FUNCTIONS 12

Techniques of Proof – Mathematical Induction – Recurrence – Polynomials and their Evaluations – Recurrence Relations – Generating Functions – Some Common Recurrence Relations – Primitive Recursive Functions – Recursive and Partial Recursive Functions.

UNIT- II MATHEMATICAL LOGIC 12

TF Statements–Connectives–Atomic and Compound Statements– Well-Formed Statement Formulae –Parsing – Truth Table of a Formula – Tautology – Tautological Implications and Equivalence of Formulae.

UNIT-III MATHEMATICAL LOGIC (CONTD…) 12

Replacement Process–Functionally Complete sets of connectives and Duality law – Normal Forms – Principal Normal Forms.

UNIT -IV LATTICES12

Lattices–Some properties of Lattices–New Lattices–Modular and Distributive Lattices.

UNIT –VBOOLEAN ALGEBRA12

Boolean Algebra–Boolean Polynomials–Karnaugh Maps.

TEXT BOOK:

1. 1.M.K. Venkataraman, N. Sridharan and N. Chandrasekaran, "Discrete Mathematics", The National Publishing Company, Chennai, 2003.
2. Sen.M.K, and B.C. Chakraborthy, "Discrete Mathematics", 2nd Edn. Books and Allied Private Ltd., Kolkata, 2002

REFERENCES:

1. 1. Johnsonbaugh.R, "Discrete Mathematics", 5th Edn. Pearson Education, Asia, 2001.
2. C.L. Liu, "Elements of Discrete Mathematics", McGraw Hill, New York, 1985.
3. Truss.J, "Discrete Mathematics for Computer Scientists", 2nd Edn. Pearson Education, Asia, 2000.

CourseCoordinator **HOD**

SEMESTER VI

BMA601	**CORE- 14 -COMPLEX ANALYSIS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	2	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Designed by – Department of Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)

CO1	Grasp several facts on complex integration
CO2	Get exposed to the harmonic functions and its properties
CO3	Have sound knowledge in the derivatives of analytic functions
CO4	Be familiar with singularities of different types and thecorresponding theorems
CO5	Be thorough with the evaluation of integrals of different types
CO6	To study Taylor's and Laurent's Theorem

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I –ANALYTIC FUNCTION **12**

Complex Numbers - Point at Infinity- Stereographic Projection - Analytic functions: Definitions of Function of a Complex Variable - Limits, Continuity - Derivatives and Differentiation Formula - Cauchy-Riemann Equations - Properties of Analytic Functions - Necessary and Sufficient Conditions for Analytic Functions - Harmonic Functions - Determination of Harmonic Conjugate and Analytic Function.

UNIT II – TRANSFORMATIONS **12**

Mappings Conformal Mapping - The transformations $w = az+b$, $w = 1/z$, $w = z^2$, $w = \sqrt{Z}$, $w = e^z$, Bilinear Transformation and special Bilinear Transformation.

UNIT III – CONTOUR INTEGRAL **12**

Integrals Contours - Line Integrals-Cauchy- Goursat's Theorem (without proof) Cauchy's Integral Formula - Derivatives of Analytic Functions - Maximum Modulus Theorem.

UNIT IV TAYLOR'S AND LAURENT'S THEOREM **12**

Power series - Taylor's and Laurent's Theorem - Singularities and Classification – Problems

UNIT V : EVALUATION OF INTEGRAL **12**

Cauchy's Residue Theorem- Evaluation of the Integrals of the following types

$$\int_0^{2\pi} f(\cos\theta,\sin\theta)\,d\theta,\quad \int_{-\infty}^{+\infty} f(x)\sin ax\,dx,\quad \int_{-\infty}^{+\infty} f(x)\cos ax\,dx,\quad \int_{-\infty}^{+\infty} \frac{p(x)}{q(x)}\,dx$$

$\int_{-\infty}^{+\infty} f(x)\,dx$ Where f(x) has finite number of poles on the real axes. Jordan's lemma.

TEXT BOOK

1. S. Narayanan and T. K. Manickavachagam Pillai, "Complex Analysis", Revised Edition, S. Viswanathan Printers & Publishers, 2002.

REFERENCES

1. P.Duraipandian and Laxmi Duraipandian, "Complex Analysis", Emerald Publishers, Chennai, 1999.
2. S. Ponnusamy, "Foundations of Complex Analysis", Narosa Publishing House, ND. 2000.
3. Murray R. Spiegel, "Theory and Problems of Complex Variable", Tata-McGraw Hill Edition, New Delhi. 2005.

CourseCoordinator **HOD**

BMA602	GRAPH THEORY	L	T	P	C
	Total Contact Hours – 60	3	2	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.K. Ramalakshmi &Mathematics				

COURSE OBJECTIVES :-

To equip students with adequate knowledge of graph theory

COURSE OUTCOMES (COs)

CO1	To introduce the students to the beautiful and elegant theory of graphs.
CO2	To equip the students with problem solving, critical thinking and algorithm techniques that may be used to solve a host of very practical real-world problems.
CO3	To study and develop the concepts of graphs, subgraphs, trees connectivity,
CO4	To study Eulerian and Hamiltonian graphs, matching colorings of graphs and planar graphs
CO5	To introduce the studentsAdjacency and incidence of matrices
CO6	To introducechromatic number andcoloring

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Graphs, subgraphs, Degree of a vertex, Isomorphism of graphs, independent sets and coverings; intersection graphs.

UNIT II **12**

Adjacency and incidence of matrices; Operations on graphs; degree sequences; graphic sequences; Walks; trails; paths; problems.

UNIT III **12**

Connectedness and components; cut point, bridge, block; Connectivity theorems and simple problems.

UNIT IV **12**

Eulerian graphs and Hamiltonian graphs; simple problems; Trees, theorems, and simple problems.

UNIT V **12**

Planarity; definition and properties; Characterization of planar graph, Colour ability; chromatic number and index.

TEXT BOOK

S. Arumugam and S. Ramachandran, “Invitation to Graph Theory”, SITECH Publications India Pvt. Ltd, Chennai – 17, 2006.

REFERENCES

1. S.Kumaravelu, Susheela Kumaravelu, “Graph Theory”, SKV Publishers, Sivakasi, 1999.
2. S.A.Choudham, “A First Course in Graph Theory", Macmillan India Ltd, 2000.
3. Robin J. Wilson, “Introduction to Graph Theory”, Prentice Hall, 2012.
4. J.A.Bondy and U.S.R. Murthy, “Graph Theory with Applications”, Macmillan, London, 2008.

CourseCoordinator **HOD**

BMA004	BIO-STATISTICS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.K. Ramalakshmi &Mathematics				

OBJECTIVES

To impart knowledge about important tools in Statistics to apply and solve real life problems in Genetic Engineering.

COURSE OUTCOMES (COs)

CO1	Understand the computation of basic measures in Statistics
CO2	Understand the importance and the application of Probability in Engineering.
CO3	Various tools for testing the parameters based on samples.
CO4	How Design of Experiments are to be analyzed.
CO5	Concepts of Process Control and various Charts to control the quality of products.
CO6	Analyze the applications of Baye's theorem

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

Unit – I **12**

Scope of Statistical methods in medicine, Role of Statistics in clinical medicine, Areas of application of Statistics, Role of Statistics in preventive medicine and Areas of application. Observations in medicine: Qualitative and Quantitative observation – Scale of measurement.

Unit – II **12**

Health Statistics: Utilization of the basic data, Sources of Health Statistics, Problems in the Collection of sickness data and Measurement of sickness - Hospital Statistics – International classification of diseases: General Principles and Numbering system of the classification problems in applications of ICD.

Unit – III **12**

Probability – Measurement of Probability – Laws of probability for independent events: Addition law, multiplication law – Conditional probability – **Baye's** theorem (statement only) – Application of Baye's theorem in determining diagnostic efficacy – Sensitivity, Specificity, False Negative Rate, False Positive Rate, Predictive value positive, Predictive value negative.

Unit – IV **12**

Biological Assay: Direct assays, Indirect Assays – Sequential medical Trials – Special features – Scope – Steps involved

Unit – V **12**

Clinical trials – Types of Clinical trials, Therapeutic trials, Design and Random Allocation, Mode of Administration of Therapy, Observations and Records – Deviations from Design, Prophylactic trials, Ethical considerations and Community trials.

Text Book:

1. P.S.S. Sundar Rao and J. Richard, "Introduction to Biostatistics and Research Methods", Fourth Edition, Prentice – Hall of India Private Limited, New Delhi – 1, (2006).

Book for Reference:

1. Arora, P.N & Malham, P.K, "Bio-Statistics", Himalaya Publishing House, Mumbai, (1998).
2. Wayne W.Daniel, "BIO-STATISTICS, Basic Concepts and Methodology for the Health Sciences", 9th Edition, John Wiley and Sons Inc. UK, (2013).

CourseCoordinator **HOD**

BMA007	MECHANICS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.K. Ramalakshmi &Mathematics				

OBJECTIVES

To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.

COURSE OUTCOMES (COs)

CO1	Understand in detail, simple harmonic motion
CO2	Analyze the characteristic of elasticity
CO3	Study, in detail, motion of a projectile
CO4	Be familiar with central forces and orbit
CO5	Be thorough with motion of a rigid body
CO6	Understand in detail, simple harmonic motion

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	-	-	-	-	H	H		
	CO2	H	M	-	-	-	-	M			
	CO3	H	M	-	-	-	-	H			
	CO4	H	M	-	-	-	-	M			
	CO5	H	M	-	-	-	-	H			
	CO6	H	M	-	-	-	-	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				
4	Approval		Academic Council Meeting							

Unit I **12**

Statics: Concurrent system of forces: Triangle law of forces, Lami's Theorem, Polygon law offorces, Moment of a force, Varignon's Theorem.

Unit II **12**

Friction: Laws of friction, Angle of friction, Ladder problems. Dynamics - Energy: Kinetic energy, Conservation of energy, Conservation forces.

Unit III **12**

Projectiles: Trajectory, Horizontal and inclined planes.S.H.M: General solution, Elastic strings,Composition of two S.H.M, Simple Pendulum, Seconds Pendulum.

Unit IV **12**

Motion of a particle along a curve: Conical Pendulum, Motion on a curved track, Circulartrack, banked up track, Vertical curve, Motion on the outside of a smooth vertical circle, inside a vertical circle.

Unit V **12**

Central Orbits: Central forces, Differential equation of a central orbit, Pedal equation, Apse, p-requation, Inverse square law.

Text Book

1. Viswanathan Naik.S, and M.S. Kasi, “Dynamics”, Emerald Publishers, 1992.

References

1. Duraipandian.P, Laxmi Duraipandian, Muthamizh Jayapragasam, “Mechanics”, S.Chand & Co. 2010.
2. Venkataraman,MK, “A text book of Statics”, Agasthiar Publications, 1994.
3. Venkataraman,M.K, “A text book of Dynamics”, Agasthiar Publications, 1994.

CourseCoordinator **HOD**

BBA011	**BUSINESS PROCESS OUTSOURCING-MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours– 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name& Department:- Ms.D.K.Sowmiyalaskshmi,BBA				

COURSE OBJECTIVES:-

- To familiarize the students with the basic fundamentals of BPO.
- To impart knowledge on type of BPO and call centers .
- To enable the students onthe conceptHealthcare BPO & Transaction BPO.
- To peep into the concept of Human Resource BPO and the career opportunities in BPO.

COURSE OUTCOMES(COs)

CO1	Describe the basic fundamentals of BPO.
CO2	Discuss and develop the awareness about Types of BPOs and Call Centers
CO3	Identify the concept of Health care BPOs
CO4	Examine the concept of Transaction BPOs
CO5	Develop the confidence in Human Resource BPO and career opportunities in BPOs
CO6	Formulate the Types of Transaction Processing BPO in India

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H							H		
	CO2				H						
	CO3			H							
	CO4		M								
	CO5	M									
	CO6		H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
									✓		
4	Approval		Academic Council Meeting								

UNIT-I **6**

Business Process Outsourcing– Basics – Benefits of BPO– BPO companies in India.

UNIT-II **6**

BPO Industry – Employment Opportunities– types of BPO – Call centers– Types of Call Centers– Issues and Problems.

UNIT-III **6**

Health Care-BPO - Structure of foreign Health Care sector– Future Trends and Threats.

UNIT-IV **6**

Transaction Processing BPO– Elements of Back Office services– Types of Transaction Processing BPO in India.

UNIT-V **6**

Human Resource BPO-Reasons for outsourcing HR– Activities involved in HR BPO– HR Outsourcing Trends– Carrier in HR BPO.

Text Books:

1. John K. Holvey, Borboro Murphy Melby, Business Process Outsourcing–Wiley Publisher-2007
2. SarikaKulkarni –Business Process Outsourcing–Jai co Publishing house – 2005
3. .RickL.Click, Thomas N.Duening,BusinessProcess Outsourcing–John Willey &sons,Publisher 2004

Reference Books:

1. Deepak Shikapur – BPO DIGEST– Ameya (Inspiring books) – 2004.
2. Clifton – System analysis for business data processing– Prentice hall Publications.
3. Anandkumar, V. &Biswas, S., 2008. Business Process Outsourcing, Sage Publications Pvt. Ltd

Course Coordinator **HOD**

BBE002	DESKTOP PUBLISHING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthebasic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

BCA001	**COMPUTER APPLICATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professiona l Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU,

	GRAPHICAL AND WEB DESIGNING	L	T	P	C

Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

BCA002	**Total Contact Hours - 30**	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
CO3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

BCA003	**MULTIMEDIA**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

BCA004	NETWORKING AND MAINTENANCE	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**
5. **Troubleshooting, Maintaining and Repairing PCs, Stephen J Bigelow ,Tata MCGraw Hill Publication ,Troubleshooting Maintaining and Repairing PCs**

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

ANIMATION

Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.- Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	Academic Council Meeting

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in

C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String –String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**
3. **Kernighan., B.W and Ritchie, D.M, " The C Programming Lanaguage", Second Edition, Pearson Education, 2006.**

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	Academic Council Meeting

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

CURRICULUM

(R2015)

CHOICE BASED CREDIT SYSTEM

(Applicable to the batches admitted from July 2015)

B.Sc. MICROBIOLOGY

I-VI SEMESTERS

SEMESTER I

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							
Part I	HS	BAL101	Tamil-I	4	0	0	4
		BAL102	French –I				
		BAL103	Hindi-I				
Part II	HS	BEH101	English-I	4	0	0	4
Part III	MC	BMI101	Core I- Fundamentals of Microbiology	3	1	0	4
	MC	BMI102	Enzymology	3	1	0	4
	MC	BMI103	Biodiversity and its Conservation	3	1	0	4
	PRACTICAL						
	MC	BMI1L1	Core III- Basic Microbiology Lab I	0	0	4	2
Total Contact Hours: 30						**Total Credits: 22**	

SEMESTER II

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							
Part I	HS	BAL201/BAL2E1	Tamil-II	4	0	0	4
	HS	BCI203	Environmental Studies	2	0	0	2
Part II	HS	BEH201	English –II	3	0	0	3
Part	MC	BMI201	Cell Biology	3	1	0	4

III	MC	BMI202	Genetics	3	1	0	4
	MC	BMI203	Molecular biology	3	1	0	4
Part IV	EEC	BSS201	Value Education	2	0	0	2
	PRACTICAL						
	MC	BMI2L1	Cell biology Lab	0	0	4	2
Total Contact Hours: 30						**Total Credits: 26**	

SEMESTER III

Part	**Category**	**Sub Code**	**Sub Name**	**No. of periods per week**			**Credit**
				L	**T**	**P**	
THEORY							
Part I	HS	BAL301	Tamil- III	4	0	0	4
		BAL302	French-III				
		BAL303	Hindi- III				
Part II	HS	BEH301	English- III	4	0	0	4
Part III	MC	BMI301	Biochemistry	3	1	0	4
	MC	BMI302	Immunology	3	0	0	3
	MC	BMI303	Microbial Diversity	3	0	0	3
	NON MAJOR ELECTIVE I						
Part	NME	BAL002	Basic Tamil I- for those who studied other language under Part I	2	0	0	2
		BCA351	Special Tamil I- for those who studied Tamil under Part I				
	PRACTICAL						
	MC	BMI3L1	Biochemistry lab	0	0	4	2
Total Contact Hours: 30						**Total Credits: 24**	

SEMESTER IV

Part	**Category**	**Sub Code**	**Sub Name**	**No. of periods per week**			**Credit**
				L	**T**	**P**	
THEORY							
Part I	HS	BAL401	Tamil-IV	4	0	0	4
		BAL402	French-IV				

		BAL403	Hindi-IV				
Part II	HS	BEH401	English-IV	4	0	0	4
Part III	MC	BMI401	Clinical Microbiology	3	1	0	4
	MC	BMI402	Soil and Agricultural Microbiology	3	1	0	4
	MC	BMI403	Environmental Microbiology	3	1	0	4
Part IV	**NON MAJOR ELECTIVE II**						
	NME	BAL004	Basic Tamil II- for those who studied other language under Part I	2	0	0	2
		BCA453/BMI4E2	Special Tamil II- for those who studied Tamil under Part I				
	SBE	BMI4E3/BCA451	Skill Based Elective I	2	0	0	2
	PRACTICAL						
	MC	BMI4L1	Clinical Microbiology Lab	0	0	4	2
Total Contact Hours: 30						**Total Credits: 26**	

SEMESTER V

Part	**Category**	**Sub Code**	**Sub Name**	**No. of periods per week**			**Credit**
				L	**T**	**P**	
THEORY							
Part III	MC	BMI501	Food Microbiology	4	1	0	5
	MC	BMI502	Fermentation technology	4	1	0	5
	MC	BMI503	rDNA technology	3	1	0	4
	ME		Major Elective – I	3	1	0	4
	PRACTICAL						
	MC	BMI5L1	Food Microbiology Lab	0	0	4	2
	MC	BMI5L2	Fermentation technology lab	0	0	4	2
Part IV	SBE	BMI5E5	Skill Based Elective – II	2	0	0	2
	SBE	BMI5E6	Skill Based Elective – III	2	0	0	2

Total Contact Hours: 30	**Total Credits: 24**

SEMESTER VI

Part	Category	Sub Code	Sub Name	No. of periods per week			Credit
				L	T	P	
THEORY							
Part III	MC	BMI601	Microbial Bacteriology	3	1	0	4
	MC	BMI602	Virology, Mycology and Parasitology	3	1	0	4
	ME		Major Elective – II	3	0	0	3
	PRACTICAL						
	MC	BMI6L1	Immunology Lab	0	0	4	2
	MC	BMI6P1	Project	0	0	10	6
Part V	EEC	BMI6V1	Extension Activities	0	0	1	1
Total Contact Hours: 30						**Total Credits: 21**	
Total Credits – 143							

LIST OF ELECTIVES

MAJOR ELECTIVE I

SUBJECT CODE	SUBJECT	L	T	P	C
BMIE01	Microbial metabolites	3	0	0	3
BMIE02	Dairy technology	3	0	0	3
BMIE03	Fundamentals of Microbial Remediation	3	0	0	3

MAJOR ELECTIVE II

SUBJECT CODE	SUBJECT	L	T	P	C
BMIE04	Industrial waste treatment	3	0	0	3
BMIE05	Production of Microbial Biomass	3	0	0	3
BMIE06	Biochemical engineering	3	0	0	3

NON MAJOR ELECTIVE (NME) I

Sub Code	Sub Name	L	T	P	C
BAL002	Basic Tamil – I for those who studied other language under Part I	2	0	0	2
	Special Tamil – I for those who studied Tamil under Part I	2	0	0	2

NON MAJOR ELECTIVE (NME) II

Sub Code	Sub Name	L	T	P	C
	Basic Tamil – II for those who studied other language under Part I	2	0	0	2
	Special Tamil – II for those who studied Tamil under Part I	2	0	0	2

LIST OF SKILL BASED ELECTIVES (Choose any three courses – one in semester IV & two in semester V):

S.NO	Sub Code	Sub Name	L	T	P	C
1	BBA011	BPO Management	**1**	**0**	**2**	**2**
2	BBE002	Desk Top Publishing	**1**	**0**	**2**	**2**
3	BCA001	Computer Application	**1**	**0**	**2**	**2**
4	BCA002	Graphical and Web Design	**1**	**0**	**2**	**2**
5	BCA003	Multimedia	**1**	**0**	**2**	**2**
6	BCA004	Networking and Maintenance	**1**	**0**	**2**	**2**
7	BCA006	Web Designing	**1**	**0**	**2**	**2**
8	BSC001	Animation	**1**	**0**	**2**	**2**
9	BSC002	Computer Hardware and Networking	**1**	**0**	**2**	**2**
10	BSC003	Computer Programming	**1**	**0**	**2**	**2**
11	BSC004	Computer Technology	**1**	**0**	**2**	**2**

SEMESTER I

BAL101	□□□□□ – I	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OUTCOMES (COs)	
CO1	இருபதாம் நூற்றாண்டு கவிதைஇலக்கியத்தைப் பற்றி அறிவர்
CO2	இருபதாம் நூற்றாண்டுகட்டுரைஇலக்கியத்தைப் பற்றி அறிவர்
CO3	இருபதாம் நூற்றாண்டுசிறுகதைஇலக்கியத்தைப் பற்றி அறிவர்
CO4	இக்கால இலக்கிய வரலாறுபற்றி அறிவர்
CO5	மொழி வரலாறு – செம்மொழிபற்றி அறிவர்
CO6	தற்கால இலக்கியத்தில் ஆழ்ந்த அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation)H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies	Basic Sciences	Engg Sciences	Professional Core (PC)	Core Elective	Non-Major Elective	Open Elective	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு -1 இருபதாம் நூற்றாண்டு கவிதைகள் 9

1. பாரதியார் -யாமறிந்த மொழிகளிலே 2. பாரதிதாசன்-நீங்களே சொல்லுங்கள்!
3. கண்ணதாசன் -அழுகை 4. பெருஞ்சித்திரனார்- தமிழா நீ எங்கே?
5. தமிழ் ஒளி - (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல் ரகுமான் - கல்லின் காயம்

அலகு -2 உரைநடை (I) 4 கட்டுரைகள் 9

1. மனிதனும் அழகும் - திரு.வி.க.2. வீட்டிற்கோர் புத்தகசாலை-அறிஞர் அண்ணா
3. பொறியியல் தமிழ் - நா. மால் முருகன்
4. தேசியமறை திருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 உரைநடை (II) சிறுகதை - 4 கதைகள் 9

1. நட்சத்திரக் குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம் – ஜெயகாந்தன்4. கடவுளும் கந்தசாமிப் பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 இக்கால இலக்கிய வரலாறு 9

1. இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு
2. இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு
3. இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

அலகு -5 மொழி வரலாறு 9

1. தமிழ்மொழி வரலாறு 2. உலகச் செம்மொழிகளின் வரலாறு
3. தமிழுக்கும் உலகச் செம்மொழிகளுக்குமான உறவு வரலாறு

பாடநூல்

1. இருபதாம் நூற்றாண்டு கவிதை, உரைநடை, சிறுகதை(அலகு-3) பாரத் பல்கலைக்கழக வெளியிடு

பார்வை நூல்கள்

1. சு. ஆனந்தன்,"தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ் அமைப்புற்றவரலாறு", வியாபார ஐக்கிய சங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ் வரலாறு", பூம்புகார் பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல் தாய்மொழி", பூம்புகார் பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டு விளக்கம்" , பூம்புகார் பதிப்பகம்,2006

Course Coordinator **HOD**

BAL102	**FRENCH-I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	2	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

Learners will study basic principles and practice of oral and written communication.

COURSE OUTCOMES (COs)	
CO1	Remember the basics of the language.
CO2	Understand the sentence patterns and form the grammar.
CO3	Apply the basics of grammar along with its principles.
CO4	Apply the anatomy of conjugations.
CO5	Analyse dialogs and conversation on their own within the language & to practice oral and written skills.
CO6	Analyse the necessary rules of the language

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO 3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		√								

4	Approval		Academic Council Meeting

UNIT I - Vous comprenez **9**

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail! **9**

Masculine Singular and Feminine singular - Conjugaison des verbes (present tense) -

Les articles définis.

UNIT III En se detend? **9**

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir)

UNIT IV Racontez-moi **9**

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage! **9**

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!-Article partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

BAL103	**Hindi-I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	2	0	4
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name &Department:- Mrs Rani Selvan & Department of Hindi				

COURSE OBJECTIVES: -

Learners will understand , read, write and speak Hindi language with grammatical.

COURSE OUTCOMES (COs)

CO1	Remember the behaviour
CO2	Understand the importance of money by story
CO3	Apply the concept of Hindi grammar
CO4	Apply the usage of translation from English to Hindi
CO5	Analyze the unseen passage to answer the questions
CO6	Analyze the knowledge in Hindi Language

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation)H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **9**

NAVEEN GADYA CHAYANIKA – 2 - Bholaram ka jeev - Mehamaan se Bhagavaanbachaaye - NumberovaliThijori – Kaffan - Gunda

UNIT II **9**

NON DETAILED TEXT: KAHANI KUNJ - Stories: 6 – 10 only

UNIT II **9**

GRAMMAR: SHABDA VICHAR ONLY - NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS - Theoretical & Applied

UNIT-I **9**

TRANSLATION - English – Hindi only - ANUVADH ABHYAS – III - 1 – 15 Lessons Only

UNIT V **9**

COMPREHENSION - 1 Passage from ANUVADH ABHYAS – III (16 – 30)

TEXT BOOKS:

UNIT 1 - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

UNIT II - Govind Prakashan, SadharBagaar, Mathura, Uttar Pradesh – 281001 - Editor: Dr V.P. Amithab

UNIT III - Vyakaran Pradeep by Ramdev - Hindi Bhavan, 36, Tagor Town, Allahabad – 211002.

UNIT IV - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017.

UNIT V - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

Course Coordinator **HOD**

BEH101	ENGLISH I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. SHEEBA - English				

COURSE OBJECTIVES:- :-

Learners will use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓							

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

Course Coordinator **HOD**

BMI101	FUNDAMENTALS OF MICROBIOLOGY	L	T	P	C
	Total Contact Hours – 45	3	1	0	4
	Prerequisite course – Biology at Higher Secondary Education				
	Course Designed by – Dr.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics of any microbiology concepts. The purpose of this course is providing a clear understanding the classification, characteristics and importance of microbes.

COURSE OUTCOMES (COs)

CO1	Remember the history and scope of basics of Microbiology.
CO2	Understand the classification of microbes based on physiological characteristics.
CO3	Apply the various techniques in microbiology lab maintenance
CO4	Apply the various staining techniques to visualize the microbial structure.
CO5	Analyze the nature of the microorganisms.
CO6	Analyze the pathogenicity of the microbes by various criteria.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval	Academic Council Meeting

UNIT I INTRODUCTION **9**

Overview of history of Microbiology - Biogenesis and abiogenesis Contributions of Redi, Spallanzani, Needham, Pasteur, Tyndal, Joseph Lister, Koch [Germ Theory], Edward Jenner and Flemming [Penicillin], General Concepts of Microscopy- Simple and Compound, Fluorescent microscopy and Phase contrast microscopy. Scope of Microbiology and its application

UNIT II CLASSIFICATION **9**

Classification of microbes - general properties and principles of classification of microorganisms- Numerical taxonomy- Nutritional types (media preparation and examples), classification on the basis of Temp, pH, and Oxygen requirement

UNIT III STERILIZATION **9**

Concept of Sterilization and Disinfection – Physical methods of sterilization- dry and moist heat, pasteurization, tyndallisation, radiation, ultrasonication, filtration- Chemical methods of sterilization- Concept of Disinfection sanitization, antisepsis, sterilants and fumigation

UNIT IV STAINING TECHNIQUES **9**

Staining techniques – Classification of stains, Theories and Mechanism of Gram staining, acid fast staining, Negative staining, Capsule staining, Flagella staining, Endospore staining.

UNIT V PATHOGENESIS **9**

Common pathogenesis of bacteria, fungi and virus (Morphology, Biochemical characters, pathogenecity, treatment and preventive measures)

TEXT BOOKS:

1. Dubey, R.C. and Maheswari, D.K. (2003) A Text Book of Microbiology, 1st Edn. S. Chand & Co. Ltd., New Delhi.
2. Pelczar, M.J., Jr., Chan, E.C.S and Kreig, N.R. (1993) Microbiology. McGraw Hill, New York.

REFERENCES BOOKS

1. Prescott, L.M., Harley, J.P. and Klein, D.A. (1999) Microbiology. McGraw Hill, New Delhi
2. Madigan, M.T., Martinko, J.M. and Parker, J. (1999). Brock's Biology of Micro organisms, 9th Edn. Prentice Hall, New Jersey.
3. Ketchum, P.A. (1984) Microbiology: Concepts and Applications. John Wiley and Sons, New York.

Course Coordinator **HOD**

BMI302	ENZYMOLOGY	L	T	P	C
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Higher Secondary level biology, Basic knowledge of enzymes				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics of enzymology. The purpose of this course is providing a clear understanding importance of enzymes in cellular functions.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of enzymology.
CO2	Understand the structure, functions and the mechanism of action of enzymes
CO3	Apply to characterize the enzymes in each enzymatic class
CO4	Apply the application of enzymes in medicine.
CO5	Analyse the kinetics of enzyme catalysed reactions and enzyme inhibitory process.
CO6	Analyse the applications of enzymes and their future potentials

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I INTRODUCTION **9**

Structure and functions of Enzymes- Classification of enzymes- Specificity of enzyme action –Active site, Fischers lock and key model, Koshland induces fit hypothesis. Factors modifying enzyme activity, biotechnological applications of enzymes

UNIT II CHEMICAL NATURE OF ENZYME CATALYSTS **9**

Mechanism of Catalyst, Acid base catalyst, Electrostatic catalyst, Covalent and enzyme catalyst- Structural Components of Enzymes – apoenzymes, prosthetic group, cofactors, Mechanisms of reactions catalysed by enzymes- metalloenzymes, coenzymes.

UNIT III ENZYME KINETICS **9**

Kinetics of single substrate reactions, turnover number, Enzyme Inhibition, Kinetics of multi-substrate reactions, Temperature and pH effects on enzyme activity.

UNIT IV IMMOBILIZATION OF ENZYMES **9**

Methods of immobilization of enzymes, Determination of molecular weight of enzymes (Column Chromatography) - Application in medicine (assay of plasma enzyme) and its application

UNIT V EXTRACTION AND PURIFICATION OF ENZYMES **9**

Methods of production of enzymes, Extraction of Enzymes –soluble enzymes – membrane bound enzymes –Nature of extraction medium – purification of enzyme.

TEXT BOOKS

1. Enzymes by Trevor palmer

2. Enzymes by Robert A. Copeland, 2nd edition.

3. Biochemical Engineering by Harwey W. Blanch and Douglas S. Clark

REFERENCE BOOKS

1. Principles of Fermentation technology – Stanbury, 2nd edition, 2003

2. Enzyme technology by Martin F. Chaplin, C. Bucke

3. Methods in Enzymology vol. 152 by S.L. Berger and A.R. Kimmel

Course Coordinator **HOD**

BMI103	Biodiversity& Its Conservation	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Basic bioscience/ Fundamental Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.VasukideviRamachandran/BSc				

COURSE OBJECTIVES :-

Learners having knowledge in basics of biological diversity can understand the biodiversity patterns. The purpose of this course is providing a clear understanding of the concepts over-exploitation; deforestation; hydropower development.

COURSE OUTCOMES (COs)

CO1	Remember the important of biological diversity
CO2	Understand the seasonal fluctuations
CO3	Apply the ethical values of biodiversity
CO4	Apply the deforestation,hydropower development.
CO5	Analyze thehabitat degradation.
CO6	Analyze theIn &Ex-situ conservation

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I INTRODUCTION **12**

Concept and levels of biodiversity, India as a mega diversity nation; Biogeographic zones of the country; Measurement of biodiversity, impact of hydropower development on biological diversity; status of protected areas and biosphere reserves in the country; National Biodiversity Action Plan.

UNIT II GRADIENT OF BIODIVERSITY **12**

Gradient of Biodiversity, Geological distribution of biodiversity. Spatial patterns: latitudinal and elevational trends in biodiversity; temporal patterns: seasonal fluctuations in biodiversity patterns, Barriers and means of disposal.

UNIT III ECONOMIC VALUES **12**

Economic values–medicinal plants, drugs, fisheries and livelihoods; ecological services – primary productivity, role in hydrological cycle, biogeochemical cycling; ecosystem services – purification of water and air, nutrient cycling, climate control, pest control, pollination, and formation and protection of soil; social, aesthetic, consumptive, and ethical values of biodiversity.

UNIT IV NATURAL AND ANTHROPOGENIC DISTURBANCES **12**

Natural and anthropogenic disturbances; habitat loss, habitat degradation, and habitat fragmentation; climate change; pollution; hunting; over-exploitation; deforestation; hydropower development; invasive species; land use changes; overgrazing; man wildlife conflicts; consequences of biodiversity loss; Intermediate Disturbance Hypothesis.

UNIT V IN-SITU CONSERVATION **12**

In-situ conservation (Biosphere Reserves, National Parks, Wildlife Sanctuaries); Ex-situ conservation (botanical gardens, zoological gardens, gene banks, seed and seedling banks, pollen culture, tissue culture and DNA banks), role of local communities and traditional knowledge in conservation; biodiversity hotspots; IUCN Red List categorization – guidelines, practice and application; Red Data book

TEXT BOOKS:

1. Gaston, K J. & Spicer, J.I. 1998. Biodiversity: An Introduction. Blackwell Science, London, UK.
2. Krishnamurthy, K.V. 2004. An Advanced Text Book of Biodiversity - Principles and Practices. Oxford and IBH Publications Co. Pvt. Ltd. New Delhi.
3. Pandit, M.K. &Grumbine R.E. 2012. Ongoing and proposed hydropower development in the Himalaya and its impact on terrestrial biodiversity. Conservation Biology 26:1061-1071.
4. Primack, R.B. 2002. Essentials of Conservation Biology (3rd edition). Sinauer Associates, Sunderland, USA.

REFERENCE BOOKS:

1. Singh, J. S. & Singh, S. P. 1987. Forest vegetation of the Himalaya. The Botanical Review 53: 80-192.
2. Singh, J. S., Singh, S.P. & Gupta, S. 2006. Ecology, Environment and Resource Conservation. Anamaya Publications, New Delhi.
3. Sodhi, N.S. & Ehrlich, P.R. (Eds). 2010. Conservation Biology for All. Oxford University Press.
4. Sodhi, N.S., Gibson, L. & Raven, P.H. 2013. Conservation Biology: Voices from the Tropics. Wiley-Blackwell, Oxford, UK.

Course Coordinator **HOD**

BMI1L1	**BASIC MICROBIOLOGY LAB**	L	T	P	C
	Total Contact Hours – 45	0	0	4	2
	Prerequisite- Basic Microbiology				
	Course Designed by – Dr.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics of microbial laboratory techniques. The purpose of this course is providing a clear understanding the microbial characteristics and identification of microbes in disease perspectives.

COURSE OUTCOMES (COs)

CO1	Perform the basics in microbial identification.
CO2	Handle and operate the various instruments.
CO3	Caliberate the concept of sterilization techniques.
CO4	Manipulate the results based on the microbial testing.
CO5	Sketches the sterilization techniques on media preparation.
CO1	Perform the protein separation based on the size of the particles.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO1	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval	Academic Council Meeting									

1. Microscopy- light microscopy: principles, parts & function, operation
2. Image analysis of different classes of Microbes.
3. Preparation of Microbial media (Bacteria, yeast, mold, algae, protozoa)
4. Sterilization: principles & operations-Auto clave, Hot air oven, Filtration, Laminar air flow
5. Principles and operations of Incubators and shakers.
6. Principles and operations of Centrifuge.
7. Principles and operations of pH meter
8. Principles and operations of Colorimeter.
9. Principles and operations of Spectrophotometer.
10. Electrophoresis Techniques.

TEXT BOOKS:

1. Josephine A, Morello Paul A, Granato Helen and Eckel Mizer. Laboratory Manual and Workbook in Microbiology. Spiral Bound, Comb press, 1999.
2. Nina Parker. Microbiology Manual, OpenStax CNX,2001.

REFERENCE BOOKS:

1. Moat AG, Foster JW and Spector MP. Microbial Physiology, 4 th Edn., Wiley-Liss Publishers, 2002.
2. James Cappuccino. Microbiology: A Laboratory Manual, 10 ed., Pearson, 2013.

Course Coordinator **HOD**

SEMESTER II

BAL201	□□□□□ **- II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – TAMIL – I				
	ourse Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES : சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	சிற்றிலக்கியமான தூது,பள்ளு ,குறவஞ்சி பற்றி அறிந்துகொள்வர்
CO2	சைவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO3	வைணவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO4	பௌத்த, இசுலாம், கிறித்துவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறுபற்றி அறிந்துகொள்வர்
CO6	சிற்றிலக்கியம் மற்றும்சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35
திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 **9**
அற்புதத்திருவந்தாதி - 1 - 5
திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10
மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 **9**
பெரியாழ்வார் - முதல்திருமொழி - 1 - 10
ஆண்டாள் - திருப்பாவை - - 1 - 10
தொண்டரடிப்பொடிஆழ்வார் - திருமாலை - 1 - 5

அலகு4 **9**
ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10
பராபரக்கண்ணி - குணங்குடிமஸ்தான்சாகிபு - 1 - 20
இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 **9**
சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாட நூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

Course Coordinator **HOD**

BAL202	**FRENCH-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				
COURSE OBJECTIVES: - Learners will understand the complexity of the grammar and how to overcome it with simple rules.					
COURSE OUTCOMES (COs)					

CO1	Remember to interpret the language.
CO2	Understand familiarize with methodological approaches in the study of literary and cultural texts, such as close reading, socio-historical contextualization, and literary and cultural theory.
CO3	Apply advanced proficiency in spoken and written French.
CO4	Apply the development of skills in linguistics, translation, and comparative studies.
CO5	Analyze remember the anatomy of conjugations in past tense.
CO6	Analyze the given text critically and enhance communication skills.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences	Engg Sciences (ES)	Professional Core (PC)	Core Elective	Non-Major Elective	Open Elective	Any other	Project/Term Paper/ Seminar/ Internship (PR
		√								

4	Approval		Academic Council Meeting

UNIT I -Quelle journee! 9

La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! 9

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)

Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? 9

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? 9

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est- Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! 9

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION

Course Coordinator HOD

BAL203	**Hindi-II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				

COURSE OBJECTIVES: -
Learners will understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana In Sabari part
CO2	Understand the historical stories
CO3	Apply the concept of translation
CO4	Apply and develop the letter writing skills
CO5	Analyze and develop the speaking skills
CO6	Analyze knowledge in letter writing and speaking skills

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **09**

MODERN POETRY - SHABARI

UNIT II **09**

ONE ACT PLAY - EKANKI SANKALAM

UNIT III **09**

TRANSLATION - HINDI – ENGLISH ONLY

UNIT IV **09**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **09**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - LokbharathiPrakashan ,1 Floor, DuebariBuilding,Mahathma Gandhi Marg, Allahabad – 1.

UNIT II – Publishers – Vani Prakasam, New Delhi-110002
UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

	ENGLISH - II	L	T	P	C
BEH201	Total Contact Hours – 45	4	0	0	4
	Prerequisite – Higher Secondary Level				
	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English				

COURSE OBJECTIVES:-
Learners will have better understanding of the English language skills and its implementation it in day to day life activities.

COURSE OUTCOMES (COs)	
CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO 2	PS O3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L						H		
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb – Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

Course Coordinator **HOD**

BCI203	ENVIRONMENTAL STUDIES	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite – Plus Two				
	Course Designed by – Dept. of Chemistry				

COURSE OBJECTIVES: -

Learners wil learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and abiotic ecosystem

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of natural resources, ecosystem and environmental pollution
CO2	Understand about the Biodiversity and its conservation
CO3	Apply Environmental Pollution and Management.
CO4	Apply organic environmental approach to protect our habitat for the next generation.
CO5	Analyze the impact of population and Urbanization to affect the system of habitat loss
CO6	Analyze case studies relate to environment and healt.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION TO ENVIRONMENTAL SCIENCES: NATURAL RESOURCES 6

Environmental sciences-relevance-significance-public awareness-forest resources-water resources-mineral resources-food resources-conflicts over resource sharing-exploitation-land use pattern-environmental impact-fertilizer-pesticide problems-case studies

UNIT II ECOSYSTEM, BIODIVERSITY AND ITS CONSERVATION 6

Ecosystem-concept-structure and function-producers, consumers and decomposers-food chain-food web-ecological pyramids-energy flow-forest, grassland, desert and aquatic ecosystem-Biodiversity: definition-genetic, species and ecosystem diversity-values and uses of biodiversity-biodiversity at global, national (India) and local levels-hotspots, threats to biodiversity-conservation of biodiversity-*in situ* and *ex situ*

UNIT III ENVIRONMENTAL POLLUTION AND MANAGEMENT 6

Environmental pollution-causes-effects and control measures of air, water, marine, soil, solid waste, thermal, nuclear pollution and disaster management-floods, earthquake, cyclone and landslides-role of individuals in prevention of pollution-pollution case studies

UNIT IV SOCIAL ISSUES- HUMAN POPULATION 6

Urban issues-energy-water conservation-environmental ethics-global warming-resettlement and rehabilitation issues-environmental legislations-Environmental protection Act, 1986-air, water, wildlife and forest conservation Act-population growth and explosion-human rights and value education-environmental health-HIV/AIDS-role of IT in environment and human health-women and child welfare-public awareness-case studies

UNIT V FIELD WORK 6

Visit to local area-local polluted site-local simple ecosystem-report submission

REFERENCE BOOK

1. Kumarasamy k., a. Alagappa Moses and M. Vasanthy, 2004. Environmental Studies, Bharathidasan University Pub, 1, Trichy
2. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy
3. Kalavathy, S. (ED), 2004, Environmental Studies, Bishop Heber College Pub, Trichy

Course Coordinator **HOD**

BMI201	CELL BIOLOGY	L	T	P	C
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Higher Secondary level biology, basic concepts in cell signaling				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics of cells and cellular components. The purpose of this course is providing a clear understanding the structure, function, types and its culture.

COURSE OUTCOMES (COs)

CO1	Remember the history and fundamental principles of cellular biology.
CO2	Understand the cellular components and their structure and functions.
CO3	Apply the concept of cell theory.
CO4	Apply the role of cell organelles in physiology.
CO5	Analyze the theory to identify the various cell structures.
CO6	Analyze the cell cycles and growth of cells.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION **9**

An Overview of cells – Origin and evolution of cells- Cell theory, Classification of cells – Prokaryotic cells and Eukaryotic cells- Comparison of prokaryotic and eukaryotic cells Cell cycle – components in cell cycle control – cyclic- CDKs – check points in cell cycle -abnormalities in cell cycle

UNIT II CELL MEMBRANE **9**

Cell Membrane – Fluid mosaic model of membrane structure- Membrane proteins and their properties-Membrane carbohydrates and their role- Transport across membranes – Diffusion - active and passive diffusion.

UNIT III ENDOPLASMIC RETICULUM **9**

Endoplasmic reticulum – Types, structure and function- Golgi apparatus – Structure and function- Lysosome– Structure and functions- Morphology and functions of peroxisomes and **glyoxisomes - Ribosomes – Types structure and function

UNIT IV NUCLEUS **9**

Nucleus: Structure and function. Chromosomes, chromatin structure- Mitochondria – Structure and functions- Cytoskeleton: Types of filaments and their functions. Microtubules – Chemistry and functions – Cilia and flagella- Cell –cell interactions.

UNIT V CELL DEATH **9**

Introduction to Necrosis, Senescence, Apoptosis – Programmed cell death- Mechanism of Apoptosis- Oncogenes – Types of cancer

TEXT BOOK:

1. Molecular Cell Biology (Lodish, Molecular Cell Biology) by Harvey Lodish, Arnold Berk, Chris A. Kaiser and Monty Krieger -2007

REFERENCE BOOKS

2. Molecular Biology of the Cell, 4th edition by Bruce Albert's, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter. New York: Garland Science; 2002.
3. Cell and Molecular Biology: Concepts and Experiments, Fourth Edition by Gerald Karp-2004
4. The World of the Cell, 7th Edition by Wayne M. Becker, Lewis J. Kleinsmith, Jeff Hardin and Gregory Paul Bertoni (Feb 29, 2008)

Course Coordinator **HOD**

BMI202	GENETICS	L	T	P	C
	Total Contact Hours – 30	3	1	0	4
	Prerequisite – Basic biology, concepts in genetics				
	Course Designed by – Dr.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics on genetics, its laws, genes and chromosomes, inheritance, heredity. The purpose of this course is providing a clear understanding the causes of genetic disorders and the methods of gene transfer.

COURSE OUTCOMES (COs)

CO1	Remember the basics about genes and genetics.
CO2	Understand the mechanism of genetic materials.
CO3	Apply the mechanism of gene transfer.
CO4	Apply the familiarity about genetic materials and diseases.
CO5	Analyze the concept in sex determination.
CO6	Analyze the role of genetic materials in cells.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I BASICS OF GENETICS **9**

Classical gentics, Mendelian Laws- Mendel's experiment-monohybrid cross-phenotype, genotype, Dihybrid inheritance, Interaction of genes, Fine structure of Genes

UNIT II CHROMOSOMES **9**

Chromosome structure and organization in prokaryotes and eukaryotes, Unusual chromosomes-chromosome banding, chromosome abnormalities- genetic disorders

UNIT III ALLELES **9**

Classical concepts of allelomorphism, Multiple alleles, ABO blood groups, Rh factor, sex linkage in Drosophila, linkage in human beings, mechanism of sex determination, XX-XY mechanisms of sex determination, sex determination in Drosophila, environmental factors and sex determination, sex differentiation.

UNIT IV CROSSING OVER **9**

Coupling and Repulsion-Hypothesis, Test cross in maize and crossing over, theory of crossing over, molecular mechanism of crossing over, sex chromosomes and sex linked inherited disorders, colour blindness, hemophilia, Muscular dystrophy.

UNIT V GENE TRANSFER **9**

Transformation, Tansduction, Conjugation, Plasmids and Episomes

TEXT BOOK:

Gardner; Principle of Genetics

REFERENCE BOOKS:

1. Fundamentals of Biotechnology, Prave. P. Faust, V. Sitih. W., Sukatsh, DA, 1987 ASM press
2. An introduction to Genetic Engineering, Desmond, S.T., Nicholl, 1994. Cambridge press.

Course Coordinator **HOD**

BMI203	**MOLECULAR BIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Basic biology, concepts in genetics				
	Course Designed by – Dr.L.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics knowledge about the general dogma of cell. The purpose of this course is providing a clear understanding the genetic materials structure and functions.

COURSE OUTCOMES (COs)

CO1	Remember the basic of molecular biology.
CO2	Understand the structure of DNA and RNA.
CO3	Apply the mechanisms of DNA Replication.
CO4	Apply the importance of transcription and translation in RNA processing.
CO5	Analyse the gene expression.
CO6	Analyse the concept of codons.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

	CELL BIOLOGY LAB	L	T	P	C

UNIT I INTRODUCTION TO MOLECULAR BIOLOGY - DNA AND RNA 9

Scope and History- Structure of DNA-Nucleoside, Nucleotide, Base pairing, Double Helix-features of Watson and Crick model, major and minor groove, Supercoiling- twist, writhe and linking number Types of DNA- Structure and function of mRNA, rRNA, tRNA.Secondary structures in RNA.

UNIT II REPLICATION 9

Types and functions of DNA polymerases in Prokaryote and Eukaryote-Replication in prokaryote and Eukaryote- Plasmid Replication- rolling circle model.

UNIT III TRANSCRIPTION AND POST TRANSCRIPTIONAL MODIFICATIONS 9

Fine structure of prokaryotic and eukaryotic gene.Transcription of mRNA,rRNA, and tRNA genes in Prokaryote and eukaryote. Post transcriptional processing of mRNA – 5'capping, splicing, polyadenylation and RNA editing.

UNIT IV TRANSLATION AND POST TRANSLATIONAL PROCESSING 9

Genetic code and Wobble hypothesis- Translation in prokaryote and eukaryote-Post translational modifications

UNIT V GENE REGULATION 9

Principles of gene regulation- Transcriptional and post transcriptional gene regulation-activators, co-activators,suppressors, co-suppressors, moderators, silencers, insulators, enhancers. Operon-*lac* operon, *trp*operon, *ara*operon and *gal* operon.

TEXT BOOKS:

1. Karp G. Cell and Molecular Biology – Concepts and Experiments, 6 th Edn. John Wiley and Sons., 1998.
2. Verma PS and Agarwal VK. Cell Biology (Cytology, Biomolecules, Molecular Biology), Paperback, S. Chand and Company Ltd., 2016.
3. Molecular Biology of Gene - Watson

REFERENCE BOOKS:

McLennan A, Bates A, Turner P and White M. Bios Instant Notes Molecular Biology, 4 th Edn. Taylor and Francis, 2012.

1. Cox MM, Doudna JA and O'Donnell M. Molecular biology: Principles and Practice, WH Freeman and Company, 2012.
3. Molecular and Cellular Biology- Stefen Wolfe

4. Molecular biology of Gene,fifth edition Author James D. Watson 2004Benjamin cummings

Course Coordinator **HOD**

	Total Contact Hours –30	0	0	4	2
	Prerequisite course – Biology at Higher Secondary Education				
	Course Coordinator Name & Department :- Dr.V.Padmapriya & Biotechnology				

COURSE OBJECTIVES: - Learners will be familiar with basic cell biology experiments. Learners will understand the microscopical observation of cells

COURSE OUTCOMES (COs)

CO1	Perform the differential staining and measure osmotic potential.
CO2	Differentiate the structure of prokaryotes and eukaryotes
CO3	Grasp the microscopic observation of chromosomes in cells.
CO4	Manipulate the estimation of Hb, WBC and RBC levels as compared to the control
CO5	Sketch the difference between mitosis and meiotic division

Mapping of Course Outcomes with Program outcomes (POs)
(H/ML indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

I QUALITATIVE ANALYSIS

1. Cell Division: Mitosis – onion root tip: Meiosis – Transdescantia
2. Polytene chromosomes – chironomous larvae
3. Microscopic observation of prokaryotic and eukaryotic cell (differential staining)
4. Screening of leaf pigments – paper chromatography
5. Haemoglobin estimation
6. WBC and RBC count – Haemocytometer
7. Osmotic potential – (sucrose / salt solution)

II PERMANENT SLIDE OBSERVATION

8. Meiosis
9. Plant cell
10. Mitochondria
11. Chloroplast

TEXT BOOKS

1. Smith and Wood, Cell Biology, Chapman and Halls, 1996.
2. Bruce Alberts and other, Molecular Biology of the Cell, Garland Publishing, 3rd ed., 1994.
3. Veerakumari L. Bioinstrumentation. MJP Publisher; 2019.

REFERENCE BOOKS:

1. Julio E. Celis, Cell Biology: A Laboratory Handbook, Academic Press, 3rd ed, 2005.
2. Gerald Karp, Cell and Molecular Biology", John Wiley and Sons Inc. New York, 1996.
3. Kates M, Work E. Laboratory techniques in biochemistry and molecular biology. North-Holland Publishing Company; 1986.
4. Harvey DT. The Essence of Chromatography. ACS Publications;2003.
5. Westermeier R, Westermeier R. Electrophoresis in practice. Weinheim Germany: Wiley-Vch; 2001.

Course Coordinator **HOD**

BSS201	VALUE EDUCATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite – Plus Two				
	Course Designed by –Department of Commerce				

COURSE OBJECTIVES: -

Learners wil enable the students to understand the Social values. To provide knowledge on the features for life. To acquire the knowledge on Human rights. To impart the knowledge on Environment and Ecological balance. To educate the knowledge on Social evils..

	COURSE OUTCOMES (COs)
CO1	Remember the basic concept of human values, Social Value role of medias, Self-introspection – Self esteem
CO2	Understand the duties and responsibilities of individuals and role of media
CO3	Apply Salient features for life, : Truth, commitment,, honesty and integrity, forgiveness and love and also positive creative thinking
CO4	Apply Universal declaration of Human rights, peace and nonviolence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship.
CO5	Analyze living and nonliving environmental balance, Ecological balance and conservations and enrichment

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-ow

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO 6	PO7	PS O1	PSO2	PS O3
2	CO1	H	M	M							
	CO2	H	H	H		L					
	CO3	M	H	M	M				H		
	CO4	H	M	L							
	CO5	H	H	M			M				
	CO6	M	M	L							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT I INTRODUCTION **6**

Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

UNIT II FAMILY VALUES **6**

Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT III ETHICAL VALUES **6**

Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development.

UNIT IV SOCIAL VALUES **6**

Social values- Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms.

UNIT V GLOBALIZATION **6**

Effect of international affairs on values of life/ Issue of Globalization - Modern warfare – Terrorism- Environmental issues - mutual respect of different cultures, religions and their beliefs.

REFERENCE BOOKS:

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995)

2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.

3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.

4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)

5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.

6. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.\

Course Coordinator **HOD**

SEMESTER III

BAL301	**தமிழ் – III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES : காப்பிய இலக்கியம் மற்றும் நீதி இலக்கியத்தை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	ஐம்பெரும் காப்பியங்களைபற்றி அறிவர்
CO2	பிற்கால காப்பியங்களைபற்றி அறிவர்
CO3	முக்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO4	பிற்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றைபற்றி அறிவர்
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 **9**

சிலப்பதிகாரம்-இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219
மணிமேகலை- சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115
சீவகசிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம்-851 - 860

அலகு2 **9**

கம்பராமாயணம்- கம்பர்- அயோத்தியகாண்டம்- கங்கைப்படலம் - 10
தேம்பாவணி- வீரமாமுனிவர்- நாட்டுப்படலம் - 10
சீறாப்புராணம்-உமறுப்புலவர்--மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 **9**

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10
நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10
இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 **9**

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி- சிவப்பிரகாசர் - 8,12,18,24,39
புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 **9**

காப்பியஇலக்கியவரலாறு , நீதிஇலக்கியவரலாறு

பாட நூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

Course Coordinator **HOD**

BAL302	**FRENCH -III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: - To develop the technical aspects of the language and varied grammatical nuances to interpret the subject matter											
COURSE OUTCOMES (COs)											
CO1	Remember the impart the various aspects that makeup the language.										
CO2	Understand facts, procedures, practice certain grammatical structures, and practice communicative strategies.										
CO3	Apply the culture of the language natives.										
CO4	Apply the basic and advanced grammar.										
CO5	Analyze to remember the interlink between the conjugations										
CO6	Analyze and understand grammatical strictures.										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
4	Approval		Academic Council Meeting								

UNIT I Vivement demain! 9

Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? **9**

Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? **9**

Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme! **9**

Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-La forme ((en + participle present))

UNIT V On se retrouve ! **9**

Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present -Passe compose-Imparfait et future

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

BAL303	Hindi-III	L	T	P	C
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana in Panchavati part
CO2	Understand the history of Hindi literature
CO3	Apply the concept of Hindi grammatical speech
CO4	Apply and develop the translation skills
CO5	Analyze and develop the unseen passage skills
CO6	Analyze and create the skills in Hindi language

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		√								

4	Approval		Academic Council Meeting

UNIT I **09**

POETRY - PANCHAVATI

UNIT II **09**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **09**

ALANKAR – Anupras – Yamak - Slesh - VakrokthiUpama – Rupak – Drishtanth – Virodhabas.

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

By MaithilisharanGupt, AnuvadhAbhyas – III

Reference Books:

Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BEH301	ENGLISH - III	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills

COURSE OUTCOMES (COs)

CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message -Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

Course Coordinator **HOD**

BMI301	**BIOCHEMISTRY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Basic biochemistry of Sugars and proteins				
	Course Designed by – Dr.S.Selvakumar/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with biochemical molecules present in cell. The purpose of this course is providing a clear understanding the importance of biochemical molecules in cellular functions.

COURSE OUTCOMES (COs)

CO1	Remember the basic knowledge about biomolecules.
CO2	Understand the importance of carbohydrate, protein and lipids.
CO3	Apply the importance of biomolecules.
CO4	Apply the processes and control of bioenergetics and metabolism, as chemical reactions.
CO5	Analyze the principles of biochemistry to analytical determination of biomolecules.
CO6	Analyze the metabolites origin and its functions.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval	Academic Council Meeting									

UNIT I INTRODUCTION **9**

Introduction to biochemistry – Biomolecules, structure of water & its importance – Important noncovalent forces – Hydrogen bonds, electrostatic, hydrophobic & Vanderwaals forces – Acid, base & buffers – pH, Biological buffers and their significance.

UNIT II CARBOHYDRATES **9**

Classification, structure & properties of carbohydrates – mono, di, oligo & polysaccharides- Classification, structure & properties of amino acids & proteins- Classification, structure & properties of Lipids – Lipoproteins Structure & functions of nucleic acids

UNIT III BIOENERGETICS **9**

Principles of Bio-energetic; Metabolism of carbohydrates, fats, proteins, purines, pyrimidines-their biosynthesis & degradation; mechanism of oxidative phosphorylation & its inhibitors, photo phosphorylation

UNIT IV METABOLITES **9**

Prostaglandins, leukotrienes, thromboxines, interferons and interleukins; antibodies; alkaloids; plant and animal pigments

UNIT V SEPARATION METHODS **9**

Separation methods: Chromatography - electrophoresis and immunoelectrophoresis, high voltage electrophoresis and isoelectric focusing. Isolation methods– centrifugation, ultra – centrifugation, density gradient centrifugation

TEXT BOOKS:

1. Harper's review of biochemistry By David.W.Martin ,Peter.A.Mayes , Victor.W.Rodwell

LANGE medical publications.

2. Practical Biochemistry – Principles & Techniques By Keith Wilson & John Walker. Oxford university press

REFERENCE BOOKS :

1. Understanding Enzymes By Trevor palmer. Published by Ellis Horwood LTD.

2. Biochemistry Lippincott's Illustrated Reviews by Pamela.C. Champe & Richard.A.Harvey.

Lippincott-Raven publishers

Course Coordinator **HOD**

BMI302	**IMMUNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite – Basics of immune system				
	Course Designed by – Dr.s.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with human immune system. The purpose of this course is providing a clear understanding of the concepts the types of immune cells, immunity and antigen antibody reactions.

COURSE OUTCOMES (COs)

CO1	Remember the types of immunity
CO2	Understand the basic concept of antigen, antibody and immune responses
CO3	Apply the antigen antibody reaction and tests for diagnosing the diseases.
CO4	Apply the role of B Lymphocytes and T Lymphocytes in humans.
CO5	Analyse the importance of graft rejection process..
CO6	Analyse the real time application of drugs in targeting tumour antigens.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval	Academic Council Meeting									

UNIT I THE IMMUNE SYSTEM **9**

Introduction, Immunity, antigens &their classification, complement and their biological functions, types of immune responses, anatomy of immune response.

UNIT II HUMORAL IMMUNITY

B-lymphocytes and their maturation, activation &differentiation, structure and function of immunoglobulin, immunoglobulin classes, antibody production, mono-clonal antibodies and diagnosis major histocompatibility complex

UNIT III CELLULLAR IMMUNOLOGY **9**

T-Lymphocytes their classification, maturation, activation & differentiation, antigen presenting, cells (APC), macrophages, langerhans cells, their origin and function, mechanisms of phagocytosis, Cytokines and their role in immune response, immunosuppression, immune tolerence.

UNIT IV ANTIGEN - ANTIBODY INTERACTION AND HYPERSENSITIVITY 9

Principle and application: Precipitation- immuno diffusion & widal test, Agglutination reactions, radio immuno assay, ELISA, Complement fixation test, Immuno fluorescence technique, Immunoelecctrophoresis-Hypersensitivity reactions

UNITV TRANSPLANTATION AND AUTO IMMUNITY **9**

Graft rejection, evidence and mechanisms of graft rejection, prevention of graft rejection-immunosuppressive drugs, mechanisms of immunity to tumour antigens. Auto antibodies in humans, pathogenic mechanisms -autoimmune diseases- treatment of auto immune disorders

TEXT BOOKS:

1. Owen J, Punt J and Stranford S. Kuby Immunology, 7th Edn., Macmillan Education, India,2001.
2. Shetti N. Immunology: Introductory Text book, 2nd Edn., New Age International Limited,2005.
3. Janis Kuby,2007. “Immunology” W.H. Freeman & Co. 6th ed.

REFERENCE BOOKS:

1. Lydyard P, Whelan A and Fanger M. Bios Instant notes in Immunology, 3rd Edn., GarlandScience Publishers, 2011.
2. Delves PJ, Martin SJ, Burton DR and Roitt IM. Roitt's Essential Immunology, 12th Edn.,Wiley Publishers, 2011.
3. Tizard, 1992. “Introduction to Immunology” Saunders collage publication, 3rded.
4. Abbas,2009. “Basic Immunology” W.B. Saunders company, 2nded.

Course Coordinator **HOD**

BMI303	MICROBIAL DIVERSITY	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite – Classification of Microorganisms				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with environmental microbiology. The purpose of this course is providing a clear understanding importance of soil microbes in agricultural development.

COURSE OUTCOMES (COs)

CO1	Remember the basic classifications of living organisms..
CO2	Understand the classification strategy in microorganisms
CO3	Apply the classifications for identify the microbes.
CO4	Apply the importance of microbial classifications.
CO5	Analyse the characteristics of microbes by classification.
CO6	Analyse and understand the microbes.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I **9**

Microbial Classification: Whittaker's five kingdom classification of living system.

UNIT II **9**

Archaebacteria: – Cell structure, metabolic character, function and reproduction of Methanogens.

UNIT III **9**

Eubacteria: Cell morphology, function, reproduction and of

a) Photosynthetic eubacteria (cyanobacteria).

b) Gram negative eubacteria (Spirochetes, Rickttsias, Chlamydias)

c) Gram positive eubacteria (Actinomycetes).

d) Spore forming bacteria (spore formation and germination)

e) Sulfur bacteria and Nitrogen fixing bacteria.

UNIT IV **9**

Brief description of eukaryotic Algae & Fungi and protozoa : General characteristics, vegetative and reproductive structure of the following groups of Microorganism particularly Protozoa (Entamoeba, Plasmodium), Algae (Cyanophyta, Cholorophyta), Fungi (Phycomycetis, Bacidiomycetis).

UNIT V **9**

General properties of Actinomycetes of plants and animals

TEXT BOOKS

1. Principles of Microbial Diversity James W. Brown Paperback – 1 Jan 2015

REFERENCES BOOKS

1. H.N. Thatoi, B.B. Mishra, Microbial Biotechnology: Methods and Applications, ISBN: 978-81-8487-131-9 , Publication Year: 2012 .

2. R.N. Kharwar (Microbial Diversity and Biotechnology in Food Security Hardcover.

Course Coordinator **HOD**

BAL002	அடிப்படைத் தமிழ் - I	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES : தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ் எழுத்துக்களைஅறிவர்
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளைஅறிவர்
CO3	சொல்லமைப்புபற்றிஅறிவர்
CO4	சொற்களை உருவாக்கும்அறிவைப்பெறுவர்
CO5	சொற்களை தொடராக மாற்றும்திறனைப்பெறுவர்
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு –1 **9**

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 **12**

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 **12**

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 **12**

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

.1ஆறுமுகநாவலர்,"தமிழ் இலக்கணம்", பாரிநிலையம், 2012
2. கழகப்புலவர்குழுவினர்,"நன்னூல்–எழுத்ததிகாரம்", கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,"நன்னூல்–சொல்லதிகாரம்", கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,"நன்னூல்",உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

Course Coordinator **HOD**

BCA351	**சிறப்புத்தமிழ் – I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES : தமிழர் நாகரீகம் பண்பாடு பற்றி அறியச் செய்தல்					
COURSE OUTCOMES (COs)					

CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்
CO4	தமிழரின்கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றி அறிவர்
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றி அறிவர்
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(L/M/H indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு **1** **6**

நாகரிகமும் பண்பாடும் - சங்க காலத்து அரசியல் நிலை - சங்ககாலத் தொழிற்பிரிவினரும் சமூக அமைப்பும் - மகளிர் நிலை

அலகு **2** **6**

பண்டைத் தமிழர் திருமணமுறை நல்லறம் - குடும்ப வாழ்வு பற்றிய தமிழர் கொள்கை –

அலகு 3 **6**

பண்டையத் தமிழரின் உணவு, உடை, உறையுள் - சங்க கால விழாக்கள்

அலகு **4** **6**

பண்டைத் தமிழரின் கல்விநிலை - பண்டைத் தமிழரின் வானியல் அறிவு
அலகு 5 **6**
பண்டைத் தமிழரின் விளையாட்டும் பொழுதுபோக்கும் - மருத்துவக் கலை

பாட நூல்:

1. அ.தட்சிணாமூர்த்தி, "தமிழர் நாகரிகமும் பண்பாடும்", ஐந்திணைப் பதிப்பகம், 2017
2. ஞா.தேவநேயப் பாவாணர், "பண்டைத் தமிழர் நாகரிகமும் பண்பாடும்", பூம்புகார் பதிப்பகம், 2017
3. கே கே பிள்ளை, "தமிழக வரலாறு மக்களும் பண்பாடும்", உலகத் தமிழாராய்ச்சி நிறுவனம், 2015

பார்வை நூல்கள்:

1. □□. □□□□□□□□□, □□□□□□ □□□□□□□□□□ □□□□□□□□□□□, □□□□□□ □□□□□□□□□□□□□, 2016
2. □□□□□□□□□□, □□□□□□ □□□□□□□:□□□ □□□□□□□□□□□□ □□□□□□□□□□□, □□□□□□ □□□□□□□□□□□□□□, 2011
3. □□.□□□□□□□□□□□□□□□□□, □□□□□ □□□□□□□□□ □□□□□□ □□□□□□□□□□, □□□□□□□ □□□□□□□□□□, 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

	BIOCHEMISTRY LAB	L	T	P	C
BMI3L1	Total Contact Hours – 45	0	0	4	2
	Prerequisite – basic cell biology				
	Course Designed by – Dr.L.jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES: - Learners will be familiar with various biochemical experiments .Learners will understand the principle and determination of biomolecucles by each experiment.

COURSE OUTCOMES (COs)

CO1	Perform qualitative analyses of lipids
CO2	Hanadle various amino-acids separation by TLC.
CO3	Caliberate the basic principle involved in qualitative analysis of amino acids
CO4	Manipulates the determination of saponification, acid and iodine number
CO5	Sketches the classification of carbohydrates

Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M							H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

LIST OF EXPERIMENTS

1. pH measurements and preparation of buffers.

2. Qualitative tests for Carbohydrates.

3. Estimation of sugars.

4. Estimation of proteins by Lowry's method / Biuret method.

5. Estimation of cholesterol by Zak's method.

6. Determination of saponification number of lipids.

7. Estimation of Amino acids.

8. Separation of amino acids - Thin layer chromatography.

9. Separation of sugars - Paper chromatography

10. Biochemical estimation of DNA /RNA using Spectrophotometer

TEXT BOOKS:

1. Biochemistry Laboratory Manual - Mark Brandt, Ph.D. 3rd edition , 2002
2. Biochemistry Laboratory Manual – Dr. Dennis Welsh**,** 2013
3. Biochemistry Laboratory Manual Che 4350. Andrew J. Bonham, Ph.D., 2013.

Course Coordinator **HOD**

SEMESTER IV

BAL401	□□□□□ **– IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES : சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்					
COURSE OUTCOMES (COs)					
CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்				
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்				
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்				
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்				

CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு1 **9**

நற்றிணை - 10, 110, 129
குறுந்தொகை - 8, 25, 32
கலித்தொகை - 6, 37, 51

அலகு2 **9**

புறநானூறு - 89, 109, 204
பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 **9**

பொருநராற்றுப்படை - 151 - 213
பெரும்பாணாற்றுப்படை - 5 - 15,
- 170 - 184

அலகு4 **9**

நெடுநல்வாடை - 1 - 25
பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 **9**

எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010

3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

Course Coordinator **HOD**

BAL402	**FRENCH-IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -
To introduce students to the complexity of the grammar and how to overcome it with simple rules.

COURSE OUTCOMES (COs)

CO1	Remember the culture of the language natives in advanced setup.
CO2	Understand the integral grammar structure in French.
CO3	Apply encourage the development of skills in linguistics
CO4	Apply the Oral and Written skill set
CO5	Analyse and remember the language construction
CO6	Analyze and enhance advanced fluency in language

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								

	CO2	H	M						H		
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		√									
4	Approval		Academic Council Meeting								

UNIT I Vous plaisantez! 9

Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien! 9

Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verbe)

UNIT III A vos risqué et perils! 9

Le subjonctif Present- La construction passive pour metre en valeur l'object direct de l' action

UNIT IV C'est tout un programme!
9

Les pronom possessives -Les adjectifs et les pronoms indefinis-Les pronom demonstratifs:

Les constructions --celui+de

UNIT V C'est la fete !
9

Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

BAL403	**Hindi-IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	0	0	4
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. Mustak Husaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)	
CO1	Rememberthe skills of the leadership
CO2	Understand and develop the skills to overcome the mistake
CO3	Apply the concept of Hindi essay writing
CO4	Apply and develop the translation skills
CO5	Analyze the unseen passage skills
CO6	Analyze and create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**
DRAMA – Andher Nagari

UNIT II **09**
NOVEL - GABAN - Premchand

UNIT III **09**
GENERAL ESSAY

UNIT IV **09**
TRANSLATION - HINDI – ENGLISH

UNIT V **09**
COMPREHENSION

Text Books:
ByBharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas – III

Reference Books:

UNIT 1 - Publisher–Vani Prakashan, New Delhi – 110 002.
UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002
UNIT III – Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra -282002
UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17
UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BEH401	**ENGLISH - IV**	**L**	**T**	**P**	**C**
	Total Contact Hours -60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				

COURSE OBJECTIVES: -
To focus on the balanced development of the English language communication skills.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of English literature
CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS

Macbeth Soliloquy – **Out, Out, Brief Candle** - **Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar - Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Macbeth", Macmillan Publisher, 2014

Course Coordinator **HOD**

BMI401	**CLINICAL MICROBIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours - 45	3	2	0	4
	Prerequisite – Introduction to medical microbiology				
	Course Designed by – Dr.Anbuselvi/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics clinically importance bacteria fungi and virus. The purpose of this course is providing a clear understanding the microbial diseases and the treatments involved in therapeutic measures.

COURSE OUTCOMES (COs)

CO1	Remember the basic of microbiology in personal health.
CO2	Understand the collection and processing of the bacterial and fungal clinical specimens.
CO3	Apply and knowledge of microorganism and their relevance of infectious diseases.
CO4	Apply the importance of microbial classifications.
CO5	Analyse the principles of prevention and treatment of infectious diseases in humans.
CO6	Analyse the microbial disease and diagnosis and treatment methods.

Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **9**

Introduction to medical microbiology - Infectious Diseases process – Diagnosis – Process of sample collection, transport and examinations of the specimens, Antibiogram and serological test.

UNIT II **9**

Bacteriology: Gram positive organisms-pathogenicity and laboratory diagnosis of *Staphylococcus aureus, Streptococccus pyogenes, Pneumococcus, Bacillus anthracis, Corynebacterium diptheriae, Clostridium tetani, Clostridium botulinum, Mycobacterium tuberculosis, Mycobacterium leprae.*

UNIT III **9**

Bacteriology: Gram negative organisms:- pathogenicity and laboratory diagnosis of *E.coli, Klebsiella sp, Salmonella typhi, Shigella dysenteriae, Pseudomonas aeroginosa, Vibrio cholerae.*

UNIT IV **9**

Virology: Approaches to viral diagnosis- Serological and Molecular techniques, Pathogenicity and Laboratory diagnosis of viral infections - Hepatitis, Polio, Rabies, Influenza, Measles, Mumps, and HIV.

UNIT V **9**

Mycology: approaches to laboratory diagnosis-Mycosis–Superficial, Subcutaneous and Systemic infections– Cryptococcosis, Madura mycosis-Histoplasmosis, *Candida allbicans*. Parasitology: Pathogenicity and laboratory diagnosis of *Entamoeba histolytica, Taenia solium, Plasmodium vivax*

TEXT BOOKS:

1. Ananathanarayanan R and Jayaram Panicker CK. Text book of Microbiology. Orient longman,1994.
2. Baird RM, Hodges NA and Denyer SP. Handbook of Microbiological Quality control in Pharmaceutical and Medical Devices, Taylor and Francis Inc., 2005.

REFERENCE BOOKS:

1. Greenwood D, Slack RB and Peutherer JF. Medical Microbiology, 16th Edn. Churchill Livingstone, London. (2002).
2. Saghee MR, Sandle T and Tidswell EC. Microbiology and Sterility Assurance in Pharmaceuticals and Medical devices, Business Horizons publishers. 2011.

Course Coordinator **HOD**

BMI402	**SOIL AND AGRICULTURAL MICROBIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Higher secondary basics with biology as a major				
	Course Designed by – Dr.S.Selvakumar/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics of environmental microbiology. The purpose of this course is providing a clear understanding importance of soil microbes in agricultural development.

COURSE OUTCOMES (COs)

CO1	Remember the microbial population of soil.
CO2	Understand the importance of microbial interaction
CO3	Apply the soil microbes in agriculture development
CO4	Apply the wide applications of soil microbes.
CO5	Analyse the soil microbes in agriculture development.
CO6	Analyse the plant diseases and role of microbes

Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval	Academic Council Meeting									

UNIT I INTRODUCTION **9**

Properties of soil (Structure, texture, formation)-Types and significance of soil microbes – Bacteria, Fungi, Actinomycetes, Algae, Protozoa, Nematode and Viruses – Factors affecting microbial population

UNIT II BIOGEOCHEMICAL CYCLE **9**

Biogeochemical cycle – Carbon, Phosphorus, Nitrogen – Biological Nitrogen fixation – Nitrogen fixers- Root nodule formation–Nitrogenase, Hydrogenase

UNIT III MICROBIAL INTERACTIONS **9**

Microbial interaction between microbes–Neutralism, Commensalism, Synergism, Mutualism, Amensalism, Symbiosis, Competition, Parasitism and Predation-Interaction of Microbes with plants – Rhizosphere and Mycorrhizae – Interaction of microbes – insects and rumen

UNIT IV PLANT PATHOLOGY **9**

Plant pathology –Bacterial diseases – Blight of rice, Citrus canker – Fungal disease – Red rot of sugarcane, Wilt of cotton, Tikka leaf spot of groundnut

UNIT V BIOINOCULANTS 9

Biofertilizer – Rhizobium and Azotobacter, Cyanobacteria, Azolla–Mass multiplication and crop response. Biopesticide – Bacterial, fungal and viral

REFERENCE BOOKS:

1. Subba Rao NS (2004). Soil Microbiology. 4th Edition, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi

2. Mishra RR (2004). Soil Microbiology. 1st Edition, CBS Publishers and Distributors, New Delhi

3. Rangaswami G and Mahadevan A (2002). Diseases of crop plants in India. 4th Edition, Printice-Hall of India Pvt. Ltd., New Delhi

4. Robert, L Tate, (1995). Soil Microbiology. 1st Edition, John Wiley & Sons, Inc. New York.

Course Coordinator HOD

BMI403	**ENVIRONMENTAL MICROBIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Introduction to the environmental microbiology				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics knowledge about the microorganisms in various environmental conditions. The purpose of this course is providing a clear understanding the interaction and adaptation of microbes in various ecosystems.

COURSE OUTCOMES (COs)

CO1	Remember the basic of interaction between soil and microbes.
CO2	Understand the soil characteristics and biogeochemical cycling.
CO3	Apply the role of microbes present in the aquatic ecosystem.

CO4	Apply the importance of environmental microbes.										
CO5	Analyse the airborne pathogens using detection methods.										
CO6	Analyse the root nodule bacteria.										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I MICROBIAL INTERACTIONS 9

Distribution of microorganisms in nature – Microbial communities in soil- Factors Influencing the microbial density in soil- zymogenous and autochthonous flora in Soil- Microbial associations – symbiotic protocooperation, Ammensalism, Commensalism, Syntropism, Parasitism and Predation with suitable examples.

UNIT II MICROBIAL DECOMPOSITION 9

Microbial decomposition; Cellulose, Hemicellulose, Lignin, Pectin and Chitin – Factors influencing degradation- Acetate utilization - bioconversion of organicwastes – sugarcane wastes- coir pith composition- composting, principles and Applications- conversion process.

UNIT III BIOGEOCHEMICAL CYCLE 9

Microorganisms in the Decomposition of organic matter- Carbon cycle – Nitrogen Cycle - Nitrogen fixing microorganisms - Root nodule bacteria – non symbiotic Nitrogen fixers – biofertilizers in agriculture - Rhizobium and phosphate Solubilizers - Mycorrhizial association – Phosphorous cycle

UNIT IV AQUATIC MICROBIOLOGY **9**

Water microbiology, algae, phytoplankton- eutrophication- water treatment- Primary, secondary and tertiary-Drinking water- Portability- MPN technique.

UNIT V AEROMICROBIOLOGY **9**

Aero microbiology- aerosol, droplet nuclei, air pollution- sources (Microbiological) – air quality analysis- air sampling devices.

TEXT BOOKS:

1. Atlas R. M.and Bartha. R 1992, Microbial Ecology. Fundamental and application, 3rd edition Bengamin and Cummings

2. Alexander A M 1987. Introduction to Soil Microbiology, 5th edition John Wiley and sons,

3. Alexander, A M 1974. Microbiology Ecology, Jhon Willy & Sons

REFERENCE BOOKS:

1.Mitchell R 1974, Introduction to Environmental Microbiology, Prentice Gall Inc., Englewood Cliffs

2. Rangasamy, G and D J Bagyaraj, Agricultural microbiology, Asia Publishing House, New Delhi.

3. Rheinhermer , G. 1986 . Aquatic Microbiology, John Wiley and Sons, NY

4. Grant. W. D. P. E. Long. 1981 Environmental Microbiology, Thomson Litho Ltd

Course Coordinator **HOD**

BMI4L1	**CLINICAL MICROBIOLOGY LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	4	2
	Prerequisite – Introduction to medical microbiology				
	Course Designed by – Dr.S.Selvakumar/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with the fundamental knowledge in microbial disease diagnosis. The purpose of this course is providing a clear understand the human disease-causing microbes, identification and treatment methods

COURSE OUTCOMES (COs)

CO1	Perform the basics behind the physiological reactions in prokaryotic cells.
CO2	Handle and operate the various human specimens for diagnosis.
CO3	Caliberate the equipments according to the test objectives
CO4	Manipulate the obtained values with reference values

CO5	Sketches the experimental techniques for culturing various microbes										
CO1	Perform the interpretation and inferences										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

LIST OF EXPERIMENTS

1. Collection, transport, processing of specimen and Identification of bacteria from clinical specimens –Urine, Blood, Sputum, Pus and Faeces.
2. Slide agglutination -Blood grouping
3. Tube agglutination- WIDAL
4. Precipitation – RPR
5. Immunodiffusion- Radial, Ouchterlony's
6. Immunoelectrophoresis- Rocket and Counter current
7. ELISA
8. SDS-PAGE
9. Observation of fungi- LCB or KOH mount
10. Western blotting techniques

TEXT BOOKS:

1. Engelkirk PG and Duben-Engelkirk J. Burton's Microbiology for the Health

Sciences,10th Edn. Wolters Kluwer Health, 2000.
2. Jay JM, Loessner MJ and Golden DA, Clinical Microbiology, 7th Edn. Springer,2005.
3. Park K. Parks Text Book of Clinical Microbiology, 5th Ed., Banarsidas BhanotPublishers, 2017.

REFERENCES BOOKS

1. Jorgensen, James H.Manual of Clinical Microbiology. 2Volume set.

2. Microbiology Bio 204 Laboratory Manual

3. Laboratory Manual in General Microbiology (1916)

4. Microbiology Bio 12421L Laboratory manual (Donna Cain, Hershell Hanks, Mary Weis, Carroll Bottoms, Jonathan Lawson)

Course Coordinator **HOD**

SEMESTER – V

BMI501	**FOOD MICROBIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	1	0	5
	Prerequisite – Higher secondary basics with biology as a major				
	Course Designed by – Dr.Anbuselvi/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics of with food preservation methods can understand the functions of system.. The purpose of this course is providing a clear understanding of the concepts production of different fermented foods**.**

COURSE OUTCOMES (COs)

CO1	Remember the important microorganisms

CO2	Understand the general principles and application for preservation methods										
CO3	Apply the equipment according to the preservation methods										
CO4	Apply the Fermented food processes.										
CO5	Analyse the food borne diseases.										
CO6	Analyse the food standards, quality etc.,										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I **12**

Food and Microorganisms – Important microorganisms in food (Bacteria, Mold and yeasts) ; Factors affecting the growth of microorganisms in food – Ph, moisture, oxidation – Reduction potential , Nutrient content and Inhibitory substances and biological structure.

UNIT II **12**

Principles of food preservation – General principles and application methods – Asepsis – Techniques of removal – use of temperature (low & high) - Drying, radiation and chemical preservatives.

UNIT III **12**

Spoilage of food – cereals, vegetables, fruits, egg and milk – canned foods and sea foods.

UNIT IV **12**

Fermented food – pickled cucumber, Sauerkraut- soysauce, Bread, Idli – Fermented dairy products – Yoghurt and cheese.

UNIT V **12**

Food borne diseases & Food Quality control Measures – Food poisoning and Food borne infections – Bacterial and Mycotoxins- Investigation of food poisoning outbreaks- food standards, quality control- HACCP, FDA, WHO.

TEXT BOOKS:

1. Frazier WC and Westhoff DC. Food Microbiology, 3rd ed., Tata Mcgraw Hill PublishingCo., New Delhi, 1978.
2. Jay JM. Modern Food Microbiology, 4th edition, Van Nostra and Rainhokdd Co., 1991.

REFERENCE BOOKS:

1. Adams MR and Moss MD. Food Microbiology, New Age International limited, 1995.
2. Roday S. Food Hygiene and Sanitation, Tata Mcgraw Hill Publications, 1998.

Course Coordinator **HOD**

BMI502	**FERMENTATION TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	1	0	5
	Prerequisite – Principles of the chemical engineering and downstream processing				
	Course Designed by – Dr.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with fermentation techniques. The purpose of this course is providing a clear understand the production of methods of production of beverages, vitamins, antibiotics and enzymes

COURSE OUTCOMES (COs)

CO1	Remember the fermentation process.
CO2	Understand the basic concept of industrially important microbial strain screening methods.
CO3	Apply the different methods in the production of vitamins, enzymes using microbes.
CO4	Apply the standards that to be followed during production.
CO5	Analyse the importance of microbes in SCP production.

CO6	Analyse the methods for downstream process										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT –I FERMENTATION TECHNIQUES **9**

Fermentation- Definition & types - Submerged and Solid state.Fermentors & its types (Tower, cylindroconical & airlift) – Batch fermentation – Continuous fermentation.

UNIT –II INDUSTRIAL STRAINS **9**

Industrially important strains- Screening methods- Strain development for Improved yield- Mutation, Recombination and protoplasmic fusion.

UNIT –III ALCHOLIC PRODUCTION **9**

Production of beverages – beer and wine- vitamin B12 and Riboflavin –Antibiotics- penicillin and streptomycin- production of enzymes - Amylases and Proteases- methods of immobilization.

UNIT- IV BIOINNOCULANTS **9**

Single cell protein- Bakers yeast, spirulina- Details of mushroom development-Oyster (Pleurotus) and Button (Agaricus) mushroom.

UNIT –V DOWNSTREAM PROCESSING 9

Downstream process- Intercellular and extracellular- Centrifugation, filtration, Floatation-solvent extraction, precipitation- Breakage of cells- physical and Chemical methods.

TEXT BOOKS:

1. Stanbury PT and Whitaker. Principles of Fermentation Technology, Pergamon Press, NY,1984.
2. Casida LEJR. Industrial Microbiology, New Age International Publishers, 1968.

REFERENCE BOOKS:

1. Prescott and Rehm. Industrial Microbiology, Wiley and Sons, 1979.
2. Michael L Shuler and Fikret Kargi. Bioprocess Engineering, Basic Concepts, 2nd Ed.,Prentice Hall of India Pvt. Ltd., 2002.

Course Coordinator **HOD**

BMI503	**rDNA TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – General biology, Cell biology, Microbiology				
	Course Designed by – Dr.L.jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with different restriction enzymes and vectors. The purpose of this course is providing a clear understand the gene transfer techniques and sequencing methods.

COURSE OUTCOMES (COs)

CO1	Remember the DNA, RNA and its isolation methods.
CO2	Understand the basic concept of gene manipulation.
CO3	Apply the plasmid and cosmids as vectors.
CO4	Apply the role of hybrid vectors

CO5	Analyse the importance of gene transfer techniques.										
CO6	Analyse the new sequencing methods based on the already proposed standards.										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT- I GENE MANIPULATION **9**

Gene manipulation – Definition and Application, Restriction Enzymes, Discovery,Types and Mode of Action, Ligases and Methylases.

UNIT –II –PLASMID **9**

Isolation - Purification of DNA (Chromosomal and Plasmid), Isolation and Purification of RNA, Chemical Synthesis of DNA, Genomic Library and cDNA Library.

UNIT -III VECTORS **9**

Vectors – Plasmid based Vectors- Natural (PSC101, PSF2124, PMB1), Artificial – pBR322 & pUC Construction: Phage based Vectors- ג (Lamda) phage Vectors and its Derivatives: Hybrid Vectors- Phagemid, Phasmid and Cosmid, BAC and YAC.

UNIT –IV GENE TRANSFER **9**

Gene Transfer Techniques: Physical – Biolistic Method, Chemical- Calcium chloride and DEAE Methods , Biological invitro package method - Screening and Selection of recombinants- Direct Method – Selection by Complementation, -Indirect Methods- Immunological and Genetic Methods.

UNIT- V SEQUENCING TECHNIQUES **9**

PCR , DNA Sequencing (Sanger's Method) Blotting (Southern, Western, Northern) Techniques, RFLP and Application, - RAPD and Application - Microarray. Protein Engineering.

TEXT BOOKS:

1. Old RW and Primrose. Principles of Gene Manipulation, 5th edition, Blackwell ScientificPublication, Boston, 1999.
2. Winnecker ED. From gene to clones, Introduction to Gene Technology, VCH Publication,FRG., 1987.

REFERENCE BOOKS:

1. Brown TA. An introduction to Gene Cloning, 3rd Ed., Champman and Hall, 1995.
2. Glick BR and Pasternak JJ. Molecular Biotechnology - Principles and Application ofrecombinant DNA, ASM Press, Washington, 1994.

Course Coordinator **HOD**

BMI5L1	**FOOD MICROBIOLOGY LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	4	2
	Prerequisite – Basic Microbiology				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with isolation and identification of different microbes from various food samples. The purpose of this course is providing a clear understand the process of production of fermented products

COURSE OUTCOMES (COs)	
CO1	Perform the complicated microbiological tests.
CO2	Handle and operate the sophisticated instruments and equipments.
CO3	Caliberate the equipments according to the test objectives

CO4	Manipulate the equipments according to the test objectives										
CO5	Sketches and write the interpretation and inferences										
CO1	Perform the interpretation and inferences										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

LIST OF EXPERIMENTS

1. Isolation of *Lactobacillus* from curd sample.

2. Immobilization of yeast

3. Quality analysis of milk using the Methylene blue reductase test

4. Isolation of microorganisms from food spoilers

5. Enumeration of microorganisms in juice sample

6. Preparation of cheese and yogurt

7. Estimation of water quality using MPN technique

8. Enumeration of microbial isolates from Milk sample

9. Isolation of coli phages from waste water

10. Physical examination of Milk sample

11. Extracellular enzyme activities – cellulase, protease, amylase.

TEXT BOOKS:

1. Ray B. Fundamentals of Food Microbiology, CRC Press, USA, 1996.
2. Jay JM. Modern Food Microbiology, Chapman and Hall, New York, 1996.

REFERENCE BOOKS:

1. Banwart GJ. Basic Food Microbiology, CBS Publishers & Distributors Pvt. Ltd, 1993.
2. Frazier WC and Westhoff DC. Food Microbiology, Mc Graw-Hill, New York, 1988.

Course Coordinator **HOD**

BMI5L2	**FERMENTATION TECHNOLOGY LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	4	2
	Prerequisite – Principles of the chemical engineering and downstream processing				
	Course Designed by – Dr.S.Anbuselvi/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with the production of fermented products. The purpose of this course is providing a clear understand the production of biofuels and bio surfactant

COURSE OUTCOMES (COs)	
CO1	Perform the bioreactors for large scale production.
CO2	Handle and operate the basic machineries in order to obtain the beneficial products effectively.
CO3	Caliberate the production method sequentially.

CO4	Manipulate the fermenter and other related instruments professionally										
CO5	Sketches the skills in developing the fermented products.										
CO6	Perform the interpretation and inferences										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

LIST OF EXPERIMENTS

1. Fermentative production of amylase by *Aspergillus niger* using soy bean meal.
2. Wine production using grapes by *Saccharomyces cerevisiae*
3. Operational procedures of bioreactors.
4. Production of Antibiotic Bacitracin by bacillus sp.
5. Production of Vitamin B_{12}.
6. Cultivation of mushroom *in vitro* studies.
7. Fermentation of citrus juices.
8. Bio-ethanol production by using *Zymomonas mobilis*.
9. Bio-surfactant production

10. Production of probiotics from lactic acid bacteria.

TEXT BOOKS:

1. Stanburry PF and Whitaker . Principles of fermentation technology, Pergamon Press, 2nd Edition, Butterworth Heinemann - Elsevier, 1999.
2. Sinnotl RK. Coulson and Richardson's Chemical Engineering, 3rd Ed., ButterworthHeinemann - Elsevier Pub, 2001.

REFERENCE BOOKS:

1. Arnold Demain and Julian E Davis. Manual of Industrial Microbiology andBiotechnology, 2nd Ed, ASM Press, Washington DC, 1999.
2. Ashok Pandey, Carlos Ricardo Soccol and Christian Larroche. Current developments inSolid Substrate fermentation, Oxford University Press, Great Clarendon Street, 2008.

Course Coordinator **HOD**

BMI601	**MICROBIAL BACTERIOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Basics of medical microbiology and clinical pathogenesis				
	Course Designed by – Dr.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics knowledge about pathogenicity of microbes. The purpose of this course is providing a clear understanding the microbial diseases.

COURSE OUTCOMES (COs)

CO1	Remember the common microbial flora present in the human body.
CO2	Understand the importance of handling and storage of specimens.
CO3	Apply the mechanisms of pathogenesis of bacterial diseases.

CO4	Apply the role of microbial characteristics in identifying the pathogens.
CO5	Analyze the diagnosis methods for microbial disease identification.
CO6	Analyze the role of pathogens in human diseases.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval	Academic Council Meeting									

UNIT I INTRODUCTION **9**

Normal microbial flora of human body; General attributes and virulence factors of bacteria causing infections- Host Parasite relationships

UNIT II COLLECTION OF SAMPLE **9**

Specimen Collection, Transport and Storage; Specimen processing- (Blood, Urine, GSF, Sputum, other body fluids)

UNIT III CLASSIFICATION **9**

Classification morphology, cultural characteristics, pathogenicity, epidemiology, laboratory diagnosis, treatment, prevention and control of diseases caused by: Staphylococci, Streptococci, Pneumococci, Neisseriae (Gonococci and Meningococci), Corynebacterium, Mycobacterium, Clostridium, Bacillus, Pseudomonas and Haemophilus.

UNIT IV HUMAN PATHOGENS **9**

Human Pathogens - of Salmonella, Shigella, Vibrios, Brucella, Bordetella, Escherichia, Gramnegative anaerobes, Spirochaetes, Rickettsiae, Chlamydiae, Mycoplasmas and Ureoplasmas

UNIT V ZOONOTIC DISEASES 9

Zoonotic diseases and their control; Hospital acquired infections and their control; Hospital waste disposal; Ethical committee and their functions.

TEXT BOOKS

1. Salle, A.J. (1992). Fundamental Principles of Bacteriology, 7th Edition, Mc. Graw Hill Publishing Co. Ltd., New York
2. Ananthanarayanan R. and Jayaram Panicker C.K. (1994). Text book of Microbiology. Orient Longman.
3. Baron, E.J. and Finegold S.M. (1995). Scientific Company, Diagnostic Microbiology Blackwell Scientific Company

REFERENCE BOOKS

1.Bergeys Manual of determinative Bacteriology
2. Ananthanarayanan R. and Jayaram Panicker C.K. (1994). Text book of Microbiology. Orient Longman.

Course Coordinator **HOD**

BMI602	**VIROLOGY, MYCOLOGY AND PARASITOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite – Basics of medical microbiology and clinical pathogenesis				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with viral and fungal diseases. The purpose of this course is providing a clear understand about the various parasites causing infections in humans.

COURSE OUTCOMES (COs)

CO1	Remember the definition and properties of viruses and fungi.
CO2	Understand the basic concept of detection of viruses and antigens in clinical specimens.
CO3	Apply the uses of bacteriophages in microbiology.
CO4	Apply the medical importance of fungi..

CO5	Analyse the applications of bacteriophages in bacterial genetics.										
CO6	Analyse the diagnostic methods for identifying parasitical infections.										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT-I VIRAL PROPERTIES **9**

General properties of viruses - Detection of viruses and antigens in clinical specimens - Serological diagnosis of virus infections. Cultivation of viruses. Structure & properties of viroids, prions.

UNIT-II TYPES OF VIRUSES **9**

Arthropod borne and rodent borne virus diseases - Picorna viruses and diseases, Hepatitis viruses-Rabies and other neuro viruses - Orthomyxo and paramyxo viruses. Pox, Adeno, Horpes, Reo, Rota and AIDS viruses-Oncogenic viruses-Viral vaccines, their preparation and their immunisation schedules-Viruses of importance to plants and soil

UNIT-III BACTERIOPHAGES **9**

Viruses of importance to bacteria - Bacteriophages - Their structure, types - Uses in Microbiology - Typing and application in bacterial genetics.

UNIT-IV FUNGAL MYCOSES **9**

General Introduction Morphology and taxonomy of fungi of medical importance-Detection and recovery of fungi from clinical specimens- Dermatophytes and agents of superficial mycoses Yeasts of medical importance dimorphic fungi causing systemic mycoses

UNIT-V PARASITICAL INFECTIONS **9**

Classification Morphology, Pathogenicity, lab diagnosis of common protozoan diseases- Amoebiasis, Giardiasis, Balantidiosis, Trypanosomiasis, Malaria, Toxoplasmosis, Leishmaniasis. Classification Morphology, Pathogenicity, lab diagnosis of common parasitic metazoan diseases – Ascariasis, Hook worm, Filariasis, Hydatidosis, Taenia infection.

TEXT BOOKS:

1. Ananthanarayanan R and Jayaram Panicker CK. Text book of Microbiology, OrientLongman, 1994.
2. Baron EJ and Finegold SM. Diagnostic Microbiology, Blackwell Scientific Company,1995.

REFERENCE BOOKS:

1. Singh V. Text book of Virology, 1st Edn., IBDC Publishers, 2010.
2. Oarsman SNJ, Van Zyl GU, Nutt L, Anderson MI and Preiser W. Virology IllustratedColour text, 1st Edn., Elsevier Health Sciences, 2012.

Course Coordinator **HOD**

BMI6L1	**IMMUNOLOGY LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	4	2
	Prerequisite – basics of immune system				
	Course Designed by – Dr.S.Sharmila/Microbiology				

COURSE OBJECTIVES :-

Learners having knowledge in basics with the immunological techniques. The purpose of this course is providing a clear understand the different diagnostic tests that are used in identifying the diseases.

COURSE OUTCOMES (COs)

CO1	Perform the complicated diagnostic tests.
CO2	Handle and operate the sophisticated instruments and equipments.
CO3	Caliberate the equipment according to the diagnostic test objectives.

CO4	Manipulate the obtained values with reference range values.
CO5	Sketches the skills in developing the ELISA techniques/.
CO1	Perform the interpretation and inferences

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

BMI6P1	**PROJECT WORK**	**L**	**T**	**P**	**C**
	Total Contact Hours -10 per week	0	0	10	6
	Prerequisite – Biochemistry, Microbiology, Bioprocess, Downstream process				
	Course Designed by– Dr.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES: - To facilitate the students to understand the current scenario in computing technology and present the research report on their findings as per the acceptable format.

COURSE OUTCOMES (COs)

CO1	List out the concept and objectives, nature, types and methods of project.
CO2	Choose the process and steps involved in preparation of project work, research gap
CO3	Practice the research design, and methodology , sampling techniques & sampling design

CO4	Calculate the statistical tools in the project for data analysis										
CO5	Measure the major findings, suggestions and conclusion										
CO6	Design the model for project report										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M								H
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

LIST OF EXPERIMENTS

1. SDS- Slab gel electrophoresis of immunoglobulins
2. Western blotting
3. Immunoelectrophoresis
4. Countercurrent Electrophoresis
5. Rocket Immunoelectrophoresis
6. Single radial immunodiffusion
7. Double immunodiffusion
8. Dot- ELISA
9. DEAE cellulose chromatography for IgG.

TEXT BOOKS:

1. Myers RL and Richard L Myers. Immunology A Laboratory Manual, 5th Ed.,McGraw-hills Higher Education, 1954.
2. Henrikk Joakim Stafseth, Stockten and Newman. A Laboratory Manual forImmunology, Burgesss, 2004.

REFERENCE BOOKS:

1. Lydyard P and Whelan A and Fanger M. Bios Instant notes in Immunology, 3rdEdition, Garland Science Publishers, 2011.
2. Delves PJ, Martin SJ, Burton DR and Roitt IM. Roitt's Essential Immunology, 12thEdition, Wiley Publishers, 2011.

Course Coordinator **HOD**

BMIE01	**MAJOR ELECTIVE I – MICROBIAL METABOLISM**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	3	2	0	4
	Prerequisite – Microbiology, Environmental biotechnology				
	Course Designed by – Dr.L.jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learners will get the knowledge about microbial metabolism. Learners will also know about waste water management

COURSE OUTCOMES (COs)

CO1	Remeber the fundamental knowledge of microbial metabolism
CO2	Understand about microbial metabolism

CO3	Apply the use of bioenergetics
CO4	Apply and learn about microbial physiology
CO5	Analyze about different macromolecule metabolism
CO6	Analyze about metabolic dysfunction

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				

4	Approval		Academic Council Meeting

UNIT I **6**

Bioenergetics:. Gibbs free energy, endergonic & exergonic reactions,. Standard state free energy changes-DG, DG^0 and DG'^0, Relationship between equilibrium constant and DG'^o, Feasibility of reactions. Simple problems, ATP-Structure, properties and energy currency of the cell, Importance of Coupled reactions, High energy compounds, simple problems. Introduction to Metabolism - Catabolism, anabolism, catabolic, anabolic and amphibolic pathways

UNIT II 6

Carbohydrate Metabolism: Introduction, Aerobic and anaerobic pathways: Glycolysis and its regulation , Gluconeogenesis and its regulation.TCA cycle, amphibolic & anaplerotic reactions. Electron Transport chain, Oxidative phosphorylation, & production of ATP, balance sheet of glucose oxidation, Oxidative stress., Pentose phosphate pathway (HMP shunt) Photosynthesis – 'light'

and 'dark' reactions

UNIT III 6

Lipid Metabolism: Beta – oxidations of saturated fatty acids. Ketone bodies, production during starving and diabetes Biosynthesis of fatty acids – Acetyl-CoA carboxylase reaction, Fatty acid synthase complex, biosynthesis of palmitate, energetics, Regulation of fatty acid biosynthesis. Biosynthesis of cholesterol, regulation.

UNIT IV 6

Amino Acid/ Nucleic Acid Metabolism: Biodegradation of amino acids – deamination, transamination, decarboxylation, urea cycle including its regulation. Biosynthesis of amino acids, Disorders of amino acid metabolism (phenylketonuria, alkaptonuria, Biologically active amines Recycling of Purine and Pyrimidine nucleotides by salvage pathways. Lesch-Nyhan syndrome & Gout.

Reference Books

1. Lehninger, Nelson and Cox, Principles of Biochemistry, 4th Edition, W.H.Freeman & Company, 2004. (T1)
2. Voet & Voet, Fundamentals of Biochemistry, Upgrade Edition, Wiley, 2002.

Course Coordinator **HOD**

BMIE02	**DAIRY TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Basic Biology at Secondary Education				
	Course Coordinator Name & Department:- Dr.L.Jeyanthy Rebacca & Biotechnology				

COURSE OBJECTIVES:-

Learners will be familiar with the different production methods of dairy and fermented foods. Learners will understand the indigenous milk products.

COURSE OUTCOMES (COs)

CO1	Recall the milk products and fermented foods.

CO2	Recognize the different types of each fermented products.
CO3	Apply the role of beneficial microbes in the production of fermented foods.
CO4	Analyze the therapeutic effects of fermented milk products.
CO5	Evaluate the importance of milk products in healthy lifestyle.
CO6	Create and design different production methodologies.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	CO1	H	M								
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				
4	Approval	Academic Council Meeting								

UNIT I **9**

Market milk – Collection, Transportation of milk – Clarification - Chilling – Homogenisation – Sterilization - Pasteurization – UHT processing of fluid milk.

UNIT II **9**

Preparation, types and defects – Butter, Ghee, Ice cream. AGMARK standards, Manufacture of milk powder - whole milk, skim milk powder, spray drying.

UNIT III **9**

Preparation of Cheese, Different types of Cheese, Manufacture of Dahi and Yoghurt, Therapeutic effects of fermented milk products.

UNIT IV **9**

Indigenous milk products and by products – Preparation of Khoa and Khoa based products, Peda, Gulab jamun, Rasagolla, Kulfi – utilization of skim milk – butter milk and whey.

UNIT V **9**

Cleaning and Sanitation – Sterilization agent - Can Washing - Manual & Mechanical washing – Packaging of milk & Milk Products – Packaging Material – Filling system – Aseptic Packaging.

TEXT BOOKS:

1. Sukumar de, 2000, "Outlines of Dairy Technology" Oxford University Press.
2. Bhattacharya A and Rajan RP, 2002, "An over view on Yogurt, beverage and food world"

REFERENCE BOOKS:

1. Andrews, 2004, "Biochemistry of Milk Products", Black rabbit books, 2nd ed.
2. Ananthakrishnan CP and Padmanabhan, "The technology of milk processing" Shrilakshmi Ppublications.

Course Coordinator **HOD**

BMIE03	**MAJOR ELECTIVE I - FUNDAMENTALS OF MICROBIAL REMEDIATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	3	2	0	4
	Prerequisite – Microbiology, Environmental biotechnology				
	Course Designed by – Dr.L.jayanthi Rebhaka/Microbiology				
COURSE OBJECTIVES :- Learners will get the knowledge about microbial remediation.Learners will also know about waste water management					
COURSE OUTCOMES (COs)					

CO1	Remeber the fundamental knowledge of bioremediation
CO2	Understand about bioaugmentation
CO3	Applythe use of microbes in solid waste management
CO4	Apply and learn about microbial leaching
CO5	Analyze about different pollutants
CO6	Analyze about waste water treatment

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION **6**

Bioremediation- process and organisms involved- Constraints and priorities of bioremediation. Major pollutants and polluted sites- Bioaugmentation; Ex-situ and in-situ processes; Intrinsic and engineered bioremediation.

UNIT II POLLUTANTS **6**

Pollutants and associated risks; Polyaromatic hydrocarbon pollution; organic pollutant degradation- Microbial aspects and metabolic aspects; Factors affecting the process; Recent developments.

UNIT III WASTE WATER TREATMENT **6**

Microbes involved in aerobic and anaerobic processes in nature- Water treatment- BOD, COD, dissolved gases, removal of heavy metals, total organic carbon removal; secondary waste water treatments; use of membrane bioreactor; aquaculture effluent treatment; Aerobic sludge and landfill leachate process; aerobic digestion.

UNIT IV SOILD WASTE MANAGEMENT 6

Composting of solid wastes, treatment of organic pollutants, anaerobic digestion: methane production and important factors involved, sulphur, iron and nitrate reduction, hydrocarbon degradation, dechlorination, nitroaromatic compounds degradation, bioremediation of dyes, bioremediation in paper and pulp industries; Aerobic and anaerobic digesters: design; various types of digester for bioremediation of industrial effluents; Pros and cons of anaerobic process.

UNIT V MICROBIAL LEACHING 6

Microbial leaching of ores- process, microorganisms involved and metal recovery with special reference to copper and iron, Biotransformation of heavy metals and xenobiotics, Petroleum biodegradation; reductive and aerobic dechlorination. A brief account of biodegradable plastics and super bug

TEXT BOOKS:

1. Pandey A, Lasroche C, Soccol C. R and Dussop C. G. Advances in Fermentation technology (2008). Asiatech publishers Inc

2. Mathuriya A. S. Industrial Biotechnology (2009) Ane Books Pvt. Ltd

Course Coordinator **HOD**

MAJOR ELECTIVE – II

BMIE04	**INDUSTRIAL WASTE TREATMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	3	2	0	4
	Prerequisite – Environmental biotechnology, Waste management				
	Course Designed by – Dr.S.Selvakumar/Microbiology				
COURSE OBJECTIVES :- Learner will get the knowledge on sources and characteristics of industrial wastewater and the learners will also learn the application of physio chemical and biological treatment methods for recovery, reuse and disposal					
COURSE OUTCOMES (COs)					
CO1	Remember the fundamental knowledge of the effluent discharge standards and waste minimization technology				

CO2	Understand the characteristics of industrial waste water and treatment methods										
CO3	Apply knowledge about conventional methods of treatment for industrial waste										
CO4	Apply various biological treatment methods										
CO5	Analyze the combined treatment of industrial and municipal wastes										
CO6	Analyze about various types of effluent released from industries										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION 6

Effects of industrial wastes on streams, land and air, waste water treatment plants, water quality criteria – effluent standards : Process modification, method and material changes, housekeeping etc., to reduce water discharges and strength of the waste and established recovery methods for bye products within the plant operations.

UNIT II CHARACTERISTICS OF WASTE 6

Characteristics of major industrial waste water (liquid wastes) Chemical Industries: Petrochemicals & refineries, pharmaceuticals. Apparel Industries: Textile, synthetic fibres, leather, paper-Agro Industries: Fertilizer Food Industries: Heat – packing pickles, canning poultry and eggs, distillers, sugar. Metallurgical Industries: Thermal power station, nuclear power plants.

UNIT III WASTE TREATMENT 6

Conventional methods of treatment and disposal of industrial wastes-Equalization and neutralization, separation of solids – sedimentation and filtrations

UNIT IV BIOLOGICAL TREATMENT 6

Removal of organic contents: Biological treatment methods, aerobic and anaerobic, digestion, tickling filters, stabilization ponds, activated sludge process – oxidation ditch.

UNIT V PHYSICOCHEMICAL TREATMENT 6

Physico Chemical Treatment Method – Neutralization, coagulation, flocculation, adsorption and precipitation. Combined treatment of industrial and municipal wastes

TEXT BOOKS:

1. EckenfalderW.W,"Industrial Water Pollution Control", McGraw Hill, New York, 1989

REFERENCES:

1. Arceivala S.J &ShyamAsolekarR,"Waste Water Treatment and Pollution Control Tata McGraw Hill, 1998.
2. Nelson Leonard Nemerow," Theories and practice of industrial waste treatment", Addison Wesley Pub. Co., 1963
3. World Bank Group "Pollution prevention and Treatment Hand Book" World Bank and UNEP Washington DC, 1998.

BMIE05	**PRODUCTION OF MICROBIAL BIOMASS**	**L**	**T**	**P**	**C**
	Total Contact Hours - 45	3	2	0	4
	Prerequisite – Microbiology, Environmental biotechnology				
	Course Designed by – Dr.S.Sharmila/Microbiology				
COURSE OBJECTIVES :- Learner will get knowledge on sources and characteristics of microbial biomass and its culture					
COURSE OUTCOMES (COs)					
CO1	Remember the fundamental knowledge of the effluent discharge standards and waste minimization technology				

CO2	Understand the characteristics of industrial waste water and treatment methods
CO3	Apply knowledge about conventional methods of treatment for industrial waste
CO4	Apply various biological treatment methods
CO5	Analyze the combined treatment of industrial and municipal wastes
CO6	Analyze about various types of effluent released from industries

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION **6**

Microbial cells as products for commercial use-Selection and Improvement of Strains for biomass production-Characteristics of Single-Cell Biomass: Composition, Nutritional Value and Toxicological Status-Formulation of media composition for Biomass Production

UNIT II BIOREACTORS **6**

Types of fermentation system fir Biomass Production: Batch Culture; Continuous Culture; Fed-Batch Culture; Mixed culture; General principle of culture maintenance and preparation: bacterial culture (lactic acid cultures; propionic acid culture; acetic acid bacteria)

UNIT II SINGLE CELL PROTEINS **6**

Single cell protein: microorganisms used; raw material used as substrate; condition for growth and production; nutritive value and uses of SCP- Baker's yeast; Production of probiotic biomass; and mold cultures- Mushroom production: cultivation of different types of mushroom; edible

mushroom; diseases of mushrooms therapeutic value of an edible mushroom; production of pectin and microbial conversion of woody biomass.

UNIT III MICROBIAL INOCULANTS 6

Microbial inoculants- Selection and establishment of nitrogen fixing bacteria- Production of Rhizobium, Azotobacter, Azospirilla, cyanobacteria and other nitrogen fixing bacterial cultures Quality control of bio inoculants; Phosphate solubilizing bacteria; mycorrhiza; plant growth promoting rhizobacteria (PGPR); Biocontrol microbial inoculants

UNIT IV MICRO AND MACRO ALGAE 6

Cyanobacterial and algal fuels; Fine chemicals (restriction enzymes etc) and nutraceuticals from algae; UV absorbing pigments Industrial products from macro algae - seaweed biotechnology; Bioweapons and Bioshields.

TEXT BOOKS:

1. Robert A Andersen. 2005. Algal Culturing Techniques. Academic Press
2. L. M. Prescott, J. P. Harley and D. A. Klein Microbiology-, McGraw Hill
3. N. J. Pelczar, S. Chand, R. Krieg. Microbiology- Tata McGraw Hill

REFERENCES:

1. Casida, Industrial microbiology-, L.E. New age international Ltd, Publishers New Delhi:

2. Frazier, Food microbiology. W.C. Tata McGraw Hill

BMIE06	**BIOCHEMICAL ENGINEERING**	**L**	**T**	**P**	**C**
	Total Contact Hours - 45	3	2	0	4
	Prerequisite – Microbiology, Biochemistry				
	Course Designed by – Dr.L.Jayanthi Rebhaka/Microbiology				

COURSE OBJECTIVES :-

Learner will get knowledge on biochemical engineering using microorganisms.Learners will also get an idea about production of various enzymes

COURSE OUTCOMES (COs)

CO1	Remember the fundamental knowledge of the effluent discharge standards and waste minimization technology

CO2	Understand the characteristics of industrial waste water and treatment methods
CO3	Apply knowledge about conventional methods of treatment for industrial waste
CO4	Apply various biological treatment methods
CO5	Analyze the combined treatment of industrial and municipal wastes
CO6	Analyze about various types of effluent released from industries

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION **6**

Material balances; Energy balances; Material and Energy balance together; Kinetics of enzyme catalyzed reactions.

UNIT II STOICHIOMETRY **6**

Growth stoichiometry- Kinetics of microbial growth and product formation in batch, Fed batch and continuous cultures; Sterilization of air and medium

UNIT III HEAT AND MASS TRANSFER **6**

Heat Conduction and Molecular Diffusion; Fluid Flow and Momentum Transfer; Laminar versus Turbulent Flow; Aeration and agitation; Power requirements for mixing; Mass and heat transfer in Biological reactions; Scale-up Principles.

UNIT IV BIOREACTORS DESIGN **6**

Types and of Bioreactors- Bioreactor design for microbial culture, animal cell culture, enzymatic reactions and waste treatment; Instrumentation and control of bioprocess.

UNIT V DOWNSTREAM PROCESSING 6

Downstream processing- Cell disruption: Mechanical and non-mechanical methods - Recovery and purification of products: Separation of insoluble products-filtration – Micro to Nano filtration, centrifugation, flocculation and coagulation-Separation of soluble products- liquid-liquid extraction, precipitation, adsorption, dialysis, reverse osmosis, chromatography-purification-crystallization and drying

TEXT BOOKS

1. Principles of Fermentation Technology by P. F. Stanbury, A. Whitaker, S. J. Hall. Publisher: Butterworth-Heinemann

2. Biochemical Engineering by S. Aiba, A.E. Humphrey and N.F. Millis. Publisher: University of Tokyo Press.

REFERENCE

1. Bioreaction Engineering Principles by J. Nielson and J. Villadsen Publisher: Plenum Press.

2. Bioprocess Engineering Basic Concepts by M.L. Shuler and F. Kargi. Publisher: Prentice Hall.

BBA011	**BUSINESS PROCESS OURTSOURCING - MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	**2**	**0**	**0**	**2**
	Prerequisite course – +2 studied in Higher Secondary Studies				
	Course Coordinator Name &Department: -Ms.D.K.Sowmiyalakshmi, Business Administration				

COURSE OBJECTIVES: -

To familiarize the students with the basic fundamentals of BPO.
To impart knowledge on types of BPO and call centers .
To enable the students on the concept Health care BPO & Transaction BPO.
To peep into the concept of Human Resource BPO and the career opportunities in BPO

COURSE OUTCOMES (COs)	
CO1	Underline the basic fundamentals of BPO.
CO2	Discuss the awareness about the models of BPO.

CO3	Initiate the concept of Health Care BPO.
CO4	Identify the elements of Transaction processing BPO.
CO5	Evaluate the career opportunities in BPO.
CO6	Formulate the challenges faced by BPO industry.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO 3
2	CO1	H	H						H	M	L
	CO2	M	L								
	CO3	L	H								
	CO4	H	H								
	CO5	H	H								
	CO6	M	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part III Project	Part V Extension Activity			
						✓					
4	Approval	Academic Council Meeting									

BPO MANAGEMENT

Unit I

Business Process Outsourcing – Basics – Benefits of BPO – Growth Drivers – BPO Models and Types of Vendors – Offshore BPO – Evolution Destinations – Challenges of Off shoring – BPO Companies in India.

Unit II

BPO Industry – Employment Opportunities – Employee Structure – Skill Set Required – Compensation Levels – Contact Centre BPO – Types of Call Centres – Technology – Components and working of a Call center – Issues and Problems – Case Study – Intelenet Global.

Unit III

Healthcare BPO – Structure of the American Healthcare Sector – Activity Profile – Future Trends and Threats – Case Study – Cbay Systems. Transaction Processing BPO - Elements of Back – Office Serivces – Financial Services – Insurance – Case Studies – Datamatics – Hinjuja TMT. Human Resource BPO – Reasons for outsourcing HR – Activities involved in HR BPO – HR Outsourcing Trends – Career in HR BPO – Emerging BPO Domains – Media and Entertainment BPO – Publishing BPO.

Text Books:-

Business Process Outsourcing Sarika Kulkarni Jaico Publishing House, Delhi 2005

Reference Books:-

BPO DIGEST Deepak Shikapur Ameya (Inspiring Books) 2004.

Course Coordinator HOD

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BBE002	**DESKTOP PUBLISHING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .

CO3	Discussthe basic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

Course Coordinator HOD

BCA001	**COMPUTER APPLICATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)	
CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PS O3**
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input		GRAPHICAL AND WEB DESIGNING	L	T	P	C

Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

Course Coordinator HOD

	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
O3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part I Tamil/Linguistic Course I	Part II Linguistic Course II	Part III Core	Part III Substream	Part III Project	Advanced Tamil/ EVS/VE/	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

Course Coordinator HOD

BCA003	**MULTIMEDIA**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO2**	**PS O3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

Course Coordinator HOD

BCA004	**NETWORKING AND MAINTENANCE**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part I Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**

Course Coordinator HOD

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	**CO1**	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2
Terminology, Starting a Website, HTML Coding

UNIT-3
HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

Course Coordinator HOD

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO2**	**PS O3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

ANIMATION
Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2
3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

Course Coordinator HOD

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

Course Coordinator HOD

BSC003	**COMPUTER PROGRAMMING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System – Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String – String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**

Course Coordinator HOD

BSC004	**COMPUTER TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

FACULTY OF ARTS & SCIENCE - CURRICULUM FORMAT

DEPARTMENT OF PHYSICS-B.Sc PHYSICS

Semester I:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL10X	Tamil *****/ Hindi /French	5	4	3	25	75	100
Part II	BEH101	English	5	4	3	25	75	100
Part III	BPS101	**Core – I -Properties Of Matter And Acoustics**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS102	**Core II-Heat and Thermodynamics**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS1L1	**PHYSICS PRACTICAL I**	4	2	3	40	60	100
	BPS103	First Allied – Mathematics I	5	4	3	25	75	100
		Seminar / Group Discussion	1					
		Total	**30**	**22**				**600**

Semester II:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL20X	Tamil / Hindi /French	4	3	3	25	75	100
Part II	BEH201	English	4	3	3	25	75	100
Part III	BPS201	**Core – III-Mechanics**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS202	**Core IV- Optics**	**4**	**4**	**3**	**25**	**75**	**100**
	BPS2L1	Core Lab II	4	2	3	40	60	100
	BPS203	First Allied –Mathematics II	5	4	3	25	75	100
Part IV	BCI204	Environmental Studies	2	2	3	25	75	100
	BBC206	Value Education	2	2	3	25	75	100
		Total	**30**	**24**				**800**

Semester III:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL30X	Tamil / Hindi /French	5	4	3	25	75	100
Part II	BEH301	English	5	4	3	25	75	100
Part III	BPS301	**Core – V- Electricity and Magnetism**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS3L1	Core Lab III	4	2	3	40	60	100
	BPS302	Second Allied –Chemistry I	5	4	3	25	75	100
	BPS3L2	Second Allied - Chemistry Lab I	4	2	3	25	75	100
Part IV	BPS3E1	Non Major Elective I – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.	2	2	3	25	75	100
		Total	**30**	**22**				**700**

Semester IV:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL40X	Tamil / Hindi /French	4	3	3	25	75	100
Part II	BEH401	English	4	3	3	25	75	100
Part III	BPS401	**Core – VI- Atomic and Nuclear Physics**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS4L1	Core Lab– IV	4	2	3	40	60	100
	BPS402	Second Allied – Chemistry II	5	4	3	25	75	100
	BPS4L2	Second Allied - Chemistry Lab II	4	2	3	25	75	100
Part IV	BPS4E2	Non Major Elective I – for those who studied Tamil under Part I c) Basic Tamil for other language students d) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for	2	2	3	25	75	100

		other languages in degree programme.						
	BPS4E3	Skill Based Elective I	2	2	3	25	75	100
		Total	**30**	**22**				**800**

Semester V:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part III	BPS501	**Core – VII Quantum Mechanics and Relativity**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS502	**Core – VIII- Basic Electronics**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS503	**Core – IX- -Crystal Physics**	**4**	**4**	**3**	**25**	**75**	**100**
	BPS5E4	**Major Elective – I Materials Science**	**4**	**4**	**3**	**25**	**75**	**100**
	BPS5L1	**Core Lab V – Physics lab**	**4**	**3**	3	40	60	100
	BPS5L2	Core Lab VI – Electronics I	4	3	3	40	60	100
Part IV	BPS5E5	Skill Based Elective – II	2	2	3	25	75	100
	BPS5E6	Skill Based Elective – III	2	2	3	25	75	100
		Total	**30**	**26**				**800**

Semester VI:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
	BPS601	**Core – X- Digital Electronics**	**5**	**4**	**3**	**25**	**75**	**100**
Part III	BPS602	**Core – XI –Solid state Physics**	**5**	**4**	**3**	**25**	**75**	**100**
	BPS6L1	Core Lab VII - Electronics II	6	3	3	40	60	100
	BPS6P1	Project	10	8				200
	BPS6E7	Major Elective – II- Nano Science and Nano Technology	4	4	3	25	75	100
Part IV	BPS6V1	Extension Activity		1				
		Total	**30**	**24**				**600**

		GRAND TOTAL		**140**				**4300**

Note :

	Internal Marks	**External Marks**
1. Theory	**25**	**75**
2. Practical	**40**	**60**

3. *** Examination at the end of the next semester

LIST OF SKILL BASED ELECTIVES (Choose any three courses – one in semester IV & two in semester V):

S.NO	Sub Code	Sub Name	L	T	P	C
1	**BBA011**	BPO Management	**1**	**0**	**2**	**2**
2	**BBE002**	Desk Top Publishing	**1**	**0**	**2**	**2**
3	**BCA001**	Computer Application	**1**	**0**	**2**	**2**
4	**BCA002**	Graphical and Web Design	**1**	**0**	**2**	**2**
5	**BCA003**	Multimedia	**1**	**0**	**2**	**2**
6	**BCA004**	Networking and Maintenance	**1**	**0**	**2**	**2**
7	**BCA006**	Web Designing	**1**	**0**	**2**	**2**
8	**BSC001**	Animation	**1**	**0**	**2**	**2**
9	**BSC002**	Computer Hardware and Networking	**1**	**0**	**2**	**2**
10	**BSC003**	Computer Programming	**1**	**0**	**2**	**2**
11	**BSC004**	Computer Technology	**1**	**0**	**2**	**2**

	TAMIL – I	L	T	P	C
BAL101	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				

	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை										
COURSE OBJECTIVES :- இருபதாம் நூற்றாண்டு இலக்கியம் மற்றும் மொழி வரலாற்றை அறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	இருபதாம் நூற்றாண்டு கவிதைஇலக்கியத்தைப் பற்றி அறிவர்										
CO2	இருபதாம் நூற்றாண்டுகட்டுரைஇலக்கியத்தைப் பற்றி அறிவர்										
CO3	இருபதாம் நூற்றாண்டுசிறுகதைஇலக்கியத்தைப் பற்றி அறிவர்										
CO4	இக்கால இலக்கிய வரலாறுபற்றி அறிவர்										
CO5	மொழி வரலாறு – செம்மொழிபற்றி அறிவர்										
CO6	தற்கால இலக்கியத்தில் ஆழ்ந்த அறிவைப் பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு -1 **இருபதாம் நூற்றாண்டு கவிதைகள்** 9

1. பாரதியார் -யாமறிந்த மொழிகளிலே 2. பாரதிதாசன்-நீங்களே சொல்லுங்கள்!
3. கண்ணதாசன் -அழுகை 4. பெருஞ்சித்திரனார்- தமிழா நீ எங்கே?
5. தமிழ் ஒளி - (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல் ரகுமான் - கல்லின் காயம்

அலகு -2 **உரைநடை** (I) 4 **கட்டுரைகள்** 9

1. மனிதனும் அழகும் - திரு.வி.க. 2. வீட்டிற்கோர் புத்தகசாலை-அறிஞர் அண்ணா
3. பொறியியல் தமிழ் - நா. மால் முருகன்
4. தேசியமறை திருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 **உரைநடை** (II) **சிறுகதை** - 4 **கதைகள்** 9

1. நட்சத்திரக் குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம் – ஜெயகாந்தன்4. கடவுளும் கந்தசாமிப் பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 **இக்கால இலக்கிய வரலாறு** 9

1. இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு
2. இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு
3. இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

அலகு -5 **மொழி வரலாறு** 9

1. தமிழ்மொழி வரலாறு 2. உலகச் செம்மொழிகளின் வரலாறு
3. தமிழுக்கும் உலகச் செம்மொழிகளுக்குமான உறவு வரலாறு

பாடநூல்

1. இருபதாம் நூற்றாண்டு கவிதை, உரைநடை, சிறுகதை (அலகு-3) பாரத் பல்கலைக்கழக வெளியிடு

பார்வை நூல்கள்

1. சு. ஆனந்தன்,"தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ் அமைப்புற்றவரலாறு", வியாபார ஐக்கிய சங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ் வரலாறு", பூம்புகார் பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல் தாய்மொழி", பூம்புகார் பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டு விளக்கம்" ,பூம்புகார் பதிப்பகம்,2006

BEH101	**ENGLISH I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				

	Course Coordinator Name & Dept: Mrs. SHEEBA - English

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019
3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

BPS101	**CORE 1- PROPERTIES OF MATTER AND ACOUSTICS**	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Designed by-Department of Physics				

COURSE OBJECTIVES:-	
To understand the properties of matter for liquid , solids, gases and study of ultra sound	
COURSE OUTCOMES (COs)	
CO1	Remembering the basics of stress, strain, elastic constant, surface tension and viscosity
CO2	To learn the oscillation of time period using beam and microscope
CO3	Evaluate the raising of capillary in different types of experiments
CO4	Understand the flow of water and kerosene using viscosity of liquid and co-efficient
CO5	Observe the sound topics include intensity of noise pollution and decibel using frequency
CO6	Understand the production and application of ultrasonic sound

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS101 - PROPERTIES OF MATTER AND ACOUSTICS

Unit 1 ELASTICITY **12**

Elasticity- Hooke's Law – three elastic moduli and Poisson's ratio- Relation between elastic constants and Poisson's ratio- Energy stored- Twisting couple on a cylinder- Torsional pendulum (with and without weights)- Bending of beams- Bending

moment- Cantilever loading- Transverse vibrations of cantilever-Non- uniform and uniform bending of a beam-Koenig's method

Unit 2. VISCOSITY AND LOW PRESSURE **12**

Poiseuilles flow- Newton's law- Stoke's fall- Rotation viscometer- Ostwald viscometer- Meyer's formula for viscosity of gas-Rankine's method- Effect of temperature and pressure on viscosity- Air pump- Rotary oil pump-Mercury diffusion pump-McLeod gauge-Pirani gauge- Knudsen Gauge.

Unit 3. SURFACE TENSION **12**

Molecular interpretation- surface energy- Pressure difference across a curved surface- Excess pressure in liquid drops and air bubbles-Molecular forces- Shape of liquid meniscus in capillary tube-Angle of contact- Capillary rise and energy consideration- Variation of surface tersion with temperature – Angel of contact and surface tension of mercury - Jaeger's method- Quincke's drop

Unit 4. WAVES AND OSCILLATIONS **12**

Longitudinal and transverse waves- Equation of Wave motion- Plane progressive wave- speed of transverse wave on a string-Energy in wave motion- Superposition of waves- Interference, reflection and transmission of wave- Standing waves normal modes of a string- Resonance-Sound Waves in gases- Organ pipes- Beats- Doppler effect.

Unit 5. ULTRASONICS AND ACOUSTICS **12**

Ultrasonics - Piezo-electric effect-Piezo-electric generator- Magneostriction effect- Magnetostriction oscillator-Detection and application of ultrasonics – Acoustics- Reverberation time and its measurement- Sabine's formula-Absorption coefficient and its determination- Condition for good acoustical design of an auditorium- Noise and its measurement- Noise reduction- sound insulation

TEXT BOOKS:

1. D.S Mathur- Elements Of Properties Of Matter: S.Chand And Co
2. Brij Lal And N. Subrahmanyam- Properties Of Matter :- S.Chand And Co (2003)
3. N.Subrahmanyam And Brij Lal- A Text Book Of Sound: Vikas Publishing House (Second Revised Edition- 1995)

BOOKS FOR REFERENCE:

1. H.R Gulati- Fundamental Of General Properties Of Matter- R.Chand And Co- Fifth Edition (1977)
2. N.K Bajaj- The Physics Of Waves And Oscillations- Tata Mcgraw-Hill (1988)
3. A.P French- Vibration And Waves- Mit Introductory Physics- Arnold-Heinmann India (1973)
4. Satya Prakash And Akash Saluja- Oscillations And Waves- Pragati Prakashan (2002)

BPS102	**CORE 2 - HEAT AND THERMODYNAMICS**	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Designed by-Department of Physics				

COURSE OBJECTIVES:-

To understand the thermodynamics ,concept of energy and specific heat capacity of solids, liquids and gases

COURSE OUTCOMES (COs)

CO1	Analyze the temperature and specific heat capacity of solid, liquid and gases
CO2	Evaluation about transmission of heat and radiation black body radiation
CO3	Understand the Kinetic theory of gases and Vander Waals force
CO4	To learn the Law of thermodynamic and adiabatic process
CO5	Understand the concept of entropy, energy and Kelvin effect
CO6	Knowledge of theory and practical concepts of thermal conductivity and thermodynamics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS102 – HEAT AND THERMODYNAMICS

UNIT I - INTRODUCTION TO HEAT **12**

Basic Definitions – Newton's law of cooling – Specific heat of a liquid Calendar and Barne's continuous flow method – Two specific heats of a gas – Specific heat of a gas by Jolly's differential steam calorimeter – Regnault's method – Dulong and Petit's law –Einstein's theory of specific heat - Debye's theory of specific heat - variation of specific heat and atomic heat with temperature.

UNIT II - TRANSMISSION OF HEAT **12**

Conduction – Coefficient of the thermal conductivity – Rectilinear flow of heat along a metal bar - Radial flow of heat - Spherical shell method – thermal conductivity of rubber – Lee's disc method to find thermal conductivity of bad conductor. Conduction – Radiation – Black body – Wein's Law – Raleigh Law and its significance –Jean's Law – Stefan's law – Experimental Determination of Stefan's constant – Mathematical derivation of Stefan's law.

UNIT III - KINETIC THEORY OF GASES **12**

Maxwell's law of distribution of molecular velocities – Experimental verification of molecular velocities – Equilibrium speed distribution of velocities - Mean free path of gaseous molecules – Transport phenomena – Diffusion of gases – Viscosity and thermal conduction of gases – Vander walls equation of state – Determination of van der Walls constant – Comparison of vander Walls equation with Andrews experiment - Relation between Vander Wall's constant and critical constants.

UNIT IV - LAWS OF THERMODYNAMICS **12**

First law of thermodynamics – Isothermal and Adiabatic process – Gas equation during an adiabatic process – Work done in an adiabatic expansion of gas – Equation of an adiabatic curve – Isothermal processes – Determination of $\gamma$by Clement and Desorme's method – Second law of thermodynamics – Concept of Carnot's engine- Working efficiency of Carnot's engine – Carnot's refrigerator – Carnot's Theorem and its significance.

UNIT V - CONCEPT OF ENTROPY **12**

Third law of thermodynamics - Concept of Entropy - Temperature - entropy diagram – entropy of perfect gas - Entropy Change in a reversible process and in an irreversible process – Entropy of a perfect gas – increase of entropy in any irreversible process – Thermo dynamic functions – Maxwell's thermodynamics relations and applications – Theory of Joule Kelvin effect - Claussius and Clapeyron equation - Specific Heat Relation.

TEXT BOOKS

1. Brijlal, N. Subrahmanyam and P. S. Hemne, Heat,Thermodynamics and Statistical Physics, Revised Edition, S. Chand and Company, 2010.
2. Richard H Dittman and Zemansky MW, Heat and Thermodynamics, 3Special Edition, McGraw Hill, 2008.

REFERENCES

1. Michael J. Moran, Howard N. Shapiro, Daisie D. Boettner and Margaret Bailey, Fundamentals of Engineering Thermodynamics, John Wiley and Sons, 2011.
2. D.S. Mathur, Heat and Thermodynamics, S. Chand and Company, 2006.
3. Kittel C and Kroemer H, Thermal Physics, W. H. Free man, New York, 1980.
4. Stephen Blundell and Katherine M. Blundell, Concepts in Thermal Physics,Oxford University Press, 2006.
5. Anandamoy Manna, Heat and Thermodynamics, Dorling Kindersely Pvt Ltd,2011.

BPS1L1	**PHYSICS PRACTICAL I**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				

	Course Designed by-Department of Physics

COURSE OBJECTIVES:-

To gain the practical knowledge of measuring tools, bending of beams, time period of pendulum and surface tension of different liquids

COURSE OUTCOMES (COs)

CO1	Handling of basic practical tools such vernier, screw gauge and microscope
CO2	Developing technical skills
CO3	Understand the concept of material science.
CO4	Understand the equations with real coefficients of different modules
CO5	To gain the knowledge of instrumentation techniques
CO6	Verification of laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS1L1- PHYSICS PRACTICAL I

Objective:-It is aimed at exposing the under graduate students to the technique of handling simple measuring instruments and also make them measure certain mechanical and thermal properties of matter.

1) Young's modulus - Non-uniform bending (Pin and microscope).
2) Rigidity modulus of a wire -Torsional Pendulum(without mass)
3) Rigidity modulus of a wire -Torsional Pendulum(with mass)
4) Compound bar pendulum- g and K
5) Surface tension and interfacial surface tension by drop weight method
6) Sonometer- frequency of a tuning fork
7) Potentiometer- Calibration of low range voltmeter
8) Coefficient of viscosity of a liquid by Poiseuille's flow (using burette)

BPS103	**FIRST ALLIED MATHEMATICS - I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.P.Sumathi & Mathematics				

COURSE OBJECTIVES :-

Knowledge and understanding are fundamental to studying mathematics and form the base from which to explore concepts and develop problem-solving skills.

COURSE OUTCOMES (COs)

CO1	Understand about the importance of algebraic functions
CO2	To explain about the theory of equation in mathematical derivation
CO3	Study about the importance of the matrices
CO4	To explain detail about the Trigonometric functions
CO5	Study about the differential calculus using various concepts
CO6	State and explain to the student to understand all concepts thoroughly.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/ Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H						H		
	CO2	H	H								
	CO3	H	M								
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT-I : ALGEBRA **12**

Partial Fractions, Binomial, Exponential and logarithmic Series (without Proof) - Summation -Simple problems

UNIT-II : THEORY OF EQUATIONS **12**

Polynomial Equations with real Coefficients - Irrational roots - Complex roots, Transfo0rmation of equation by increasing or decreasing roots by a constant - Reciprocal equations - Newton's method to find a root approximately - Simple problems.

UNIT-III: MATRICES **12**

Symmetric - Skew-Symmetric - Orthogonal and Unitary matrices - Rank of a matrix - Consistency of equations - Eigen roots and Eigen vectors – Cayley Hamilton theorem (without proof)-Verification and computation of inverse matrix.

UNIT-IV: TRIGONOMETRY **12**

Expansions of sinn θ, cosn θ, sinnθ, cosnθ, tannθ - Expansions of sin θ, cos θ, tan θ in terms of θ - Hyperbolic and inverse hyperbolic functions - Logarithms of complex numbers.

UNIT-V: DIFFERENTIAL CALCULUS **12**

Derivatives.n-th derivatives - Leibnitz theorem (without proof) and applications – Jacobians - Concepts of polar

co-ordinates-Curvature and radius of curvature in Cartesian co-ordinates.

TEXT BOOKS

1. P.Duraipandian and S.Udayabaskaran, "Allied Mathematics, Vol. I & II", Muhil Publishers, Chennai.(1997)
2. 1. P.Balasubramanian and K.G.Subramanian, , "Ancillary Mathematics. Vol. I & II". Tata McGraw Hill, New Delhi. 1997
3. S.P.Rajagopalan and R.Sattanathan, "Allied Mathematics .Vol. I & II", Vikas Publications, New Delhi. 2005
4. P.R.Vittal, "Allied Mathematics", Margham Publications, Chennai. 2003

Books for Reference:

1. S. Narayanan and T.K. ManickavasagamPillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.

2. Allied Mathematics by Dr. A. Singaravelu.

SEMESTER II

	TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3

BAL201		Prerequisite course – TAMIL – I									
		Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை									
COURSE OBJECTIVES :- சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	சிற்றிலக்கியமான தூது, பள்ளு , குறவஞ்சி பற்றி அறிந்துகொள்வர்										
CO2	சைவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்										
CO3	வைணவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்										
CO4	பௌத்த, இசுலாம், கிறித்துவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்										
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறுபற்றி அறிந்துகொள்வர்										
CO6	சிற்றிலக்கியம் மற்றும்சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 9

அழகர்கிள்ளைவிடுதூது - 1 - 20

முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35

திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 9

அற்புதத்திருவந்தாதி - 1 - 5

திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10

மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 9

பெரியாழ்வார் - முதல்திருமொழி - 1 - 10

ஆண்டாள் - திருப்பாவை - - 1 - 10

தொண்டரடிப்பொடிஆழ்வார் - திருமாலை - 1 - 5

அலகு4 9

ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10

பராபரக்கண்ணி - குணங்குடிமஸ்தான்சாகிபு - 1 - 20

இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 9

சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாட நூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English				

COURSE OBJECTIVES:- To have a better understanding of the English language skills and its implementation it in day to day life activities.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb – Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

BPS201	**CORE 5 - MECHANICS**	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr E. Thirumal &Department of Physics				

COURSE OBJECTIVES:-

To understand the Mechanics, dynamics, solid, pressure, energy and machine.

COURSE OUTCOMES (COs)

CO1	Understand the basics of mass, velocity, particle and pendulum.
CO2	Analyze the hydrodynamics and hydrostatics
CO3	Evaluate the Atwood machine, D'Alembert principle
CO4	Understand the concepts of dissipative force and simple pendulum.
CO5	Develop the knowledge about Hamiltonian function and central force field.
CO6	Knowledge of theory and practical concepts different types of mechanical systems

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			

	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)		Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS201 – MECHANICS

UNIT I- DYNAMICS **12**

Rigid body - moment of inertia - radius of gyration - moment of inertia of a solid cylinder, cylindrical shell, solid sphere, spherical shell, hollow sphere with external and internal radii - Compound pendulum - theory - equivalent simple pendulum - reversibility of centers of suspension and oscillation - determination of g and K - Kater's pendulum

UNIT II- STATICS AND HYDROSTATICS **12**

Centre of gravity - centre of gravity of a solid and hollow tetrahedron, solid and hollow hemisphere, solid cone centre of pressure - centre of pressure of a vertical rectangular lamina - vertical triangular lamina

Laws of floatation - meta centre - meta centric height of a ship - atmospheric pressure and its variation with altitude.

UNIT III- ROCKETS AND SATELLITES **12**

Rockets and Satellites - basic principles of rocket motion - rocket equation, thrust and acceleration - escape velocity - multistage rockets - liquid, solid and cryogenic - propellant rockets - space shutter -

orbital velocity - launching of a satellite, types of satellite orbits - theory of Geosynchronous satellites - trajectory adjustments - launch site tracking, radio televity, block diagram of satellite and earth space probes - exploration of solar systems.

UNIT IV- CLASSICAL MECHANICS I **12**

Lagrangian formulation of classical mechanics - Mechanics for a system of particles - Generalised co-ordinates - transformation equations - configuration space - Principle of virtual work - D'Alembert's principle - Lagrange's equation - Applications of Lagrange's equation –Simple pendulum - Atwood's machine - Bead sliding on a uniformly rotating wire

UNIT V- CLASSICAL MECHANICS II **12**

Hamiltonian formulation of classical mechanics - phase space - Hamiltonian function - Hamilton's canonical equations of motion - Applications of Hamilton's equations of motion - Simple pendulum - Compound pendulum - linear harmonic oscillator.

Books for study:

1. Mechanics and mathematical methods by R Murugeshan, S Chand & Co. Pvt. Ltd., New Delhi, 1990
2. Elements of mechanics by Gupta
3. Dynamics by Naranamurthi, National Publishing company, Chennai.
4. Classical Mechanics by Gupta Kumar and Sharma,
5. Classical Mechanics by B D Gupta and Sathya Prakash, Kedar Nath Ram Nath & Co.,

Books for Reference:

1. Mechanics by D S Mathur
2. Classical Mechanics by Goldstein, Narosa

BPS202	**CORE 5 - OPTICS**	L	T	P	C
	Total contact Hours-60	4	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr E. Thirumal &Department of Physics				

COURSE OBJECTIVES:-

To understand the interference, diffraction, polarization of light using different optical tools and their applications

COURSE OUTCOMES (COs)

CO1	Understand the geometrical optics using prism, lenses and optical tools etc.,
CO2	Analyze the Airwedge and Michelson's interferometer
CO3	Understand the diffraction, grating, telescope and microscope and their applications
CO4	Understand the polarizer, analayzer and optical activities
CO5	Knowledge of Laser-ruby laser, He-Ne laser
CO6	Knowledge of theory and practical concepts different types of optical systems

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS202 -- OPTICS

Unit 1- Geometrical Optics **12**

Matrix method in ray optics - Effect of translation, refraction - Thick and thin lens formulae - Unit planes - Nodal planes - System of two thin lenses Lens - defects of images - aberrations - Spherical aberrations of a single surface -Astigmatism - Curvature of field - Distortion -Abbe's sine condition - Chromatic aberrations – Huygen's eyepiece – Ramsden's eyepiece - Dispersive power of a prism – Cauchy's formula – Combination of prisms to produce dispersion without deviation – deviation without dispersion.

Unit 2 -Interference **12**

Fresnel's biprism, Fresnel's mirrors and Lloyd's single mirror experiments - Achromatic fringes - Interference in thin films (from reflected and transmitted light) -Fringes in wedge shaped films -Reflective and antireflective coatings - Michelson's interferometer - Determination of wavelength and refractive index -Fabry Perrot etalon (qualitative) .

Unit 3 -Diffraction **12**

Rectilinear propagation of light - Zone plate - Fresnel diffraction - Diffraction at circular aperture, circular disc and a straight edge - Fraunhofer diffraction - Diffraction at a single and double slit - Missing orders in double slit - Theory of diffraction grating - Determination of wavelength - Dispersive power - Rayleigh's criterion and resolving power of a prism, grating, telescope and microscope .

Unit 4 - Polarization **12**

Plane of polarization - Polarization by reflection - Brewster's law - Pile of plates- Polarization by refraction - Malu's law - Double refraction - Nicol prism - Huygen's explanation of double refraction - Elliptically and circularly polarized light -

Quarter and half wave plates - Production and detection of plane, elliptically and circularly polarized light - Optical activity - Fresnel's theory - Specific rotation - Laurent's half shade polarimeter.

Unit 5 - Laser and fiber optics **12**

Communication – Non-linear optics – Basic ideas – second harmonic generation - Laser – Population inversion – metastable state – laser action – components of a laser – Nd - YAG laser – He - Ne laser – CO2 laser – application of laser in industry and medicine – Fibre optics – Principle of transmission of light through optical fiber – numerical aperture – acceptance angle – types of fiber – single mode fiber – multi mode fiber – step index fiber – graded index fiber – application of fiber – sensors of fiber optic.

TEXT BOOKS:-

1. Optics, Ajoy Ghatak, Tata McGraw Hill Co. (12th edition) (For Matrix methods)
2. Fundamental of Optics, Jenkins and White, McGraw Hill (for Aberrations, Optical Instruments and Quantum Optics)
3. A Text Book of Optics, Subrahmanyam and Brijlal, S. Chand and Co. (22nd edition) (for wave Optics)
4. Optics by Khanna D.R. & Gulati H.R., Chand & Co., Pvt. Ltd., New Delhi.

BOOKS FOR REFERENCE:-

1. Optical Physics, S.G. Lipson, H. Lipson and D. S. Tannhauser (3rd edition) Cambridge University Press
2. Optics, Miles V. Klein and Thomas E. Furtak (2nd edition) John Wiley & Sons
3. Text Book of Optics - Chakraborty, CBS publications.

WEBSITE REFERENCES FOR OPTICS

http://sky.net.co/physics/optica.html
http://www.sparknotes.com/physics/optics/geom/

BPS2L1	**CORE 6 - GENERAL LAB II**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr E. Thirumal &Department of Physics				

COURSE OBJECTIVES:-

To gain the practical knowledge of measuring tools, bending of beams, time period of pendulum and surface tension of different liquids

COURSE OUTCOMES (COs)

CO1	Applying theoretical knowledge in practical experiments
CO2	Developing technical skills to collect data and analyze the results
CO3	Understand the internal properties of given material
CO4	To resolve the equations, data's and graphs with real-timeexperiments
CO5	To gain the knowledge ofinstrumentation techniques
CO6	To acquire fundamental laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS2L1 -GENERAL LAB II

1) Young's modulus - Uniform bending (Pin and microscope)
2) Thermal conductivity of good conductor- Forbe's method.
3) Thermal conductivity of bad conductor- Lee's disc
4) Method of Mixtures- Latent Heat of vaporisation of Steam.
5) Specific heat capacity of a solid – Method of mixtures (Barton's correction)
6) Air wedge- Thickness of thin wire.
7) velocity of sound and compressibility of liquid by ultrasonic interferometer
8) Potentiometer – Internal Resistance

9) Determination of Acceptance angle in an Optical Fiber

TEXT BOOKS:-

1. C.C Ouseph, G.Rangarajan- A Text Book of Practical Physics- S. Viswanathan Publisher-Part I (1990)
2. C.C Ouseph, C.Rangarajan, R.Balakrishnan- A Text Book of Practical Physics- S.Viswanathan Publisher-Part II (1996)

BOOKS FOR REFERENCE:-

1. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002)

BPS203	**FIRST ALLIED MATHEMATICS –II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	1	0	4
	Prerequisite course – Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Dr.P.Sumathi & Mathematics				

COURSE OBJECTIVES :-

To identify methods appropriate for solving problems. Apply methods to specific problems.

COURSE OUTCOMES (COs)

CO1	Understand about the relation and functions
CO2	To explain about the logic connectivity of the mathematical functions
CO3	Study about the importance of vector analysis
CO4	To explain detail about the steps involved in the differential equations
CO5	Study about the differentiation
CO6	State and explain to the student to understand all concepts thoroughly.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	H								
	CO2	H	H								

	CO3	H	M						H		
	CO4	H	M								
	CO5	M	M								
	CO6	H	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I - SETS, RELATIONS AND FUNCTIONS **12**

Sets- Sets- representation of sets- Types of sets- Operation on sets- Venn diagram. Relation- Types of relation- Equivalence relation. Function- types of functions- Composite of two functions- Composite of three functions.

UNIT II - MATHEMATICAL CONNECTIVES LOGIC **12**

Statements- Connectives- Conjunction- Disjunction- Negation- Tautology contradiction- Logical equivalence- tautological implications- arguments- validity of arguments – Normal forms – Principal disjunctive normal form - Principle conjunctive normal form.

UNIT III - VECTOR ANALYSIS **12**

Scalar and Vector fields - Gradient, Divergence and Curl - Equations of motion in the vector notation - equations of motion (components) in Cartesian coordinates and spherical polar coordinates - equation of motion in the polar coordinates.

UNIT IV - - DIFFERENTIAL EQUATION **12**

Differential Equation - Second order Differential Equation with constant coefficient. Problem based on R.H.S: e^{ax} ,x^n, $Sinax, Cosax$.

UNIT V - DIFFERENTIATION **12**

Simple problems only – Maxima and minima of functions of single variable – Radius of curvature (Cartesian co–

ordinate) – Partial differentiation – Euler's theorem.

TEXT BOOKS

1. Veerarajan. T, "Discrete Mathematics", 7 th Edition, Tata McGraw hill, 2006.[Unit I & II]
2. KayalalPachaiyappa & P.Duraipandian ,"Vector Analysis", S.Chand Publishing, 2014.
3. Smith &Bradlley "Calculus", 4th Edition, PHI 2007. [Unit IV – V]

Books for Reference:

1. S. Narayanan and T.K. ManickavasagamPillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.

2. Allied Mathematics by Dr. A. Singaravelu.

BCI204	**Environmental Sciences**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES :-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and abiotic ecosystem.

COURSE OUTCOMES (COs)

CO1	Remember the fundamental concept of environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Understand the various environmental pollution, effects and prevention.
CO4	Apply the environmental legislations and environmental production act.
CO5	Apply the human rights, value education, environment and human health: women and child welfare, public awareness
CO6	Analyze the local area, local polluted site and local simple ecosystem.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L	H			H		H		
	CO2	H	L	H			H				
	CO3	H	L	H			H				
	CO4	H	L	H			H				
	CO5	H	L	H			H				
	CO6	H	L	H			H				
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

Unit – I: Introduction to Environmental Sciences: Natural Resources: 6

Environmental sciences – relevance – significance – public awareness – forest resources – water resources – mineral resources – food resources – conflicts over resource sharing – exploitation – land use pattern – environmental impact – fertilizer – pesticide Problems - case studies.

Unit – II: Exosystem, Biodiversity and its conservation: 6

Ecosystem – concept – structure and function – producers, consumers and decomposers –food chain – food web – ecological pyramids – energy flow – forest, grassland, desert and aquatic ecosystem – definition – genetic, species and ecosystem diversity – biodiversity – definition – genetic, species and ecosystem diversity – values and uses of biodiversity – biodiversity at global, national (india) and local levels – hotspots, threats to biodiversity –conservation of biodiversity – insitu and ex-situ.

Unit – III: Environmental Pollution and Management 6

Environmental pollution – causes – effects and control measures of air, water , marine, soil, solid waste. Thermal, nuclear pollution and disaster management – floods, earth quake, cyclone and land slides, role of individuals in prevention of pollution – pollution case studies.

Unit – IV: Social issues – Human population: 6

Urban issues – energy – water conservation – environmental ethics – global warming – resettlement and rehabilitation issues – environmental legislations – environmental production act. 1986 – air, water, wildlife and forest B.C.A.: syllabus (CBCS) conservation act - population growth and explosion – human rights and value education – environmental health – HIV/AIDS – role of it in environment and human health – women and child welfare – public awareness – case studies.

Unit – V: Field Work:

Visit to a local area / local polluted site / local simple ecosystem – report submission.

Text book:

1. K. Kumarasamy, A. Alagappa Moses and M. Vesanthy, 2004, Environmental Studies, Bharathidasan University Pub, 1, Trichy.
2. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
3. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub., Trichy.

Reference book:

1. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
2. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub. Trichy.
3. G. TylerMiller, Scott Spoolman, 2018, Environmental science, 16th edition.

Course Coordinator **HOD**

BBC206	**VALUE EDUCATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name & Department:- Ms. G. Vinothini, Commerce				

COURSE OBJECTIVES:-

- To enable the students to understand the Social values.
- To provide knowledge on the features for life.
- To acquire the knowledge on Human rights.
- To impart the knowledge on Environment and Ecological balance.
- To educate the knowledge on Social evils.

COURSE OUTCOMES (COs)

CO1	List out the Formation and Essential Elements of Contract.
CO2	Determine the Self esteem, duties and responsibilities of individuals, Social values
CO3	Apply to create peace and non violence and Dr. APJ Abdul Kalam's ten points for Enlightened citizenship
CO4	Determine the Environment and Ecological balance
CO5	Measure the Knowledge on Environmental conservations and enrichment
CO6	Formulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	H	H	L	M	H	M	H		
	CO2	H	M	H	M	L	H	H			
	CO3	H	L	M	M	H	H	L			
	CO4	M	H	H	H	H	L	H			
	CO5	H	M	H	M	M	L	H			
	CO6	M	M	H	H	H	H	L			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	Approval	47th Academic Council Meeting

UNIT I **6**

Value education: Definition- relevance to present day – concept of human values – self introspection – Self esteem- duties and responsibilities of individuals- Social values- role of media in value building**.**

UNIT II **6**

Salient features for life: Truth, commitment,, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity and inclusiveness, Team work- positive creative thinking.

UNIT III **6**

Human rights: Universal declaration of Human rights- human rights violation – National integration – peace and non violence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship

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UNIT IV **6**

Environment and Ecological balance: Interdependent of all being – living and non living – the binding of man and nature – Environmental conservations and enrichment.

UNIT V **6**

Social evils : Corruption – cyber crime, terrorism, Alcoholism, Drug addiction, Dowry – Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.

TEXT BOOK

1. N. Arumugam, S. Mohana, Lr. Palkani- value based education- Saras Publication, 2009
2. DN Ghose, Value Education- dominant publishers, 2005
3. M.G. Chitakra, Education and Human values, A.P.H Publishing Corporation. New Delhi

REFERENCE BOOKS

1) For Life, for the future: Reserves and Remains – UNESCO Publications.
2) Values, A Vedanta kesari presentations, Sri Ramakrishna Math, Chennai

Course Coordinator **HOD**

SEMESTER – III

BAL301		TAMIL – III			L	T	P	C			
		Total Contact Hours – 45			3	0	0	3			
		Prerequisite course – TAMIL –II									
		Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை									
COURSE OBJECTIVES :- காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தைஅறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	ஐம்பெரும் காப்பியங்களைபற்றி அறிவர்										
CO2	பிற்கால காப்பியங்களைபற்றி அறிவர்										
CO3	முக்கால நீதி இலக்கியங்களைபற்றி அறிவர்										
CO4	பிற்கால நீதி இலக்கியங்களைபற்றி அறிவர்										
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றைபற்றி அறிவர்										
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 9

சிலப்பதிகாரம்-இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219

மணிமேகலை- சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115

சீவகசிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம்- 851 - 860

அலகு2 9

கம்பராமாயணம்- கம்பர்- அயோத்தியகாண்டம்- கங்கைப்படலம் - 10

தேம்பாவணி- வீரமாமுனிவர்- நாட்டுப்படலம் - 10

சீறாப்புராணம்-உமறுப்புலவர்--மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 9

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10
நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10
இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 9

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி- சிவப்பிரகாசர் - 8,12,18,24,39
புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 9

காப்பியஇலக்கியவரலாறு , நீதிஇலக்கியவரலாறு

பாட நூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

BEH301	**ENGLISH- III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills..

	COURSE OUTCOMES (COs)
CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message -Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

	CORE 7 - ELECTRICITY AND MAGNETISM	L	T	P	C

BPS301	Total contact Hours-60	5	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr E. Thirumal / Physics				

COURSE OBJECTIVES:-

To understand the concepts of Electrical and magnetic properties and study about various laws, circuits and analysis of different techniques applications

COURSE OUTCOMES (COs)

CO1	Remembering Faradays law and thermoelectric effects
CO2	Understand the different combinations of electronic components and their circuit analysis
CO3	Apply suitable ideas of magnetic effects on Helmholtz galvanometer
CO4	Analyze the different types of induction coils
CO5	Evaluate the problems of electromagnetic circuits
CO6	To know about Maxwell's equations and electromagnetic wave propagation in various medium

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS301 - ELECTRICITY & MAGNETISM

Objectives:

1. To give the students a firm understanding of the basics of Electricity and Magnetism.
2. To introduce the application of Electricity and Magnetism

Unit 1 – ELECTROSTATICS **12**

Coulomb's inverse square law - permittivity - electric intensity - Gauss's theorem and its applications - electric potential and potential energy - electric dipole - potential and intensity due to a dipole - torque on the dipole by electric field CONDENSERS - Farad - capacitance of a spherical, parallel and cylindrical condenser - effect of dielectrics - energy expression - change in energy of parallel plate capacitor - loss of energy on sharing of charges.

Unit 2 - CURRENT ELECTRICITY **12**

Kirchoff's laws - EMF and internal resistance of a cell - Carey Foster's bridge Potentiometer and its uses THERMO ELECTRICITY - Seebeck and Peltier effect - thermo emf- laws of thermoelectricity - Peltier coefficient -determination of thermo emf - Thomson effect and Thomson coefficient - application of thermodynamics - thermo electric power and thermo electric diagrams - CHEMICAL EFFECT - Faraday's laws - conductivity of an electrolyte - Kohlraush bridge - theories of electrolytic conduction -Daniel and Lechlanche cells - Lead- acid accumulator - Gibbs-Helmholtz equation.

Unit 3- MAGNETIC EFFECT OF AN ELECTRIC CURRENT **12**

Biot - Savart's rule - application to straight conductor, circular coil and solenoid - Tangent galvanometer - Helmholtz galvanometer - Ampere's circuital law - FORCE ON CURRENT CARRYING CONDUCTOR- Fleming Left hand rule - force between two infinitely long conductors - Ampere - force on a charge - Lorentz force - theory of moving coil galvanometer and damping correction ELECTROMAGNETIC INDUCTION- Faraday and Lenz laws - Self induction - Self inductance of solenoid - Mutual induction - Mutual inductance of a solenoid inductor - Coefficient of coupling - earth inductor.

Unit 4 - TRANSIENT CURRENT **12**

Growth and decay in an inductive circuit - growth and decay in a capacitative circuit -determination of high resistance by leakage - growth, and decay of charge in an LCR circuit. ALTERNATING CURRENT - EMF induced in coil rotating in a magnetic field – peak, average and rms value of a.c - phasor diagrams - series and parallel resonant circuits - power factor - choke coil – transformers - three phase a.c - dynamos -motors.

Unit 5- MAGNETISM **12**

Deflection magnetometer - vibration magnetometer - its uses - Magnetism - Dia, Para and Ferro - Susceptibility and permeability - Langevin theory of Diaand Para magnetism - Domain theory for Ferro magnetism - hysteresis. EM WAVES IN FREE SPACE - Maxwell equations - Transverse nature of em waves - Velocity in free space - Poynting vector.

TEXT BOOKS:-

1. Electricity and Magnetism: Brijlal & Subrahmanyam Ratan Prakashan Mandir Publishers -1995.
2. Fundamentals of Electricity and Magnetism: R.G.Mendiratta and B.K.Sawhney East - West Press (1976)

BOOKS FOR REFERENCE:-

1. Advanced level physics, Nelkon and Parker Annold Publishers (sixth edition)
2. Classical Electricity and Magnetism; Panofsky and Phillips, India Book House (2000)
3. Electricity and Magnetism, A.S. Mahajan and A.A. Rangwala, Tata McGraw-Hill (1989)
4. Feynman lectures on physics, volume 2 Narosa Publishing House (1992)
5. Foundation of Electromagnetic theory, Reitz (Milford) and Christy, Narosa Book Distributors (1992)
6. Introduction to electro dynamics, David J. Griffith Prentice - Hall of India (1984)
7. Physics through Experiments Vol. II, EMF constant and Varying, B Sarat et al, Vikas Publications, New Delhi (1978)
8. Physics volume 11, David Halliday, Robert Resnick John Wiley and Sons (4th edition 1994)

BPS3L1	**CORE 6 - GENERAL LAB III**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				

	Course Coordinator Name & Department:- Dr E. Thirumal &Department of Physics

COURSE OBJECTIVES:-

To learn the practical knowledge and interpretation of various experiments aspects

COURSE OUTCOMES (COs)

CO1	Applying theoretical knowledge in practical experiments
CO2	Developing technical skills to collect data and analyze the results
CO3	Understand the internal properties of given material
CO4	To resolve the equations, data's and graphs with real-timeexperiments
CO5	To gain the knowledge ofinstrumentation techniques
CO6	To acquire fundamental laws and concepts of physics

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS3L1 - GENERAL LAB III

Objective : It is aimed at exposing the under graduate students to the technique of handling simple measuring instruments and also make them measure certain mechanical and thermal properties of matter

1) Young's modulus – uniform bending (Scale and Telescope)
2) Bifilar pendulum- Moment of inertia.
3) Searle's viscometer- Viscosity of highly viscous liquid.
4) Specific heat capacity of cooling - Method of mixtures (Barton's correction)
5) Deflection and Vibration magnetometer (m and Bh)
6) Spectrometer – Refractive index of a solid prism
7) Spectrometer – Grating – normal incidence
8) Capillary Rise- Surface Tension of liquid
9) Carey Foster's Bridge – Resistance and Specific resistance

TEXT BOOKS:-

1) C.C OUSEPH, G.RANGARAJAN- A TEXT BOOK OF PRACTICAL PHYSICS- S. VISWANATHAN PUBLISHER- PART I (1990)
2) C.C OUSEPH, C.RANGARAJAN, R. BALAKRISHNAN- A TEXT BOOK OF PRACTICAL PHYSICS- S. VISWANATHAN PUBLISHER-PART II (1996)

BOOKS FOR REFERENCE:-

1) S.L GUPTA AND V.KUMAR- PRACTICAL PHYSICS- PRAGATI PRAKASHAN- 25TH EDITION (2002).

	ALLIED CHEMISTRY- I	L	T	P	C
BCI302	Total Contact Hours - 45	3	1	0	3
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary				

	studies										
	Course Coordinator Name & Department:- – Dr. P.Paulraj / Chemistry										
COURSE OBJECTIVES:-To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.											
COURSE OUTCOMES (COs)											
CO1	Gain the knowledge about the properties and uses of Fuels and Fertilizer										
CO2	Understand about the theoretical concepts of polymer and its uses										
CO3	Apply its properties and uses of Conventional energy sources										
CO4	Analyze the detail about the state of matters and its importance										
CO5	Evaluate the importance of chemical kinetics										
CO6	Create the real time applications of Chemistry in day today life.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT – I **9**

Atomic radii, ionic radii, ionization energy or ionization potential - electron affinity - electronegativity. Fuel gases –

water gas - producer gas - LPG gas – gobargas - natural gas. Fertilizers – NPK and mixed fertilizers- micronutrients and their role in plant life – bio fertilizers. Soap and detergents – an elementary idea about preparation and manufacture – cleaning action of soap and detergents. Atomic weight - molecular weight – molarity – molality - equivalent weight - normality - mole fraction - common ion effect.

UNIT – II **9**

Polymers –definition- polymerization – types – addition and condensation polymerization – Plastics - classification – preparation, properties and uses of PVC, Teflon, nylon-6,6- PET. Rubber- vulcanization of rubber - synthetic rubbers – butyl rubber - SBR - composites – definition - types polymer matrix composites –FRP.

UNIT – III **9**

Petroleum products and Polynuclear aromatic hydrocarbons - Coal tar –distillation products – petroleum fractionation – cracking – synthetic petrol – Fischer tropsch synthesis – octane number – cetane number– flash point – fire point – aniline point- anti-knocking agents. Benzene – resonance and resonance energy - effect of substituents in benzene – electrophile, nucleophile. Naphthalene – anthracene and phenanthrene structures only.

UNIT – IV **9**

Solid state, Energetics and Phase rule - Typical crystal lattices – unit cell - elements of symmetry - Bragg's equation – Weiss indices - Miller indices, simple, body centered and face centered cubes. Review of first law of thermodynamics – state and path functions – need for the second law – Carnot's cycle and thermodynamic scale of temperature – spontaneous and non spontaneous processes – entropy. Phase, component, degrees of freedom, phase rule definition - one component system – water.

UNIT – V **9**

Chemical equilibrium and Chemical kinetics - Criteria of homogeneous and heterogeneous equilibria - decomposition of HI, CaCO3 and PCl_5. Order of reactions and their determinations (first order and second order only) activation energy - effect of temperature on reaction rate..Catalysis – typesand mechanism of catalytic reactions, industrial applications.

TEXT BOOKS:

1. Principles of Inorganic Chemistry, B.R.Puri, L.R.Sharma, ShobanLalNagin Chand & Co.
2. Text Book of Inorganic Chemistry, P.L.Soni, Mohan Katyal, Sultan Chand & Sons.
3. Industrial Chemistry, B.K.Sharma, Goel Publishing House.
4. A Textbook of Environmental Chemistry and Pollution Control, S.S. Dara, S.Chand& Co Ltd.

REFERENCES :

1. Text Book of Organic Chemistry, P.L.Soni, H.M.Chawla, Sultan Chand & Sons.
2. Text Book of Physical Chemistry, P.L.Soni, O.P.Dharmara, U.N. Dash, Sultan Chand & Sons.
3. Principles of Physical Chemistry, B.R.Puri, L.R.Sharma, M.S.Pathania, ShobanLal Nagin Chand & Co.
4. A Textbook of Environmental Chemistry and Pollution Control, S.S. Dara, S.Chand & Co Ltd.

	ALLIED CHEMISTRY LAB - I	L	T	P	C
BCI3L2	Total Contact Hours - 48	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Mrs. K. Kalpana / Chemistry				

COURSE OBJECTIVES:-To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.											
COURSE OUTCOMES (COs)											
CO1	Gain the knowledge about the basic of volumetric analysis										
CO2	Understand about the theoretical concepts of chemistry Practicals										
CO3	Apply and know about its importance in Industrial Process										
CO4	Analyze the detail about practical importance to be aware of the concepts from the basis.										
CO5	Evaluate the importance of handling and precision of experimental skills										
CO6	Create the real time applications of Chemistry in day today life.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

VOLUMETRIC ANALYSIS

ACIDIMETRY AND ALKALIMETRY

1. Strong acid Versus Strong Base
2. Weak acid Versus Strong base.
3. Determination of hardness of water

4. Estimation of HCl – standard oxalic acid.

IODOMETRY

1. Estimation of copper using thiosulphate
2. Estimation of $K_2Cr_2O_7$
3. Estimation of $KMnO_4$using thiosulphate

PERMANGANOMETRY

1. Estimation of ferrous sulphate – Standard FAS.
2. Estimation of oxalic acid – Standard oxalic acid.

TEXT BOOKS:

1. Vogel, A.I. A Textbook of Quantitative Inorganic Analysis, ELBS. 1978
2. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
3. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
4. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).

REFERENCE BOOKS:

1. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York (2003).
2. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
3. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
4. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000).

BAL002	BASIC TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				
COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	தமிழ் எழுத்துக்களை அறிவர்				
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளைஅறிவர்				
CO3	சொல்லமைப்புபற்றிஅறிவர்				
CO4	சொற்களை உருவாக்கும்அறிவைப்பெறுவர்				
CO5	சொற்களை தொடராக மாற்றும்திறனைப்பெறுவர்				
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்				
Mapping of Course Outcomes with Program outcomes (POs)					

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு – 1 9

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 12

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 12

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 12

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

.1 ஆறுமுகநாவலர்,"தமிழ் இலக்கணம்", பாரிநிலையம், 2012

2. கழகப்புலவர்குழுவினர்,"நன்னூல் – எழுத்ததிகாரம்", கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,"நன்னூல் – சொல்லதிகாரம்", கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,"நன்னூல்",உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

BCA3E1	SPECIAL TAMIL – I				L	T	P	C			
	Total Contact Hours – 45				3	0	0	3			
	Prerequisite course – Tamil Under Part 1										
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை										
COURSE OBJECTIVES :- பண்டைத்தமிழரின்நாகரிகமும்பண்பாடும்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்										
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்										
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்										
CO4	தமிழரின்கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றி அறிவர்										
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றி அறிவர்										
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	

							✓			
4	Approval		Academic Council Meeting							

அலகு1 9

நாகரிகமும்பண்பாடும் -சங்ககாலத்துஅரசியல்நிலை - சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்

அலகு2 9

பண்டைத்தமிழர்திருமணமுறை ,நல்லறம் - குடும்பவாழ்வுபற்றியதமிழர்கொள்கை - பண்டையத்தமிழரின்உணவு, உடை, உறையுள்

அலகு3 9

பண்டைத்தமிழரின்கல்விநிலை - பண்டைத்தமிழரின்வானியல்அறிவு -பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4 9

மகளிர் நிலை - சங்கத் தமிழரின் சமய வாழ்வு - சங்ககால விழாக்கள்

அலகு5 9

இந்திய நாகரீகத்தில் தமிழ்ப் பண்பாட்டுக்கூறுகள் - மருத்துவக் கலை - தமிழகக் கோயில் கட்டிடக்கலை வளர்ச்சி

பாடநூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2010
2.பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2012
3 கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", மணிவாசகர் பதிப்பகம், 2012

பார்வைநூல்கள்

1. நா. வானமாமலை, "தமிழர்பண்பாடும்தத்துவமும்", அலைகள்வெளியீட்டகம், 2011
2. பேரின்பன், "தமிழர்வரலாறு:சிலகேள்விகளும்தேடல்களும்", அலைகள்வெளியீட்டகம், 2011
3. மா.இராசமாணிக்கனார், "தமிழகவரலாறும்தமிழர்பண்பாடும்", செண்பகாபதிப்பகம், 2012

SEMESTER IV

BAL401	TAMIL – IV				L	T	P	C			
	Total Contact Hours – 45				3	0	0	3			
	Prerequisite course – TAMIL –III										
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை										
COURSE OBJECTIVES :- சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்										
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்										
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்										
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்										
CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்										
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 9

நற்றிணை - 10, 110, 129

குறுந்தொகை - 8, 25, 32

கலித்தொகை - 6, 37, 51

அலகு2 9

புறநானூறு - 89, 109, 204
பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 9
பொருநராற்றுப்படை - 151 - 213
பெரும்பாணாற்றுப்படை - 5 - 15,
- 170 - 184

அலகு4 9
நெடுநல்வாடை - 1 - 25
பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 9
எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				
COURSE OBJECTIVES:- To focus on the balanced development of the English language communication skills.					
COURSE OUTCOMES (COs)					
CO1	Remember the basic concepts of English literature				

CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Eng Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle - Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar - Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Macbeth", Macmillan Publisher, 2014

BPS401	**CORE 9 - NUCLEAR AND PARTICLE PHYSICS**	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr E. Thirumal / Physics				

COURSE OBJECTIVES:-

To understand the concepts of Electricity and magnetism with application of laws, circuits and analysis of different experiments

COURSE OUTCOMES (COs)

CO1	Remembering basics of nuclear structure and radioactivity

CO2	Understand the different types accelerators and detectors
CO3	To gain knowledge about nuclear reactions
CO4	Analyze the different types radioactivity
CO5	Evaluate the problems of nuclear models and particle physics
CO6	Applying the learned models to understand nuclear reactions

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)		Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS401 – NUCLEAR AND PARTICLE PHYSICS

UNIT I - DISCHARGE PHENOMENON THROUGH GASES **12**

Motion of a charge in a transverse electric and magnetic fields - specific charge of an electron - Dunnington's method - Magnetron method - Positive rays - Thomson parabola method - Aston and Dempster's mass spectrograph.

UNIT II - ATOMIC STRUCTURE **12**

Vector atom model - Pauli's exclusion principle - explanation of periodic table - various quantum numbers - angular momentum and magnetic moment - coupling schemes - LS and JJ coupling - spatial quantisation - Bohr magneton - Stern and Gerlach experiment.

UNIT III - IONISATION POTENTIAL AND SPLITTING OF ENERGY LEVELS **12**

Excitation and ionization potential - Davis and Goucher's method - Zeeman effect - Larmor's theorem - Debye's explanation of normal Zeeman effect - Anamalous Zeeman effect - theoretical explanation - Lande's 'g' factor and explanation of splitting of D1 and D2 lines of sodium - Paschen back effect-theory - Stark effect (qualitative treatment only).

UNIT IV - Nuclear size, shapes and forces **12**

Nuclear size determination -Electron scattering method-electricmoments- magnetic moments - Nuclear forces - Neutron Proton scattering at low energies-Singlet state magnetic moment.

UNIT V- Models of nuclei **12**

Liquid drop model - Semi-empirical mass formula - nuclear fission-Levy's formula-Atomic masses and its significance-Shell model-Magic numbers-Barrier penetration-Basic ideas of nuclear reactors.

Books for study:

1. Modern physics by R Murugeshan, S Chand & Co., New Delhi – 2004
2. Atomic and Nuclear physics by N Subramanian and Brij Lal, S Chand & Co. - 2000
3. Atomic physics by J B Rajam
4. Atomic and Nuclear Physics - A.B. Gupta and Deepak Ghosh
5. Modern Physics by B.D.Guggal, C.L.Chabbra and P.L.Gupta

Books for Reference

1. Atomic physics by A B Gupta and Dipak Ghosh - Books and Allied Publishers
2. Modern physics by J H Hamilton and Yang, McGraw Hill Publication 1996
3. Concepts of Modern physics by A Beiser, Tata McGraw Hill, New Delhi 1997
4. Fundamentals of physics, 6th edition, by D Halliday, R Resnick and J Walker, Wiley NY 200
5. Introduction to Nuclear Physics, Harold Enge, (1969).
6. Nuclear Physics, Roy R.R and Nigam B.P., New Age International, Chennai, Edition 1 (2008).

BPS4L1	**CORE 10 - GENERAL LAB IV**	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- Dr E. Thirumal / Physics				

COURSE OBJECTIVES:-

To gain the knowledge of advanced scientific experiments with hands on experience of spectrometer, Ballistic galvanometer and deflection magnetometer

COURSE OUTCOMES (COs)

CO1	Applying gained scientific knowledge in practical experiments
CO2	Developing practical skills to find resolution of spectrometers and data analysis
CO3	Understand the optical properties of given gratings and prisms
CO4	To resolve the data graphs with real-time experiments
CO5	To gain the knowledge of instrumentation techniques
CO6	To acquire advanced scientific knowledge from different experiments

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS4L1 - GENERAL LAB IV

Objective : It is aimed at exposing the under graduate students of the Physics department to the techniques of handling equipments, making error free measurements and error analysis.

1. Young's modulus – Koneig's method
2. Newton law of cooling – Specific heat of liquid
3. Surface tension – Quinkes Method
4. Liquid lens – Refractive index of glass and liquid
5. Spectrometer – Hallow prism – Refractive index
6. Potentiometer – Calibration of high range
7. Ballastic galvanometer – Figure of Merit
8. Transistor – Characteristic curve common emitter mode

TEXT BOOKS:-

1. C.C Ouseph, G.Rangarajan- A Text Book of Practical Physics- S. Viswanathan Publisher-Part I (1990)
2. C.C Ouseph, C.Rangarajan, R.Balakrishnan- A Text Book of Practical Physics- S.Viswanathan Publisher-Part II (1996)

BOOKS FOR REFERENCE:-

1. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002)

BCI402	**ALLIED CHEMISTRY– 1I**	**L**	**T**	**P**	**C**
	Total Contact Hours - 45	3	1	0	3
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Mrs. K. Kalpana / Chemistry				

COURSE OBJECTIVES:- To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly											
COURSE OUTCOMES (COs)											
CO1	Gain the knowledge about the importance and uses of aquatic system										
CO2	Understand about the theoretical concepts of carbohydrates and proteins										
CO3	Apply its properties and uses of solvent systems										
CO4	Analyze the detail about the state of colloids and its importance										
CO5	Evaluate the importance of electrochemistry and its role										
CO6	Create the real time applications of Chemistry in day today life.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT – I Water Treatment **9**

Introduction – Characteristics – alkanity – types of alkanity and determination – hardness – types and estimation by EDTA method; Domestic water treatment – disinfection methods (chlorination, ozonation , UV treatment) –Boiler feed water – requirements – disadvantages of using hard water in boilers – internal conditioning (calgon and carbonate

conditioning methods) – external conditioning – demineralization process – desalination and reverse osmosis.

UNIT – II Carbohydrates and Proteins **9**

Classification – glucose and fructose – preparation and properties – elucidation of structure of glucose – configuration of glucose – Fisher and Haworth cyclic structures. Sucrose – manufacture and properties – starch and cellulose – properties and uses. Amino acids and proteins - amino acids – classification based on structure and essential and non-essential amino acids – preparation and properties – proteins – classification based on physical properties and biological functions.

UNIT – III: Basic concepts of organic chemistry **9**

Inductive effect – relative strength of aliphatic mono carboxylic acid and aliphatic amines. Resonance – conditions for resonance - consequences of resonance – resonance energy - basic property of aniline and acidic property of phenol – hyper conjugation – consequences of hyper conjugation – heat of hydrogenation - bond length and dipole moment - steric effect – steric accelerated reaction and steric inhibited reaction - Types of solvents – polar - non-polar – their dissolving nature

UNIT – IV - Colloidal Chemistry **9**

Introduction : Types of Colloidal system – classification of colloids. Preparation of colloidal solution – dispersion method (mechanical and electrical)– condensation method (oxidation and reduction) Properties of colloidal system: colligative, optical, electrical and Brownian movement - **Emulsions**: Emulsifiers – types of emulsion - **Gels**: Gelation - preparations of gels – elastic and non – elastic gels. Applications of colloids.

UNIT – V – Electrochemistry **9**

Introduction; Conductors, Electrode potential Measurement of single electrode potential, ion selective electrodes – electro chemical series and applications.pH and buffer - importance of pH and buffers in living systems – pH determination by Colorimetric and Potentiometric methods. Specific and equivalent conductivities – their determination – effect of dilution on conductivity. Ostwald's dilution law, Kohlrausch's law, conductivity measurements, Conductometric titrations.

TEXT BOOKS:

1. Principles of Inorganic Chemistry, B.R.Puri, L.R.Sharma, Shoban Lal Nagin Chand & Co.
2. Text Book of Organic Chemistry, P.L.Soni, H.M.Chawla, Sultan Chand & Co
3. Principles of Physical Chemistry, B.R.Puri, L.R.Sharma, M.S.Pathania, Shoban Lal Nagin Chand & Co.
4. Industrial Chemistry, B.K.Sharma, Goel Publishing House.

REFERENCES :

1. Text Book of Inorganic Chemistry, P.L.Soni, Sultan Chand & Sons.
2. A Textbook of Environmental Chemistry and Pollution Control, S.S. Dara, S.Chand & Co Ltd.
3. Text Book of Physical Chemistry, P.L.Soni, O.P.Dharmara, U.N. Dash, Sultan Chand & Sons.
4. A Textbook of Environmental Chemistry and Pollution Control, S.S. Dara, S.Chand& Co Ltd.

	ALLIED CHEMISTRY LAB - II	**L**	**T**	**P**	**C**
BCI4L2	Total Contact Hours - 48	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Mrs. S.S.Vanitha / Chemistry				
COURSE OBJECTIVES:-To make the students learn about the chemistry from the basic and understood all theoretical background with all concepts understands thoroughly.					

COURSE OUTCOMES (COs)											
CO1	Gain the knowledge about the basic of organic salt analysis										
CO2	Understand about the theoretical concepts of chemistry Practical's										
CO3	Apply and know about its importance in Industrial Process										
CO4	Analyze the detail about practical importance to be aware of the concepts from the basis.										
CO5	Evaluate the importance of handling and precision of experimental skills										
CO6	Create the real time applications of Chemistry in day today life.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

ORGANIC ANALYSIS

A STUDY OF REACTIONS OF THE FOLLOWING ORGANIC COMPOUNDS:

1. Carbohydate
2. Amide
3. Aldehyde

4. Ketone
5. Acid
6. Amine
7. Phenol

The students may be trained to perform the Specific reactions like

Test for element (nitrogen only),

Aliphatic or aromatic, Saturated or unsaturated and functional group present and record their observation

TEXT BOOKS:

1. Vogel, A.I. A Textbook of Quantitative Inorganic Analysis, ELBS. 1978
2. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
3. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
4. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).

REFERENCE BOOKS:

1. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York (2003).
2. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
3. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)

Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000).

BAL004	BASIC TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Basic Tamil – I				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழ்மொழியின்சொல்வகை, திணை, பால்பாகுபாடுபற்றிஅறிவர்										
CO2	அடுக்குத்தொடர், இரட்டைக்கிளவி, ண,ன,ர,ற,ள,ழவேறுபாடுபற்றிஅறிவர்										
CO3	பத்திகளைசுருக்கியும், விரிவாக்கிஎழுதும்அறிவைப்பெறுவர்										
CO4	சொற்களைகையாண்டு உரையாடுவதுபற்றிபெறுவர்										
CO5	கட்டுரை, கடிதம்எழுதும்அறிவைப்பெறுவர்										
CO6	தமிழ்மொழியில்சரளமாகபேசும்எழுதும்திறனைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு – 1 12

1.1 தமிழ் மொழி அறிமுகம்

1.2 சொல் வகைகள்

1.3 திணை, பால் பாகுபாடு

அலகு – 2 12

2.1 அடுக்குத் தொடர், இரட்டைக் கிளவி

2.2 ஒரு ஓர் வேறுபாடு

2.3 ண,ன,ர,ற,ள,ழ வேறுபாடு

அலகு – 3 12

3.1 பத்தியிலிருந்து வினாக்களுக்குரிய விடைகளை கண்டறியும் பயிற்சி

3.2 சுருக்கி வரைதல்

3.3 விரிவாக்கி எழுதுதல்

அலகு – 4 9

4.1 உரையாடல்

4.2 கட்டுரை

4.3 மடல் வரைதல்

பாட நூல்கள்

1. மருதூர் அரங்கராசன்,"தவறின்றித் தமிழ் எழுத", ஐந்திணைப்பதிப்பகம், 2012
2. ஞா.தேவநேயப்பாவாணர், "உயர்தரக் கட்டுரை இலக்கணம்", கௌராபதிப்பகம்,2013
3. க. கயிலாயநாதன்,"தமிழ் மொழி விளக்கம்", முல்லைநிலையம், 2006

பார்வை நூல்கள்

1. பாரதிதாசன், "தவறின்றித்தமிழ்எழுத", நாம்தமிழர்பதிப்பகம், 2013
2. ஆசிரியர்குழு, "கடிதம்வரைதல்', லியோபப்ளிகேஷன்ஸ், 2013
3. பாவாணர், "கட்டுரைவரைவதுஎப்படி?",தமிழ்மண்பதிப்பகம், 2012

BCA4E1		SPECIAL TAMIL – II			L	T	P	C			
		Total Contact Hours – 45			3	0	0	3			
		Prerequisite course – SPECIAL TAMIL – I									
		Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை									
COURSE OBJECTIVES :- நாட்டுப்புறவாழ்வியலைபற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தாலாட்டுமற்றும்குழந்தைப்பாடல்கள்பற்றிஅறிவர்										
CO2	தொழிற்பாடல், காதல்பாடல், கொண்டாட்டப்பாடல்கள்பற்றிஅறிவர்										
CO3	சங்ககாலமக்களின்விடுகதை, நம்பிக்கை, சடங்குகள்பற்றிஅறிவர்										
CO4	பழமொழிகள், நாட்டுப்புறமருத்துவம், சமயவழிபாடுகள்பற்றிஅறிவர்										
CO5	நாட்டுப்புற இலக்கிய வரலாறுபற்றிஅறிவர்										
CO6	வாய்மொழிஇலக்கியம்மூலம்சங்ககாலமக்களின்வாழ்வியலைஅறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		Academic Council Meeting							

அலகு1 9

தாலாட்டுப்பாடல் - குழந்தைப்பாடல் - விளையாட்டுப்பாடல்

அலகு2

தொழிற்பாடல்கள் - காதல்பாடல்கள் - கொண்டாட்டப்பாடல்கள்

அலகு3 9

விடுகதைகள் - நம்பிக்கைகள் -சடங்குகள்

அலகு4 9

பழமொழிகள் -நாட்டுப்புறமருத்துவம் - சமயவழிபாடுகள்

அலகு5 9

நாட்டுப்புற இலக்கிய வரலாறு

பாடநூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புறஇயல்ஆய்வு", மணிவாசகர்பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014

பார்வைநூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புறபாடல்வகைகள்", புலமைவெளியீடு, 1982
2. சரசுவதிவேணுகோபால், "தமிழகநாட்டுப்புறவியல்", தாமரைவெளியீடு, 1981
3. கழனியூரன், "நாட்டுப்புறவியல்கட்டுரைகள்", காவ்யாபதிப்பகம், 2014

BPS4E3	**Skill Based Elective I- DESKTOP PUBLISHING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO 2**	**PSO3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

SEMESTER V

BPS501	CORE 11 -RELATIVITY AND QUANTUM MECHANICS	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite- Science / Mathematics Studied in Higher Secondary Studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:-

To acquire sufficient knowledge in Properties of matter waves, Wave equation, Schrodinger equation and applications, Operator formalism and Relativity.

COURSE OUTCOMES (COs)

CO1	Understand the basic terms in Quantum Mechanics
CO2	To Learn about the principles of quantum particles
CO3	Apply basics to construct and solve one particle equation.
CO4	To develop problem solving methods that will include mathematical as well as numerical computations and solutions
CO5	To design and construct particle equation in the free and bound states as well as to analyze and interpret the results.
CO6	To understand the fundamentals and concepts in the special theory of relativity

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

Objective: To understand the basic concepts of quantum mechanics and apply it to various simple problems. In addition, tounderstand the laws of special & general theory of relativity.

UNITI - WAVE MECHANICS **12**

Matter waves – de Broglie wavelength – wave velocity and group velocity – Heisenberg's Uncertainty principle – proof of Uncertainty principle for one dimensional wave packet – Postulates of wave mechanics – properties of wave functions – operator formalism – eigen functions – eigen values – expectation values.

UNIT II - SCHRODINGER EQUATIONS AND ITS APPLICATIONS **12**

Schrodinger equation – time dependent and time independent – application of Schrodinger equations – linear harmonic oscillator – zero point energy – particle in a one dimensional box – barrier penetration and tunnelling effect – rigid rotator – hydrogen atom.

UNIT III - SPECIALE THEORY OF RELATIVITY **12**

Classical relativity – Galilean transformation - Michelson – Morley experiment – Significance of negative result – postulates of special theory of relativity – Lorentz transformation equations – Length contraction – Time dilation – Relativity of simultaneity – Law of addition of velocities – variation of mass with velocity – relativistic kinetic energy equations.

Unit VI - RELATIVISTIC KINEMATICS **12**

Mass energy equivalence – Einstein mass energy equation –Illustration - pion decay - aberration and Doppler effect - velocity transformation - transformation of acceleration - four-dimensional Euclidean space-time.

Unit V - GENERAL THEORY OF RELATIVITY **12**

The conflict between Newtonian gravitation and special theory - General theory of relativity - Mach's principle -Definable features of a gravitation theory - Two approaches to general theory - Einstein's equations

BOOKS FOR STUDY:

1. Quantum Mechanics – Bagade and Singh.
2. Quantum Mechanics Satya Prakash Sultan Chand Publishers .
3. Modern Physics - R.Murugesan
4. P.M.Mathews and K.Venkatesan, A Textbook of QUANTUM MECHANICS, 2nd Ed, Tata McGraw Hill PVT. (2010) (Units 1-3)
5. Robert Resnick, 1968, Introduction to Special Relativity, 1st Edition, Wiley Eastern, New Delhi. (Unit IV)
6. Arthur Beiser, Shobhit Mahajan and S.Rai choudhury, Concepts of MODERN PHYSICS, (special Ind.Ed) 6 th edition Tata McGraw Hill(2009)(units 1-3)
7. K D Krori, Fundamentals of Special and General Relativity, PHI (2012) (units 4-5) 4. Robert Resnick First edition, Introduction to special relativity, Wiley Eastern, New Delhi (1968)(units

BOOKS FOR REFERENCE:

1. A.B. Gupta and Dipak Ghosh, Atomic and Nuclear Physics, Books and Allied (P) Ltd, Calcutta (1997)
2. Ghatak A, Introduction to Quantum mechanics, MacMillan India Ltd, Madras (2002)
3. Powell J.L and Craseman.B, Quantum mechanics, Narosa publishing, Madras (1995)
4. R.Murugeshan and Kiruthiga Sivaprasath, Modern Physics, 14th Ed., S.Chand and Company Ltd (2009)
5. Quantum Physics - Berkeley Series - Sie - Eyvind Wichman - 1st Ed - Tata McGraw Hill -2010
6. Introduction to Quantum Mechanics- 2nd Ed - David Griffiths - PHI - 2004
7. Quantum Mechanics - 2nd Ed - G Aruldhas - PHI - 2008
8. Introduction to Modern Physics - Mani H S and G K Mehta - Afiliated East and West - 1988

Web sites:

http://www.hi.is/~/quantum mechanics/quantum.html http://newton.ex.ac.uk/research/qsystems/people/jenkins/mbody/mbody2.html http://en.wikipedia.org/wiki/quantum_mechanics http://www2.slac.stanford.edu/vvc/theory/relativity.html

BPS502	**CORE 12 - BASIC ELECTRONICS**	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary				

	studies
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics

COURSE OBJECTIVES:-

Understand the basic concepts of current electricity, electronics and digital electronics

COURSE OUTCOMES (COs)

CO1	To understand the basic concepts of construction and working of electronic devices and optical fibers
CO2	To Learn about the principles of electronics circuits
CO3	Apply the knowledge to understand the working of special types of diodes
CO4	Understand the principles of modulation and demodulation
CO5	To design and construct the electronic circuit and solve the mathematical equations.
CO6	Apply the knowledge to understand the working of amplifiers, oscillators and multivibrators

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS502 - BASIC ELECTRONICS

UNIT I -SEMICONDUCTOR THEORY DEVICES AND CHARACTERISTICS **12**

Classification of solids in terms of forbidden energy gap - Fermi level - Fermi - dirac function - Carrier concentration intrinsic and extrinsic semi conductors - effect of temperature on Fermi level - PN junction diode - Zener diode - Tunnel diode - photo diode - PIN - APD - Photo transistor - LED, LCD.

UNIT II - RECTIFIERS AND AMPLIFIERS **12**

Half-wave, full-wave and bridge rectifier - Two port representation of a transistor - h–parameters - AC equivalent circuit using h-parameters - analysis of an amplifier using h-parameters - Expressions for current gain, voltage gain, input impedance, output impedance and power gain for common emitter only.

UNIT III - FEEDBACK OSCILLATORS **12**

Voltage gain of a feedback amplifier - Barkhausen criterion - Hartley, Colpitt's, phase shift and Weinbridge oscillators - expressions for frequency of oscillations and condition for sustained oscillations in each case - crystal oscillator - frequency stability.

UNIT IV - WAVE SHAPING CIRCUITS AND MULTI VIBRATORS **12**

Clipping and clamping circuits - biased clipper - integrating and differentiating circuits Multivibrators - Astable - Mono stable and bi-stable multivibrators - Schmitt trigger

UNIT V- RADIO COMMUNICATION AND TELEVISION **12**

Principles of transmission and reception - Modulation - types of modulation - amplitude modulation - frequency modulation and phase modulation - theory and mathematical analysis for AM, FM and PM - detector - AM detector - FM Discriminator - AM and FM transmitter and receiver - Block diagram of TV transmission and reception – principles of colour TV.

Books for study

1. Principles of electronics by V K Mehta, S Chand & Co., 5th edition 2001
2. Elements of electronics by Bagde and S P Singh
3. Functional electronics by Ramanan
4. Monochrome and Colour TVby Gulati
5. Basic and applied electronics by M Arul Thalapathi, Comptek Publishers, Chennai 2005

Books for reference:

1. Electronic principles by Malvino
2. Electronic devices and circuits by Allen Mottershed
3. Monochrome and colour TV Gulati
4. Basic Television and videosystems by B Grob
5. Solid state electronics by Manna, Tata McGraw Hill
6. Basic electronics, 6th edition by B Grob, McGraw Hill, NY 1989

	CORE13 CRYSTAL PHYSICS	L	T	P	C
BPS503	Total contact Hours-60	4	0	0	4

	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics

COURSE OBJECTIVES:-

The aim of this course is to introduce the students to different types of crystals and their properties

COURSE OUTCOMES (COs)

CO1	Understand the basic concepts crystals
CO2	Kinds of nucleation-nucleation.
CO3	Understand the basic laws of Crytallography.
CO4	Analyze and solve the problems based on electron theory of solids and for different materials
CO5	To design and construct particle equation in the free and bound states as well as to analyze and interpret the results.
CO6	To execute the applications of the superconductor

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS503 – CRYSTAL PHYSICS

UNIT I – NUCLEATION **12**

Introduction-kinds of nucleation-nucleation barometers - equilibrium stability and Meta stable state-classical theory of nucleation-nucleation parameters - effect of soluble impurities on nucleation-determination of solubility-methods of induction period measurements-desupersaturation.

UNIT II - SOLUTION AND GEL GROWTH TECHNIQUES **12**

Low temperature solution growth - slow cooling method – slow evaporation method - temperature gradient method-criteria for optimizing solution growth parameters-basic apparatus for solution growth - Gel growth-structure of silica gel and gelling mechanism -merits of gel method-experimental methods - chemical reaction method-chemical reduction method-complex de complex method-solubility reduction method-sol gel method.

UNIT III - HIGH TEMPERATURE AND OTHER TECHNIQUES OF GROWTH **12**

Growth from melt-Bridgman, Czochralski, zone melting, Verneuil techniques-physical vapour deposition-flux growth-chemical vapour deposition - chemical vapor transport-hydrothermal growth - epitaxial growth.

UNIT IV - OPTICAL STUDIES **12**

Atomic absorption spectroscopy-UV-Visible-NIR spectroscopy - Experimental set up for Fourier Transform Infrared analysis - FT-Raman vibrational spectroscopy and NMR-Illustrations with selected crystals-Nonlinear optical phenomenon (qualitative)-Kurtz powder SHG method-photoconductivity and schematic set up for measurements – positive and negative photoconductivity.

UNIT V - CRYSTAL CHARACTERIZATION **12**

Thermal analysis-methods of thermal analysis-thermogravimetric analysis (TGA)-Differential thermal analysis (DTA)-Differential Scanning Calorimetry (DSC)-Mechanical studies-methods of hardness testing (qualitative)-Vickers hardness testing-correlation of microhardness with other properties-estimation of hardness number and work hardening coefficient (n)-dielectric studies-dielectric constant and dielectric loss measurements.

BOOKS FOR REFERENCE:

1. Brice J. C. (1986), 'Crystal Growth Process', John Wiley and Sons, New York.
2. Brice J.C. (1973), 'The growth of crystals from liquids', North Holland publishing company, Amsterdam.
3. Buckley H.E. (1951), 'Crystal Growth', John Wiley and Sons, New York.
4. Pamplin B.R. (1980), 'Crystal Growth', Pergman Press, London.
5. Henisch H.K. (1988), 'Crystals in gels and Liesegang rings', Cambridge Univ. Press. USA
6. R.T. Sane and Jagdish K Ghadge 'Thermal Analysis Theory and applications' Quest Publications 1997
7. V G Dmitriev, G.G. Gurzadyan, D.N. Nikigosyan; 'Handbook of Nonlinear optical crystals' SpringerVerlag 1991
8. Joshi V.N. (1990), 'Photoconductivity', Marcel Dekker, New York.
9. Santhanaraghavan P. and Ramasamy P. Crystal growth Process and Methods, (2000) KRU Publications, Kumbakonam.

	MAJOR ELECTIVE - MATERIAL SCIENCE	L	T	P	C

BPS5E4	Total contact Hours-60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:-

The aim of this course is to introduce the students to electron theory of solids and different types of materials based on their properties

COURSE OUTCOMES (COs)

CO1	Understand the basic concepts of conductors ,dielectric
CO2	Apply an idea of dielectric and magnetism which are essential tools in problem solving.
CO3	Understand the basic laws of magnetism .
CO4	Analyze and solve the problems based on electron theory of solids and for different materials
CO5	To design and construct particle equation in the free and bound states as well as to analyze and interpret the results.
CO6	To execute the applications of the superconductors

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
						✓					
4	Approval	Academic Council Meeting									

UNIT –I ENGINEERING MATERIALS - CHEMICAL BONDING **12**

Classification of engineering materials - levels of structure - structure-property relationship in materials stability and metastability - Bond energy - bond type and bond length - Ionic and covalent bonding secondary bonding - variation in bonding character and properties.

UNIT -II- ELEMENTARY CRYSTALLOGRAPHY **12**

Space lattice - basis - unit cell - Bravais lattice - Miller indices - symmetry elements of a crystalline solid - symmetry groups - X-ray diffraction and Bragg's law - powder method - Crystal imperfections - point imperfections - geometry of dislocation -edge and screw dislocation - Burger's vector.

UNIT –III MECHANICAL BEHAVIOUR OF MATERIALS **12**

Elastic behaviour - atomic model of elastic behaviour -Young's modulus - Poisson's ratio - Shear modulus - bulk modulus -The modulus as a parameter in design - rubber like elasticity - Plastic deformation - the tensile stress- strain curve.

UNIT -IV NON DESTRUCTIVE TESTING **12**

Radiographic methods - Photoelastic method - magnetic methods - electrical methods Ultrasonic methods - Equipments used for NDT - metallurgical microscope - electron microscope - scanning electron microscope (SEM).

UNIT –V MAGNETIC MATERIALS AND DIELECTRIC MATERIALS **12**

Terminology and classification - magnetic moments due to electron spin - ferro magnetism the domain structure - soft and hard magnetic materials. Polarization - electronic, ionic, orientation and space charge polarization - temperature and frequency effects - electric breakdown - ferroelectric materials – Pyro electric materials – Peizo electric materials

TEXT BOOKS:-

1. Raghavan V- Materials Science and Engineering a first course, III Ed., Presences Hall of India (pact) ltd , 1990.
2. Structural M., Materials Science, Anuradha agencies & pubblishers, 1990.

BOOKS FOR REFERENCE:-

1. Kittel C., Introduction to Solid State Physics, V11 Ed, Wiley Eastern
2. Manchandra VK., A text book of Materials Science, New India Publishing House, 1992.

Course Coordinator **HOD**

BPS5E6	MAJOR ELECTIVE - ASTROPHYSICS	L	T	P	C
	Total contact Hours-60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:-

To acquire sufficient knowledge in space and astronomy, solar systems etc.,

COURSE OUTCOMES (COs)

CO1	Understand the study about Big bang theory ,
CO2	Reminder the basic ideas of gravity
CO3	Detail changes which are observed when viewing the sky daily, weekly, monthly, annually and longer period of time and demonstrate an understanding of the reasons behind any observed changes.
CO4	Describe the features of objects in the Solar System (i.e. Sun, planets, moons, asteroids, comets, planetary interiors, atmospheres, etc.) giving details of similarities and differences between these objects;
CO5	Detail the main features and formation theories of the various types of observed galaxies, in particular the Milky Way;.
CO6	Learn about the various theories of stars

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

UNIT – I EARLIEST ASTRONOMY AND SPACE 12

Origin – Earliest Astronomy (2500 – 100 BC) – Pythagorean Spherical Earth – Aristotle's Earth as Centre – Copernicus Theory – Kepler's Law – Galileo's observations – Newton's Synthesis.

UNIT – II SPACE 12

Introduction – Habble's Law – Big bang theory – Shape of Universe – Expanding universe in space – Galaxies – Types of Galaxies – Spiral, Elliptical and Irregular Galaxies – Clusters of Galaxies – Milky Way – Quasars.

UNIT – III STARS 12

Birth of Stars – Colour and Age – Life of Stars – Red giant stars – With dwarf star – Neutron Star – Black hole – Supernovae – Constellations - Zodiac.

UNIT – IV SOLAR SYSTEM 12

Introduction – Sun – Structure of Sun – Nuclear reactions in sun – Sun spot and solar flares – Earth – Structure of earth – Atmosphere – Moon and its structure – Inner planets – Outer planets – Astroids – Meteors – Meteorites - Comets.

UNIT – V SPACE DISTANCE, UNITS AND CO-ORDINATES 12

Cislunar space – Translunar space – Inter planetary distance – Interesteller space – Inter galactic space – Light Year – Astronomical Unit – Astronomical Map. Astronomical Systems – Astronomical co-ordinates – Celestial Sphere – Celestial Equators – Celestial Poles - Celestic.

TEXT BOOKS

1. Hewish. A / Physics of the universe / CSIR publication, New Delhi, 1992.
2. Biman Basu / Inside Stars / CSIR Publication, New Delhi, 1992. Biman Basu / Cosmic Vistas / National Book Trust of India, 2002.
3. Krishnasamy K.S. / Astro Physics a modern perspective / New Age International / New Delhi. Murugesan. R / Modern Physics / S. Chand & Co. / New Delhi, 2003.

BOOKS FOR REFERENCE

1. Mohan Sundara Rajan / Space today / National Book Trust of Indi, 2000.
2. William K. Hartmann / The Cosmic Voyage through time and space / Wads worth Publishing company, Californi, 1990.

Course Coordinator **HOD**

BPS5E7	MAJOR ELECTIVE - APPLIED ELECTRONICS	L	T	P	C
	Total contact Hours-60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:-

Understand the basic concepts of current electricity, electronics and digital electronics

COURSE OUTCOMES (COs)

CO1	To understand the basic concepts of construction and working of electronic devices and optical fibers
CO2	To Learn about the principles of electronics circuits
CO3	To design and analyze the clocked synchronous and asynchronous
CO4	To design and analyze the clocked synchronous and asynchronous
CO5	To design and construct the electronic circuit and solve the mathematical equations.
CO6	Apply the knowledge to understand the working of amplifiers, oscillators and multivibrators

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

UNIT – I SPECIAL DEVICES AND APPLICATIONS FET 12

Characteristics – parameter FET as amplifier – FET as VVR – MOSFET – Depletion and enhancement – UJT characteristics – UJT as relaxation oscillator – SCR characteristics – SCR as half wave rectifier and full wave rectifier. SCR as static current switch – Firing of SCR using UJT.

UNIT – II OPERATIONAL AMPLIFIER AND APPLICATIONS OPAMP 12

Parameters – Inverting and Non-inverting amplifier – gain – Miller effect – Virtual ground – Offset voltage – offset current – PSRR – CMRR. OPAMP – Sign and Scale changer – adder, subtractor and averager – Integrator and differentiator – DC voltage follower – ac voltage follower.

UNIT – III OTHER APPLICATION OF OPAMP OPAMP 12

Logarithmic amplifier – antilogarthmic amplifier – Logarithmic multiplier – Logarithmic divider. Comparator – Schmitt trigger – astable multivibrator – monostable multivibrator – Bistable multivibrator.

UNIT – IV 555 TIMER AND PLL 12

555 block diagram and work monostable operation – Astable operation – Schmitt trigger. Phase – Locked Loops (PLL): Basic principles – Phase Detector. Comparator – Analog phase detector – Digital phase detector – voltage controlled oscillator (VCO).

UNIT – V D/ A AND A/D CONVERTER 12

Weighted resistor D/A converter – 4-bit R-2R ladder DAC – Analog to Digital converter – Stair case ADC – tracking or servo ADC – Successive approximation ADC – Flash ADC Duel slope ADC.

Course Coordinator **HOD**

BPS5L1	CORE 14 - GENERAL LAB V	L	T	P	C
	Total contact Hours-60	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- To make the students learn about the physics from the basic and understood all technical background with all concepts understands thoroughly

COURSE OUTCOMES (COs)

CO1	Apply knowledge of mathematics and physics fundamentals and an instrumentation to arrive solution for various problems.
CO2	Understand the application side of the experiments
CO3	Use of basic laws to study the spectral properties and optical properties of the given prism and grating. .
CO4	Understand the usage of basic laws and theories to determine various properties of the materials given.
CO5	Analyze the detail about practical importance to be aware of the concepts from the basis.
CO6	To understand the fundamentals and concepts in the physics practicals

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)		Project/Term Paper/ Seminar/ Internship(PR)	
						✓					
4	Approval	Academic Council Meeting									

BPS5L1– CORE 14 - GENERAL LAB V

Kundt's tube – Longitudinal wave propagation

1) Newton's rings – radius of curvature of lens
2) Spectrometer- i-d curve-Refractive index.
3) Spectrometer- i-i' curve- Refractive index.
4) Spectrometer- Small angled prism- Refractive index
5) EMF of a thermocouple- Potentiometer.
6) Field along the axis of a circular coil- Determination of Bh
7) Absolute determination of capacitance- BG.
8) Mutual Inductance- BG.

TEXT BOOKS:-

1. C.C Ouseph, G.Rangarajan- A Text Book of Practical Physics- S. Viswanathan Publisher-Part I (1990)
2. C.C Ouseph, C.Rangarajan, R.Balakrishnan- A Text Book of Practical Physics- S.Viswanathan Publisher-Part II (1996)

BOOKS FOR REFERENCE:-

2. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002)

BPS5E5	Skill Based Elective – II-COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

BPS5E6	Skill Based Elective – III GRAPHICAL AND WEB DESIGNING	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
CO3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

BPS5L2	CORE 15 - ELECTRONICS LAB I	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- It is aimed at exposing the under graduate students of the Physics department to the techniques of handling equipments, making error free measurements and error analysis..

COURSE OUTCOMES (COs)

CO1	Analyze the significance of laws involved in electric circuits
CO2	Understand the basics of operational amplifier
CO3	To learn about the basics to construct and solve the mathematical equation.
CO4	Apply the principles of electronics in day to life
CO5	To design and construct the electrical and electronics circuits and interpret the results.
CO6	Apply the characteristics of electronic devices in practicals

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

SEMESTER V

BPS5L2 - CORE 15 - ELECTRONICS LAB I

Objective : It is aimed at exposing the under graduate students of the Physics department to the techniques of handling equipments, making error free measurements and error analysis.

1. Logic Gates – AND - OR – NOT – NOR – NAND (using IC)
2. NAND gate as universal building
3. NOR gate as universal building
4. Characteristics of Transistor
5. Characteristics of Zener diode
6. Transistor – Hartley's Oscillator
7. Transistor – RC coupled

TEXT BOOKS:-

1. C.C Ouseph, G.Rangarajan- A Text Book of Practical Physics- S. Viswanathan Publisher-Part I (1990)
2. C.C Ouseph, C.Rangarajan, R.Balakrishnan- A Text Book of Practical Physics- S.Viswanathan Publisher-Part II (1996)

BOOKS FOR REFERENCE:-

3. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002)

SEMESTER VI

BPS601	CORE 16 - **DIGITAL ELECTRONICS**	L	T	P	C
	Total contact Hours-60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- To study about the electronic circuits that are used to process and control digital signals.

COURSE OUTCOMES (COs)

CO1	Study about the numbersystem of base 2, 8, 16 and BCD-code (binary-coded decimal) calculations etc.,
CO2	Explain the principles of analog-to-digital (AD) - and digital-to-analog (DA) conversion,
CO3	Apply basics to construct and solve one particle equation.
CO4	Excute the minimal sequential and combinational circuit that solves binary logical tasks,
CO5	Apply the characteristics of electronic devices in practicals
CO6	Apply the principles of electronics in day to life

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PS O1**	**PSO2**	**PSO3**
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS601 – DIGITAL ELECTRONICS

UNIT I - DIGITAL FUNDAMENTALS **12**

Number systems - decimal, binary, octal and hexadecimal systems - conversion from one number system to another. Codes - BCD code - Excess 3 code, Gray code - ASCII code - Binary arithmetic - Binary addition - subtraction - unsigned binary numbers - sign magnitude numbers - 1's and 2's complement - Binary multiplication and division. Logic gates and logic families AND, OR circuits using diodes and transistors - NOT using transistors - NAND, NOR and EXOR - functions and truth tables. NAND & NOR as universal gates - bipolar and unipolar logic families - RTL NOR - DTL NAND - TTL NAND characteristics of TTL gates - ECL OR / NOR - MOS inverters - CMOS NAND and NOR.

UNIT II - BOOLEAN ALGEBRA AND SIMPLIFICATION OF LOGIC CIRCUITS **12**

Laws and theorems of Boolean algebra - De Morgan's theorems and their circuit implications - Duality theorem, simplification of Boolean equations - Karnaugh map - pairs, quads, octets - 2,3 and 4 variables - sum of products method - NAND - NAND circuits - product of sums methods - NOR-NOR circuits. Arithmetic circuits Arithmetic building blocks - Half adder - Full adder - parallel binary adder - Half subtractor - Full subtractor - The adder-subtractor - digital comparator - parity checker / generator

UNIT III - DATA PROCESSING CIRCUITS **12**

Multiplexers - Demultiplexers - Decoders - 1 of 16 decoder BCD to decimal decoder - seven segment decoder - Encoders - decimal to BCD encoder - Memory addressing - ROM, PROM, EPROM, PLA - RAM - Dynamic RAM - basic memory cells. Sequential Logic Flip - flops - RS Flip Flop - Clocked RS Flip-flop - D flip-flop - JK flip-flop - JK master slave flip-flop - T type flip-flop

UNIT IV - CLOCKS AND TIMERS **12**

Clock waveforms - TTL clock - 555 timer - astable, monostable - monostable with input logic. Shift registers and counters - Types of registers - serial in serial out - serial in parallel out - parallel in serial out - parallel in parallel out - ring counter - asynchronous counter - decoding gates - omitted states - modulus counters - BCD counter - up down counter - synchronous counter - combination counters - decade counter - cascaded counters.

UNIT V - D/A AND A/D CONVERTERS **12**

Introduction - variable resistor network - binary ladder - D/A converter - D/A accuracy and resolution - A/D converter - simultaneous conversion - A/D accuracy and resolution. Digital applications Multiplexing displays - frequency counters - time measurement - digital clock - principles - digital voltmeter.

Books for study:

1. Malvino and Leech (2000), Digital Principles and Application, 4th edition, Tata McGraw Hill, New Delhi
2. Millman and Halkias, (1972), Integrated Electronics, International edition, McGraw Hill, New Delhi
3. Arul Thalapapathi, Fundamentals of digital computers, Comptek publishers, Chennai, 1995.

BPS602	CORE 17 - SOLID STATE PHYSICS	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- To learn about the matter from an atomic view point. Topics covered include the structure, super conductivity and electrical properties of matter and its applications.

COURSE OUTCOMES (COs)

CO1	To study about the relationships between chemical bonding & crystal structure and their defects
CO2	Understand the basic properties of metals, insulators and semiconductors and their technological applications
CO3	Understand the basic concept in magnetic properties
CO4	Extend their knowledge in theoretical fundamentals of electron theory and super conductiv
CO5	Transfer their knowledge level from theoretical physical subjects towards the understanding of basic properties of solid state matter
CO6	To understand the fundamentals and concepts in solid state physics in the modern society

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

BPS602 – SOLID STATE PHYSICS

UNIT I - CRYSTAL PHYSICS **12**

Crystalline and amorphous solids- Lattice and basis-Unit cell and primitive cell Crystal systems- Translation vectors-Number of atoms per unit cell in a Cubic Crystal -Bravais lattice - Simple - Body centered and face centered cubic lattices Hexagonal close packed and diamond structure-Miller indices-Inter planar spacing- Crystal diffraction- Bragg's law-Experimental diffraction methods-Laue method-Powder diffraction method-Reciprocal lattice.

UNIT II - BONDING IN SOLIDS **12**

Crystal binding-Crystal binding-Crystals of inert gas-Van der Waals-Cohesive energy-Compressibility and bulk modulus-Ionic Crystals-Madelung energy Evaluation of Madelung constant – Covalent crystals- Energy value for single covalent bonds – Metallic crystals- Hydrogen bonding– Atomic radii –Tetrahedralcovalent radii and ionic crystal radii.

UNIT III- LATTICE VIBRATION AND THERMAL PROPERTIES OF SOLIDS **12**

Vibration of one dimensional monatomic linear lattice-Derivation of force constant-Dispersion relation-Brillouin zone-Phase velocity-Group velocity Phonons-characteristics of phonons – Phonon momentum-Thermal Properties of Solids-Classical theory of specific heat- Einstein's theory of specific heat Debye's theory of specific heat-Debye approximation-Specific heat capacity Experimental verification

UNIT IV - FREE ELECTRON THEORY OF METALS **12**

Free electron theory – Drude Lorentz theory – Explanation of Ohm's law – Electrical conductivity – Thermal conductivity – Wied-Mann and Franz ratio – Sommerfield model – Schotcky effect – Hall effect – Hall voltage and Hall coefficient – Mobility and Hall angle – Importance of Hall effect – Experimentaldetermination of Hall coefficient.

UNIT V - DILECTRICS AND SUPERCONDUCTIVITY **12**

Dielectrics- Dielectric constant and displacement vector- Clausiss mossotti relation- Atomic or molecular polarizability – Types of polarizability – Superconductivity-Occurrence of superconductivity – Destruction of superconductivity by magnetic fields – Meissner effect – London equation – Josephson effect – Energy gap – Elements of BCS theory – Classification of Superconductivity – Application

A

TEXT BOOKS

1. Pillai S.O., Soild State Physics, 6th Edition, New Age Science, 2013.
2. Charles Kittel, Introduction to Solid State Physics, Wiley, 2005.

REFERENCES

1. Ashcroft W.and Mermin N.D., Solid State Physics, Holt-Rinehart-Winston,1976.
2. Blakemore J. S., Solid State Physics, 2nd Edition, Cambridge University Press, Cambridge, 1974.
3. Dekker A. J., Solid State Physics, Mac Millan, 1971.
4. Giuseppe Grosso, Giuseppe Pastori Parravicini, Solid State Physics,Academic Press, Second Edition, 2014.
5. Woolfson M. M., An Introduction to X-ray Crystallography, Cambridge University Press,1991.

BPS6L1	CORE 19 - ELECTRONICS LAB II	L	T	P	C
	Total contact Hours-30	0	0	4	2
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- To make the students learn about the physics from the basic and understood all technical background with all concepts understands thoroughly

COURSE OUTCOMES (COs)

CO1	Execute the basic circuits to create amplifier circuits, oscillator, regulated power supplies etc.,
CO2	Understand the given concepts and its physical significance
CO3	Apply the characteristics of electronic devices in practicals.
CO4	Understand about the significance of laws involved in electric circuit
CO5	Apply and know about its importance in electronics and mechanical in mathematical Process
CO6	Analyze the detail about practical importance to be aware of the concepts from the basis.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
					✓					

4	Approval	Academic Council Meeting

BPS6L1 - ELECTRONICS LAB II

1) Colpitt Oscillator – transistor
2) Cathode Ray Oscilloscope
3) IC regulated power supply
4) ASM programs – Add & subtract (all modes of addressing) - µP 8085
5) programs – multiply & divide (all modes of addressing) - µP 8085
6) Verification of DeMorgan theorem
7) Solving simultaneous equations – Op-amp IC 741.

TEXT BOOKS:-

1. C.C Ouseph, G.Rangarajan- A Text Book of Practical Physics- S. Viswanathan Publisher-Part I (1990)
2. C.C Ouseph, C.Rangarajan, R.Balakrishnan- A Text Book of Practical Physics- S.Viswanathan Publisher-Part II (1996)

BOOKS FOR REFERENCE:-

4. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002)

BPS6E6	MAJOR ELECTIVE - NANO SCIENCE AND NANOTECHONOLOGY	L	T	P	C
	Total contact Hours-60	5	0	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- :- To learn and study about the Processing and Properties of Nanostructured, nanoparticles, etc.,

COURSE OUTCOMES (COs)

CO1	To learn about the basic of material science with special, emphasize on nanomaterials
CO2	To know about processes in handling polymers and nanostructured materials
CO3	Tounderstand various forms of nanomaterials and polymers for special applications
CO4	Understand Metal/Ceramic Powder synthesis methods for composite
CO5	Understand and learn about the charectrization techniques and basics of non-linear optical property
CO6	Understand the environmental impact of nanostructured materials

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
						✓					
4	Approval	Academic Council Meeting									

BPS6E7 – NANO SCIENCE AND NANOTECHONOLOGY

UNIT I - BASICS OF NANOSCIENCE **12**

Nano revolution of the 20thcentury - Difference between bulk and nanoscale materials and their significance - Properties at the nanoscale - Optical property Magnetic property and electronic property - Size dependent behavior – Scaling Mechanical properties of Nano materials and Chemical properties of
Nanoparticles.

UNIT II - CLASSES OF NANOMATERIALS **12**

Metals and Semiconductor Nanomaterials - Quantum dots - Nano wells – Nano ribbons and Nano Wires - Bucky balls - Carbon nanotubes - Single walled and Multi walled CNT-Structure - Synthesis- Properties- Functionalization and applications - Fullerenes/Bucky Balls/ C60- Synthesis - Properties Functionalization
And application

UNIT III - SYNTHESIS OF NANOMATERIALS **12**

Wet Chemical Synthesis for Nanomaterials: Chemical and co-precipitation, Sol fundamentals-sol-gel synthesis of metal oxides, Micro emulsions or reverse micelles, Solvothermal, Microwave heating synthesis, Sonochemical synthesis, Electrochemical synthesis, Photochemical synthesis, Langmuirblodgett (LB) technique.

UNIT IV - CHARACTERIZATION TECHNIQUES **12**

Powder X-Ray Diffraction, Energy dispersive X-ray (EDX), X-ray photoelectron spectroscopy (XPS), Scanning electron microscope (SEM), Transmission electron microscope (TEM), Scanning tunnelling microscope (STM), Atomic force microscope (AFM), Scanning probe microscopy (SPM), UV-Visible absorption, Photoluminescence, Impedance measurement, IN characteristics, Vibrating sample magnetometer (VSM).

UNIT V - APPLICATIONS OF NANOTECHNOLOGY **12**

Nanotechnology in Energy systems - Electronics - Environment - Space and Aviation - Textiles - Food and Agriculture - Automotive Industry – Solar Technology - Chemical engineering - Building and Construction - Biotech and Biomedical Engineering - Pharmaceutical and drugs - Molecular Nanoelectronics Nanobots - Photonic crystals – NEMS(NANO ELECTRO MECHANICAL SYSTEM) device - Nanosensors and Devices.

BOOKS FOR STUDY:

1. Structure and properties of solid state materials – B. Viswanathan, Oxford: Alpha Science International, II Edition (2006).
2. Nano the essentials by T.Pradeep, Tata McGraw-Hill publishing company limited (2007).

BOOKS FOR REFERENCES:

1. Nanocomposite Science and Technology- Pulickel M. Ajayan, Linda S. Schadler, Paul V. Braun, Copyright © 2003 Wiley-VCH Verlag GmbH & Co. KGaA.
2. Nanoparticles: from theory to application- G.Schmidt, Wiley Weinheim (2004).
3. Nanotechnology principle and practices by Sulabha K.Kulkarni, Capital publishing company (2007), India.
4. Encyclopedia of materials characterization-C.Rechard Brundle, Charles A.Evans, ButterworthHeinemann publishers (1992).
5. Introduction to nanotechnology by Charles P.Poole, Frank J. Owens, John Wiley & Sons publication (2003).
6. Synthesis of inorganic materials by Ulrich Schubert, Nicola Husing, Wiley-VCH, 2nd Edition (2005).
7. Cluster Beam synthesis of nanotechnology by Milani and S.Lannota, Springer Verlang Berlin Heidelberg, New York (1999).

Course Coordinator **HOD**

BPS6E7	MAJOR ELECTIVE - ENERGY RESOURCES	L	T	P	C
	Total contact Hours-60	3	1	0	4
	Prerequisite course – Chemistry / Physics / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

COURSE OBJECTIVES:- :- To learn and study about the Renewable and Non-Renewable energy, and environmental aspects,

COURSE OUTCOMES (COs)

CO1	Explain the principles that underlie the ability of various natural phenomena to deliver solar energy
CO2	Outline the technologies that are used to harness the power of solar energy
CO3	Discuss the positive and negative aspects of solar energy in relation to natural and human aspects of the environment.
CO4	To study about the conventional and non-conventional energy
CO5	Understand and learn about the Geothermal thermal energy
CO6	Understand the environmental impact of other forms of energy

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PSO3
2	CO1	H	M	L	L	L	L	M	H		
	CO2	M	H	L	M	M	L	M			
	CO3	H	M	M	H	M	M	H			
	CO4	H	H	H	M	M	M	H			
	CO5	M	H	M	L	H	M	M			
	CO6	H	H	H	L	H	M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
						✓					
4	Approval	Academic Council Meeting									

UNIT -I CONVENTIONAL ENERGY SOURCES 12

Worlds reserve - commercial energy sources and their availability – various forms of energy – renewable and conventional energy system – comparison – Coal, oil and natural gas – applications – Merits and Demerits

UNIT -II SOLAR ENERGY RENEWABLE ENERGY SOURCES 12

Solar energy – nature and solar radiation – components – solar heaters – crop dryers – solar cookers – water desalination (block diagram) Photovoltaic generation – merits and demerits

UNIT -III ENERGY FUNDAMENTALS 12

Biomass energy – classification – photosynthesis – Biomass conversion process

UNIT -IV BIOMASS UTILIZATION 12

Gobar gas plants – wood gasification – advantages & disadvantages of biomass as energy source

UNIT -V OTHER FORMS OF ENERGY SOURCES 12

Geothermal energy – wind energy – Ocean thermal energy conversion – energy from waves and tides (basic ideas)

TEXT BOOKS

1. G.D.Rai, Non- Conventional Energy Sources, Kanna Publishers, IVth Edn., 15th Reprint, 2005.

REFERENCE BOOKS

1. “Renewable energy sources and emerging Technologies”, by D.P. Kothari, K.C. Singal & Rakesh Ranjan, Prentice Hall of India pvt. Ltd., New Delhi. 2008.
2. “Renewable Energy sources and their environmental impact” – S.A. Abbasi and Nasema Abbasi PHI Learning Pvt. Ltd., New Delhi, 2008.

Course Coordinator **HOD**

	PROJECT (DISSERTATION AND VIVA-VOCE)	L	T	P	C
	Total Contact Hours – 45	0	0	20	10
BPS6P1	Prerequisite course – Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department: -Dr.S.Anandhi/Physics				

COURSE OBJECTIVES:-To make the students understand the importance of experimental and theoretical analysis and to educate and train the students to write the scientific papers.

COURSE OUTCOMES (COs)

CO1	List out the concept and objectives, nature, types and methods of project.
CO2	To develop a scientific approach in solving problems related to physics
CO3	To Practice the research design, and methodology
CO4	To study the characterization and synthesized material
CO5	Measure the major findings, suggestions and conclusion
CO6	Design the model for project report.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PS O2	PS O3
2	CO1	H	H						H		
	CO2	M	H								
	CO3	H	H								
	CO4	H	M								
	CO5	H	H								
	CO6	M	H								

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)		Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓						
4	Approval	Academic Council Meeting									

PROJECT (DISSERTATION AND VIVA-VOCE) **10**

Topics in Projects will be assigned to each group of students by the staff coordinator guiding the project. The project work is to be carried out at the department or any other organization approved by the staff coordinator and the HoD. Review meeting will be conducted once in a month. Viva Voce presentation will be conducted by the HoD, internal examiner and the staff coordinator guiding the project.

Marks

Dissertation	**150**
Viva- Voce Examination	**50**

Course Coordinator **HOD**

BBA011	**BUSINESS PROCESS OUTSOURCING-MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours– 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name& Department:- Ms.D.K.Sowmiyalaskshmi,BBA				

COURSE OBJECTIVES:-

- To familiarize the students with the basic fundamentals of BPO.
- To impart knowledge on type of BPO and call centers .
- To enable the students onthe conceptHealthcare BPO & Transaction BPO.
- To peep into the concept of Human Resource BPO and the career opportunities in BPO.

COURSE OUTCOMES(COs)

CO1	Describe the basic fundamentals of BPO.
CO2	Discuss and develop the awareness about Types of BPOs and Call Centers
CO3	Identify the concept of Health care BPOs
CO4	Examine the concept of Transaction BPOs
CO5	Develop the confidence in Human Resource BPO and career opportunities in BPOs
CO6	Formulate the Types of Transaction Processing BPO in India

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H							H		
	CO2				H						
	CO3			H							
	CO4		M								
	CO5	M									
	CO6		H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
									✓	
4	Approval		Academic Council Meeting							

UNIT-I **6**

Business Process Outsourcing– Basics – Benefits of BPO– BPO companies in India.

UNIT-II **6**

BPO Industry – Employment Opportunities– types of BPO – Call centers– Types of Call Centers– Issues and Problems.

UNIT-III **6**

Health Care-BPO - Structure of foreign Health Care sector– Future Trends and Threats.

UNIT-IV **6**

Transaction Processing BPO– Elements of Back Office services– Types of Transaction Processing BPO in India.

UNIT-V **6**

Human Resource BPO-Reasons for outsourcing HR– Activities involved in HR BPO– HR Outsourcing Trends– Carrier in HR BPO.

Text Books:

1. John K. Holvey, Borboro Murphy Melby, Business Process Outsourcing–Wiley Publisher-2007
2. SarikaKulkarni –Business Process Outsourcing–Jai co Publishing house – 2005
3. .RickL.Click, Thomas N.Duening,BusinessProcess Outsourcing–John Willey &sons,Publisher 2004

Reference Books:

1. Deepak Shikapur – BPO DIGEST– Ameya (Inspiring books) – 2004.
2. Clifton – System analysis for business data processing– Prentice hall Publications.
3. Anandkumar, V. &Biswas, S., 2008. Business Process Outsourcing, Sage Publications Pvt. Ltd

Course Coordinator **HOD**

	DESKTOP PUBLISHING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
BBE002	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthebasic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

BCA001	COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

COMPUTER APPLICATION

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

BCA002	GRAPHICAL AND WEB DESIGNING	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
CO3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								

3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity		
							✓			
4	Approval	Academic Council Meeting								

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

2. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

BCA003	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	

4	Approval	Academic Council Meeting

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. John Villamil-Casanova, Louis Molina, An introduction to multimedia
2. Mohammad Dastbaz, Desgning Interactive Multimedia Systems
3. Bohdan O. Szuprowicz, Multimedia Networking
4. Stephen McGloughlin, Multimedia on the web

BCA004	NETWORKING AND MAINTENANCE	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								

3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity		
							✓			
4	Approval	Academic Council Meeting								

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**
5. **Troubleshooting, Maintaining and Repairing PCs, Stephen J Bigelow ,Tata MCGraw Hill Publication ,Troubleshooting Maintaining and Repairing PCs**

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO 2**	**PSO3**
2	**CO1**	**H**	**L**								
	CO2	**M**	**L**						H		
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

ANIMATION

Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.- Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	Academic Council Meeting

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String –String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.
2. Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.
3. Kernighan., B.W and Ritchie, D.M, " The C Programming Lanaguage", Second Edition, Pearson Education, 2006.

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	Academic Council Meeting

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

CURRICULUM AND SYLLABUS (R 2015)
CHOICE BASED CREDIT SYSTEM
(Applicable to the batches admitted from July, 2015)

B.Sc – VISUAL COMMUNICATION
I – VI SEMESTERS

Semester I

Part	Category	Sub Code	Sub Name	No. of periods per week			C
				L	T	P	
Theory							
Part I	HS	BAL101	Tamil – I	3	1	0	4
		BAL102	French – I				
		BAL103	Hindi - I				
Part II	HS	BEH101	English - I	3	1	0	4
Part III	MC	BVC101	Introduction to Visual Literacy	4	1	0	5
Part III	EEC	BVC102	Communication Skills	4	1	0	5
Practical							
Part III	NMC	BVC1L1	Graphic Design - I	0	0	4	2
Part III	NMC	BVC1L2	Drawing - I	0	0	4	2
Total No. of Contact Hours: 30						**Total No. of Credits: 22**	

Semester II

Part	Category	Sub Code	Sub Name	No. of periods per week			C
				L	T	P	
Theory							
Part I	HS	BAL201	Tamil - II	3	0	0	3
		BAL202	French - II				
		BAL203	Hindi - II				
Part II	HS	BEH201	English - II	3	0	0	3
Part III	MC	BVC201	History of Media	3	1	0	4
Part III	MC	BVC202	Advertising	4	1	0	5
Part IV	HS	BVI204	Environmental Studies	2	0	0	2
Part IV	HS	BBC206	Value Education	2	0	0	2
Practical							
Part III	NMC	BVC2L1	Graphic Design - II	0	0	4	2
Part III	NMC	BVC2L2	Drawing - II	0	0	4	2
Total No. of Contact Hours: 30						**Total No. of Credits: 23**	

Semester III

Part	Category	Sub Code	Sub Name	No. of periods per week			C
				L	T	P	
Theory							
Part I	HS	BAL301	Tamil - III	4	0	0	4
		BAL302	French - III				
		BAL303	Hindi - III				
Part II	HS	BEH301	English - III	4	0	0	4
Part III	MC	BVC301	Public Relations	3	1	0	4
Part III	MC	BVC302	Media Organization	4	1	0	5
Part IV	NME	BVC3E1	Non-Major Elective - I	2	0	0	2
Practical							
Part III	NMC	BVC3L1	Computer Graphics	**0**	0	4	2
Part III	MC	BVC3L2	Photography (Practicals)	**0**	0	4	2
Total No. of Contact Hours: 30						**Total No. of Credits: 23**	

Semester IV

Part	Category	Sub Code	Sub Name	No. of periods per week			C
				L	T	P	
Theory							
Part I	HS	BAL401	Tamil - IV	3	0	0	3
		BAL402	French - IV				
		BAL403	Hindi - IV				
Part II	HS	BEH401	English - IV	3	0	0	3
Part III	MC	BVC401	Elements of Film Studies	4	1	0	5
Part III	MC	BVC402	Media Ethics	4	1	0	5
Part IV	NME	BVC4E2	Non-Major Elective - II	2	0	0	2
	SBE	BVC4E3	Skill Based Elective I	1	0	2	2
Practical							
Part III	MC	BVC4L1	Web Publishing	0	0	4	2
Part III	MC	BVC4L2	Writing for Media	0	0	4	2
Total No. of Contact Hours: 30						**Total No. of Credits: 24**	

Semester V

Part	Category	Sub Code	Sub Name	No. of periods per week			C
				L	T	P	
Theory							
Part III	MC	BVC501	Television Production	4	1	0	5
Part III	MC	BVC502	Media culture & Society	4	1	0	5
Part III	MC	BVC503	Basics of Script Writing	2	0	0	2
Part IV	SBE	BVC5E4	Skill Based Elective – II	1	0	2	2
Part IV	SBE	BVC5E5	Skill Based Elective - III	1	0	2	2
Practical							
Part III	MC	BVC5L1	3D Animation	0	0	6	4
Part III	MC	BVC5L2	Script Writing Practical	0	0	2	2
Part III	NMC	BVC5L3	Event Management	0	0	4	2
Total No. of Contact Hours: 30						**Total No. of Credits: 24**	

Semester VI

Part	Category	Sub Code	Sub Name	No. of periods per week			C
				L	T	P	
Practical							
Part V	ME1	BVC6E6	1.Corporate Communication 2.Print Journalism 3.Cinematography Techniques	4	1	0	5
	ME2	BVC6E7	1.Reporting, Writing and Editing 2.Media Research Methods 3.Psychological Foundation	3	0	0	3
Part V	EEC	BVC6P1	Elective - Project	0	0	10	5
Part V	EEC	BVC6P2	Project - Internship	0	0	10	5
Part V	EEC	BVC6V1	Extension Activities	0	0	2	1
Total No. of Contact Hours: 30						**Total No. of Credits: 19**	
Grand Total **Total No. of Contact Hours: 180**						**Total No. of Credits: 135**	

SUMMARY OF CURRICULUM STRUCTURE AND CREDIT & CONTACT HOUR DISTRIBUTION

S.No	Sub Area	Credit As per Semester						No. of Credit	% of credit
		I	II	III	IV	V	VI		
1	Humanities & Social Sciences (HS)	8	10	8	6			32	23.88
2	Major Core (MC)	5	9	11	14	20	5	54	40.2
3	Non Major Core (NMC)	4	4	2		2		12	8.95
4	Major Electives (ME)							13	7.4
5	Non Major Electives (NME)			2	2			4	2.98
6	Skill Based Electives (SBE)				2	4		6	4.47
7	Employability enhancement Courses (EEC) Project Work, Seminar, Internship, Term Paper, etc.	5					11	16	11.94
	Total Credit	22	23	23	24	26	16	137	100
	Total Contact Hours	30	30	30	30	30	30	180	

LIST OF ELECTIVES

MAJOR ELECTVES –I

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
BVC 601	Corporate Communication	4	2	0	5
	Print Journalism	4	2	0	5
	Cinematography Techniques	4	2	0	5

MAJOR ELECTVES –II

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
	Reporting, Writing and Editing	4	2	0	5
	Media Research Methods	4	2	0	5
	Psychological Foundation	4	2	0	5

NON MAJOR ELECTIVE (NME) I - BCI3E1

Sub Code	Sub Name	L	T	P	C
BAL001	Basic Tamil – I for those who studied other language under Part I	2	0	0	2
BAL002	Special Tamil – I for those who studied Tamil under Part I	2	0	0	2

NON MAJOR ELECTIVE (NME) II – BCI 4E2

Sub Code	Sub Name	L	T	P	C
BAL003	Basic Tamil – II for those who studied other language under Part I	2	0	0	2
BAL004	Special Tamil – II for those who studied Tamil under Part I	2	0	0	2

LIST OF SKILL BASED ELECTIVES (Choose any three courses – one in semester IV & two in semester V): BCI4E3, BCI5E4 & BCI5E5

S.NO	Sub Code	Sub Name	L	T	P	C

1	**BBA010**	Advertising and Sales Management	**1**	**0**	**2**	**2**
2	**BBA011**	BPO Management	**1**	**0**	**2**	**2**
3	**BBA012**	Call Centre Management –Voice & Non Voice	**1**	**0**	**2**	**2**
4	**BBA013**	Customer Relationship Management	**1**	**0**	**2**	**2**
5	**BBA014**	Entrepreneurship Development	**1**	**0**	**2**	**2**
6	**BBA015**	Human Resource Management	**1**	**0**	**2**	**2**
7	**BBA016**	Logistics & Supply Chain Management	**1**	**0**	**2**	**2**
8	**BBA017**	NGO Management	**1**	**0**	**2**	**2**
9	**BBA018**	Office Management	**1**	**0**	**2**	**2**
10	**BBA019**	Retail Management	**1**	**0**	**2**	**2**
11	**BBA020**	Sales and Marking Management	**1**	**0**	**2**	**2**
12	**BBA021**	Yoga and Stress Management	**1**	**0**	**2**	**2**
13	**BBC001**	TALLY – 9	**1**	**0**	**2**	**2**
14	**BBE001**	Journalism and Public Relations	**1**	**0**	**2**	**2**
15	**BBE002**	Desk Top Publishing	**1**	**0**	**2**	**2**
16	**BCA001**	Computer Application	**1**	**0**	**2**	**2**
17	**BCA002**	Graphical and Web Design	**1**	**0**	**2**	**2**
18	**BCA003**	Multimedia	**1**	**0**	**2**	**2**
19	**BCA004**	Networking and Maintenance	**1**	**0**	**2**	**2**
20	**BCA005**	Office Automation	**1**	**0**	**2**	**2**
21	**BCA006**	Web Designing	**1**	**0**	**2**	**2**
22	**BCT001**	Food & Beverage Service	**1**	**0**	**2**	**2**
23	**BCT002**	Food Production	**1**	**0**	**2**	**2**
24	**BCT003**	Travel and Tourism Management	**1**	**0**	**2**	**2**
25	**BMI001**	Clinical Microbiology	**1**	**0**	**2**	**2**
26	**BMI002**	Herbal Medicine	**1**	**0**	**2**	**2**
27	**BPS001**	Electrical Technician	**1**	**0**	**2**	**2**
28	**BPS002**	Electronic Servicing & Maintenance	**1**	**0**	**2**	**2**
29	**BPS003**	Medical Electronics	**1**	**0**	**2**	**2**
30	**BPS004**	Medical Laboratory Techniques	**1**	**0**	**2**	**2**
31	**BPS005**	Medical Transcription	**1**	**0**	**2**	**2**
32	**BPS006**	Refrigeration and Air Conditioning Technician	**1**	**0**	**2**	**2**
33	**BSC001**	Animation	**1**	**0**	**2**	**2**

34	**BSC002**	Computer Hardware and Networking	**1**	**0**	**2**	**2**
35	**BSC003**	Computer Programming	**1**	**0**	**2**	**2**
36	**BSC004**	Computer Technology	**1**	**0**	**2**	**2**
37	**BSC005**	Auto cad	**1**	**0**	**2**	**2**
38	**BVC001**	Audio and Video Technician	**1**	**0**	**2**	**2**
39	**BVC002**	Fashion Designing	**1**	**0**	**2**	**2**
40	**BVC003**	Instrumental Music (Key Board & Guitar)	**1**	**0**	**2**	**2**
41	**BVC004**	Photography & Videography	**1**	**0**	**2**	**2**

SYLLABUS

BAL101	TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :□□□□□□□□.□.□□□□□□□□□□□□□&□□□□□□□□□□□□				

COURSE OBJECTIVES :- □□□□□□□□□ □□□□□□□□□□□ □□□□□□□□□□ □□□□□□□□ □□□□□ □□□□□□□□□ □□□□□□□ □□□□□□□□

COURSE OUTCOMES (COs)

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Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

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Course Coordinator HOD

ENGLISH I

	ENGLISH I	L	T	P	C

Total Contact Hours – 60	4	0	0	4
Prerequisite course – + 2 level English				
Course Coordinator Name & Dept: Mrs. SHEEBA - English				

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019
3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

CourseCoordinator **HOD**

	FRENCH	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES:-

To introduce students to basic principles and practice of oral and written communication.

COURSE OUTCOMES (COs)	
CO1	To understand the basics of the language.
CO2	To analyze the sentence patterns and form the grammar.
CO3	To learn the basics of grammar along with its principles.
CO4	To remember the anatomy of conjugations.
CO5	To create dialogs and conversation on their own within the language & to practice oral and written skills.
CO6	To remember the necessary rules of the language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PS O2
2	CO1	1	3	2	1	1	1	3		
	CO2	3	3	3	1	2	1	3		
	CO3	3	3	3	1	3	1	3		
	CO4	3	3	3	1	1	1	3		
	CO5	3	3	3	3	1	1	3		
	CO6	3	3	3	2	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I - Vous comprenez **9**

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail! **9**

Masculine Singular and Feminine singular **-** Conjugaison des verbes (present tense) -

Les articles définis.

UNIT III En se detend? 9

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir)

UNIT IV Racontez-moi 9

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage! 9

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!**-**Article partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXTBOOK:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator HOD

BVC101	**Introduction to Visual Literacy**	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept. of Visual Communication				

COURSE OBJECTIVES :-

Apply appropriate communication skills across settings, purposes, and audiences. Demonstrate knowledge of communication theory and application.

COURSE OUTCOMES (COs)

CO1	Knowledge will be gained about Introduction & Definition of Communication
CO2	Knowledge will be gained about Levels of Communication

CO3	Knowledge will be gained about Stages of Communication
CO4	Knowledge will be gained about Elements of Design
CO5	Knowledge will be gained about Design Process
CO6	Knowledge will be gained about Introduction & Definition of Communication

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT IIntroduction to Communication 9

Need for and the Importance of Communication. Communication as an Expression, Skill and Process. Understanding Communication: SMRC Model

Unit II Communication as Process 9

Communication as a Process. Message, Connotation & Denotation. Types of Communication.Levels of Communication.

Unit III Stages of Communication 9

Stages of Interpersonal Communication. Communication Barriers. Advantages and DisadvantagesOf Group Communication. Advantages and Disadvantages of Interpersonal Communication.

Unit IV Elements of Design 9

Elements of Design: Line, Shape, Space, Colour, Texture, Form, Etc. Principles of Design:Symmetry, Rhythm, Contrast, Balance, Mass/Scale, Etc. Design and Designers (Need, Role,Process, Mehodologies, Etc.)

Unit V Design Process 9

Colour Psychology and Theory (Some aspects) Definition, Optical / Visual Illusions, Etc.Various stages of Design process – Problem Identification, Search for solution refinement,Analysis, Decision making and Implementation.

Reference Books:

1. Visual Communications: Images with Messages – Lester.E, Thompson Learning (2000)
2. Pocket Guide to Colour with Digital Applications – Schildgen, Thompson Learning (1998)

Text Books:

1. Manual of Graphic Technique – Palmer, Astrgal Books (1982)
2. Visual Awareness - Palmer, Batsford (1972)

BVC102	**Communication Skills**						**L**	**T**	**P**	**C**
	Total Contact Hours – 45						3	1	0	4
	Prerequisite course –+2 With any Major									
	Course Coordinator Name &Department :- VISUAL COMMUNICATION									
COURSE OBJECTIVES :- Learners will be familiar with the basic programming in C Language concepts.										
COURSE OUTCOMES (COs)										
CO1	Remember the basic structures of Data type, operators and statements									
CO2	Understand the Fundamentals of C programming.									
CO3	Choose the suitable loop statements and decision making statements to solve the problem.									
CO4	Use functions to apply for real time application									
CO5	Ability to code C using Array and Pointers									
CO6	Develop an application using files									
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
	CO1	H	M						H	M
	CO2	H	M							
	CO3	H	M							
	CO4	H	M							
	CO5	H	M							
	CO6	H	M							

3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part III Project	Part V Extension Activity		
				✓						
4	Approval	Academic Council Meeting								

Unit I Interpersonal Communication 9

Interpersonal communication: Theories and Models-Transactional analysis etc.

Unit II Group Communication 9

Group communication: Theories and Models-Decision making process, leadership, team work communication patterns group context

Unit III Public Communication 9

Public communication: Rhetoric Model, Persuasion Models.

Unit IV Non-Verbal Communication 9

Non-verbal Communication: Theories and Models, Types of non-verbal behavior Kinesics

Unit V Designing Messages for different audiences 9

Ideation and Creative Thinking-Lateral Thinking. Designing Messages for different audiences

REFERENCE BOOK

1. Communication Mosaics: An Introductionto the Field of CommunicationWood, Julia T, Wadsworth, 2001.

Text Book

1. Persuasion-Reception and Responsibility - Larson, Charles U; Wadsworth, 2001.

CODE No. U18MCVC1L1	**COURSE NAME : Graphic Design I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	1	0	3	2
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Dots and Lines of Different Thickness

UNIT – 2 : To learn about Curves and Shapes of Different Thickness

UNIT – 3 : To learn about Patterns and Distortion

UNIT – 4 : To learn about Lettering

UNIT – 5 : To learn about Fonts

Unit I	Dots and Lines of Different Thickness	Number of Hours: 6
Unit II	Curves and Shapes of Different Thickness	Number of Hours: 6
Unit III	Patterns and Distortion	Number of Hours: 6
Unit IV	Lettering	Number of Hours: 6
Unit V	Fonts	Number of Hours: 6

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Dots and Lines of Different Thickness
CO2	Knowledge will be gained about Curves and Shapes of Different Thickness
CO3	Knowledge will be gained about Patterns and Distortion
CO4	Knowledge will be gained about Lettering
CO5	Knowledge will be gained about Fonts
Category	MC
Approval	47th Academic Council Meeting

CODE No.	**COURSE NAME : Drawing I**	**L**	**T**	**P**	**C**
BVC1L2	Total Contact Hours – 45	0	0	4	2
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Dots and Lines

UNIT – 2 : To learn about Geometrical Shapes and Overlapping

UNIT – 3 : To learn about Patterns and Surface Textures

UNIT – 4 : To learn about Overlapping Objects

UNIT – 5 : To learn about Light and Shade

Unit I	Dots and Lines	Number of Hours: 6
Unit II	Geometrical Shapes and Overlapping	Number of Hours: 6
Unit III	Patterns and Surface Textures	Number of Hours: 6
Unit IV	Overlapping Objects	Number of Hours: 6
Unit V	Light and Shade	Number of Hours: 6

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Dots and Lines
CO2	Knowledge will be gained about Geometrical Shapes and Overlapping
CO3	Knowledge will be gained about Patterns and Surface Textures
CO4	Knowledge will be gained about Overlapping Objects
CO5	Knowledge will be gained about Light and Shade
Category	NC
Approval	47th Academic Council Meeting

SEMESTER II

BAL201	TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL – I				
	Course Coordinator Name& Department :□□□□□□□□.□.□□□□□□□□□□□□□&□□□□□□□□□□□□				
COURSE OBJECTIVES :- □□□□□□□□□□□□□□□□ □□□□□□□□ □□□□ □□□□□□□□□□□□ □□□□□□□□□□□□□□□					
COURSE OUTCOMES (COs)					
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CO5	□□□□□□□□□□□□□□□□ □□□□□□□□ □□□□ □□□□□□□□ □□□□□□□□□□□□ □□□□□□□□□□□□□□□□
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Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

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CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb – Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

CourseCoordinator **HOD**

	Hindi	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana In Sabari part
CO2	Understand the historical stories
CO3	Apply the concept of translation
CO4	Analyzeand develop the letter writing skills
CO5	Evaluateand develop the speaking skills
CO6	Create knowledge in letter writing and speaking skills

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								

	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**

MODERN POETRY - SHABARI

UNIT II **09**

ONE ACT PLAY - EKANKI SANKALAM

UNIT III **09**

TRANSLATION - HINDI – ENGLISH ONLY

UNIT IV **09**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **09**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - Lokbharathi Prakashan ,1 Floor, Duebari Building,Mahathma Gandhi Marg, Allahabad – 1.

UNIT II – Publishers – Vani Prakasam, New Delhi-110002

UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

	FRENCH	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

To introduce students to the complexity of the grammar and how to overcome it with simple rules.

COURSE OUTCOMES (COs)

CO1	To being able to interpret the language.
CO2	To familiarize with methodological approaches in the study of literary and cultural texts, such as close reading, socio-historical contextualization, and literary and cultural theory.
CO3	To obtain advanced proficiency in spoken and written French.
CO4	To encourage the development of skills in linguistics, translation, and comparative studies.
CO5	To remember the anatomy of conjugations in past tense.
CO6	To evaluate the given text critically and enhance communication skills.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PS O2
2	CO1	1	3	2	1	1	1	3		

	CO2	3	3	3	1	2	1	3			
	CO3	3	3	3	1	2	1	3			
	CO4	3	3	3	1	1	2	3			
	CO5	3	3	3	3	1	1	3			
	CO6	3	3	2	3	1	1	3			
3	Category	Humanities & Social Studies (HS)		Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓									
4	Approval	Academic Council Meeting									

UNIT I -Quelle journee! **9**La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! **9**

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)

Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? **9**

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? **9**

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est-Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! **9**

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXTBOOK: A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

Code No BVC201	**History of Media**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	4	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES :

UNIT – 1 : To learn about Historical Development of the press
UNIT – 2 : To learn about Study of Leading Newspapers
UNIT – 3 : To learn about Invention and Development of Radio
UNIT – 4 : To learn about Invention and development of TV
UNIT – 5 : To learn about Historical Development Film

	COURSE OUTCOMES (Cos)
CO1	Knowledge will be gained about Historical Development of the press
CO2	Knowledge will be gained about Study of Leading Newspapers
CO3	Knowledge will be gained about Invention and Development of Radio
CO4	Knowledge will be gained about Invention and development of TV
CO5	Knowledge will be gained about Historical Development Film

Mapping of Course Outcomes with Program outcomes (Pos) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	Cos/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O	PSO2	PS O3
2	CO1	H	M	M							
	CO2	H	M	M							
	CO3	H	M	M							
	CO4	H	M	M					H	H	M
	CO5	H	M	M							
	CO6	H	M	M							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
					*					
4	**Approval**	Academic Council Meeting								

UNIT IPRESS MEDIUM 9

Historical Development of the press as a media Institution in India, Advent of printing press inIndia and Newspaper, Role of the press in Indian's freedom movement.

UNIT II NEWSPAPERS IN INDIA9

Study of leading newspapers and journalists in India since 1947. The vernacular press in India, Development of news agencies..

UNIT III DEVELOPMENT OF RADIO9

Invention and development of radio as a medium of mass communication, Development of radio in pre independence & post – independence in India. Development of FM Radio.

UNIT IV DEVELOPMENT OF TELEVISION9

Invention and development of TV as medium of mass communication in India, Advent and growth of satellite and cable TV in India.

UNIT V DEVELOPMENT OF FILM9

Film as medium of communication, Historical development of film in India, Regional cinema.

REFERENCE BOOK

1. Indian Journalism - Nadiq Krishna moorthyPrasaranga, University of Mysore, 1966.

TEXT BOOK

1. Broadcasting in India - Chatterjee, P.C, Sage, New Delhi, 1990.

Sub. Code: BVC202	**Subject Name : ADVERTISING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	1	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator : Mr.Arun mozhi varman, Assistant professor, Visual communication.				

COURSE OBJECTIVES :-

This course is designed as a comprehensive introduction to the principles and practices of advertising, with some attention to IBP. The course is designed for those students who wish to pursue a career in advertising. The primary objective of the course is to provide each student with the background and experience necessary to develop and implement marketing communication strategies.

COURSE OUTCOMES (COs)

CO1	Knowledge will be gained about Advertising & Audience
CO2	Knowledge will be gained about Environment, Components
CO3	Knowledge will be gained about Advertising Management
CO4	Knowledge will be gained about Advertising campaign
CO5	Know the latest trends in advertising.
CO6	Gain knowledge in Audiovisual commercials.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT IDEFINITION OF ADVERTISING 9

Definition, Nature & Scope of advertising, Roles of Advertising; Societal, Communication, Marketing & Economic.Functions of advertising.

UNIT II ADVERTISING & AUDIENCE 9

Based on target audience, geographic area, Media & Purpose.Corporate and Promotional Advertising.Web Advertising.

UNIT III ENVIRONMENT, COMPONENTS 9

Environment, Components -Advertiser, Advertising agency & Media.Consumer behavior.Latest trends in advertising - (India and abroad). Ad Agency - Structure of small, medium & big agencies, functions. Types of agencies - in-house, Independent, Full-service & Specialized.Legal aspects & ethical issues.

UNIT IV ADVERTISING MANAGEMENT 9

Client Brief, Account Planning, Creative Strategy and Brief, Communication Plan, Brand Management - Positioning, brand personality, brand image, brand equity. Case studies.

UNIT IV ADVERTISING CAMPAIGN 9

Conceptualization and Ideation, Translation of ideas into campaigns, Visualization Designing & Layout, Copy writing - Types of headlines, body copy base lines, slogans, logos, & trademarks. Typography, Writing styles, Scripting. Story board.Advertising campaign-from conception to execution.

REFERENCE BOOKS

1. Advertising Theory and Practice – Fryburger and Rotzoll, AAITBS Publisher (1996)
2. Advertising Managers Hand book – Stansfied, Richard, UBBSPD Publishers

TEXT BOOK

1. Advertising Hand book – Mohan, Atlantis Publications
2. Advertising Management: Concepts and Cases – Tata McGraw – Hill Jewler, E, Thomson Learning (1998)

BCI204	**ENVIRONMENTAL STUDIES**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name &Department:- – Mrs. S. Vinitha / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and a biotic ecosystem.

COURSE OUTCOMES (COs)

CO1	Gain the knowledge about the environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Apply its properties and uses of Hydrocarbons and Alkynes
CO4	Analyze the impact of population and Urbanization to affect the system of habitat loss
CO5	Evaluate the Social issues by our conservation act
CO6	Create the organic environmental approach to protect our habitat for the next generation.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	3	3	1	1	3		
	CO2	3	3	1	2	2	3	3		
	CO3	3	2	2	2	3	2	3		

	CO4	3	2	3	1	1	3	3			
	CO5	2	3	3	2	3	1	3			
	CO6	3	3	2	2	3	3	3			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)	
		✓									
4	Approval	Academic Council Meeting									

UNIT-I

NATURAL RESOURCES:

The multidisciplinary nature of Environmental Studies;

Definition, scope and importance. Need for public awareness.

Natural resources: Nenewable and Non- renewable resources;

Natural resources and associated problems.

Forest resources: Use ami over exploitation, deforestation, case studies, timber extraction, mining, dams and their effects on forests and tribal people.

Water resources: Use and over utilization of surface and ground water, floods, drought, conflicts over water, dams – benefits and problems.

Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case study.Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sounds, case studies.Land resources: Land as resources, land degradation, man induced landslides, soil erosion and desertification.Role of individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT-II

ECOSYSTEM : 9

Concepts of an ecosystem-structure and function of and ecosystem-producers, consumers and decomposers-energy flow in ecosystem-ecological-Succession-Food chains, food webs and ecological pyramids-introduction, types, characteristics features, structure and function of the following

ecosystem – Forest ecosystem Grass land ecosystem, Desert ecosystem, Aquatics ecosystem(Ponds, stream,lakes,rivers,oceans,estuaries)

UNIT-III

BIODIVERSITY AND ITS CONSERVATION: 9

Introduction – Definition: genetic, species and ecosystem diversity- Biogeographical classififcation of India- Value of Biodiversity: consumptive use, productive use, social, ethicial, aesthetic and option values – Biodiversity at global, national, local levels –India as a mega diversity nation –Hotspots of wildlife conflicts- Endangered and endemic species of India- Conservation od biodiversity In-Situ and Ex-Situ conservation of biodiversity.

ENVIRONMENTAL POLLUTION:

Definition, causes, effects and control measures of – Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, and Nuclear hazards. Solids waste Management: causes effects and control measures of urban and industrial wastes –Role of an individual in earth quake, cyclone and landslides.

UNIT-IV

SOCIAL ISSUES AND THE ENVIRONMENT: 9

From unsustainable to sustainable development, urban problems related to energy. Water conservation, rain water harvesting, watershed management, resettlement and rehabilitation of people, its problems and concerns.Case studies. Environmental ethics: Issues and possible solutions. Climate change, holocaust.Case studies. Water land reclamation- Environment Protection Act- Air(Prevention and control of pollution) Act –Wildlife protection act- Forest conservation Act- Issues involved in enforcement of environmental legislation – Public awareness.

UNIT-V

HUMAN POPULATION AND THE ENVIRONMENT: 9

Population growth, variation among nations- population explosion- family welfare Programme-Environment and human health. Human values- value Education –HIV/AIDS.

Women and child welfare- Role of Information Technology in Environment and Human health –Case studies.

TEXT BOOKS

1. Sharma.B.K. and Kaur, *Environmental Chemistry*, Goel Publishing House, Meerut, 1994.

2. De.A.K., *Environmental Chemistry* , New Age International (p) lt., , New Delhi, 1996.

3. Kurian Joseph & R. Nagendran, *Essential of Environmental Studies*, Pearson Education, 2004.

REFERENCE BOOKS

1. Dara S.S., *A Text Book of Environmental Chemistry and pollution control*, S.Chand & Company Ltd.,New Delhi, 2004.

2. Jeyalakshmi.R, *Principles of Environmental Science*, 1st Edition, Devi Publications, Chennai 2006.

3. Kamaraj.P & Arthanareeswari.M, *Environmental Science – Challenges and Changes*, 1st Edition, Sudhandhira Publications, 2007.

4. Arivalagan.K, Ramar.P & Kamatchi.P, *Principles of Environmental Science*, 1st Edition, Suji Publications, 2007.

Course Coordinator HOD

BBC206	**VALUE EDUCATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name &Department:- Ms. G. Vinothini, Commerce				

- **COURSE OBJECTIVES**
- To enable the students to understand the Social values.
- To provide knowledge on the features forlife.
- To acquire the knowledge on Humanrights.
- To impart the knowledge on Environment and Ecologicalbalance.
- To educate the knowledge on Socialevils..

COURSE OUTCOMES (COs)

CO1	Recall the basic concept of human values, Social Value role of medias, Self-introspection – Self esteem
CO2	Understand the duties and responsibilities of individuals and role of media
CO3	Apply Salient features for life, : Truth, commitment,, honesty and integrity, forgiveness and love and also positive creative thinking
CO4	Demonstrate Universal declaration of Human rights, peace and nonviolence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship.
CO5	Analyze living and nonliving environmental balance, Ecological balance and conservations and enrichment
CO6	Manipulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M					H		
	CO2	H	H	H		L					
	CO3	M	H	M	M						
	CO4	H	M	L							
	CO5	H	H	M			M				
	CO6	M	M	L							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
							✓			

	Approval	Academic Council

		Meeting	

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UNIT-I: Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

UNIT-II: Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT-III: Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development.

UNIT-IV: Social values - Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms.

UNIT-V: Effect of international affairs on values of life/ Issue of Globalization - Modern warfare - Terrorism. Environmental issues - mutual respect of different cultures, religions and their beliefs.

Reference Books:

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995)

2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.

3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.

4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)

5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.

6. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

Course Coordinator HOD

CODE No.	COURSE NAME : GRAPHIC DESIGN II	L	T	P	C
BVC2L11	Total Contact Hours – 30	0	0	4	2
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Logo design

UNIT – 2 : To learn about Letterhead

UNIT – 3 : To learn about Visiting Cards

UNIT – 4 : To learn about Brochures

UNIT – 5 : To learn about Print Advertisements – Black & White, Colour

UNIT I	**LOGO DESIGN**	6
UNIT II	**LETTERHEAD**	6
UNIT III	**VISITING CARDS**	6
UNIT IV	**BROCHURES**	6
UNIT V	**BLACK & WHITE, COLOUR**	6

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Logo design
CO2	Knowledge will be gained about Letterhead
CO3	Knowledge will be gained about Visiting Cards
CO4	Knowledge will be gained about Brochures
CO5	Knowledge will be gained about Print Advertisements – Black & White, Colour
Category	MC
Approval	47th Academic Council Meeting

CODE No.	COURSE NAME :DRAWING – II	L	T	P	C
BVC2L2	Total Contact Hours – 45	0	0	4	2
	Prerequisite – +2 With Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Forms- humans, animals, birds,

UNIT – 2 : To learn about Live models

UNIT – 3 : To learn about Landscapes

UNIT – 4 : To learn about Monuments

UNIT – 5 : To learn about Still life

UNIT I	**FORMS - HUMANS, ANIMALS, BIRDS**	6
UNIT II	**LIVE MODELS**	6
UNIT III	**LANDSCAPES**	6
UNIT IV	**MONUMENTS**	6
UNIT V	**STILL LIFE**	**6**

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Forms- humans, animals, birds
CO2	Knowledge will be gained about Live models
CO3	Knowledge will be gained about Landscapes
CO4	Knowledge will be gained about Monuments
CO5	Knowledge will be gained about Still life
Category	NC
Approval	47th Academic Council Meeting

CODE No.	COURSE NAME :DRAWING – II	L	T	P	C

BVC2L2	Total Contact Hours – 45	0	0	4	2
	Prerequisite – +2 With Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Forms- humans, animals, birds,

UNIT – 2 : To learn about Live models

UNIT – 3 : To learn about Landscapes

UNIT – 4 : To learn about Monuments

UNIT – 5 : To learn about Still life

UNIT I	**FORMS - HUMANS, ANIMALS, BIRDS**	6
UNIT II	**LIVE MODELS**	6
UNIT III	**LANDSCAPES**	6
UNIT IV	**MONUMENTS**	6
UNIT V	**STILL LIFE**	**6**

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Forms- humans, animals, birds
CO2	Knowledge will be gained about Live models
CO3	Knowledge will be gained about Landscapes
CO4	Knowledge will be gained about Monuments
CO5	Knowledge will be gained about Still life
Category	NC
Approval	47th Academic Council Meeting

SEMESTER III

BAL301	TAMIL – III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :□□□□□□□□.□.□□□□□□□□□□□□□&□□□□□□□□□□□□				

COURSE OBJECTIVES :- □□□□□□□□□□□□□□

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BEH301	Prerequisite course – + 2 level English
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English

COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills..

COURSE OUTCOMES (COs)

CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L								
	CO4	H	L						H		
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message - Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS
12

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS
12

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

CourseCoordinator **HOD**

	Hindi	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana in Panchavati part
CO2	Understand the history of Hindi literature
CO3	Apply the concept of Hindi grammatical speech
CO4	Analyze and develop the translation skills
CO5	Evaluate and develop the unseen passage skills
CO6	Create the skills in Hindi language

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I **09**

POETRY - PANCHAVATI

UNIT II **09**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **09**

ALANKAR – Anupras – Yamak - Slesh - Vakrokthi Upama – Rupak – Drishtanth - Virodhabas.

UNIT IV **09**
TRANSLATION - HINDI – ENGLISH

UNIT V **09**
COMPREHENSION

Text Books:

By Maithilisharan Gupt, Anuvadh Abhyas - III

Reference Books:
Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

	FRENCH	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

To develop the technical aspects of the language and varied grammatical nuances to interpret the subject matter.

COURSE OUTCOMES (COs)

CO1	To impart the various aspects that makeup the language.
CO2	To learn some facts, procedures, practice certain grammatical structures, and practice communicative strategies.
CO3	To learn the culture of the language natives.
CO4	To analyse the differences between the basic and advanced grammar.
CO5	To remember the interlink between the conjugations
CO6	To understand grammatical strictures.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PS O2

2	CO1	1	3	2	1	1	1	3		
	CO2	3	3	3	3	2	1	3		
	CO3	3	3	3	1	3	1	3		
	CO4	2	3	3	1	1	1	3		
	CO5	3	3	3	1	1	2	3		
	CO6	3	3	3	2	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I Vivement demain! **9**

Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? **9**

Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? **9**

Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme!

Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-

La forme ((en + participle present))

UNIT V On se retrouve ! **9**

Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present -Passe compose-Imparfait et future

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

BVC301	**Public Relations**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Visual Communication / Advertising Studied in Semester II				
	Course Coordinator Name & Department :- Ms. A. Niramathi/VISCOM				

COURSE OBJECTIVES :-

Learners having knowledge in basics of Advertising can understand the functions of Public relations skills. The purpose of this course is providing a clear understanding of the concepts that Public Relations.

COURSE OUTCOMES (COs)

CO 1	Knowledge will be gained about Introduction to Public Relations
CO 2	Knowledge will be gained about Researching the Publics
CO 3	Knowledge will be gained about Relating to the Media
CO 4	Knowledge will be gained about Public service announcements

CO 5	Knowledge will be gained about Professional ethics & Career Opportunities

UNIT 1 INTRODUCTION TO PUBLIC RELATIONS 9

Defining Public Relations**,** The history of public relations in modern organizations**.**Theories and paradigms of effective public relations. Market and audience research and analysis.

UNIT 2 CAMPAIGN DEVELOPMENT 9

Analyzing public opinion. Campaign development, image and text design, media relations.

UNIT 3 WRITING FOR MEDIA 9

writing for media Market surveys, writing for news releases. survey construction. Preparing survey questions prepare survey drafts

UNIT 4 PUBLIC SERVICE ANNOUNCEMENTS 9

Producing public service announcements. Conducting news conferences, and design web pages.

UNIT 5 CRISIS MANAGEMENT 9

Crisis management, and communication ethics. Professional ethics of Public Relations.Career opportunities in Public relations.

REFERENCE BOOKS

1. The Practice of Public Relations - Fraser ,P. Seitel

TEXT BOOK

1. Upper Saddle River, New Jersey: Prentice Hall, 1998.

BVC302	**MEDIA ORGANIZATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	1	0	4
	Prerequisite course – Visual Communication / Communication Skill Studied in Semester I				
	Course Coordinator Name & Department :- Mr. V. Naveen/VISCOM				

COURSE OBJECTIVES:-

Learners having knowledge in basics of Advertising can understand the functions of Public relations skills. The purpose of this course is providing a clear understanding of the concepts that Public Relations.

COURSE OUTCOMES (COs)

CO1	To learn about Media Organization and Design
CO2	To learn about Organizational Behavior
CO3	To learn about Economics of Media
CO4	To learn about Project Management in Media

CO5	To learn about Programming Strategies &Media Audience

UNIT IMEDIA ORGANIZATION AND DESIGN 9

Media Organization and Design: Some Conceptual Issues. Media as Business and Social Institution.Media entrepreneurship, Greiner's Development Model of a company.

UNITII BEHAVIOUR IN MEDIA ORGANIZATION 9

Behavior in media Organization and Organizational Behavior. Nature and Structure of different Media Organizations-AIR/DD, Private Satellite Channels, Production Houses, employment opportunities in Indian Media industry, Group Behavior, Innovation and Creativity, Culture of organization

UNIT III ECONOMICS OF MEDIA 9

Economics of Media-Relationship between supplier and buyer, Leisure time activity, Cost Factors, Revenue Models, Market Factors, State of the Industry today.

UNIT IV PROJECT MANAGEMENT 9

Project Management in Media-Production Project Cycle .Management themes in production Process, Project Planning, Production Strategies, PPC in Practice-Initiation (Ideas, Evaluation and Assessment), Risk and Impact Assessment, Pre-production, Production Team, Project Specification, Project work plan, Sources of Funds, Budgeting. Project Responsibility, Production Process

UNIT V PROGRAMMING STRATEGIES 9

Programming Strategies, Audience Rating-Analyzing Programming and Audience Trends Marketing Programs arid selling space and time.Different kinds of contracts and legal arrangements, Project Management.

REFERENCE BOOK

Managing in the Media, Block et al – Focal Press, 2001

BCA3E1	SPECIAL TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :□□□□□□□□.□.□□□□□□□□□□□□□&□□□□□□□□□□□□				
COURSE OBJECTIVES :- □□□□□□□□□□□□□□

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	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
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4	Approval		Academic Council Meeting								

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Course Coordinator HOD

CODE No.	COURSE NAME : COMPUTER GRAPHICS	L	T	P	C
BVC3L1	Total Contact Hours – 45	0	0	4	2
	Prerequisite – +2 With any Degree				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Basics tools of Photoshop

UNIT – 2 : To learn about Visiting card Designing

UNIT – 3 : To learn about Poster Designing

UNIT – 4 : To learn about Logo Designing, Brochure Designing

UNIT – 5 : To learn about Letterhead and Banner Designing

UNIT I BASICS TOOLS OF PHOTOSHOP 6

UNIT II VISITING CARD DESIGNING 6

UNIT III POSTER DESIGNING

6

UNIT IV LOGO DESIGNING, BROCHURE DESIGNING

6

UNIT V LETTERHEAD AND BANNER DESIGNING 6

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained Basics tools of Photoshop
CO2	Knowledge will be gained Visiting card Designing
CO3	Knowledge will be gained about Poster Designing
CO4	Knowledge will be gained about Logo Designing, Brochure Designing
CO5	Knowledge will be gained about Letterhead and Banner Designing
Category	NC
Approval	47th Academic Council Meeting

CODE No.	COURSE NAME : PRACTICALPHOTOGRAPHY	L	T	P	C
BVC3L2	Total Contact Hours – 30	0	0	4	2
	Prerequisite – +2 With any Degree				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Landscape

UNIT – 2 : To learn about Photo feature, Photo Language & Environmental Exposure

UNIT – 3 : To learn about Sillhoutte and Freezing movement

UNIT – 4 : To learn about Panorama, Montage, Indoor and Industrial Photography

UNIT – 5 : To learn about Special effects

UNIT I LANDSCAPE (SCENIC, PEOPLE, BIRDS/ ANIMALS, MONUMENTS) 6

UNIT II PHOTO FEATURE, PHOTO LANGUAGE & ENVIRONMENTAL EXPOSURE 6

UNIT III SILLHOUTTE AND FREEZING MOVEMENT 6

UNIT IV PANORAMA, MONTAGE, INDOOR AND INDUSTRIAL PHOTOGRAPHY 6

UNIT V SPECIAL EFFECTS 6

COURSE OUTCOMES (COs)

CO1	Knowledge will be gained aboutLandscape
CO2	Knowledge will be gained aboutPhoto feature, Photo Language & Environmental Exposure
CO3	Knowledge will be gained about Sillhoutte and Freezing movement
CO4	Knowledge will be gained about Panorama, Montage, Indoor and Industrial Photography
CO5	Knowledge will be gained about Special effects
Category	MC
Approval	47th Academic Council Meeting

SEMESTER IV

BAL401	TAMIL – IV	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :□□□□□□□□.□.□□□□□□□□□□□□□&□□□□□□□□□□□□□				

COURSE OBJECTIVES :- □□□□ □□□□□□□□□□□□□□□ □□□□□□ □□□□□□□ □□□□□□□□	
COURSE OUTCOMES (COs)	
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Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								

	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

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Course Coordinator HOD

	Hindi	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. Mustak Husaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Rememberthe skills of the leadership
CO2	Understand and develop the skills to overcome the mistake
CO3	Apply the concept of Hindi essay writing
CO4	Analyzeand develop the translation skills
CO5	Evaluate the unseen passage skills
CO6	Create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I **09**
DRAMA – Andher Nagari

UNIT II **09**
NOVEL - GABAN - Premchand

UNIT III **09**
GENERAL ESSAY

UNIT IV **09**
TRANSLATION - HINDI – ENGLISH

UNIT V **09**
COMPREHENSION

Text Books:

By Bharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas - III

Reference Books:

UNIT 1 - Publisher – Vani Prakashan, New Delhi – 110 002.
UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002
UNIT III– Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra -282002
UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17
UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

	FRENCH	**L**	**T**	**P**	**C**

Total Contact Hours – 45	3	0	0	3
Prerequisite course – Grade 12				
Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

To introduce students to the advanced levels of the language.

COURSE OUTCOMES (COs)

CO1	To learn the culture of the language natives in advanced setup.
CO2	To understand the integral grammar structure in French.
CO3	To encourage the development of skills in linguistics
CO4	To evaluate the Oral and Written skill set
CO5	To remember the language construction
CO6	To enhance advanced fluency in language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PS O2
2	CO1	1	3	3	1	1	1	3		
	CO2	3	3	3	1	2	2	3		
	CO3	3	3	3	1	3	1	3		
	CO4	3	3	3	1	1	1	3		
	CO5	3	3	3	2	1	2	3		
	CO6	3	3	3	1	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I Vous plaisantez! **9** Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien! **9**

Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verbe)

UNIT III A vos risqué et perils! **9**

Le subjonctif Present- La construction passive pour metre en valeur l'object direct de l' action

UNIT IV C'est tout un programme! **9**

Les pronom possessives -Les adjectifs et les pronoms indefinis-Les pronom demonstratifs:

Les constructions --celui+de

UNIT V C'est la fete ! **9**

Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXTBOOK: A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

CourseCoordinator **HOD**

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				
COURSE OBJECTIVES:- To focus on the balanced development of the English language communication skills.					
COURSE OUTCOMES (COs)					
CO1	Remember the basic concepts of English literature				
CO2	Understand the importance of the English language.				
CO3	Apply the themes and values by comprehending the given text.				

CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Eng Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY
12
Laugh and Be Merry – **John Masefield** – Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES
12
Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS
12

Macbeth Soliloquy – **Out, Out, Brief Candle - Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar - Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH
12

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
1. Shakespeare, "Macbeth", Macmillan Publisher, 2014

CODE No.	**COURSE NAME : ELEMENTS OF FILM STUDIES**	**L**	**T**	**P**	**C**
BVC401	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES:- Identify and define the formal and stylistic elements of film. Develop an understanding of film language and terminology, and analyze the ways in which that this language constructs meaning and ideology.

	COURSE OUTCOMES (COs)
CO1	Observe with knowledge and reflect upon the articulation of a film's content, form and structure.
CO2	Identify and define the formal and stylistic elements of film. Develop an understanding of film language and terminology, and analyze the ways in which that this language constructs meaning and ideology.
CO3	Gain a basic understanding of film theory and global film history, to be able to identify significant movements and articulate key concepts.
CO4	Demonstrate familiarity with diverse forms of the moving image, including, for example, the feature film, experimental and avant-garde cinema, video art and moving image installation, television and digital media.
CO5	Understand the relationship between film form and its historical and cultural contexts. Describe how a film offers a set of social, political and cultural ideas and questions through form and content.
CO6	Demonstrate a competency in discussing the ways in which film is influenced and shaped by individuals, movements, institutions and technologies with local, national, transnational and global dimensions.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O	PSO2	PS O3

2	CO1	H	M									
	CO2	H	M									
	CO3	H	M									
	CO4	H	M						H	H	M	
	CO5	H	M									
	CO6	H	M									

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
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4	**Approval**	Academic Council Meeting								

UNIT I HISTORY OF FILM 9

Indian (Hindi, Tamil & other languages), Film form and film History: Early Cinema (1893-1903). Development of Classical Hollywood cinema (1903-1927).German expressionism (1919-1924). French Impressionism and Surrealism (1917-1930)

UNIT IIPRODUCTION PROCESS 9

Planning, pre-production- Concept / Story development, Scripting / Screen play writing, Budgeting, Casting, Locations, Financing. Production-Shooting, Direction & Cinematography. Post production- Editing, Sound recording, Dubbing, Special effects, Graphics &Final mixing. Distribution & Exhibition.

UNIT III MISE-EN-SCENE 9

Mise-en-scene-Realism, the power ofmise-en-scene, aspects of mise-en-scene.space and time, narrative functions of mise-en-scene. Cinematographer properties-the photographic image, framing, duration of the image, montage and long take. Editing- dimensions of film editing, continuity editing, alternative to continuity editing. Sound-the powers of sound, fundamentals of film sound, dimensions of film sound, functions of film sound.

UNIT IV THE CONCEPT OF FORM IN FILMS 9

The concept of form in films, principles of film, narrative form, non-narrative form, dividing a film into parts and Genres.

UNIT V NARRATIVE TECHNIQUES 9

Style as a formal system, narrative unity, ambiguity, a non-classical approach to narrative films, space and time, disunity, form, style and ideology.

REFERENCE BOOKS

1.The Cinema of India – Thoraval, Yves (2000)

TEXT BOOK

1.Encyclopedia of Indian Cinema – Baskar, Yves (2000)

CODE No.	COURSE NAME : MEDIA ETHICS	L	T	P	C
BVC402	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES:-

To learn about Introduction to Media Ethics

- To learn about Media determinants
- To learn about Media Duties
- To learn about Values and ethics of media personnel

To learn about Power of Media in Development

	COURSE OUTCOMES (COs)
CO1	Knowledge will be gained about Introduction to Media Ethics
CO2	Knowledge will be gained about Media determinants
CO3	Knowledge will be gained about Media Duties
CO4	Knowledge will be gained about Values and ethics of media personnel
CO5	Knowledge will be gained about Power of Media in Development
CO6	Knowledge will be gained about Introduction to Media Ethics

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O	PSO2	PS O3
2	CO1	H	M								
	CO2	H	M								
	CO3	H	M								
	CO4	H	M						H	H	M
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
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4	**Approval**	Academic Council Meeting								

UNIT I INTRODUCTION TO MEDIA ETHICS 9

Introduction to Media Ethics.Media – Derived press freedom, Restrictions, limitations; State laws on media control, Contempt of court; defamation- Libel and Slander, Pre independence and post-independence laws (copyright act, press act, RTI, Official secrets act, PrasarBharathi Act, Cable TV ac, Cinematography act, IPC)

UNIT II MEDIA DETERMINANTS 9

Media determinants, Owners and Controlling companies; State and the law; Advertisers; economic determinants; History of control over media with special reference to Emergency. Social responsibilities of Media.

UNIT III MEDIA DUTIES 9

Media Duties, Self Control and regulations, Official bodies such as Press Council, TRAI, BRAI, IBF, CBFC, their constitution and power.

UNIT IV VALUES AND ETHICS OF MEDIA PERSONNE 9

Values and ethics of media personnel (journalists, advertisers, media organizations), Ethical dilemmas, Right to privacy, String Journalism, Yellow Journalism, Misinformation, Disinformation, Paid news, vested interests.

UNIT V POWER OF MEDIA 9

Power of Media in Development; Development and participatory communication; History of Development Communication, investigative journalism and infringement of personal liberty.

REFERENCE BOOKS :

1. The Press - Rao , M. C. National Book Trust (1974).

TEXT BOOK

Journalism Ethics – Basu, Random Publications.

BCA4E1	SPECIAL TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – SPECIAL TAMIL – I				
	Course Coordinator Name& Department :□□□□□□□□.□.□□□□□□□□□□□□□□&□□□□□□□□□□□□				
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Course Coordinator HOD

BVC4L1	**WEB PUBLISHING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	4	2
	Prerequisite – Higher Secondary Level				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about Web Publishing Tool
UNIT – 2 : To learn about FrontPage or Dream weaver
UNIT – 3 : To learn about MM Flash HTML and XML Programming
UNIT – 4 : To learn about Creation of the Home Page of a Website with proper links
UNIT – 5 : To learn about Creation of a dynamic web page

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Web Publishing Tool
CO2	Knowledge will be gained about FrontPage or Dream weaver
CO3	Knowledge will be gained about MM Flash HTML and XML Programming
CO4	Knowledge will be gained about Creation of the Home Page of a Website with proper links
CO5	Knowledge will be gained about Creation of a dynamic web page
Category	OE

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L								
	CO4	H	L						H		
	CO5	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Project/Term Paper/ Seminar/ Internship(PR)
								✓	
4	Approval	47th Academic Council Meeting							

UNIT I	**WEB PUBLISHING TOOL**	**9**
UNIT II	**FRONT PAGE OR DREAM WEAVER**	**9**
UNIT III	**MM FLASH HTML AND XML PROGRAMMING**	**9**
UNIT IV	**CREATION OF HOME PAGE WITH PROPER LINKS**	**9**
UNIT V	**CREATION OF DYNAMIC WEB PAGE**	**9**

REFERENCE BOOK

1. Web Design, - Thomas, Powell (2000)

TEXT BOOK

1. The Principles of Interactive Design – Grahm, L, Thomson Learning (1999)

CODE No.	COURSE NAME : Writing for Media	L	T	P	C
BVC4L2	Total Contact Hours – 60	0	1	3	2
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To learn about concepts of writing for Print Medium
UNIT – 2 : To learn about concepts of writing for Posters
UNIT – 3 : To learn about concepts of writing for Pamphlet
UNIT – 4 : To learn about concepts of writing for Catalogues
UNIT – 5 : To learn about concepts of writing for Advertising & Journals

	COURSE OUTCOMES (COs)
CO1	Knowledge will be gained about writing for Print Medium
CO2	Knowledge will be gained about writing for Posters
CO3	Knowledge will be gained about writing for Pamphlet
CO4	Knowledge will be gained about writing for Catalogues
CO5	Knowledge will be gained about Advertising & Journals

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O	PSO2	PS O3
2	CO1	H	M								
	CO2	H	M								
	CO3	H	M								
	CO4	H	M						H	H	M
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
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4	**Approval**	Academic Council Meeting

CO6	Knowledge will be gained about Introduction to Media Ethics

UNIT I WRITING FOR PRINT MEDIUM 9

UNIT II WRITING FOR POSTERS 9

UNIT III WRITING FOR PAMPHLET 9

UNIT IV WRITING FOR CATALOGUES 9

UNIT V WRITING FOR ADVERTISING & JOURNALS 9

V SEMESTER

BVC501	**TELEVISION PRODUCTION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Visual Communication / Media Organaization Studied in Semester III				
	Course Coordinator Name & Department :- Mr. P. Nagarajan/VISCOM				

COURSE OBJECTIVES:-

Learners having knowledge in basics of Television Production Skill can understand the functions of Media production skills. The purpose of this course is providing a clear understanding of the concepts that Television Producation.

COURSE OUTCOMES (COs)

CO1	To learn about Introduction of Television Production &visualization
CO2	To learn about Principles of script writing
CO3	To learn about Camera techniques & operation
CO4	To learn about Video recording format
CO5	To learn about Editing procedure

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H			H				H	H	H
	CO2	H			L						
	CO3	H			H						
	CO4	H			H						
	CO5	H			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I INTRODUCTION OF TELEVISION PRODUCTION 9

Introduction of visualization, Different approaches to visualization - TV, Films, and Ad films. Types of telecasting, Production standards NTSC, PAL, Secam etc.Television Crew, an overview of direction, art direction, floor management- indoor & outdoor, production management, budget preparation.

UNIT II PRINCIPLES OF SCRIPT WRITING 9

Principles of script writing, creative writing, script formats. Planning of Story, story board, discussions, screen play, dialogue writing, selection of cast, costumes, locations, set &design ,Research. Locations: In-door, set, on-sights sets, - Outdoor on-sight sets, blue matte. Etc.,

UNIT III CAMERA TECHNIQUES & OPERATION9

Camera techniques & operation, Types of camera, Video formats, framing, shots & movements, usage of various types of camera lenses, usages of various filters, objectives TV lighting, various types of Lights ,colour temperature, lighting for different situations, types of lighting.

UNIT IV VIDEO RECORDING FORMAT 9

Video recording format - Audio on line or off line .Usage of various kinds of mics. Knowledge about audio recording (mono, stereo, surround sound, eco etc.,).

UNIT III EDITING PROCEDURE 9

Editing procedure, assembling shots, symbolic editing and editing errors. The language of editing and shooting-sound in editing-categories of sound, post-synchronization, voice-over or narration, music and dubbing, Video Editing .Television graphics& titling and specials effects.

REFERENCE BOOKS

1. Effective W.Production – Millerson, Focal Press Holland (1993)

TEXT BOOK

1. The Television Handbook - Millerson, Focal Press Holland (1998)

BVC502	MEDIA CULTURE AND SOCIETY	L	T	P	C
	Total Contact Hours – 45	**4**	**2**	**0**	**5**

	Prerequisite course – Visual Communication / Communication Skill Studied in Semester I
	Course Coordinator Name & Department :- Mr. P. Nagarajan/VISCOM

COURSE OBJECTIVES

UNIT – 1 : To learn about Why study media?
UNIT – 2 : To learn about Media Audience analysis
UNIT – 3 : To learn about Approaches to media analysis
UNIT – 4 : To learn about : Media as consciousness Industry
UNIT – 5 : To learn about Media and Popular culture

COURSE OUTCOMES (COs)

CO1	Knowledge will be gained about Why study media?
CO2	Knowledge will be gained about Media Audience analysis
CO3	Knowledge will be gained about Approaches to media analysis
CO4	Knowledge will be gained about Media as consciousness Industry
CO5	Knowledge will be gained about Media and Popular culture

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3

2	CO1	H			H				H	H	H
	CO2	H			H						
	CO3	H			H						
	CO4	H			H						
	CO5	H			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I UNDERSTANDING MASSMEDIA 9

Why study media? Understanding mass media.Characteristics of mass media.Effects of mass media on individual, society and culture-basic issues.Power of mass media.Media in Indian society.Definition, nature and scope. Function of mass media.

UNIT II MEDIA AUDIENCE ANALYSIS 9

Media Audience analysis Audience making. Active Vs Passive audience: Some theories of audience-Uses and Gratification Uses and Effects etc.

UNIT III MEDIA AS TEXT 9

Media as text. Approaches to media analysis Marxist, Semiotics, Sociology, Psychoanalysis. Media and realism (class, gender, race, age, minorities, children etc.)

UNIT IV MEDIA AS CONSCIOUS INDUSTRY 9

Media as consciousness Industry.Social construction of reality by media.Rhetoric of the image, narrative etc. Media myths (representation, stereotypes etc.) - Cultural Studies approach to media, audience as textual determinant, audience as readers, audience positioning, establishing critical autonomy.

UNIT V MEDIA AND POPULAR CULTURE 9

Media and Popular culture-commodities, culture and sub-culture, popular texts, popular discrimination, politics popular culture, popular culture Vs people's culture, celebrity industry-personality as brand name, hero-worship etc. Acquisition and transformation of popular culture.

REFERENCE BOOKS

1. Media Literacy – Potter, James W (1998)

TEXT BOOK

1. Media Making – Grasberg, Sage Publication (1998)

BVC503	**BASICS OF SCRIPT WRITING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Visual Communication / Introduction to Visual Communication Studied in Semester I				
	Course Coordinator Name & Department :- Mr. P. Nagarajan/VISCOM				

COURSE OBJECTIVES:-

Learners having knowledge in basics of Communication Skill can understand the functions of Script Writing. The purpose of this course is providing a clear understanding of the concepts that Basic Script Writing.

COURSE OUTCOMES (COs)

CO1	To learn about Introduction to Script writing
CO2	To learn about Writing Script for Television
CO3	To learn about Creating Story Board
CO4	To learn about Writing script for Documentaries
CO5	To learn about Writing Script for Films

UNIT I INTRODUCTION TO SCRIPT WRITING 9

Introduction to Scrip Writing.List of films which received various awards for script writing.

UNIT II WRITING SCRIPT FOR TELEVISION 9

Writing Script for Television - TV Commercial, Talk Shows and Serials.

UNIT III CREATING STORY BOARD 9

Creating Story Board. Writing Fully scripted Story Board for any AD Film

UNIT IV WRITING SCRIPT FOR DOCUMENTARIES 9

Writing script for Documentaries.Fully scripted Documentary on any issue.

UNIT V WRITING SCRIPT FOR FILMS 9

Writing Script for Films.Fully scripted Feature Film on any genre.

REFERENCE BOOKS:

1. Media Analysis Technique – Berger, Sage (1998)

CODE No.	**COURSE NAME : 3D MODELING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	0	0	6	3
BVC5L1	Prerequisite – +2With any Major				

	Course Designed by – Dept of Visual Communication

COURSE OBJECTIVES

UNIT – 1 : To learn about the introduction of 3 D Modeling

UNIT – 2 : To learn about advanced Texturing

UNIT – 3 : To learn about Lighting

UNIT – 4 : To learn about UV Mapping

UNIT – 5 : To learn about Rendering

UNIT I Introduction of 3 D Modeling **9**

UNIT II Advanced Texturing **9**

UNIT III Lighting **9**

UNIT IV UV Mapping **9**

UNIT V Rendering **9**

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about the introduction of 3 D Modeling
CO2	Knowledge will be gained about advanced Texturing
CO3	Knowledge will be gained about Lighting
CO4	Knowledge will be gained about UV Mapping
CO5	Knowledge will be gained about Rendering
Category	NC
Approval	47th Academic Council Meeting

CODE No.	**COURSE NAME : SCRIPT WRITING**	**L**	**T**	**P**	**C**
BVC5L2	Total Contact Hours – 45	0	0	6	3
	Prerequisite – +2 With any major				

	Course Designed by – Dept of Visual Communication

COURSE OBJECTIVES

UNIT – 1 : To learn about. Fully scripted Running order for any TV Commercial.

UNIT – 2 : To learn about Fully scripted Story Board for any AD Film.

UNIT – 3 : To learn about Fully scripted Documentary.

UNIT – 4 : To learn about . Fully scripted Short Film on any topic.

UNIT – 5 : To learn about Fully scripted Feature Film on any genre.

UNIT I	**FULLY SCRIPTED RUNNINGORDER FOR TV AD**	**9**
UNIT II	**FULLY SCRIPTED STORY BOARDFOR AD FILM**	**9**
UNIT III	**FULLY SCRIPTED DOCUMENTARY**	**9**
UNIT IV	**FULLY SCRIPTED SHORT FILM**	**9**
UNIT V	**FULLY SCRIPTED FEATURE FILM**	**9**

COURSE OUTCOMES (COs)	
CO1	Knowledge will be gained about Fully scripted Running order for any TV Commercial.
CO2	Knowledge will be gained about Fully scripted Story Board for any AD Film.
CO3	Knowledge will be gained about Fully scripted Documentary.
CO4	Knowledge will be gained about Fully scripted Short Film on any topic.
CO5	Knowledge will be gained about Fully scripted Feature Film on any genre.
Category	MC
Approval	47th Academic Council Meeting

CODE No. BVC5L3	COURSE NAME : EVENT MANAGEMENT	L	T	P	C
	Total Contact Hours – 45	0	0	6	3
	Prerequisite – +2 With any major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES:

Identifying and determining corresponding control measures and Programming events in such a way that operational information is transferred.

COURSE OUTCOMES (COs)

CO1	To learn a practical knowledge about Planning
CO2	To learn a practical knowledge about analyzing
CO3	To learn a practical knowledge about budgeting
CO4	To learn a practical knowledge about pre-executing
CO5	To learn a practical knowledge about Planning
CO6	Students communicate clearly and effectively in a written format.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M					L	H	L	L
	CO2	H	M					L			
	CO3	H	M					L			
	CO4	H	M					L			
	CO5	H	M					L			
	CO6	H	M					L			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT I	**PLANNING**	**9**
UNIT II	**ANALYZING**	**9**
UNIT III	**BUDGETING**	**9**
UNIT IV	**PRE -EXECUTING**	**9**
UNIT V	**EXECUTING**	**9**

SEMESTER VI

CODE No. BVC601	COURSE NAME - CORPORATECOMMUNICATION	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES:-

Learners having knowledge in basics of Communication Skill can understand business communication Writing. The purpose of this course is to provide business communication skills such as group discussions,

Presentation skills and interaction among the formal group members.

COURSE OUTCOMES (COs)

CO1	knowledge will be gained about Resume Writing
CO2	knowledge will be gained about Presentation Skills

CO3	knowledge will be gained about How to face Interviews
CO4	knowledge will be gained about Group Discussion
CO5	knowledge will be gained about Designing Portfolio

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT I RESUME WRITING 9

Definition, Strategy and Purpose of Corporation Communication, Definition, Introduction , formats & important layout types of resume, Basic steps in Resume writing, Resume content, Resume objective, Formula to create the resume objective, Adding the work experience and Achievements in the resume, Listing your Education and Technical skills, Languages, Hobbies and interests, Volunteering experience, Certificates, Publications and Projects.

UNIT II PRESENTATION SKILLS 9

Definition of Presentation, Types of presentation skills, Guidelines to do an effective presentation, Preparing for the presentation, Audience responds (vs) your presentation, Presenting under particular circumstances. Introduction to presentation, How to do an effective presentation? 10/20/30 Rule, 7 Laws of presentation.

UNIT III FACING INTERVIEWS 9

Definition of Interview Skills, Qualities/traits of a good successful interviewer. STAR method of interviewing. Guidelines to improve interview facing skills, What to do on the day of interview, what not to do, What to expect in the interview, Making a great impression during the interview.

UNIT IV GROUP DISCUSSION 9

Skills required for Group discussion, Definition, Purpose, importance and important types or categories of Group discussion, How to improve Discussion skills. Preparing for the Group discussion, The process of GD, GD – Effective performance guidelines, The evaluation criteria in a Group Discussion, GD Evaluation sheet, Background preparation for a Group Discussion, Best time to talk in GD, Common mistakes one should avoid in GD.

UNIT V DESIGNING PORTFOLIO 9

Definition of Portfolio, Forms of portfolio, Effective portfolio, Capstone portfolio, skepticism, Various formats of Portfolio designing, Creating unique work portfolios.

CODE No. **BVC602**	**COURSE NAME: PRINTING AND PUBLICATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES:-

Learners having knowledge in basics of communication can understand various forms of print media and the structure, layout and department of print media organisation

COURSE OUTCOMES (COs)

CO1	learn about the Elements of News
CO2	learn about the various forms of Print media
CO3	To learn about Publication Industry
CO4	To learn about the Illustrations and Layout styles
CO5	To learn about the various department of Print media

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

UNIT 1 INTRODUCTION TO JOURNALISM 9

Journalism-Definition-Elements of News -News Agencies-Freelancing-Press council-Press meets

UNIT 2 FORMS OF PRINT MEDIA 9

Various forms of print media-News paper organizations and management- Structure and functions of Newspaper Organization

UNIT 3 GRAPHIC COMMUNICATION 9

Graphic communication – Art of typography- Layout design- Page make up- Various types of page makeup-Page makeup in Newspapers and Magazines

UNIT 4 ILLUSTRATIONS IN PRINT MEDIA 9

Illustrations in Print Media- Importance of illustrations in Newspapers and Magazines-News photos- Line drawing-Importance of caricatures and comic strips

UNIT 5 VARIOUS DEPARTMENTS OF PRESS 9

Editorial Department-News room-Reporting-Photography section- Business Department-Print Advertising and Marketing

REFERENCE BOOKS:

1. Programmed Journalism Editing, James P. Alexander, lowa State University Press, 1991.

TEXT BOOKS:

1. Indian Journalism, NadigKrishnamoorthy Mysore University, 1978.

BVC603	CINEMATOGRAPHY TECHNIQUES	L	T	P	C
	Total Contact Hours – 45	3	1	0	4
	Prerequisite course – Visual Communication / Photography Studied in Semester III				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES:-

Learners having knowledge in basics of Photography Skill can understand the functions of Cinematography skill. The purpose of this course is providing a clear understanding of the concepts that Cinematography Techniques.

COURSE OUTCOMES (COs)

CO1	To learn about the Camera angles
CO2	To learn about the continuity
CO3	To learn about cutting
CO4	To learn about the close - ups
CO5	To learn about the composition

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H			H				H	H	H
	CO2	H			H						
	CO3	H			H						
	CO4	H			H						
	CO5	H			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

CINEMATOGRAPHY TECHNIQUES

UNIT- I

Introduction to Cinematography, Camera angles–High-angle, low-angle, bird's eye view, worm's eye view.Point of view shot, Dutch angle

UNIT II

Continuity – 180 degree, Break down shots, Punctuations

UNIT III

Cutting- Hard cut, Jump cut, L Cut & J Cut

UNIT IV

Close –Ups – Importance of close – ups, Extreme close up,

UNIT – V

Composition – Definition, Lead room, Rule of third, Film maker's Insight, Static composition, Dynamic composition.

MAJOR ELECTIVE II

Code No BVC604	**REPORTING,WRITING AND EDITING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES :-

Learners understand reporting and various types of fundamental of writing and art of editing

	COURSE OUTCOMES (Cos)
CO1	Knowledge will be gained about Introduction of reporting
CO2	Knowledge will be gained about various types of reporting
CO3	Knowledge will be gained about the Fundamentals of writing
CO4	Knowledge will be gained about Editorial structuring
CO5	Knowledge will be gained about the Art of editing
CO6	Knowledge will be gained about the new different style of editing

Mapping of Course Outcomes with Program outcomes (Pos) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	Cos/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O	PSO2	PS O3

2	CO1	H	H	M							
	CO2	H	H	M							
	CO3	H	H	M							
	CO4	H	H	M					H	H	M
	CO5	H	H	M							
	CO6	H	H	M							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
					*					

4	**Approval**	Academic Council Meeting

REPORTING, WRITNG AND EDITING

UNIT 1 INTRODUCTION TO REPORTING 9

Introduction to Reporting-Art of collecting News- Qualities or Characteristics of Reporters-Nose for News.

UNIT 2 ART OF INTERVIEING 9

Art of Interviewing- Various types of reporting - In depth and Interpretative reporting-Investigative reporting

UNIT 3 FUNDAMENTALS OF WRITING HEADLINES 9

Fundamentals of writing Headlines- Creativity-Types of Headlines-Intro or Lead-Writing body copy-Importance of translation in Newspapers and Magazines

UNIT 4 EDITORIAL STRUCTURING 9

Editorial structuring-Analysis of facts-Various forms of Editorials- features form and contents- Types of features-Articles- Forms and Contents-Columns- Letters to the Editor-Reviews-Film, Book and Art and Literature

UNIT 5 ART OF EDITING 9

Art of Editing-Qualities of Editors and Sub-editors-Principles of copy Editing- Structuring the News-Different styles in Editing- Editing for Space.

REFERENCE BOOK:

1. The Complete Reporters,Julius Harris Macmillon, Newyork, 1981.

2. Professional Journalism,Kamath M.V.,Vikas Publications, 1980.

TEXT BOOK:

1. Beyond the Facts : A guide to the art of the Feature writing, Louis Alexnde, Gulf Publishing Company, 1982.

2. News Writing: from Lead to, Metz William Prentice Hall Inc., New Jersy, 1979.

CODE No. BVC6P1	COURSE NAME : MEDIA RESEARCH METHODS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of visual Communication				

COURSE OBJECTIVES:

The main objectives of this course are to make students understand the theoretical concepts of qualitative and quantitative research techniques and enhance their applications of research nuances from the stage of research formulation through to presentation.

COURSE OUTCOMES (COs)

CO1	Learn research nuances from the stage of research formulation through to presentation.
CO2	Become familiar with various methods and techniques in research
CO3	To learn about the areas of communication research
CO4	To learn about the research design components
CO5	Implement a research in different media scenarios
CO6	To learn about the sampling and data collection

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						M	H	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								

	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						*					
4	Approval		Academic Council Meeting								

MEDIA RESEARCH METHODS

UNIIT I THE CONCEPTS IN MEDIA RESEARCH 9

Concepts in Media Research -definition and elements; basic and applied research.

UNIT II AREAS OF COMMUNICATION RESEARCH 9

Areas of Communication Research-evaluation,feedback,media habits, public opinion surveys, pre-election opinion pools and exit polls.

UNIT III RESEARCH DESIGN COMPONENTS 9

Research design components-experimental, quasi-experimental, bench mark, longitudinal studies-simulation-panel studies-corelational designs Research question, selection of topic, review of literature.

UNIT IV RESEARECH METHODS 9

Research Methods - Census method, survey method, experimental and laboratory research, field studies, case studies, content analysis, discourse analysis

UNIT V SAMPLING AND DATA COLLECTION 9

Sampling and Data Collection Importance and principles of sampling-representativeness of sampling; methods of sampling; tools of data collection,questionnaire focus groups, telephone surveys, Data Analysis and Interpretation Data analysis techniques.

REFERENCE BOOK:

1. Investigating communication, Frey, Lawrence R. Allyn and Bacon Publishers, (2000).

TEXT BOOK:

1. Mass Media Research: an Introduction, Wimmer, Roger D. (1983).

CODE No.	COURSE NAME : PSYCHOLOGICAL FOUNDATION	L	T	P	C
BVC6P2	Total Contact Hours – 45	3	1	0	4
	Prerequisite – +2 With any Major				
	Course Designed by – Dept. of visual Communication				

COURSE OBJECTIVES:

The course will demonstrate acquisition of both factual knowledge and the ability to conceptualize and apply this knowledge to their own behavior, to ways of interacting with others, and to their roles in culture and society.

COURSE OUTCOMES (COs)

CO1	Students can identify how we become aware of ourselves, how we learn to interact with others, and how we influence others and how they influence us.
CO2	Students can identify how psychologists study human behavior and how this knowledge can be used to explain, predict, and influence behavior.
CO3	Students identify and critically evaluate psychological research methods.
CO4	Students analyze empirical data.
CO5	Students assess the significance and importance of research reports.
CO6	Students communicate clearly and effectively in a written format.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M					L	H	L	L
	CO2	H	M					L			
	CO3	H	M					L			
	CO4	H	M					L			
	CO5	H	M					L			
	CO6	H	M					L			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						*				
4	Approval		Academic Council Meeting							

UNIT I INTRODUCTION TO PSYCHOLOGY 9

Introduction to Psychology.Defenition of Psychology.Major milestones in psychology.

UNIT II MAJOR AREAS OF PSYCHOLOGY 9

Major areas of psychology. Major methods used in psychology.

UNIT III THE COUNSELING PSYCHOLOGY 9

Counselling Psychology.Introduction to Counselling.Types of Counselling.Major classifications of Counselling.

UNIT IV PERCEPTION 9

Perception – Introduction and major aspects Perception - Introduction and major aspects of Learning.

UNIT V MEMORY 9

Memory - Introduction and major aspects of Memory - Emotion 6. Genetic and Environmental bases of behavior.

REFERENCE BOOK:

1. Introducing Psychology, Kosslyn, Stephen M., Person Group, 2010

TEXT BOOK:

1. Introductory psychology test preparation second edition,Don J. Sharpsteen, Cooper Cutting, 2012

CODE No.	**COURSE NAME : PROJECT**	L	T	P	C
BVC6P1	Total Contact Hours – 45	0	0	10	5
	Prerequisite – +2 With any Major				
	Course Designed by – Dept of visual Communication				

COURSE OBJECTIVES
UNIT – 1 : To learn about live Television Production
UNIT – 2 : To learn about live AD commercial
UNIT – 3 : To learn about live Advertising Photography
UNIT – 4 : To learn about live Short Film or Documentary
UNIT – 5 : To learn about 3D Animation

COURSE OUTCOMES (COs)

CO1	knowledge will be gained about Television Production
CO2	knowledge will be gained about AD commercial

CO3	knowledge will be gained about Advertising Photography
CO4	knowledge will be gained about Short Film or Documentary
CO5	knowledge will be gained about 3D Animation

UNIT I TELEVISION PRODUCTION 9

UNIT II AD COMMERCIAL 9

UNIT III ADVERTISING PHOTOGRAPHY 9

UNIT IV SHORT FILM OR DOCUMENTARY 9

UNIT V 3D ANIMATION 9

CODE No.	**COURSE NAME : INTERNSHIP**	L	T	P	C
	Total Contact Hours – 45	0	0	10	5
BVC6P2	Prerequisite – +2 With any Major				
	Course Designed by – Dept of Visual Communication				

COURSE OBJECTIVES

UNIT – 1 : To get hands on experience

UNIT – 2 : To get guidance from experience professions

UNIT – 3 : To learn about media analysis

UNIT – 4 : To convey theory to practice

UNIT – 5 : To learn to complete live project on time

Students have to do their internship in any media organization for 45 days to get live project experience.

COURSE OUTCOMES (COs)	
CO1	knowledge will be gained about get hands on experience
CO2	knowledge will be gained about get guidance from experience professions
CO3	knowledge will be gained about media analysis
CO4	knowledge will be gained about convey theory to practice
CO5	knowledge will be gained about learn to complete live project on time
Category	EEC
Approval	47th Academic Council Meeting

BPO MANAGEMENT

Unit I

Business Process Outsourcing – Basics – Benefits of BPO – Growth Drivers – BPO Models and Types of Vendors – Offshore BPO – Evolution Destinations – Challenges of Off shoring – BPO Companies in India.

Unit II

BPO Industry – Employment Opportunities – Employee Structure – Skill Set Required – Compensation Levels – Contact Centre BPO – Types of Call Centres – Technology – Components and working of a Call center – Issues and Problems – Case Study – Intelenet Global.

Unit III

Healthcare BPO – Structure of the American Healthcare Sector – Activity Profile – Future Trends and Threats – Case Study – Cbay Systems. Transaction Processing BPO - Elements of Back – Office Serivces – Financial Services – Insurance – Case Studies – Datamatics – Hinjuja TMT. Human Resource BPO – Reasons for outsourcing HR – Activities involved in HR BPO – HR Outsourcing Trends – Career in HR BPO – Emerging BPO Domains – Media and Entertainment BPO – Publishing BPO.

Text Books:-

Business Process Outsourcing Sarika Kulkarni Jaico Publishing House, Delhi 2005

Reference Books:-

BPO DIGEST Deepak Shikapur Ameya (Inspiring Books) 2004.

Course Coordinator HOD

	DESKTOP PUBLISHING	L	T	P	C
BBE002	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	

4	Approval	Academic Council Meeting

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input &

Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

Course Coordinator HOD

BCA001	COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professiona l Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

	GRAPHICAL AND WEB DESIGNING	L	T	P	C

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

Course Coordinator HOD

	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)	
CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
O3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part I Tamil/Linguist	Linguistic	Part III Core	Part III Substream	Part III Project	Advanced Tamil/ EVS/VE/ SBE/	Extension			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

Course Coordinator HOD

BCA003	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	

4	Approval	Academic Council Meeting

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

Course Coordinator HOD

BCA004	**NETWORKING AND MAINTENANCE**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				
COURSE OBJECTIVES :- Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.					
COURSE OUTCOMES (COs)					

CO1	Design the structure of Micro Processor and PCs and CPUs										
CO2	Understand the structure of PC architecture and the study of various PCs										
CO3	Understand the Basics of Processor										
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer										
CO5	Working with Background And Number System										
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver										
Mapping of Course Outcomes with Program outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**

Course Coordinator HOD

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

Course Coordinator HOD

BSC001	ANIMATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

ANIMATION

Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

Course Coordinator HOD

BSC002	**COMPUTER HARDWARE AND NETWORKING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :- Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.											
COURSE OUTCOMES (COs)											
CO1	Define the structure of Micro Processor and PCs and CPUs										
CO2	State the structure of PC architecture and the study of various PCs										
CO3	Describe the basics of Processor										
CO4	Study the CPU,Chips,Processor and Controllers										
CO5	Examine the working of Internal Components cards and Higher Level Processor										
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
									✓		
4	Approval	Academic Council Meeting									

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord,

Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

Course Coordinator HOD

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number

System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String –String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**

Course Coordinator HOD

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU

and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

Course Coordinator

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

FACULTY OF ARTS & SCIENCE

BCA – CURRICULUM

Semester I:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL10X	Tamil *****/ Hindi /French	5	4	3	30	70	100
Part II	BEH101	English	5	4	3	30	70	100
Part III	BCA101	Programming in C	5	4	3	30	70	100
	BCA102	Digital Logic and Fundamentals	5	4	3	30	70	100
	BCA103	Mathematics I	5	4	3	30	70	100
	BCA1L1	**Practical – I : Programming in C Lab**	**4**	**2**	**3**	**40**	**60**	**100**
		Library	**1**	**-**	**-**	**-**	**-**	**-**
		Total	**30**	**22**				**600**

Semester II:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL20X	Tamil / Hindi /French	4	3	3	30	70	100
Part II	BEH201	English	4	3	3	30	70	100
Part III	BCA201	Data Structure	5	4	3	30	70	100
	BCA202	Programming in C++	4	3	3	30	70	100
	BCA203	Mathematics – II	5	4	3	30	70	100
	BCA2L1	**Practical – II: Programming in C++ Lab**	**4**	**2**	**3**	**40**	**60**	**100**
Part IV	BCI204	Environmental Studies	2	2	3	30	70	100
	BBC206	Value Education	2	2	3	30	70	100
		Total	**30**	**23**				**800**

Semester III:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL30X	Tamil / Hindi /French	5	4	3	30	70	100
Part II	BEH301	English	5	4	3	30	70	100
Part III	BCA301	Computer Architecture	5	4	3	30	70	100
	BCA302	Visual Programming	4	3	3	30	70	100
	BCA303	Financial Accounting	5	4	3	30	70	100
	BCA3L1	**Practical – III : Visual Programming Lab**	**4**	**2**	**3**	**40**	**60**	**100**
Part IV	BCA3E1	Non Major Elective I – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.	2	2	3	30	70	100
		Total	**30**	**23**				**700**

Semester IV:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part I	BAL40X	Tamil / Hindi /French	4	3	3	30	70	100
Part II	BEH401	English	4	3	3	30	70	100
Part III	BCA401	Operating Systems	5	4	3	30	70	100
	BCA402	Programming in JAVA	4	4	3	30	70	100
	BCA403	Cost & Management Accounting	5	4	3	30	70	100
	BCA4L1	**Practical – IV : Programming in JAVA Lab**	**4**	**2**	**3**	**40**	**60**	**100**
Part IV	BCA4E2	Non Major Elective II – for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto 10^{th} +2 but opt for other languages in degree programme.	2	2	3		70	100
	BCA4E3	Skill Based Elective I	2	2	3	30	70	100
		Total	**30**	**24**				**800**

Semester V:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part III	BCA501	Computer Networks	5	5	3	30	70	100
	BCA502	Software Engineering	5	5	3	30	70	100
	BCA503	Programming in ASP .NET	4	4	3	30	70	100
	BCA5E4	**Major Elective – I :** • Web Technology • Computer Graphics • Data Mining and Data Warehousing	4	4	3	30	70	100
	BCA5L1	**Practical – V : Programming in ASP .NET Lab**	**4**	**2**	**3**	**40**	**60**	**100**
	BCA5L2	**Practical – VI : Software Development Lab**	**4**	**2**	**3**	**40**	**60**	**100**
Part IV	BCA5E5	Skill Based Elective – II	2	2	3	30	70	100
	BCA5E6	Skill Based Elective - III	2	2	3	30	70	100
		Total	**30**	**26**				**800**

Semester VI:

Part	Sub Code	Sub Name	Hrs	Credit	Exam Hrs	Int. Mark	Ext. Mark	Total
Part III	BCA601	Database Technology	5	4	3	30	70	100
	BCA602	Software Testing	5	4	3	30	70	100
	BCA6E7	**Major Elective – II :** • Network Programming • C# • Open Source Software	5	4	3	30	70	100
	BCA6L1	**Practical – VII : Elective III Lab**	**5**	**3**	**3**	**40**	**60**	**100**
	BCA6P1	**Project**	**10**	**6**	**-**	**-**	**-**	**200**
Part V	BCA6V1	Extension Activities	-	1	-	-	-	-
		Total	**30**	**22**				**600**
		GRAND TOTAL		**140**				**4300**

Note :	**Internal Marks**	**External Marks**
1. Theory	30	**70**
2. Practical	**40**	**60**

3. *** Examination at the end of the next semester.

LIST OF SKILL BASED ELECTIVES:

1. Animation
2. BPO Management
3. Call Centre Management –Voice & Non Voice
4. Computer Application
5. Computer Hardware and Networking
6. Computer Programming
7. Computer Technology
8. Customer Relationship Management
9. Desk Top Publishing
10. Graphical and Web Design
11. Multimedia

BAL101	TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :-இருபதாம்நூற்றாண்டுஇலக்கியம்மற்றும்மொழிவரலாற்றைஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	இருபதாம்நூற்றாண்டுகவிதைஇலக்கியத்தைப்பற்றிஅறிவர்
CO2	இருபதாம்நூற்றாண்டுகட்டுரைஇலக்கியத்தைப்பற்றிஅறிவர்
CO3	இருபதாம்நூற்றாண்டுசிறுகதைஇலக்கியத்தைப்பற்றிஅறிவர்
CO4	இக்காலஇலக்கியவரலாறுபற்றிஅறிவர்
CO5	மொழிவரலாறு – செம்மொழிபற்றிஅறிவர்
CO6	தற்காலஇலக்கியத்தில்ஆழ்ந்தஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு -1 இருபதாம்நூற்றாண்டுகவிதைகள் 9

1. பாரதியார்-யாமறிந்தமொழிகளிலே 2. பாரதிதாசன்-நீங்களேசொல்லுங்கள்!
3. கண்ணதாசன்-அழுகை 4. பெருஞ்சித்திரனார்-தமிழாநீஎங்கே?
5. தமிழ்ஒளி- (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல்ரகுமான்-கல்லின்காயம்

அலகு -2 உரைநடை (I) 4 கட்டுரைகள் 9

1. மனிதனும்அழகும் - திரு.வி.க.2. வீட்டிற்கோர்புத்தகசாலை-அறிஞர்அண்ணா
3. பொறியியல்தமிழ் - நா. மால்முருகன்
4. தேசியமறைதிருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 உரைநடை (II) சிறுகதை - 4 கதைகள் 9

1. நட்சத்திரக்குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம்–ஜெயகாந்தன்4. கடவுளும்கந்தசாமிப்பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 இக்காலஇலக்கியவரலாறு 9

1. இருபதாம்நூற்றாண்டுகவிதைஇலக்கியவரலாறு
2. இருபதாம்நூற்றாண்டுஉரைநடைஇலக்கியவரலாறு
3. இருபதாம்நூற்றாண்டுசிறுகதைஇலக்கியவரலாறு

அலகு -5 மொழிவரலாறு 9

1. தமிழ்மொழிவரலாறு 2. உலகச்செம்மொழிகளின்வரலாறு
3. தமிழுக்கும்உலகச்செம்மொழிகளுக்குமானஉறவுவரலாறு

பாடநூல்

1. இருபதாம்நூற்றாண்டுகவிதை, உரைநடை, சிறுகதை(அலகு-3)பாரத்பல்கலைக்கழகவெளியிடு

பார்வைநூல்கள்

1. சு. ஆனந்தன்,"தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ்அமைப்புற்றவரலாறு", வியாபாரஐக்கியசங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ்வரலாறு", பூம்புகார்பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல்தாய்மொழி", பூம்புகார்பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டுவிளக்கம்" , பூம்புகார்பதிப்பகம்,2006

Course Coordinator HOD

BAL10X	**Hindi**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name &Department:- Dr. K. MustakHusaain / Department of Hindi				
COURSE OBJECTIVES :- To understand , read, write and speak Hindi language with grammatical.					

COURSE OUTCOMES (COs)											
CO1	Remember the behavior										
CO2	Understand the importance of money by story										
CO3	Apply the concept of Hindi grammar										
CO4	Analyze the usage of translation from English to Hindi										
CO5	Evaluatethe unseen passage to answer the questions										
CO6	Create the knowledge in Hindi Language										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **9**

NAVEEN GADYA CHAYANIKA – 2 - Bholaram ka jeev - Mehamaan se Bhagavaanbachaaye - NumberovaliThijori – Kaffan - Gunda

UNIT II **9**

NON DETAILED TEXT: KAHANI KUNJ - Stories: 6 – 10 only

UNIT III **9**

GRAMMAR: SHABDA VICHAR ONLY - NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS - Theoretical & Applied

UNIT IV **9**

TRANSLATION - English – Hindi only - ANUVADH ABHYAS – III - 1 – 15 Lessons Only

UNIT V **9**

COMPREHENSION - 1 Passage from ANUVADH ABHYAS – III (16 – 30)

TEXT BOOKS:
UNIT 1 - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017
UNIT II - Govind Prakashan, SadharBagaar, Mathura, Uttar Pradesh – 281001 - Editor: Dr V.P. Amithab
UNIT III - Vyakaran Pradeep by Ramdev - Hindi Bhavan, 36, Tagor Town, Allahabad – 211002.
UNIT IV - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017.
UNIT V - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

Course Coordinator HOD

BAL10X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				
COURSE OBJECTIVES :- Initier les étudiants aux principes de base et à la pratique de la communication orale et écrite.					

COURSE OUTCOMES (COs)	
CO1	Comprendre les bases de la langue.
CO2	Analyser les modèles de phrases et former la grammaire.
CO3	Pour apprendre les bases de la grammaire ainsi que ses principes.
CO4	Se souvenir de l'anatomie des conjugaisons.
CO5	Créer des dialogues et des conversations par eux-mêmes dans la langue et pratiquer des compétences orales et écrites.
CO6	Se souvenir des règles nécessaires de la langue

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I - Vous comprenez

9

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail!
9

Masculine Singular and Feminine singular - Conjugaison des verbes (present tense) - Les articles définis.

UNIT III En se detend?

9

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir)

UNIT IV Racontez-moi

9

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage!

9

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!- Article
partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

ENGLISH I

	ENGLISH I	**L**	**T**	**P**	**C**
BEH101	Total Contact Hours – 60	4	0	0	4

	Prerequisite course – + 2 level English
	Course Coordinator Name & Dept: Mrs. SHEEBA - English

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

Course Coordinator HOD

	PROGRAMMING IN C	L	T	P	C
	Total Contact Hours - 60	3	1	0	4

BCA101	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.
	Course Coordinator Name &Department :- S.Surya/BCA

COURSE OBJECTIVES :-

Learners will be familiar with the basic programming in C concepts.

COURSE OUTCOMES (COs)

CO1	Remember the basic structures of Data type, operators and statements
CO2	Understand the Fundamentals of C programming.
CO3	Choose the suitable loop statements and decision making statements to solve the problem.
CO4	Use functions to apply for real time application
CO5	Analyze the C code using Array and Pointers
CO6	Examine an application using files

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L						H		
	CO2	H	L								
	CO3	M	L								
	CO4	H	L								
	CO5	H	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval									

UNIT-1:

Fundamental character set – Identifier and keywords – data types – Constants – variables –

Declarations – Expressions – Statements – Arithmetic, Unary, Relational and logical, Assignment and conditional Operators – Library Functions.

UNIT-2:

Data input output functions – Simple C programs – Flow of control – if, if-else, while, do-while, for loop, Nested control structures – Switch, Break and continue, go to statements – Comma operator.

UINT –3:

Functions – Definition – Proto-types – Passing arguments – Recursions – storage Classes – Automatic, External, Static, Register Variable – Multi-file programs.

UNIT-4:

Arrays – defining and Processing – Passing arrays to functions – Multi-Dimensional Arrays – Arrays and String. Structures – User defined data types – Passing structures to functions – self-referential structures – Unions – Bit wise operations.

UNIT –5:

Pointers – Declarations – Passing pointers to functions – Operation in Pointers – Pointer and Arrays – Arrays and Pointers - Structures and Pointers – Files – Creating, Processing, Opening and Closing a data file.

Recommended BOOKS

1. E. Balaguruswamy, 1995, Programming in ANSI C, TMH publishing Company Ltd.

Reference Books:

1. H. Schildt, 2004, The Complete Reference, 4th Edition, TMH.
2. Gottfried, B.S, 1996, Programming with C, second edition,TMH Pub.Co.Ltd.
3. Kanetkar Y, 1999, Let us C, BPB publications with ANSI & Turbo C, First edition, Pearson Education,New Delhi.

	DIGITAL LOGIC AND FUNDAMENTALS	**L**	**T**	**P**	**C**

BCA102	**Total Contact Hours – 60**	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.S.Gomathi Sakthi/ BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the given fundamental principles of digital electronics, semiconductor memories, A/D and D/A converters

COURSE OUTCOMES (COs)

CO1	Apply the principles of Boolean algebra to manipulate and minimize logic expressions.
CO2	Use K-maps to minimize and optimize two-level logic functions up to 5 variables.
CO3	Learning the operation of latches, flip-flops, counters, registers, and register transfers.
CO4	Analyze the operation of sequential circuits built with various flip-flops.
CO5	Understand the concepts of micro-operations and building blocks of digital systems
CO6	Ability to apply the concepts of Master Slave flip flops ,counters and Registers for a real time application

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT-1:

Number systems – Conversion from one number to another – Compliments – Binary codes –

Binary logic – Logic gates – Truth tables. Boolean Algebra – Axioms – Simplification of Boolean functions – Karnaugh Map method (up to 5 variables) – Tabulation method.

UNIT- 2:

Adders – Sub tractors – Code Converter – Multilevel NAND and NOR circuits – Binary parallel Adder – Decimal Adder - Decoders – Encoders – Multiplexes – Demultiplexer – Design of circuits using Multiplexers/Decoders.

UNIT- 3:

Flip Flops – RS, JK,D and T Flip Flops –Excitation Table - Registers – Shift Registers – Counters – Ripple Counters – Synchronous Counters – Design of Counters.

UNIT- 4:

Memory Unit – Bus Organization – ALU – Design of ALU – Status Register – Effects of Output carry – Microprogramming – Design of Specific Arithmetic Circuits.

UNIT- 5:

Accumulator – Design of Accumulator – Computer configuration – Instruction and Data formats – Instruction sets – Timing and Control – Execution of instruction – Design of computer – Hardwired control – PLA Control and Microprogram control.

Recommended Texts:

1. M.M. Mano, Digital Logic Computer Design, Pearson Education.

Reference Books:

1. Givone, 2002, Digital Principles Design, Tata McGraw Hill, New Delhi.
2. V. Rajaraman, 2002, Fundamental of Computers, Third Edition, PHI, New Delhi.
3. T.C. Bartee, 1991, Computer Architecture and Logical Design, Mc Graw Hill.

Course Coordinator HOD

BCA103	MATHEMATICS –I	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary				
	Course Coordinator Name & Department :- Dr.P.Sumathi&Mathematics				

COURSE OBJECTIVES :-

- Learners will be familiarized with certain concepts in Set theory, Matrices and Theory of Equations.
- To direct the students to develop problem solving skills based on the concepts ofTrigonometry and Differential Equations.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in Newton's forward and backward.
CO2	Understand the concept of Cayley - Hamilton theorem.
CO3	Apply suitable Hyperbolic and inverse hyperbolic functions.
CO4	Analyze the algorithm for trigonometric series and using the theorems in real time applications.
CO5	Evaluate maxima and minima of functions of two variables.
CO6	Create a real time application reciprocal equation.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	M	H		
	CO2	M	H	-	-	-	-	M			
	CO3	H	M	-	-	-	-	M			
	CO4	H	H	-	-	-	-	M			
	CO5	M	H	-	-	-	-	M			
	CO6	H	H	-	-	-	-	M			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT-I : SET THEORY

Sets, Subsets, Equal sets Universal sets, Finite and Infinite sets, Operation on sets, Union Intersection and complements of sets, Cartesian product, Cardinality of sets, Simple applications.

UNIT–II : MATRICES AND DETERMINANTS

Determinants: Definitions, Minors, cofactors, Properties of determinants, Application of determinant in finding the area of triangle, Solving a system of linear equations Cramer's rule.

Matrices: Definitions, Types of Matrices, Addition, Subtraction, Scalar Multiplication and Product of Matrices, Adjoint, Inverse. Solving a system of linear equation using matrix inverse.

UNIT–III : DIFFERENTIATION

Derivatives of a function, derivatives of sum, differences, Product and quotient of functions, Derivatives of polynomial, trigonometric, Exponential, Logarithmic, Inverse trigonometric and Implicit functions, Logarithmic differentiation, Chain Rule and Differentiation by substitution.

UNIT-IV : INTEGRATION

Indefinite Integrals, Method of integration by substitution by parts, Partial fractions, Integration of algebraic and transcendental functions, Reduction formulae for simple and trigonometric functions, Definite integral as limit of sum, Fundamental theorem of integral calculus, evaluation of definite integrals by substitution, Using properties of definite integrals.

UNIT-V: ORDINARY DIFFERENTIAL EQUATION

Higher order linear differential equations with constant coefficients, Method of variation of parameters, Cauchy's and Legendre's linear equations.

TEXT BOOK:

1. P.R.Vital, "Mathematical Foundation", Margham Publishing.2001

REFERENCES:

1. "Engineering Mathematics"-Dr.M.K.Venkatraman, National Publishing co, Chennai.
2. "Integral Calculus", T.K.Manickavasagam Pillai, SVPublications. 2004
3. "Elements of Discrete Mathematis" by C.L.Liu, MGH. 2014
4. "Ordinary Differential Equations" Sivarama Krishna Das And Vijayakumari, Viji's Academy. 2012

Course Coordinator HOD

BCA1L1	**PROGRAMMING IN C LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Applications / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.S.Surya /BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic concepts of C programming. Practice the use of statements to implement the arrays, functions and pointers & Gain skills to handle strings and files.

COURSE OUTCOMES (COs)

CO1	Construct programs that demonstrate effective use of C statements.
CO2	To perform the matrix operations.
CO3	Develop programs using predefined and user defined functions.
CO4	Implement C features including arrays, structures, pointers and files.
CO5	Perform sorting and searching using C programs.
CO6	Implement the arrays, functions and pointers

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

	MATRIX MANIPULATION
1.	Addition & subtraction.
2.	Multiplication.
3.	Transpose, and trace of a matrix.
4.	Determination of Matrix.
5.	Inverse of Matrix.
	SUMMATION OF SERIES
6.	Sin (x)
7.	cos (x)
8.	Exp (x) (Comparison with built in functions)
	STRING MANIPULATIONS
9.	Counting the no. of vowels, consonants , words, white spaces in a line of text and array of lines
10.	Reverse a string & check for palindrome.
11.	Substring detection, count and removal.
12.	Finding and replacing substring
	RECURSION
13.	nPr and nCr
14.	GCD of two numbers.
15.	Fibonacci series.
16.	Maximum and minimum..
17.	Tower of Hanoi.
	SORTING AND SEARCHING
18.	Insertion and Sort
19.	Bubble Sort.
20.	Linear Search
21.	Binary Search

Course Coordinator HOD

BAL201	TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL – I				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- சிற்றிலக்கியம்மற்றும்சமயஇலக்கியத்தைஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	சிற்றிலக்கியமானதூது,பள்ளு,குறவஞ்சிபற்றிஅறிந்துகொள்வர்
CO2	சைவசமயஇலக்கியம்பற்றிஅறிந்துகொள்வர்
CO3	வைணவசமயஇலக்கியம்பற்றிஅறிந்துகொள்வர்
CO4	பௌத்த, இசுலாம், கிறித்துவசமயஇலக்கியம்பற்றிஅறிந்துகொள்வர்
CO5	சிற்றிலக்கியம்மற்றும்சமயஇலக்கியவரலாறுபற்றிஅறிந்துகொள்வர்
CO6	சிற்றிலக்கியம்மற்றும்சமயஇலக்கியம்பற்றியதெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அழகர்கிள்ளைவிடுதூது - 1 - 20
முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35
திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 **9**
அற்புதத்திருவந்தாதி - 1 - 5
திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10
மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 **9**
பெரியாழ்வார்- முதல்திருமொழி - 1 - 10
ஆண்டாள் - திருப்பாவை - - 1 - 10
தொண்டரடிப்பொடிஆழ்வார்- திருமாலை - 1 - 5

அலகு4 **9**
ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10
பராபரக்கண்ணி- குணங்குடிமஸ்தான்சாகிபு - 1 - 20
இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 **9**
சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாடநூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

Course Coordinator HOD

	Hindi	L	T	P	C
BAL20X	**Total Contact Hours – 45**	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi				

COURSE OBJECTIVES: - To understand and improve the skills in the Language of Hindi	
COURSE OUTCOMES (COs)	
CO1	Remember of Ramayana In Sabari part
CO2	Understand the historical stories
CO3	Apply the concept of translation
CO4	Analyzeand develop the letter writing skills
CO5	Evaluateand develop the speaking skills
CO6	Create knowledge in letter writing and speaking skills

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**
MODERN POETRY - SHABARI

UNIT II **09**

ONE ACT PLAY - EKANKI SANKALAM

UNIT III **09**

TRANSLATION - HINDI – ENGLISH ONLY

UNIT IV **09**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **09**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - LokbharathiPrakashan ,1 Floor, DuebariBuilding,Mahathma Gandhi Marg, Allahabad – 1.
UNIT II – Publishers – Vani Prakasam, New Delhi-110002
UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator HOD

BAL20X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES :-

Présenter aux élèves la complexité de la grammaire et comment la surmonter avec des règles simples.

COURSE OUTCOMES (COs)

CO1	Être capable d'interpréter la langue.
CO2	Se familiariser avec les approches méthodologiques de l'étude des textes littéraires et culturels, telles que la lecture attentive, la contextualisation socio-historique et la théorie littéraire et culturelle.
CO3	Acquérir une maîtrise avancée du français parlé et écrit.
CO4	Encourager le développement de compétences en linguistique, en traduction et en études comparatives.
CO5	Se souvenir de l'anatomie des conjugaisons au passé.
CO6	Pour évaluer le texte donné de manière critique et améliorer les compétences en communication.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I -Quelle journee! **9**

La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! **9**

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)
Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? 9

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? 9

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est-Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! 9

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				

	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English

COURSE OBJECTIVES:-To have a better understanding of the English language skills and its implementation it in day to day life activities.

	COURSE OUTCOMES (COs)
CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb

– Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

Course Coordinator HOD

: BCA201	**DATA STRUCTURE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course –Computer Science / Mathematics Studied in Higher Secondary				

	studies
	Course Coordinator Name &Department:-Ms.V.Ramya/BCA

COURSE OBJECTIVES:-

Learners will be familiar with basic data structure and algorithm analysis. Learners will understand the applications of data structure & able to apply the problem solving techniques using data structure.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in fundamental data structure
CO2	Understand the concept of algorithmic design and implementation
CO3	Apply suitable data structure for developing a real time application
CO4	Analyze the algorithm for its complexity and performance
CO5	Apply data structures and algorithms on which file structures and data bases are based
CO6	Analyze an real time application using a suitable data structure

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PS O2	PSO7
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
					✓					

4	Approval	Academic Council Meeting

Unit 1:

Data Structures: Definition of a Data Structure – Primitive and Composite data types, Asymptotic notations, Arrays, Operation on arrays, Order lists

Unit 2:

Stacks - Applications of Stack - Infix to Postfix Conversion, Recursion, Maze Problems - Queues - Operations on Queues, Queue Applications, Circular Queue.

Unit 3:

Singly Linked List - Operations, Application - Representation of a Polynomial, Polynomial Addition; Doubly Linked List - Operations, Applications Ordering of Books in Library (Alphabetical Ordering).

Unit 4:

Trees and Graphs: Binary Trees - Conversion of Forest to Binary Tree, Operations - Tree Traversals; Graph - Definition, Types of Graphs, Hashing Tables and Hashing Functions, Traversal - Shortest Path; Dijkstra's Algorithm.

Unit 5:

Algorithm - Definition - Examples - Complexity - Divide and Conquer - Binary Search - Maximum and Minimum - Merge Sort.

Books For Study:

1. E.Horowitz and S.Shani Fundamentals of Data Structures in C++, Galgotia Pub. 1999.
2. Horowitz, S. Sahni, and S. Rajasekaran, Computer Algorithms, Galgotia Pub. Pvt. Ltd., 1998.
3. R. Kruse C.L. Tondo and B. Leung, Data Structures and Program design in C, PFU, 1997.

Course Coordinator HOD

BCA202	**PROGRAMMING IN C++**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary Studies.				

		Course Coordinator Name &Department :- Ms.N.Mathimagal/BCA									
COURSE OBJECTIVES :- Learners will be familiar with the basic programming in C++ concepts and to demonstrate the differences between traditional imperative design and object-oriented design.											
COURSE OUTCOMES (COs)											
CO1	Remember the basic concepts and elementary of C++ programs.										
CO2	Understand algorithmic thinking and apply it to programming.										
CO3	Gain knowledge to use problem-solving techniques.										
CO4	Analyze the programming with different operators										
CO5	Ability to apply OOPs concepts										
CO6	Used to implement real time application using suitable logic programming in C++										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT 1:

Principles of Object Oriented Programming (OOP): Software Evolution-OOP Paradigm-Basic Concepts of OOP-Benefits of OOP- Object Oriented Languages-Applications of OOP

UNIT 2:

Introduction to C++; Tokens, Keywords, Identifiers, Variables, Operators, Manipulators, Expressions and Control Structures in C++; Pointers - Functions in C++ - Main Function - Function Prototyping - Parameters Passing in Functions - Values Return by Functions - Inline Functions - Friend and Virtual Functions

UNIT 3:

Classes and Objects; Constructors and Destructors; and Operator Overloading and Type Conversions - Type of Constructors - Function overloading

UNIT 4:

Inheritance: Single Inheritance - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Hybrid Inheritance. Pointers, Virtual Functions and Polymorphism; Managing Console I/O operations

UNIT 5:

Working with Files: Classes for File Stream Operations - Opening and Closing a File - End-of-File Deduction - File Pointers - Updating a File - Error Handling during File Operations - Command-line Arguments.

Books For Study:

1. Herbert Schildt, 1999, C++ - The complete Reference, Third Edition, Tata McGraw – Hill.
2. E. Balagurusamy,1995,Object Oriented Programming with C++, Tata McGraw-Hill Publishing Company Ltd.
3. E.Horowitz and S.Shani,1999,Fundamentals of Data Structures in C++ , Galgotia Pub.
4. Robert Lafore, Object Oriented Programming in Microsoft C++, Galgotia publications.

Course Coordinator HOD

BCA203	MATHEMATICS –II	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary				
	Course Coordinator Name & Department :- Dr.P.Sumathi&Mathematics				

COURSE OBJECTIVES :-

- Learners will be familiarized with certain concepts in Integral calculus, ordinary Differential Equations and Laplace Transforms.
- To direct the students to develop problem solving skills based on the concepts of vector differentiation and vector integration.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in Bernoulli's formula
CO2	Understand the concept of equations with constant coefficients
CO3	Apply suitable ideas in Vector differential operator∇
CO4	Analyze the algorithm in inverse Laplace transforms
CO5	Evaluate the problems in Stoke's and Green's theorems
CO6	Create an real time application of surface and volume integrals

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	-	-	-	-	M	H		
	CO2	M	H	-	-	-	-	M			
	CO3	H	M	-	-	-	-	M			
	CO4	H	H	-	-	-	-	M			
	CO5	M	H	-	-	-	-	M			
	CO6	H	H	-	-	-	-	M			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

UNIT- I : BASIC STATISTICS

Measure of central tendency, Preparing frequency distribution table, Mean, Mode, Median, Measure of dispersion, Range, Variance and standard deviations, Correlation and regression.

UNIT- II : MATHEMATICAL LOGIC

Propositions, Logical connectives and compound statements, Truth values and truth table, Statement pattern and Logical equivalence, Tautology, contradiction, Contingency, validity of arguments, Predicates.

UNIT- III : INTRODUCTION TO NUMBERS AND SEQUENCES

Natural number, Whole number, Integers, Rational numbers, Irrational numbers, Real numbers, Complex numbers, Prime integers, Decimal number system, Binary number system, Sequences, Types of sequence and series.

UNIT- IV : COMBINATORIES

Review of permutations and combinations, Mathematical Induction, Pigeon hole principle, Principle of Inclusion and Exclusion, Generating function, Recurrence relations.

UNIT- V : GRAPH THEORY

Definition and types of graphs, Incidences and degree of vertices, Isomorphism of graphs, Connected and Disconnected graphs, walk, Paths and circuits, Directed graph, Tree, Elementary results(Properties or Theorems) of graphs, Connected graphs and Trees(Without Proof).

TEXT BOOK:

1. "Discrete Mathematical Structures", R.M.Somasundaram, Prentice-Hall of India Pvt.Ltd (August 15, 2004)

REFERENCES:

1. Gupta S.P and Kapoor V.K., "Fundamentals of Mathematical Statistics", Sultan Chand and Sons, New Delhi, 1995.
2. Graybill, "Introduction to Statistics", Mc Graw Hill.
3. "Graph Theory with Applications to computer science", Narsing Deo.
4. "Discrete Mathematics", P.Sivarama Krishna Das and Vijayakumari, Viji's Academy,2012.
5. "Basic Mathematics", Mittal and Agarwal.

Course Coordinator HOD

BCA2L1	**PROGRAMMING IN C++ LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Applications / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms. N.Mathimagal/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic programming in C++ concepts and to gain knowledge to create real time application.

COURSE OUTCOMES (COs)

CO1	Implement the basic concept of object oriented programming
CO2	Ability to implement virtual and friend functions.
CO3	Develop the programs for Stack and Queue
CO4	Analyze and implement the expressions for real time applications
CO5	Perform the Linked list operations.
CO6	Ability to use different searching and sorting methods for real time applications.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L							H	
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

S.NO	LIST OF PROGRAMS	
1.	Functions Using	i). Call by Value
		ii). Call by Reference.
		iii). Recursive Call.
		iv). Returning different Data Types.
2.	In-line function, Overloaded function and Default arguments.	
3.	Operator overloading (Unary and Binary).	
4.	Class and All types of Constructors	
5.	Static function and Array of objects with static data	
6.	Friend function and Friend class	
7.	i). Simple and Multilevel inheritance	
	ii). Implementing derived class constructors.	
8.	i). Function overriding	
	ii). Creating objects using Pointers	
9.	Virtual functions, pure virtual functions and Abstract class.	
10.	Dynamic polymorphism	
11.	Function Template and Class Template	
12.	I/O Streams with text file and data file.	

Course Coordinator HOD

BCI204	**ENVIRONMENTAL STUDIES**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name &Department:- – Mrs. S. Vinitha / Chemistry				

COURSE OBJECTIVES:-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and a biotic ecosystem.

COURSE OUTCOMES (COs)

CO1	Gain the knowledge about the environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Apply its properties and uses of Hydrocarbons and Alkynes
CO4	Analyze the impact of population and Urbanization to affect the system of habitat loss
CO5	Evaluate the Social issues by our conservation act
CO6	Create the organic environmental approach to protect our habitat for the next generation.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	3	3	1	1	3		
	CO2	3	3	1	2	2	3	3		
	CO3	3	2	2	2	3	2	3		
	CO4	3	2	3	1	1	3	3		
	CO5	2	3	3	2	3	1	3		
	CO6	3	3	2	2	3	3	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT-I

NATURAL RESOURCES:

The multidisciplinary nature of Environmental Studies;

Definition, scope and importance. Need for public awareness.

Natural resources: Nenewable and Non- renewable resources;

Natural resources and associated problems.

Forest resources: Use ami over exploitation, deforestation, case studies, timber extraction, mining, dams and their effects on forests and tribal people.

Water resources: Use and over utilization of surface and ground water, floods, drought, conflicts over water, dams – benefits and problems.

Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case study.Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sounds, case studies.Land resources: Land as resources, land degradation, man induced landslides, soil erosion and desertification.Role of individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT-II

ECOSYSTEM : 9

Concepts of an ecosystem-structure and function of and ecosystem-producers, consumers and decomposers-energy flow in ecosystem-ecological-Succession-Food chains, food webs and ecological pyramids-introduction, types, characteristics features, structure and function of the following ecosystem – Forest ecosystem Grass land ecosystem, Desert ecosystem, Aquatics ecosystem(Ponds, stream,lakes,rivers,oceans,estuaries)

UNIT-III

BIODIVERSITY AND ITS CONSERVATION: 9

Introduction – Definition: genetic, species and ecosystem diversity- Biogeographical classififcation of India- Value of Biodiversity: consumptive use, productive use, social, ethicial, aesthetic and option values – Biodiversity at global, national, local levels –India as a mega diversity nation –Hotspots of wildlife conflicts- Endangered and endemic species of India- Conservation od biodiversity In-Situ and Ex-Situ conservation of biodiversity.

ENVIRONMENTAL POLLUTION:

Definition, causes, effects and control measures of – Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, and Nuclear hazards. Solids waste Management: causes effects and control measures of urban and industrial wastes –Role of an individual in earth quake, cyclone and landslides.

UNIT-IV

SOCIAL ISSUES AND THE ENVIRONMENT: 9

From unsustainable to sustainable development, urban problems related to energy. Water conservation, rain water harvesting, watershed management, resettlement and rehabilitation of people, its problems and concerns.Case studies. Environmental ethics: Issues and possible solutions. Climate change, holocaust.Case studies. Water land reclamation- Environment Protection Act- Air(Prevention and control of pollution) Act –Wildlife protection act- Forest conservation Act- Issues involved in enforcement of environmental legislation – Public awareness.

UNIT-V

HUMAN POPULATION AND THE ENVIRONMENT: 9

Population growth, variation among nations- population explosion- family welfare Programme-Environment and human health. Human values- value Education –HIV/AIDS.

Women and child welfare- Role of Information Technology in Environment and Human health –Case studies.

TEXT BOOKS

1. Sharma.B.K. and Kaur, *Environmental Chemistry*, Goel Publishing House, Meerut, 1994.

2. De.A.K., *Environmental Chemistry* , New Age International (p) lt., , New Delhi, 1996.

3. Kurian Joseph & R. Nagendran, *Essential of Environmental Studies*, Pearson Education, 2004.

REFERENCE BOOKS

1. Dara S.S., *A Text Book of Environmental Chemistry and pollution control*, S.Chand & Company Ltd.,New Delhi, 2004.

2. Jeyalakshmi.R, *Principles of Environmental Science*, 1st Edition, Devi Publications, Chennai 2006.

3. Kamaraj.P & Arthanareeswari.M, *Environmental Science – Challenges and Changes*, 1st Edition, Sudhandhira Publications, 2007.

4. Arivalagan.K, Ramar.P & Kamatchi.P, *Principles of Environmental Science*, 1st Edition, Suji Publications, 2007.

Course Coordinator HOD

BBC206	**VALUE EDUCATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name &Department:- Ms. G. Vinothini, Commerce				

- **COURSE OBJECTIVES**
- To enable the students to understand the Social values.
- To provide knowledge on the features forlife.
- To acquire the knowledge on Humanrights.
- To impart the knowledge on Environment and Ecologicalbalance.
- To educate the knowledge on Socialevils..

COURSE OUTCOMES (COs)

CO1	Recall the basic concept of human values, Social Value role of medias, Self-introspection – Self esteem
CO2	Understand the duties and responsibilities of individuals and role of media
CO3	Apply Salient features for life, : Truth, commitment,, honesty and integrity, forgiveness and love and also positive creative thinking
CO4	Demonstrate Universal declaration of Human rights, peace and nonviolence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship.
CO5	Analyze living and nonliving environmental balance, Ecological balance and conservations and enrichment
CO6	Manipulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M	M					H		
	CO2	H	H	H		L					
	CO3	M	H	M	M						
	CO4	H	M	L							
	CO5	H	H	M			M				
	CO6	M	M	L							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		□					✓			

	Approval	Academic Council Meeting

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UNIT-I: Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

UNIT-II: Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT-III: Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development.

UNIT-IV: Social values - Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms.

UNIT-V: Effect of international affairs on values of life/ Issue of Globalization - Modern warfare - Terrorism. Environmental issues - mutual respect of different cultures, religions and their beliefs.

Reference Books:

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995)

2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.

3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.

4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)

5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.

6. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

Course Coordinator HOD

BAL301	TAMIL – III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தைஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	ஐம்பெரும்காப்பியங்களைபற்றிஅறிவர்
CO2	பிற்காலகாப்பியங்களைபற்றிஅறிவர்
CO3	முக்காலநீதிஇலக்கியங்களைபற்றிஅறிவர்
CO4	பிற்காலநீதிஇலக்கியங்களைபற்றிஅறிவர்
CO5	காப்பியமற்றும்நீதிஇலக்கியவரலாற்றைபற்றிஅறிவர்
CO6	காப்பியம்மற்றும்நீதிஇலக்கியங்களில்தெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு1 **9**

சிலப்பதிகாரம்-இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219
மணிமேகலை- சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115
சீவகசிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம்- 851 - 860

அலகு2 **9**

கம்பராமாயணம்- **கம்பர்-** அயோத்தியகாண்டம்- கங்கைப்படலம் - 10
தேம்பாவணி- வீரமாமுனிவர்- நாட்டுப்படலம் - 10
சீறாப்புராணம்-உமறுப்புலவர்--மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 **9**

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10
நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10
இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 **9**

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி- சிவப்பிரகாசர் - 8,12,18,24,39
புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 **9**

காப்பியஇலக்கியவரலாறு , நீதிஇலக்கியவரலாறு

பாடநூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

Course Coordinator HOD

BAL30X	Hindi	L	T	P	C
	Total Contact Hours – 45	3	0	0	3

	Prerequisite course – Hindi as second language in Grade 12
	Course Coordinator Name & Department:- Dr. K. MustakHusaain / Department of Hindi

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana in Panchavati part
CO2	Understand the history of Hindi literature
CO3	Apply the concept of Hindi grammatical speech
CO4	Analyze and develop the translation skills
CO5	Evaluate and develop the unseen passage skills
CO6	Create the skills in Hindi language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I **09**

POETRY - PANCHAVATI

UNIT II **09**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **09**

ALANKAR – Anupras – Yamak - Slesh - VakrokthiUpama – Rupak – Drishtanth - Virodhabas.

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

By MaithilisharanGupt, AnuvadhAbhyas – III

Reference Books:

Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

CourseCoordinator **HOD**

BAL30X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES :-

Développer les aspects techniques de la langue et des nuances grammaticales variées pour interpréter le sujet.

COURSE OUTCOMES (COs)

CO1	Transmettre les différents aspects qui composent la langue.
CO2	Pour apprendre certains faits, procédures, pratiquer certaines structures grammaticales et pratiquer des stratégies de communication.
CO3	Pour apprendre la culture des natifs de la langue.
CO4	Analyser les différences entre la grammaire de base et avancée.
CO5	Se souvenir de l'interdépendance entre les conjugaisons
CO6	Comprendre les restrictions grammaticales.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I Vivement demain! **9**
Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? **9**
Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? **9**
Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme! **9**
Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-
La forme ((en + participle present))

UNIT V On se retrouve ! **9**
Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present - Passe compose-Imparfait et future

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH301	**ENGLISH- III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:-To enhance the reading, writing, listening and speaking of the English language skills..

COURSE OUTCOMES (COs)	
CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message - Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

BCA301	**COMPUTER ARCHITECTURE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.S.Anupriya/BCA				

COURSE OBJECTIVES :-

Learners will be familiar with the basic concepts of Computer Architecture and to understand the working of computer Systems & its basic principles.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in basics of Computer and instruction sets
CO2	To understand the concept of Pipeline and its types
CO3	Apply the concept to design a hardware component
CO4	Analyze the various Input/ Output Operations & its data transfer
CO5	Understand the architecture design of a computer & its type of memory
CO6	Used to design real time application using different computer architecture

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

Unit 1: Central Processing Unit:

General registers and stack organization – instruction formats- Addressing modes – Data Transfer and Manipulations – Program Control – RISC.

Unit 2: Pipelining:
Arithmetic, Instruction and RISC pipelining – Vector Processing, Array Processor.

Unit 3: Computer Arithmetic :
Addition and Subtraction – Multiplication and Division Algorithms- floating Point on decimal arithmetic operations.

Unit 4: Input/Output Organization :
Peripheral Devices – I/O interfaces – asynchronous data transfer – modes of transfer – priority interrupt – DMA – I/O processors – Serial Communications.

Unit 5: Memory Organization :
Memory hierarchy – Main memory – Auxillary memory – associative, cache and virtual memory – interconnection structures – Inter- processor arbitration.

Books For Study:

1. Morris Mano – Computer System Architecture Third Edition – PHI – 1994.
2. J.P.Hayes – Computer system Architecture – Mc-Grawhill – 1988.

Reference Books:

1. V C. Hamacher, Z .G. Vraesic, S. G. Zaky, "Computer Organization", Tata McGraw Hill. 1996.
2. Vincent P Heuring Harry F Jordan, "Computer system Design and Architecture", Addison Westey, 1999.
3. David A. Patterson and John L. Henessy, "Computer Organization and Design", Harcourt as/s PTE Ltd, 2nd edition 1999.
4. Thomas c Bartee, "Computer Architecture and Logic Design", International Edition 1991, McGraw Hill.

BCA302	VISUAL PROGRAMMING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:-Ms.V.Ramya/BCA				

COURSE OBJECTIVES:-

Learners create and develop simple application program that connect with database using visual Basic. Learners develop practical, professional-quality programs using appropriate Visual Basic programming methods.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in basic concepts of Visual Programming
CO2	Express the use of the event-driven model
CO3	Generalize knowledge of user interface design
CO4	Analyze to implement applications using an object-oriented methodology
CO5	Validate to perform operations and store results
CO6	Comprehend an application using visual programming concepts.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO2
2	CO1	2	3	1	1	2	3	3			
	CO2	3	2	1	1	1	2	3			
	CO3	3	2	2	1	1	1	3			
	CO4	2	1	1	2	1	2	3			
	CO5	3	3	1	1	1	1	3			
	CO6	3	3	1	1	2	1	3			

3	Category	Humanities& Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Anyother	Project/Term Paper/ Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT 1:

Customizing a form/ writing simple programs/ tool box/ creating controls/ name property/

command button/ access keys/ image controls / text boxes/ labels / message boxes/ grid/ edit tools/ variables/ data types/ strings /numbers

UNIT 2:
Displaying information/ determinate loops /indeterminate loops/ conditionals/ built in functions/ functions and procedures

UNIT 3:
Lists /arrays/ sorting and searching/ records/ control arrays/ combo boxes/ grid control/ projects with multiple forms/ do events and sub main/ error trapping.

UNIT 4:
VB objects/ dialog boxes/ common controls / menus/ MDI forms / testing / debugging / optimization/ working with graphics

UNIT 5:
Monitoring mouse activity/ file handling/ file system controls/ file system objects/com/ole / automation / DLL servers / ole drag and drop

REFERENCE BOOKS

1. Gary Cornell / visual basic 6 from the ground up / TMH
2. Noel Jerke / visual basic complete ref / TMH

BCA303	FINANCIAL ACCOUNTING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – +2				
	Course Coordinator Name &Department:-Dr S.Kamaraj – Commerce & Economics				

COURSE OBJECTIVES:-

Understand the role of accounting and its limitations. Understand what economic information is conveyed in financial statements.

COURSE OUTCOMES (COs)

CO1	Describe the fundamentals of Basic Accounting Concepts and Conventions
CO2	Discuss the concept of Accounting Equations , Journal- Ledger- Trial Balance
CO3	Utilize the Profit &loss account and Balance Sheet
CO4	Examine the Bank Reconciliation Statement ,Rectification of Errors
CO5	Explain the Methods of Depreciation
CO6	Formulate Cash Voucher, Cash Memo, Debit note ,Credit note

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H							H		
	CO2	H									
	CO3		M	H							
	CO4	H		M							
	CO5	H									
	CO6	H									

3	Category	Humanities& Social Studies(HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)

4	Approval	Academic Council Meeting

Unit-1:

Book-Keeping & Accounting: Meaning, Internal & External Uses of Accounting Information, Accounting Concepts & Conventions, Accounting Procedure:- Transactions, Types of Accounts, Rules of Accounting, Source Documents:- Cash Voucher, Petty Cash Voucher, Cash Memo, Receipt, Debit Note, Credit Note, Paying Slips, Withdrawals, Cheque.

Unit-2:

Journal & Ledger: Journal, Subsidiary Books, Cash Book, Ledger Posting.

Unit-3:

Final Accounts: Preparation of Trial Balance, Preparation of Final Accounts of Sole Traders & Partnership Firms.

Unit-4:

Errors &Reconciliation : Definition of Errors – Classification of Errors - Bank Reconciliation Statement.

Unit 5:

Depreciation:, Methods of Depreciation: Straight Line Methods, Reducing Balance Method, Change in Depreciation Method.

Reference Books :

1. Advance Accountancy:- M.C. Shukla & T.S. Grewal
2. Advance Accountancy:- S.C. Jain & K.L. Narang
3. Advance Accountancy:- S.M. Shukla
4. Advance Accountancy:- Maheshwari
5. Advance Accountancy:- R.L.Gupta

Course Coordinator HOD

BCA3L1	VISUAL PROGRAMMING LAB	L	T	P	C
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department:-Ms.P.Jennifer/BCA				

COURSE OBJECTIVES:

Learners use the graphical user interface programming language which has a bulk of inbuilt user friendly tools for understanding programming language concepts and helps to enhance the intellectual skills of learners.

COURSE OUTCOMES (COs)

CO1	Ability to Perform a program using the development tools
CO2	Ability to handle and analyze fundamental computer programming operations
CO3	Examining, creating, and debugging programming projects using an IDE.
CO4	Validating user input through various input tools
CO5	Manipulate programs that include multiple forms and basic menu environment.
CO6	Comparing and contrasting source code and executable results

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	1	2	1	1	3		
	CO2	3	3	2	1	1	2	3		
	CO3	3	3	2	1	1	1	3		
	CO4	3	2	1	1	2	1	3		
	CO5	2	3	2	1	2	1	3		
	CO6	3	2	1	2	1	2	3		

3	Category	Humanities& Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Anyother	Project/Term Paper/ Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

S.NO	**LIST OF PROGRAMS**
1.	SDI
2.	MDI
3.	Drawing inside View Windows, Device Context
4.	Message Map
5.	Event Handling
6.	Graphics Devices, Colors and Fonts
7.	Dialog Controls
8.	Static and Dynamic Controls
9.	Creating Pop-Up menus
10.	Tool Bar and Status Bar
11.	SDI with Serialization

Course Coordinator HOD

BCA3E1	BASIC TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ்எழுத்துக்களைஅறிவர்
CO2	தமிழ்எழுத்துக்களில்உள்ளவேறுபாடுகளைஅறிவர்
CO3	சொல்லமைப்புபற்றிஅறிவர்
CO4	சொற்களைஉருவாக்கும்அறிவைப்பெறுவர்
CO5	சொற்களைதொடராகமாற்றும்திறனைப்பெறுவர்
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

தமிழ்எழுத்துஅறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை, வடிவம், ஒலிஅளவு (மாத்திரை) - சுட்டுவினாஎழுத்துக்கள் - எழுத்துக்களைகண்டறியும்பயிற்சி

அலகு–2 **12**

உயிர்மெய்எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை, வடிவம், ஒலிஅளவு (மாத்திரை) - எழுத்துக்களைஅகரவரிசைப்படுத்துதல் - எழுத்துவேறுபாடுஅறியும்பயிற்சி

அலகு–3 **12**

சொல்லமைப்பு - ஒரேழுத்துச்சொற்கள், பலஎழுத்துச்சொற்கள் - சொல்வகை - பெயர்வினை - சொற்பொருள்வேறுபாடுஅறிதல் - சொற்களைஉருவாக்கும்பயிற்சி

அலகு–4 **12**

தொடர்அமைப்பு - சொற்கள்தொடராகஅமையும்முறை - தொடர்வேறுபாடு - செய்தித்தொடர், வினாத்தொடர், உணர்ச்சித்தொடர், ஏவல்தொடர்- சொற்களைதொடரில்பயன்படுத்தும்பயிற்சி

பாடநூல்கள்

1.ஆறுமுகநாவலர்,"தமிழ்இலக்கணம்", பாரிநிலையம், 2012
2. கழகப்புலவர்குழுவினர்,"நன்னூல்–எழுத்ததிகாரம்", கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,"நன்னூல்–சொல்லதிகாரம்", கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,"நன்னூல்",உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

Course Coordinator HOD

BCA3E1	**SPECIAL TAMIL – I**	**L**	**T**	**P**	**C**
	Total Contact Hours –		0	0	
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES :- பண்டைத்தமிழரின்நாகரிகமும்பண்பாடும்பற்றிஅறியச்செய்தல்					

COURSE OUTCOMES (COs)											
CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்										
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்										
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்										
CO4	தமிழரின்கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றிஅறிவர்										
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றிஅறிவர்										
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு1

நாகரிகமும்பண்பாடும் -சங்ககாலத்துஅரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்

அலகு2

பண்டைத்தமிழர்திருமணமுறை ,நல்லறம் - குடும்பவாழ்வுபற்றியதமிழர்கொள்கை - பண்டையத்தமிழரின்உணவு, உடை, உறையுள்

அலகு3

பண்டைத்தமிழரின்கல்விநிலை - பண்டைத்தமிழரின்வானியல்அறிவு - பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4

மகளிர்நிலை - சங்கத்தமிழரின்சமயவாழ்வு - சங்ககாலவிழாக்கள்

அலகு5

இந்தியநாகரீகத்தில்தமிழ்ப்பண்பாட்டுக்கூறுகள் - மருத்துவக்கலை - தமிழகக்கோயில்கட்டிடக்கலைவளர்ச்சி

பாடநூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2010
2.பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2012
3கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்",மணிவாசகர்பதிப்பகம், 2012

பார்வைநூல்கள்

1. நா. வானமாமலை, "தமிழர்பண்பாடும்தத்துவமும்", அலைகள்வெளியீட்டகம், 2011
2. பேரின்பன், "தமிழர்வரலாறு:சிலகேள்விகளும்தேடல்களும்", அலைகள்வெளியீட்டகம்,2011
3. மா.இராசமாணிக்கனார், "தமிழகவரலாறும்தமிழர்பண்பாடும்", செண்பகாபதிப்பகம், 2012

Course Coordinator HOD

BAL401	**TAMIL – IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				
COURSE OBJECTIVES :- சங்கஇலக்கியத்தைப்பற்றிஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	எட்டுத்தொகையில்நற்றிணை, குறுந்தொகை, கலித்தொகைஇலக்கியங்களைஅறிவர்				
CO2	எட்டுத்தொகையில்புறநானூறு, பதிற்றுப்பத்துஇலக்கியங்களைஅறிவர்				
CO3	பத்துப்பாட்டுஇலக்கியத்தில்பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படைபற்றிஅறிவர்				

CO4	பத்துப்பாட்டில்நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டுபற்றிஅறிவர்
CO5	எட்டுத்தொகை, பத்துப்பாட்டுஇலக்கியவரலாற்றைஅறிவர்
CO6	சங்கஇலக்கியத்தைப்பற்றியஉயரியசிந்தனையைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 **9**

நற்றிணை - 10, 110, 129
குறுந்தொகை - 8, 25, 32
கலித்தொகை - 6, 37, 51

அலகு2 **9**

புறநானூறு - 89, 109, 204
பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 **9**

பொருநராற்றுப்படை - 151 - 213
பெரும்பாணாற்றுப்படை - 5 - 15,
- 170 - 184

அலகு4 **9**

நெடுநல்வாடை - 1 - 25

பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 **9**

எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாடநூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

Course Coordinator HOD

BAL40X	Hindi	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Hindi as second language in Grade 12				
	Course Coordinator Name & Department:- Dr. K. Mustak Husaain / Department of Hindi				

COURSE OBJECTIVES: -

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)	
CO1	Rememberthe skills of the leadership
CO2	Understand and develop the skills to overcome the mistake
CO3	Apply the concept of Hindi essay writing
CO4	Analyzeand develop the translation skills
CO5	Evaluate the unseen passage skills
CO6	Create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT I **09**
DRAMA – Andher Nagari

UNIT II **09**
NOVEL - GABAN - Premchand

UNIT III **09**
GENERAL ESSAY

UNIT IV **09**
TRANSLATION - HINDI – ENGLISH

UNIT V **09**
COMPREHENSION

Text Books:

ByBharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas – III

Reference Books:

UNIT 1 - Publisher–Vani Prakashan, New Delhi – 110 002.

UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002

UNIT III – Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra -282002

UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator HOD

BAL40X	**Française**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – French as second language in Grade 12				
	Course Coordinator Name &Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES :-

Initier les étudiants aux niveauxavancés de la langue.

COURSE OUTCOMES (COs)

CO1	Pour apprendre la culture des natifs de la langue dans la configuration avancée.
CO2	Comprendre la structure grammaticaleintégraleenfrançais.
CO3	Encourager le développement de compétencesenlinguistique
CO4	Évaluerl'ensemble des compétencesorales et écrites
CO5	Se souvenir de la construction du langage
CO6	Pour améliorer la maîtriseavancée de la langue

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H		
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

UNIT I Vousplaisantez! **9**
Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien! **9**
Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verb)

UNIT III A vos risqué et perils! **9**
Le subjonctif Present- La construction passive pourmetreenvaleurl'object direct de l' action

UNIT IV C'est tout un programme! **9**
Les pronom possessives -Les adjectifs et les pronomsindefinis-Les pronomdemonstratifs:
Les constructions --celui+de

UNIT V C'est la fete ! **9**
Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXT BOOKS:
A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				

COURSE OBJECTIVES:-To focus on the balanced development of the English language communication skills.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of English literature
CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Eng Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda** - **Hilaire Belloc**- Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There** - **Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle** - **Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar** - **Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Macbeth", Macmillan Publisher, 2014

Course Coordinator HOD

BCA401	**OPERATING SYSTEMS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.V.Brindha/BCA				

COURSE OBJECTIVES :-

Learners can know about essential part of any computer system with the help of an operating system. The purpose of this course is providing a clear understanding of the concepts that underlie operating systems.

COURSE OUTCOMES (COs)

CO1	Remember the concepts to gain knowledge about an operating system and the role it plays
CO2	Understand the high-level structure of operating systems, applications, and the relationship between them.
CO3	Applying various knowledge of the services provided by operating systems. Exposure to some details of major OS concepts.
CO4	Analyzing about the behaviour of the different scheduling, memory management and file systems.
CO5	Evaluate to understand clearly the concept of Virtual memory and learn about techniques to manage and recovery from the deadlock.
CO6	Used to create different types of I/O system.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	2	2	1	1	2	3		
	CO2	2	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	2		
	CO4	2	2	2	3	2	2	3		
	CO5	2	2	2	1	1	1	3		
	CO6	3	3	3	2	2	2	2		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT – 1:

Introduction: Views – Goals – Types of system – OS structures – Components – Services – System Structure – Layered Approach – Virtual Machines – System Design and Implementation. Process Management: Process – Process Scheduling – Cooperating Process – threads – Inter-process communication CPU Scheduling: CPU schedulers – Scheduling Criteria – Scheduling Algorithms.

UNIT – 2:

Process Synchronization: Critical- Section Problem – Synchronization Hardware – Semaphores – Classical Problems of synchronizing – Critical Region – Monitors. Deadlock: Characterization – Methods for Handling Deadlocks – Deadlocks Prevention – Avoidance – Detection – Recovery.

UNIT – 3:

Memory Management: Address Binding – Dynamic Loading and Linking – Overlays – Logical and Physical Address Space – Contiguous Allocation – Internal & External Fragmentation. Non-Contiguous Allocation.Paging and Segmentation Schemes – Implementation – Hardware-Protection – Sharing – Fragmentation.

UNIT – 4:

Virtual Memory: Demand paging – Page Replacement – Page Replacement Algorithms – Thrashing. File system: File concepts – Access Methods – Directory Structures – Protection Consistency Semantics – File System Structures – Allocation Methods – Free Space Management.

UNIT – 5:

I/O System: Overview – I/O Hardware – Application I/O Interface – Kernal I/O Subsystem – Transforming I/O Requests to Hardware Operations – Performance. Secondary Storage Structures: Protection – Goals – Domain – Access matrix – The Security Problem – Authentication – Threats – Threat Monitoring – Encryption.

Books for study

1. Silberschatz P.B Galvin, Gange., “Operating System Concepts”, 6th Edn., Addision – Wesley Publishing Co.,2002.

Reference:

1. H.M. Deital, An Introduction to Operating System, second edition, Addision Wesley, 1990.

Course Coordinator HOD

BCA402	**PROGRAMMING IN JAVA**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.V.Ramya/BCA				

COURSE OBJECTIVES:-

Learners will be familiar with the basic programming in JAVA concepts and the ability to write a computer program to solve specified problems using Java structure.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of object-oriented programming
CO2	Understand the classes and objects
CO3	Gain knowledge to create packages
CO4	Used to create Java SDK environment to create, debug and run simple Java programs.
CO5	Apply the concept of network programming
CO6	Examine a event driven programming using applets

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/TermPaper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

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UNIT – 1:
Introduction to Java – Features of Java – Object Oriented Concepts – Lexical Issues – Dat Types – Variables – Arrays – Operators – Control Statements.

UNIT – 2:
Classes – Objects – Constructors – Overloading method – Static and fixed methods – Inner Classes – String Class – Inheritance – Overloading methods – Using super – Abstract class.

UNIT – 3:
Packages – Access Protection – Importing packages – Exception Handling – Throw and Throws – Thread – Synchronizing – Messaging – Runnable Interface – Inner thread Communication – Deadlock – Suspending, Resuming and stopping threads – Multithreading.

UNIT – 4:
I/O streams – File Streams – Applets-String Buffer-Char Array-Java Utilities-Code Documentation.

UNIT - 5:

Networks basics-Select Programming-Proxy Servers-TCP/IP Sockets-Net Address-URL-Datagrams-Working with windows using AWT Classes-AWT Controls-Layout Managers and Menus.

REFERENCES:

1. Cay S.Horstmann, Gary Cornell-Core Java 2 Volume 1 – Fundamentals,5th PHI,2000.
2. P.Naughton and H.Schildt –Java2 (The Complete References)-Third Edition,TMH 1999.
3. K.Arnold and J.Gosling- The Java Programming Language – Second Edition,Addison Wesley,1996.

Course Coordinator HOD

BCA403	COST & MANAGEMENT ACCOUNTING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – +2				
	Course Coordinator Name &Department:-Ms.G.Anandhi -Commerce				

COURSE OBJECTIVES:-

- To understand the role of accounting and its limitations. Understand what economic information is conveyed in financial statements

COURSE OUTCOMES (COs)

CO1	List out the cost accounting& Management Accounting concept, Stores records
CO2	Report the ABC Analysis, EOQ, Material store records
CO3	Practice the Administration, Selling overheads, Machine hour rate
CO4	Analyze funds flow &Cash flow statement .
CO5	Estimate the concept of staffing functions in the organization and Ratio
CO6	Formulate the Budget, Absorption of over heads, methods of pricing methods

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO 2	PO 3	PO4	PO 5	PO6	PO7	PSO 1	PSO 2
2	CO1	3	3	2	1	3	3	3		
	CO2	1	3	1	3	3	1	2		
	CO3	2	2	2	2	3	3	2		
	CO4	3	3	2	3	1	2	1		
	CO5	3	1	3	1	2	1	3		
	CO6	3	2	3	3	3	3	1		

3	Category	Humanities& Social Studies(HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)

4	Approval	Academic Council Meeting

Unit 1:-

Principles of Accounting: Principles of double entry – Assets and Liabilities – Accounting records and systems – Trial balance and preparation of financial statements - Trading, Manufacturing, profit and Loss Accounts, Balance Sheet including adjustments (Simple problems only)

Unit 2:-

Analysis and Interpreting Accounts and Financial Statements: Ratio analysis - Use of ratios in interpreting the final accounts (trading accounts and loss a/c and balance sheet) - final accounts to ratios as well as ratios to final accounts.

Unit 3:

Break-even analysis and Marginal Costing: Meaning of variable cost and fixed cost - Cost-Volume-Profit analysis – calculation of breakeven point, Profit planning, sales planning and other decision – making analysis involving break - even analysis - Computer Accounting and algorithm.(differential cost analysis to be omitted)

Unit 4:-

Budget/Forecasting: preparation of and characteristics of functional budgets, Production, sales, Purchases, cash and flexible budgets.

Unit 5:

Project Apprasial : Method of capital investment decision making: paybackmethod, ARR METHOD- DISCOUNTED CASH FLOWS – NET PRESENT VALUES – INTERNAL RATE OF RETURN – SENSITIVITY ANALYSIS – COST OF CAPITAL.

Reference Books:-

1. Shukla M.C. & T.S. Grewal, 1991, Advanced Accounts, S.Chand & Co. New Delhi.
2. Gupta R.L. & M. Radhaswamy, 1991, Advanced Accounts Vol. II, Sultan Chand & Sons, New Delhi.
3. Man Mohan & S.N. Goyal, 1987, Principles of Management Accounting, Arya Sahithya Bhawan.
4. Kuchhal, S.C., 1980, Financial Management, Chaitanya, Allahabad.
5. Hingorani, N.L. & Ramanthan, A.R, 1992, Management Accounting, 5th edition, Sultan Chand, New Delhi.

Course Coordinator HOD

BCA4L1	**PROGRAMMING IN JAVA LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Applications / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- Ms.V.Ramya/BCA				

COURSE OBJECTIVES :- Ability to develop application using java SDK environment,AWT and Applet

COURSE OUTCOMES (COs)

CO1	Comprehend a simple java program using OOPs concepts
CO2	Ability to use an interface.
CO3	Examine packages and apply exception handling in real time application
CO4	Implement the concept of thread
CO5	Understand applications using AWT and Applet.
CO6	Ability to handle Frames & Layout

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

S.NO	JAVA PROGRAMS
1.	Finding area and Perimeter of a circle. Use Buffered Reader Class.
2.	Substring Removal from a String. Use String Buffer Class
3.	Determining the order of numbers generated randomly using Random Class
4.	Implementation of Point Class for Image Manipulation
5.	Usage of Calendar Class and manipulation
6.	String Manipulation using Char Array
7.	Database Creation for storing e-mail addresses and manipulation
8.	Usage of Vector Classes
9.	Implementation Thread based applications & Exception Handling.
10.	Application using synchronization such as thread based,Class based and synchronized
11.	Statements.
	APPLET
12.	Working with Frames and various controls
13.	Working with Dialogs and Menus.
14.	Working with Panel and Layout.
15.	Incorporating Graphics.
16.	Working with Colors and Fonts.

Course Coordinator HOD

BCA4E2	**BASIC TAMIL – II**						**L**	**T**	**P**	**C**	
	Total Contact Hours – 45						3	0	0	3	
	Prerequisite course – Basic Tamil - I										
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை										
COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தமிழ்மொழியின்சொல்வகை, திணை, பால்பாகுபாடுபற்றிஅறிவர்										
CO2	அடுக்குத்தொடர், இரட்டைக்கிளவி, ண,ன,ர,ற,ள,ழவேறுபாடுபற்றிஅறிவர்										
CO3	பத்திகளைசுருக்கியும், விரிவாக்கிஎழுதும்அறிவைப்பெறுவர்										
CO4	சொற்களைகையாண்டுஉரையாடுவதுபற்றிபெறுவர்										
CO5	கட்டுரை, கடிதம்எழுதும்அறிவைப்பெறுவர்										
CO6	தமிழ்மொழியில்சரளமாகபேசும்எழுதும்திறனைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு –1 **12**

1.1தமிழ்மொழிஅறிமுகம்
1.2சொல்வகைகள்
1.3 திணை, பால்பாகுபாடு

அலகு–2 **12**

2.1அடுக்குத்தொடர், இரட்டைக்கிளவி
2.2ஒருஓர்வேறுபாடு
2.3 ண,ன,ர,ற,ள,ழவேறுபாடு

அலகு–3 **12**

3.1பத்தியிலிருந்துவினாக்களுக்குரியவிடைகளைகண்டறியும்பயிற்சி
3.2சுருக்கிவரைதல்
3.3 விரிவாக்கிஎழுதுதல்

அலகு–4 **9**

4.1உரையாடல்
4.2கட்டுரை
4.3 மடல்வரைதல்

பாடநூல்கள்

1. மருதூர்அரங்கராசன்,"தவறின்றித்தமிழ்எழுத", ஐந்திணைப்பதிப்பகம், 2012
2. ஞா.தேவநேயப்பாவாணர், "உயர்தரக்கட்டுரைஇலக்கணம்", கௌராபதிப்பகம்,2013
3. க. கயிலாயநாதன்,"தமிழ்மொழிவிளக்கம்", முல்லைநிலையம், 2006

பார்வைநூல்கள்

1. பாரதிதாசன், "தவறின்றித்தமிழ்எழுத", நாம்தமிழர்பதிப்பகம், 2013
2. ஆசிரியர்குழு, "கடிதம்வரைதல்', லியோபப்ளிகேஷன்ஸ், 2013
3. பாவாணர், "கட்டுரைவரைவதுஎப்படி?",தமிழ்மண்பதிப்பகம், 2012

Course Coordinator HOD

	SPECIAL TAMIL – II	L	T	P	C
	Total Contact Hours –		0	0	

BCA4E1	Prerequisite course – **SPECIAL TAMIL – I**
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை

COURSE OBJECTIVES :- நாட்டுப்புறவாழ்வியலைபற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தாலாட்டுமற்றும்குழந்தைப்பாடல்கள்பற்றிஅறிவர்
CO2	தொழிற்பாடல், காதல்பாடல், கொண்டாட்டப்பாடல்கள்பற்றிஅறிவர்
CO3	சங்ககாலமக்களின்விடுகதை, நம்பிக்கை, சடங்குகள்பற்றிஅறிவர்
CO4	பழமொழிகள், நாட்டுப்புறமருத்துவம், சமயவழிபாடுகள்பற்றிஅறிவர்
CO5	நாட்டுப்புறஇலக்கியவரலாறுபற்றிஅறிவர்
CO6	வாய்மொழிஇலக்கியம்மூலம்சங்ககாலமக்களின்வாழ்வியலைஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓					✓			

4	Approval		Academic Council Meeting

அலகு1 **9**

தாலாட்டுப்பாடல்- குழந்தைப்பாடல்- விளையாட்டுப்பாடல்

அலகு2

தொழிற்பாடல்கள் - காதல்பாடல்கள்- கொண்டாட்டப்பாடல்கள்

அலகு3 **9**

விடுகதைகள் - நம்பிக்கைகள் -சடங்குகள்

அலகு4 **9**

பழமொழிகள் -நாட்டுப்புறமருத்துவம் - சமயவழிபாடுகள்

அலகு5 **9**

நாட்டுப்புறஇலக்கியவரலாறு

பாடநூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புறஇயல்ஆய்வு", மணிவாசகர்பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014

பார்வைநூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புறபாடல்வகைகள்", புலமைவெளியீடு, 1982
2. சரசுவதிவேணுகோபால், "தமிழகநாட்டுப்புறவியல்", தாமரைவெளியீடு, 1981
3.கழனியூரன், "நாட்டுப்புறவியல்கட்டுரைகள்", காவ்யாபதிப்பகம், 2014

Course Coordinator HOD

BCA501	**COMPUTER NETWORKS**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	3	1	0	4
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms. V.Ramya/BCA				
COURSE OBJECTIVES :-Learners will gain knowledge in computer networks and					

concentrates on building a firm foundation for understanding Data Communications and Networks.										
COURSE OUTCOMES (COs)										
CO1	Understand the layers of OSI and TCP/IP networks.									
CO2	Identify the solution for the error control and flow control problems.									
CO3	Understand the working principles of IP layer and its routing algorithms.									
CO4	Analyze the functionalities of transport layer protocols and its congestion control mechanism.									
CO5	Apply the functionalities of application layer protocols.									
CO6	Analyze the different types of network devices and their functions									
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	1	1	1	2	3	2		
	CO2	2	3	1	2	1	3	2		
	CO3	3	1	2	1	2	1	1		
	CO4	1	2	3	2	3	2	3		
	CO5	1	3	2	3	1	2	3		
	CO6	3	2	3	3	2	1	1		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

Unit 1:

Introduction – Network Hardware – Software – Reference Models – OSI and TCP/IP models – Example networks: Internet, ATM, Ethernet and Wireless LANs - Physical layer – Theoretical basis for data communication - guided transmission media

Unit 2:

Wireless transmission - Communication Satellites – Telephones structure –local loop, trunks and multiplexing, switching. Data link layer: Design issues – error detection and correction.

Unit 3:

Elementary data link protocols - sliding window protocols – Data Link Layer in the Internet - Medium Access Layer – Channel Allocation Problem – Multiple Access Protocols.

Unit 4:

Network layer - design issues - Routing algorithms - Congestion control algorithms – IP protocol – IP Address – Internet Control Protocol.

Unit 5 :

Transport layer - design issues - Connection management - Addressing, Establishing & Releasing a connection – Simple Transport Protocol – Internet Transport Protocol (TCP) - Network Security: Cryptography.

Text Books:-

1. S.Tanenbaum, 2003, Computer Networks, Fourth Edition, - Pearson Education, Inc, (Prentice hall of India Ltd), Delhi.

Reference Books:-

1. B. Forouzan, 1998, Introduction to Data Communications in Networking, Tata McGraw Hill, New Delhi.
2. F. Halsall, 1995, Data Communications, Computer Networks and Open Systems, Addison Wessley.
3. D. Bertsekas and R. Gallagher, 1992, Data Networks, Prentice hall of India, New Delhi.
4. Lamarca, 2002, Communication Networks, Tata McGraw Hill, New Delhi.

Course Coordinator HOD

BCA502	**SOFTWARE ENGINEERING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				

	Course Coordinator Name & Department :- Dr.S.Thirunirai Senthil/BCA										
COURSE OBJECTIVES :- Helps the learners to understand theories, methods, and technologies applied for professional software development.											
COURSE OUTCOMES (COs)											
CO1	Gain knowledge about the fundamentals of Software Engineering.										
CO2	Understand the Planning of a software Project										
CO3	Applying various Software Cost Estimation Techniques										
CO4	Analyze the various software design techniques										
CO5	Comprehend the Coding and testing part of the project.										
CO6	Understand the Software Quality Assurance and software maintenance tools										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO 2	PSO 3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT 1:

Introduction to Software Engineering : Definitions – Size Factors- Quality and Productivity Factors – Managerial Issues- Planning a software Project: Defining the Problem – Developing a Solution – Strategy – Planning the Development Process – Planning an Organization Structure –

Other Planning Activities.

UNIT 2:

Software Cost Estimation : Software cost factors – Software Cost Estimation Techniques – Staffing – Level Estimation – Estimating Software Maintenance Costs – The Software Requirements Specification – Formal Specification Techniques – Languages and Processors for Requirements Specification.

UNIT 3:

Software design: Fundamental Design Concepts – Modules and Modularization Criteria – Design Notations – Design Techniques – Detailed Design Considerations – Real-Time and Distributed System Design – Test Plans – Milestones, Walkthroughs, and Inspections.

UNIT 4:

Implementation issues : Structured Coding Techniques – Coding Style – Standards and Guidelines – Documentation guidelines – Type checking – Scooping Rules – Concurrency Mechanism.

UNIT 5:

Quality Assurance – Walkthroughs and Inspections – Static Analysis – Symbolic Execution – Unit Testing and Debugging – System Testing – Formal Verification: Enhancing Maintainability during Development – Managerial aspects of Software Maintenance – Source Code Metrics – Other Maintenance Tools and Techniques.

REFERENCE:

1. R.S.Pressman,Software Engineering , Fourth Ed , McGraw Hill,1997.

Course Coordinator HOD

	PROGRAMMING IN ASP .NET	**L**	**T**	**P**	**C**
BCA503	**Total Contact Hours - 60**	3	1	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary				

	studies										
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA										
COURSE OBJECTIVES :- Learners will be familiar with basics of the ASP .NET. Learners will understand the design and implementation of the complete applications over the web											
COURSE OUTCOMES (COs)											
CO1	Gain knowledge in developing and creating ASP .Net Applications										
CO2	Understand the usage of web controls and forms										
CO3	Apply development products of Microsoft Visual Studio.Net® products										
CO4	Analyze the implementation and connect the automated system to a database stored on a web server.										
CO5	Analyze how to link and publish Visual Studio.Net® applications to reflect a web application.										
CO6	Examine an real time application using ASP .NET										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	L								
	CO6	H	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT I INTRODUCTION TO .NET FRAMEWORK

Genesis of .Net – Features of .Net - .Net binaries – Microsoft Intermediate Language – Meta Data - .Net types and .net name spaces – Common Language Runtime – Common Type System – Common Language Specification - .Net Applications using command line compiler and visual studio .net IDE.

UNIT II BASICS OF ASP. NET

Introducing ASP .NET – Creating and deploying ASP .NET applications – Web forms – Web controls – working with events – Rich web controls – Custom web controls – Validation controls – Debugging ASP .NET pages.

UNIT III ADVANCED ASP .NET

ASP .NET configuration – Business objects – HTTP Handlers – Caching in ASP .NET – ASP .NET security – Localizing ASP .NET applications – Deployment projects.

UNIT IV BUILDING WEB SERVICES

Introduction to web services – Web services Infrastructure – SOAP – Building a web service – Deploying and publishing web services – Finding web services – Consuming web services.

UNIT V ADO .NET

Basics of ADO .NET – Changes from ADO – Data Table – Data Views – Data Set – Data Relation Type – ADO .NET Managed Providers – OlEDB and SQL Managed Providers – OlEDB Data Adapter Type.

TEXT BOOKS:

1. Andrew Troelsen – **"C# and the .Net Platform"** – Apress – 2001.(Unit I and II)
2. Mridula Parihar, et. al. – **"ASP .NET Bible"** – Wiley-dreamtech India Pvt. Ltd. – 2002

REFERENCE BOOKS:

1. David S. Platt – **"Introducing .Net"** – Microsoft Press – 2002.
2. Alex Homer et. al. – **"Professional ASP .NET 1.1"** – Wiley-dreamtech India Pvt. Ltd. – 2004.
3. Rebecaa M. Riordan – **"ADO .Net step by step"** - Microsoft Press.

Course Coordinator HOD

BCA5E4	**WEB TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher				

	Secondary studies
	Course Coordinator Name &Department :- Ms.V.Ramya /BCA

COURSE OBJECTIVES :-

Learners will be familiar with the basic concepts of web technology and Understand the various steps in designing a creative and dynamic website.

COURSE OUTCOMES (COs)	
CO1	Remember the basic internet concepts
CO2	Gain knowledge to design dynamic and interactive web pages
CO3	Ability to create Events and functions in java script
CO4	Apply Dynamic HTML to create website
CO5	Understand the fundamentals of XML
CO6	Apply to the website by connecting with data base for real time application .

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L							H	
	CO4	H	-								
	CO5	H	L								
	CO6	M	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT – 1:

Internet Basic – Introduction to HTML – List Creating Table – Linking document – Frames - Graphics to HTML Doc – Style sheet – style sheet basic – Add style to document – Creating style sheet rules – Style sheet properties – Font – Text – List – Color and Background color – Box – Display properties.

UNIT – 2:

Introduction to JavaScript – Advantage of JavaScript – JavaScript syntax – Data type – Variable – Array – Operator and Expression – Looping Constructor – Function – Dialog box.

UNIT – 3:

JavaScript document object model – Introduction – object in HTML – Event Handling – Window object – Document object – Browser Object – Form Object – Navigator object – Screen object – Build in object – User defined object – Cookies.

UNIT – 4:

ASP.NET Languages structure – Page event, Properties & Compiler Directives. HTML server controls – Anchor, Tables, Forms, Forms, Files. Basic web server Controls – Label, Textbox, Button, Image, Links, Check & Radio button, Hyperlink. Data list Web server controls – Check box list, Radio button list, Drop down list, List box, and Data grid, Repeater.

UNIT – 5:

Request and Response Objects, Cookies, Working with Data – OLEDB connection class, Command class transaction class, data adaptor class, data set class. Advanced Issues – Email, Application Security – Authentication, IP Address, Secure by SSL & Client Certificates.

Reference Books:-

1. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, JavaScript, Perl CGI, BPB Publications.
2. Jaworski, Mastering JavaScript, BPB Publications, 1999
3. T. A Powell, complete Reference HTML (Third Edition), TMH, 2002.
4. G. Buczek, ASP.NET Developers Guide, TMH, 2002.

Course Coordinator HOD

BCA5E4	**COMPUTER GRAPHICS**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher				

	Secondary studies
	Course Coordinator Name &Department :- Ms.V.Ramya /BCA

COURSE OBJECTIVES :-

Learners will begin to understand what visual communications are and how they have developed over history

COURSE OUTCOMES (COs)

CO1	Remember the general software architecture of programs that use 3D computer graphics.
CO2	Gain knowledge to design hardware system architecture for computer graphics
CO3	Ability to use a current 3D graphics API (e.g., OpenGL or DirectX).
CO4	Ability to use the underlying algorithms, mathematical concepts, supporting computer graphics
CO5	Understand the fundamentals of Composite 3D homogeneous matrices for translation, rotation, and scaling transformations
CO6	Apply to the algorithms, mathematical concepts for real time application .

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								
	CO3	H	L							H	
	CO4	H	-								
	CO5	H	L								
	CO6	M	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT 1:

Introduction to graphic devices - picture representation, display devices , display adapters, Types of printers , Plotters & input devices

UNIT 2:

Transformations - Basic 2D & 3D transformations - translation , scaling , rotation , reflection, shearing, Multiple transformations, Rotation about an axis parallel to a coordinate axis, Rotation about an arbitrary axis in space, Affine and perspective Geometry , Orthographic projections and Axonometric projections

UNIT 3:

Raster Scan Graphics - Bresenham's line and circle drawing algorithms, scan conversion, RLE, Frame buffer, Scan converting polygons - Edge fill and Seed fill algorithms, Anti aliasing and Half toning

UNIT 4:

Clipping and Display file Compilation - Sutherland - Cohen line clipping algorithm, Windowing and View porting - Segmented display file, structure and compilation. - Hidden Surface and hidden Line Removal - Backface removal algorithm, Z- buffer, Warnock algorithm, Hidden line elimination.

UNIT 5:

Plane Curves and Space Curves - Curve Representation, Non-parametric and parametric curves, representation of space curves, Cubic Spline, Parabolic Blended curves, Bezier curves and B-spline curves.

Recommended Text Books

1. D. F. Rogers, J. A. Adams, 2002, Mathematical elements for Computer Graphics, 2nd Edition, Tata McGraw-Hill, New Delhi.
2. D. F. Rogers, 2001, Procedural elements for Computer Graphics, 2nd Edition, Tata McGraw-Hill, New Delhi.

Reference Books

1. W.M. Neumann and R. F. Sproull, Principles of Interactive Computer Graphics, Tata McGraw-Hill, New Delhi.
2. D. Hearn and M. P. Baker, 2004, Computer Graphics (C Version), 2nd Edition, Pearson Education.
3. S. Harrington, 1989, Fundamentals of Computer Graphics, Tata McGraw-Hill, New Delhi.
4. Foley, Van Dan, Feiner, Hughes, 2000, Computer Graphics, Addison Wesley, Boston.

Course Coordinator HOD

		L	T	P	C
BCA5E4	**Major Elective I : DATA MINING AND DATA WAREHOUSING**				
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course –Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.S.Anupriya/BCA				
COURSE OBJECTIVES :-					

Learners will be familiar with the concepts of data ware house and data mining, which gives a complete description about the principles, used, architectures, applications, design and implementation of data mining and data ware housing concepts.											
COURSE OUTCOMES (COs)											
CO1	Gain knowledge in mathematical foundations of data mining tools										
CO2	Understand how to gather and analyze large sets of data to gain useful business										
CO3	Understand and implement classical models and algorithms in data warehouses and data mining.										
CO4	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering. Analyzing and demonstrating basic data mining algorithms, methods, and tools										
CO5	Master data mining techniques in various applications like social, scientific and environmental context.										
CO6	Develop skill in selecting the appropriate data mining algorithm for solving practical problems										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	h	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
						✓					
4	Approval	Academic Council Meeting									

UNIT I Data Warehouse

Data Warehouse roles and structures – What can a data warehouse do? The Cost of Warehousing data – Data Stores, Warehouses and Marts – The Data Warehouse environment – Data warehouse characteristics – The Data Warehouse architecture – Metadata, Metadata Extraction – Implementing the Data Warehouse – Designing and building the Data Warehouse – The data warehouse project plan – Data warehouse architecture, specification and development- Data Warehouse project success factors.

UNIT II Introduction to Data Mining:

Basic Data Mining tasks – Data mining versus knowledge discovery in data bases – Data Mining issues – Data Mining Metrics – Social implications of data mining - Data Mining from a database perspective – Data Mining Techniques – Introduction – A statistical perspective on Data Mining – Similarity measures – Decision trees – Neural networks – Genetic algorithms.

UNIT III Classification

Introduction – Statistical based algorithms – Distance based algorithms – Decision tree based algorithms – Neural networks based algorithms – Rule based algorithms – Combining Techniques.

UNIT IV Clustering

Introduction – Similarity and distance measures – Outliers – Hierarchical algorithms – Partitional algorithms – Clustering large data bases – Clustering with categorical attributes – Association Rules – Introduction – Large Item – sets – Basic Algorithms.

UNIT V Web Mining, Spatial Mining, Temporal Mining

Web Mining – Introduction – Web Content Mining – Web Structure Mining – Web Usage Mining. Spatial Mining – Introduction – Spatial Data: Overview – Spatial Data Mining primitives – Generalization and Specialization – Spatial Rules – Spatial Classification algorithm – Spatial Clustering Algorithms. Temporal Mining – Introduction – Modeling temporal events.

REFERENCE BOOKS:

1. Margaret H.Dunham. "Data Mining Introductory and Advanced Topics". Pearson Education – 2003.
2. George M. Maracas'. "Modern Data Warehousing, Mining and Visualization: Core concepts", Pearson Education – 2003.

Course Coordinator HOD

BCA5L1	**PROGRAMMING IN ASP .NET LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA				
COURSE OBJECTIVES :-					

Learners will gain ability to design and implement the complete applications over the web											
COURSE OUTCOMES (COs)											
CO1	Implement the basic concept of console applications like string manipulation, exception handling.										
CO2	Understand the technical code to implement windows applications										
CO3	Apply the programs using predefined functions										
CO4	Analyze Web Applications										
CO5	Develop applications that connect database										
CO6	Examine web pages using ASP .NET										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

S.NO	ASP.NET PROGRAMS
1.	Working with MSIL, Metadata and Namespace
2.	Usage of CLR, CTS and CLS.
3.	.Net application using command line complier.

4.	.Net application using visual studio .net IDE.
5.	Simple ASP .Net Applications.
6.	Creating web forms application projects.
7.	Usage of web controls.
8.	Working with events
9.	Usage of Rich web controls.
10.	Usage of validation controls

Course Coordinator HOD

BCA5L2	**SOFTWARE DEVELOPMENT LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	0	0	4	2
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				

	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA										
COURSE OBJECTIVES :- Learners will gain basic concepts in information system and the benefits with these systems in modern society											
COURSE OUTCOMES (COs)											
CO1	Implement the basic concept of Microsoft office applications										
CO2	Understand the technical code to implement windows applications										
CO3	Apply the programs using predefined functions										
CO4	Analyze Tables and Manipulations										
CO5	Develop applications that connect design templates										
CO6	Examine web pages										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

S.No	NAME OF THE PROGRAMS TOPICS	WORD PROCESSING - (MS-WORD PROGRAMS)
1.	**Text Manipulation**	1. Change the font size and type – Aligning and justification of text – Underlining the Text
		2. Indenting the Text i. Prepare a Bio-data, ii. Prepare a Letter.
2.	**Usage of Numbering, Bullets, Footers and Headers**	1. Usage of Spell checks and Find and Replace
		2. Prepare a document in news paper format
		3. Prepare a document with bullets and footers and headers.

3	**Tables and Manipulations**	1. Creations, Insertion, Deletion (Columns & Rows) and usage of Auto Format
		2. Create a mark sheet using table and find out the total marks.
		3. Create a calendar and Auto format it
4	**Picture Insertion and alignment**	1. Prepare a greeting card
		2. Prepare a handout
5	**Creation of documents using templates Creation of Templates**	1. Prepare a letter using any template
		2. Prepare two data using various kinds of templates
6	**Mail Merge concepts**	1. Prepare a business letter for more than one company using mail merge
		2. Prepare an invitation to be sent to specific addresses in the data source
7	**Copying text and pictures from Excel**	1. Draw a chart in Excel and paste it on word
		2. Import a picture from Excel and edit the picture
	ELECTRONIC WORK SHEET – (MS-EXCEL PROGRAMS)	
8.	Usage of Formulae and built in functions	
9.	Describe the types of functions	
10.	File manipulations	
11.	Data sorting – Ascending and descending	
12.	Worksheet preparation	
13.	Mark list Preparation for a student	
14.	Individual Pay Bill Preparation	
15.	Electricity Bill preparation	
16.	Inventory Report Preparation	
17.	Invoice Report Preparation	
18.	Drawing Graphs	
19.	Usage of Auto formatting	
	PRESENTATION SOFTWARE – (MS-POWERPOINT PROGRAMS)	
20.	Creating presentation using Blank presentation	
21.	Creating presentation using Auto content Wizard	
22.	Customizing background of slide master	
23.	Working with Graphs and Objects	
24.	Exercises on slide transition and animation	
25.	Usage of Design templates	

Course Coordinator HOD

BCA601	**DATABASE TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – Computer Science/ Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name & Department :- Ms.S.Anupriya/BCA				
COURSE OBJECTIVES:-					

Learners can easily know about the information of the database technology is an essential part of any computer system. The purpose of this course is providing a clear understanding of the concepts that underline Database Technology											
COURSE OUTCOMES (COs)											
CO1	Remember the fundamental elements of relational database management										
CO2	Understand the basic concepts of relational data model, entity-relationship model, Relational database design, relational algebra and SQL.										
CO3	Apply various ER-models to represent simple database application scenarios										
CO4	Analyze the ER-model to relational tables, relational database and formulate SQL queries on data.										
CO5	Examine to improve the database design by normalization.										
CO6	Used to apply the database system architecture.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
					✓						
4	Approval	Academic Council Meeting									

UNIT 1

Database concepts / basic concepts / constraints / keys ER diagram / reduction or ER schema / UML/ design of an ER database schema / relational model / relational algebra / views / relational database / SQL / structure / set quotation / sub queries / join relation / DDL / DML / embedded SQL,QBE.

UNIT 2

Integrity & security / domain constraints / referential integrity / assertion / triggers / authorization in SQL / relational database design / 1, 2, 3, 4, BCNF normal forms / decomposition

UNIT 3

Object relational data model / nested relations / complex types / inheritance / reference / types / querying with complex / types / functions & procedures / object oriented versus object relational / intro to xml concepts.

UNIT 4:

Storage and file structure / physical storage media / file organization, data dictionary storage, query processing / selection operation / sorting / join operation transaction / concepts / state / atomicity and amiability / Serialisability / transaction definition in sql / concurrency control / protocols / protocols / deadlock handling

UNIT 5

Database system architecture / centralized & client server architecture / server system architecture / case study / oracle.

Text Book:

1. A. Silberschatz, H.F. Korth and S. Sudharshan, 2006, Database System Concepts, 5th Edition, Tata McGraw Hill, New Delhi.

REFERENCE BOOKS:

1. Silbersehatz, h.f. korth and sudharshan / database system concepts / iv ed / mcgraw hill
2. Jeffrey .d. ullman / principles of database systems / galgotia
3. C.J.date / an introduction to database system / 3

Course Coordinator HOD

	SOFTWARE TESTING	L	T	P	C
BCA602	Total Contact Hours - 60	3	1	0	4
	Prerequisite course -- Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Dr.S.Thirunirai Senthil/BCA				
COURSE OBJECTIVES :- Learners will gain knowledge in fundamental concepts of software testing					

COURSE OUTCOMES (COs)										
CO1	Gain knowledge in software testing methods.									
CO2	Have an ability to design and conduct a software test process for a software project.									
CO3	Have an ability to identify the needs of software test automation and develop a test tool to support test automation**.**									
CO4	understand and identify various software testing problems, and solve these problems by designing and selecting software test models									
CO5	Gain skills to communicate with their teammates to conduct their practice-oriented software testing projects									
CO6	Create Test planning and process documents									
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	3	2	3	1	1	3		
	CO2	2	3	2	1	3	2	3		
	CO3	3	2	1	3	2	1	2		
	CO4	3	1	3	3	3	3	2		
	CO5	1	2	2	2	1	1	1		
	CO6	2	1	1	1	3	2	2		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT I Introduction

Software testing – Role of software testing – A structural approach to testing – Test strategy – Methods for developing test strategy Testing methodologies.

UNIT II Life Cycle Testing Approach

Test Plan – Requirements testing – Walk through test tool – Risk Matrix test tool – Testing for requirements phase and design phase – Design renew test tool – Test data and volume test tools.

UNIT III Installation

Installation phase testing – Tools for acceptance test – Software acceptance process – Software maintenance – Methodologies for testing – Training and change installation.

UNIT IV Testing Methods

Tools and techniques – Cost estimate – For testing – Testing phase of life cycle – Point accumulation tracking system – Performance analysis of testing – Inspection plan and test plan documents.

UNIT V Testing Strategies

Rapid Prototyping – Spiral testing – Tool Selection Processes – Structural system Testing – documentation of test results – Test effectiveness evaluation – Test measurement process – Test metrics.

TEXT BOOKS:

1. William Perry, "Effective Methods for Software Testing", John Wiley & Sons, USA, 1995.
2. Ron Patton, "Software Testing", Techmedia.

Course Coordinator HOD

BCA6E7	**NETWORK PROGRAMMING**	**L**	**T**	**P**	**C**
	Total Contact Hours - 60	4	0	0	4
	Prerequisite course Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.V.Ramya/BCA				
COURSE OBJECTIVES :- Learners will understand the use of client/server architecture in					

application development and use elementary and advanced socket system calls										
COURSE OUTCOMES (COs)										
CO1	Gain knowledge in networking.									
CO2	Understand the network protocols									
CO3	Be familiar with several common programming interfaces for network communication.									
CO4	Apply advanced knowledge of programming for network communications.									
CO5	Understand and evaluate knowledge of the TCP/UDP Sockets.									
CO6	Ability to create an application using sockets and network programming									
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	3	1	3	1	1	3		
	CO2	1	3	2	1	3	2	1		
	CO3	3	2	3	3	2	1	2		
	CO4	3	1	3	2	3	3	2		
	CO5	1	2	3	2	1	2	1		
	CO6	2	1	1	2	3	2	2		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
						✓				
4	Approval	Academic Council Meeting								

UNIT-I : Introduction to Network Programming:
OSI model, Unix standards, TCP and UDP & TCP connection establishment and Format, Buffer sizes and limitation, standard internet services, Protocol usage by common internet application.

UNIT-II: Sockets :

Address structures, value – result arguments, Byte ordering and manipulation function and related functions Elementary TCP sockets – Socket, connect, bind, listen, accept, fork and exec function, concurrent servers. Close function and related function.

UNIT-III : TCP client server :
Introduction, TCP Echo server functions, Normal startup, terminate and signal handling server process termination, Crashing and Rebooting of server host shutdown of server host.

UNIT – IV: I/O Multiplexing and socket options:
I/O Models, select function, Batch input, shutdown function, poll function, TCP Echo server, getsockopt and setsockopt functions. Socket states, Generic socket option.

UNIT- V : Elementary UDP sockets:
Introduction UDP Echo server function, lost datagram, summary of UDP example, Lack of flow control with UDP, determining outgoing interface with UDP. Elementary name and Address conversions: DNS, gethost by Name function, Resolver option.

TEXT BOOKS:

1. UNIX Network Programming, Vol. I, Sockets API, 2nd Edition. - W.Richard Stevens, Pearson Edn. Asia.
2. UNIX Network Programming, 1st Edition, - W.Richard Stevens. PHI.

REFERENCES:

1. UNIX Systems Programming using C++, T CHAN, PHI.
2. UNIX for Programmers and Users, 3rd Edition Graham GLASS, King abls, Pearson Education
3. Advanced UNIX Programming 2nd Edition M. J. ROCHKIND, Pearson Education.

Course Coordinator HOD

BCA6E7	C#	L	T	P	C
	Total Contact Hours – 60	4	0	0	4

	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies
	Course Coordinator Name &Department :- V.Brindha/BCA

COURSE OBJECTIVES :-

Learners will gain practical knowledge to use the features of Dot Net Framework along with the features of C#

COURSE OUTCOMES (COs)	
CO1	Gain knowledge to Implement simple console application programs using C#
CO2	Understand to develop applications using OOPs concepts
CO3	Create dynamic web pages.
CO4	Design window based applications using various controls
CO5	Develop web based applications by connecting a database with Data control
CO6	Create and deploy web based applications using web controls

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	1	1	1	2	3	2		
	CO2	2	3	1	2	1	3	2		
	CO3	3	1	2	1	2	1	1		
	CO4	1	2	3	2	3	2	3		
	CO5	1	3	2	3	1	2	3		
	CO6	3	2	3	3	2	1	1		
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

UNIT –I : The .net Framework:

Introduction, common language runtime, common type system, common language specification, the base class library, the .net class library, Intermediate language, Just in time compilation, garbage collection, assemblies, web services, COM, localization.

UNIT –II : C# Basics:

Introduction, data types, identifiers, variables, constants, C# statements, OOPs concept, array and strings, operators, control statements, classes and objects, access modifiers, overloading, inheritance, overriding, interfaces.

UNIT –III :

Visual studio IDE features, introduction to Window forms, components, control: textbox, label, linklabel, status bar, checkedlistbox, combobox, listbox, listview, radiobutton, button, panel, groupbox, dialog box, menu control, properties, methods, events of controls.

UNIT –IV :

ADO.net, the component model, creating database connection, database command, data repeater, connecting to data sources, choosing a .net data provider, manage a connection, building command objects, executing commands, building datasets and datatables, data adapter .

UNIT- V:
Case Study.

Text Book:

1. C# Programming for beginners By Mahesh Chand

Reference Books:

1. The Complete Visual C# Programmer's Guide
2. A Programmer's Introduction to C# 2.0, Third Edition
3. C# and the .NET Platform, Second Edition.

Course Coordinator HOD

BCA6E7	**OPEN SOURCE SOFTWARE**	**L**	**T**	**P**	**C**

	Total Contact Hours – 60	4	0	0	4
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- V.Brindha/BCA				

COURSE OBJECTIVES :-

Learners will have an overview of the historical and modern context and operation of free and open source software (FOSS) communities and associated software projects.

COURSE OUTCOMES (COs)	
CO1	Gain knowledge to install and run open-source operating systems
CO2	Understand to gather information about Free and Open Source Software projects from software releases and from sites on the internet
CO3	Create and modify one or more Free and Open Source Software packages.
CO4	Ability to use a version control system and to interface with version control systems used by development communities
CO5	Ability to contribute software to and interact with Free
CO6	Create and deploy Open Source Software development projects.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	2	1	1	1	2	3	2		
	CO2	2	3	1	2	1	3	2		
	CO3	3	1	2	1	2	1	1		
	CO4	1	2	3	2	3	2	3		
	CO5	1	3	2	3	1	2	3		
	CO6	3	2	3	3	2	1	1		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	Academic Council Meeting								

Unit 1: History and Emergence of Open Source Software:

The philosophy of OSS, Richard Stallman, The Cathedral and the Bazaar (CatB), commercial software vs OSS, free software vs freeware. Open source development models. Application

Programming Interface (API). GNU Project**,** Free Software Foundation**.**

Unit 2: Community Building:
Importance of Communities in Open Source Movement. JBoss Community. Developing blog, group, forum, social network for social purpose.**Open Standards:** National Information Standards Organization (NISO), The Digital Library Federation (DLF). The Dublin Core Metadata Initiative.MARC standards,Resource Description and Access (RDA). Open Archives Initiative. OAI-PMH.Search / Retrieval via URL (SRU),SRW/CQL.Java Platform, Enterprise Edition (Java EE).

Unit 3: Open Source Licenses:

GNU General Public License (GPL) version 2,3, GNU Lesser General Public License (LGPL) version 2.1,3, GNU Affero General Public License (AGPL) version 3, Apache License, Version 2.0, Artistic License 2.0, etc.

Unit 4:Operating System:
The Linux operating system and its use both for desktops and as server software. **Webserver:** Apache HTTP Server and its flavors. WAMP server (Windows, Apache, MySQL, PHP). Open Source MySQL. Apache, MySQL, PHP, JAVA as development platform.

Unit 5: Open Source Software:
Category of Open Source Software.OSS for podcasts, RDBMS, online social networks, etc. open source bibliometric softwares like pajek, ucinet, etc

References

1) http://directory.fsf.org/GNU/
2) http://www.diglib.org
3) http://www.entirelyopensource.com/
4) http://www.niso.org/`
5) The Dublin Core Metadata Initiative <http://dublincore.org/>
6) MARC standards <http://www.loc.gov/marc/>
7) Resource Description and Access (RDA) <http://www.rdaonline.org/>
8) WAMP server (Windows, Apache, MySQL, PHP) <http://www.wampserver.com/en/>
9) Open Source MySQL <http://www.mysql.com/>
10) Search / Retrieval via URL (SRU) <http://www.loc.gov/standards/sru/>

Course Coordinator HOD

BCA6L1	**NETWORK PROGRAMMING LAB**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	0	0	4	2
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Ms.S.Surya/ Dept of CS				
COURSE OBJECTIVES :-					

Learners will understand the use of client/server architecture in application development and use elementary and advanced socket system calls											
COURSE OUTCOMES (COs)											
CO1	Implement simple networking concepts										
CO2	Identify the application using Client Server Communication										
CO3	Implement programs using TCP and UDP based sockets.										
CO4	Compare interaction between Echo Server and Echo Client										
CO5	Apply protocols in real time programs.										
CO6	Examine the application to retrieve Remote Data File & RPC										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	**CO1**	H	L						H	M	
	CO2	H	-								
	CO3	H	-								
	CO4	H	-								
	CO5	M	L								
	CO6	H	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
						✓					
4	Approval	Academic Council Meeting									

S.NO.	LIST OF PROGRAMS
1.	IP Address of Local Machine
2.	Ping Server
3.	Echo Server and Echo Client

4.	Client Server Communication Using Object
5.	Time and Date Server
6.	TCP Server
7.	UDP Server
8.	Chat Server
9.	Address Resolution Protocol
10.	Multiple Client Handling
11.	Retrieving Remote Data File
12.	Remote Procedure Call

Course Coordinator HOD

BCA6L1	**C# Lab**	**L**	**T**	**P**	**C**
	Total Contact Hours - 30	0	0	4	2
	Prerequisite course - Computer Science / Mathematics Studied in Higher Secondary studies				
	Course Coordinator Name &Department :- Dr.S.Brintha Rajakumari /Dept				

	of CS

COURSE OBJECTIVES :-

Learners will gain practical knowledge to use the features of Dot Net Framework along with the features of C#

COURSE OUTCOMES (COs)

CO1	Implement simple console application programs using C#
CO2	Develop applications using OOPs concepts
CO3	Design dynamic web pages.
CO4	Design window based applications using various controls
CO5	Analyze web based applications by connecting a database with Data control
CO6	Apply concept to deploy web based applications

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	L							M	L
	CO2	H	L								
	CO3	M	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
						✓					
4	Approval	Academic Council Meeting									

S.NO.	LIST OF PROGRAMS
Console Applications	
1	Classes and Objects

2.	Jagged Array
3.	Overloading
4.	Overriding
5.	Interface
6.	Structure
7.	Constructor
8.	Sealed Class
9.	Delegates
10.	Exception Handling
WebBased Applications	
11.	Navigation Control
12.	Validation Control
13.	Login Control
14.	Repeater Control
15.	Data Control

Course Coordinator HOD

BBA011	**BUSINESS PROCESS OURTSOURCING - MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	**2**	**0**	**0**	**2**
	Prerequisite course – +2 studied in Higher Secondary Studies				

	Course Coordinator Name &Department: -Ms.D.K.Sowmiyalakshmi, Business Administration

COURSE OBJECTIVES: -

To familiarize the students with the basic fundamentals of BPO.
To impart knowledge on types of BPO and call centers .
To enable the students on the concept Health care BPO & Transaction BPO.
To peep into the concept of Human Resource BPO and the career opportunities in BPO

COURSE OUTCOMES (COs)

CO1	Underline the basic fundamentals of BPO.
CO2	Discuss the awareness about the models of BPO.
CO3	Initiate the concept of Health Care BPO.
CO4	Identify the elements of Transaction processing BPO.
CO5	Evaluate the career opportunities in BPO.
CO6	Formulate the challenges faced by BPO industry.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	H						H	M	L
	CO2	M	L								
	CO3	L	H								
	CO4	H	H								
	CO5	H	H								
	CO6	M	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part III Project	Part V Extension Activity			
						✓					
4	Approval	Academic Council Meeting									

BPO MANAGEMENT

Unit I

Business Process Outsourcing – Basics – Benefits of BPO – Growth Drivers – BPO Models and Types of Vendors – Offshore BPO – Evolution Destinations – Challenges of Off shoring – BPO Companies in India.

Unit II

BPO Industry – Employment Opportunities – Employee Structure – Skill Set Required – Compensation Levels – Contact Centre BPO – Types of Call Centres – Technology – Components and working of a Call center – Issues and Problems – Case Study – Intelenet Global.

Unit III

Healthcare BPO – Structure of the American Healthcare Sector – Activity Profile – Future Trends and Threats – Case Study – Cbay Systems. Transaction Processing BPO - Elements of Back – Office Serivces – Financial Services – Insurance – Case Studies – Datamatics – Hinjuja TMT. Human Resource BPO – Reasons for outsourcing HR – Activities involved in HR BPO – HR Outsourcing Trends – Career in HR BPO – Emerging BPO Domains – Media and Entertainment BPO – Publishing BPO.

Text Books:-

Business Process Outsourcing Sarika Kulkarni Jaico Publishing House, Delhi 2005

Reference Books:-

BPO DIGEST Deepak Shikapur Ameya (Inspiring Books) 2004.

Course Coordinator HOD

	DESKTOP PUBLISHING	L	T	P	C
BBE002	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

DESKTOP PUBLISHING

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

Course Coordinator HOD

BCA001	COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professiona l Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER APPLICATION

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

Course Coordinator HOD

BCA002	GRAPHICAL AND WEB DESIGNING	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-
To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
O3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part I Tamil/Linguist	Linguistic	Part III Core	Part III Substream	Part III Project	Advanced Tamil/ EVS/VE/ SBE/	Extension			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

Course Coordinator HOD

BCA003	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	

4	Approval	Academic Council Meeting

MULTIMEDIA

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

Course Coordinator HOD

BCA004	NETWORKING AND MAINTENANCE	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

NETWORKING AND MAINTENANCE

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**

Course Coordinator HOD

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

WEB DESIGNING

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive***
2. ***Disabilities*, Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.**
4. **Byrne, Jim. *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May. *Universal Design for Web Applications: Web Applications That Reach Everyone*, O'Reilly Media, 2008.**
6. **Clark, Joe. *Building Accessible Websites*, New Riders Publishing, 2002.**

Course Coordinator HOD

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO 2**	**PSO3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	

4	Approval	Academic Council Meeting

ANIMATION

Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia & Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

Course Coordinator HOD

BSC002	COMPUTER HARDWARE AND NETWORKING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	Academic Council Meeting

COMPUTER HARDWARE AND NETWORKING

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

Course Coordinator HOD

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER PROGRAMMING

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String – String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

COMPUTER TECHNOLOGY

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point). Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes

பாரத் உயர் கல்வி மற்றும் ஆராய்ச்சி நிறுவனம்
கலை மற்றும் அறிவியல் புலம்

B.A (Tamil)

2017 - Batch

நோக்கு (Vision)

- இலக்கணங்கள், சங்க இலக்கியங்கள், சங்க மருவிய கால இலக்கியங்கள், காப்பியங்கள், சமய இலக்கியங்கள், சிற்றிலக்கியங்கள், நெறி இலக்கியங்கள், சித்தர் இலக்கியங்கள், நாட்டுப்புற இலக்கியங்கள், இருபதாம் நூற்றாண்டு இலக்கியங்கள் (கவிதை, சிறுகதை, நாவல், உரைநடை, திறனாய்வு, கட்டுரை) வாயிலாக தமிழர் பண்பாடு, வரலாறு, சமூகம் ஆகியவற்றை தரமான தமிழ்க் கல்வியின் வழியே பயின்று, சமூக அக்கறையோடு மானிட விழுமியங்களோடு இக்கால வாழ்வை எதிர்கொள்ளும் திறன் வாய்ந்த இளைய சமுதாயத்தை உருவாக்குதல்.

இலக்கு (Mission)

இ1. தரமான தமிழ்க் கல்வியின் வழி, தமிழரின் கலை இலக்கிய வடிவங்களை பகுத்து பார்க்கும் திறன் பெற்ற மாணவர்களை உருவாக்குதல்.

இ2. இன்றைய சமுதாயத்திற்கேற்ப ஆய்வுகளை மேற்கொள்ளும் வகையிலும் பல்வேறு பகுப்புகளுக்குட்பட்ட தமிழிலக்கியங்களின் அனைத்துப் பகுதிகளும் ஆய்வுக் களங்களாக உருவாக்க முயலுதல்.

இ3. நவீனத் தொழில்நுட்ப உபகரணங்களைக் கொண்டு வகுப்பறையில் பாடங்களைத் தெளிவுப்படுத்துதல் மட்டுமல்லாமல் மாணவர்களின் சுய சிந்தனையைத் தூண்டும் வகையில் கற்பித்தல்.

இ4. மாணவர்களின் படைப்பாற்றல் திறனை அடையாளம் காணுதல் மட்டுமல்லாமல் மத்திய - மாநில அரசு சார்ந்தப் போட்டிகளில் வெற்றிப் பெற வழிவகை செய்தல்.

இ5. மொழிப்பாடத்தின் வாயிலாக தன்னாளுமையை வளர்த்ததோடு, மாணவர் கருத்தரங்குகள், ஆசிரியர் கருத்தரங்குகள், வகுப்பறை விவாதங்களை நிகழ்த்துதல், ஊடக நிகழ்ச்சிகளில் பங்குபெற பயிற்சியளித்தல்.

பாடத்தின் நோக்கங்கள் (PROGRAMME EDUCATIONAL OBJECTIVES(PEOs))

பா.**நோ**.1:தமிழ் இலக்கிய புலமையும் இலக்கண அறிவும் வாய்க்கப் பெற்றவர்களாக மாணவர்களை தயார்படுத்துதல்.

பா.**நோ**.2:படைப்பு ஆர்வமிக்கவர்களாக, இலக்கிய விமர்சர்களாக திகழும்படி செய்தல்.

பா.**நோ**.3:தமிழ் இலக்கியம், தமிழ்மொழி, தமிழ்ப்பண்பாடு ஆகியவற்றின் சிறப்புகளை உலகளாவிய நிலையில் கொண்டு சேர்க்கும் பணிகளை மேற்கொள்ளச் செய்தல்

பாடத்தின் விளைவுகள்(பா.வி): (PROGRAMME OUTCOMES:)

மாணவர்கள் B.A. **தமிழ் கல்வி முடித்திருக்கும் தருவாயில்**

பா.வி.1 :இன்றைய போட்டி நிறைந்த உலகில் மொழித்துறையில் சிறந்த அறிவைப் பெறுவர்.

பா.வி.2 :மொழிப்பாடத்தின் வாயிலாக தன்னாளுமையை வளர்த்துக் கொள்வர்.

பா.வி.3 :மத்திய - மாநில அரசு சார்ந்தப் போட்டிகளில் வெற்றிப் பெறும் திறனைப் பெறுவர்.

பா.வி.4 :ஊடக நிகழ்ச்சிகளில் பங்குபெறும் திறனைப் பெறுவர்.

பா.வி.5 :படைப்புத் திறனையும் இலக்கிய விமர்சர்களாகும் திறனைப் பெறுவர்.

பா.வி.6 :பண்டைய பெருமக்களின் வாழ்வு, குறிக்கோள், கலை, பண்பாடுகளை அறிவர்.

பா.வி.7 :தமிழ் மொழியில் காலந்தோறும் வளர்ந்து வந்துள்ள வரலாற்றை அறிவர்.

பாடத்தின் குறிப்பிட்ட விளைவுகள்: (PROGRAM SPECIFIC OUTCOMES (PSOs))

* **பா.கு.வி** 1 :கவிதை, சிறுகதை, புதினம், உரைநடை போன்ற படைப்பு இலக்கியத்திற்கு தேவையான திறனைப் பெறுவர்.

* **பா.கு.வி** 2 : தமிழ் இலக்கிய புலமையும் இலக்கண அறிவையும் பெறுவர்.

பாரத் உயர்கல்வி மற்றும் ஆராய்ச்சி நிறுவனம்
கலை மற்றும் அறிவியல் புலம்
தமிழ்த்துறை - இளங்கலைத் தமிழ் இலக்கியம் (B.A.)
பொது விருப்பப் தேர்வு முறைப் பாட அமைப்புகள் (CBCS)
2017 Batch

Degree	Batch	Dept	Mode	Sem	FT - Code	Subject	Cr
UG	2017	BA	FT	1	BAL101	Part – I (Language) - பொதுத்தமிழ் - I (HS)	3
UG	2017	BA	FT	1	BEH101	Part – II (Language) - ஆங்கிலம் - I (HS)	3
UG	2017	BA	FT	1	BIA101	இக்கால இலக்கியம் - I (MC)	4
UG	2017	BA	FT	1	BIA102	இலக்கணம் - நன்னூல்- எழுத்து (MC)	4
UG	2017	BA	FT	1	BIA103	தமிழ் இலக்கிய வரலாறு (ME)	4
UG	2017	BA	FT	1	BIA104	தமிழக வரலாறும் பண்பாடும் -I (ME)	4
UG	2017	BA	FT	2	BAL201	Part – I (Language) - பொதுத்தமிழ் - II (HS)	3
UG	2017	BA	FT	2	BEH201	Part – II (Language) - ஆங்கிலம் - II (HS)	3
UG	2017	BA	FT	2	BIA201	இக்கால இலக்கியம் - II (MC)	4
UG	2017	BA	FT	2	BIA202	இலக்கணம் - நன்னூல் - சொல் (MC)	4
UG	2017	BA	FT	2	BBC206	ஊடகவியல் (NME)	2
UG	2017	BA	FT	2	BIA204	தமிழக வரலாறும் பண்பாடும் -II (ME)	4
UG	2017	BA	FT	3	BAL301	Part – I (Language) - பொதுத்தமிழ்-III (HS)	3
UG	2017	BA	FT	3	BEH301	Part – II (Language) - ஆங்கிலம் - III (HS)	3

UG	2017	BA	FT	3	BIA301	இரட்டைக் காப்பியம் - சிலப்பதிகாரம் (MC)	4
UG	2017	BA	FT	3	BIA302	இலக்கணம்-தொல்காப்பியம்-பொருள்(MC)	4
UG	2017	BA	FT	3	BIA303	பதினெண் கீழ்க்கணக்கு நூல்கள் - I(MC)	4
UG	2017	BA	FT	3	BIA304	சிற்றிலக்கியங்கள் - I (MC)	4
UG	2017	BA	FT	3	BIA301	கணினியல்(NME)	2
UG	2017	BA	FT	4	BAL401	Part – I (Language) - பொதுத்தமிழ்-IV (HS)	3
UG	2017	BA	FT	4	BEH401	Part – II (Language) - ஆங்கிலம் - IV (HS)	3
UG	2017	BA	FT	4	BIA401	இரட்டைக் காப்பியம் - மணிமேகலை (MC)	4
UG	2017	BA	FT	4	BIA402	இலக்கணம்-புறப்பொருள்வெண்பாமாலை (MC)	4
UG	2017	BA	FT	4	BIA403	பதினெண் கீழ்க்கணக்கு நூல்கள் - II (MC)	4
UG	2017	BA	FT	4	BIA404	சிற்றிலக்கியங்கள் - II (MC)	4
UG	2017	BA	FT	4	BIA405	கணினித்தமிழ் - இணையம்(NME)	2
UG	2017	BA	FT	4	BIA406	ஆளுமைத் திறன் (SBE)	2
UG	2017	BA	FT	5	BIA501	சமய இலக்கியம் (MC)	4
UG	2017	BA	FT	5	BIA502	இலக்கணம் - யாப்பருங்கலக்காரிகை (MC)	4
UG	2017	BA	FT	5	BIA503	**பண்டைய இலக்கியம் - அகம் புறம்** (MC)	4
UG	2017	BA	FT	5	BIA504	மொழியியல் (MC)	4
UG	2017	BA	FT	5	BIA505	ஆராய்ச்சி முறையியல் ஓர் அறிமுகம் (ME)	4
UG	2017	BA	FT	5	BIA5E1	இலக்கியத் திறனாய்வியல் (ME)	4
UG	2017	BA	FT	5	BIA5E2	மொழிபெயர்ப்பியல் (SBE)	2
UG	2017	BA	FT	5	BIA5E3	இதழியல் கலை (SBE)	2
UG	2017	BA	FT	6	BIA601	தண்டியலங்காரம் (MC)	4
UG	2017	BA	FT	6	BIA602	முத்தொள்ளாயிரம் (MC)	4
UG	2017	BA	FT	6	BIA6E4	திறனாய்வுக் கலை (ME)	4
UG	2017	BA	FT	6	BIA6E5	ஒப்பிலக்கியம் (ME)	4
UG	2017	BA	FT	6	BIA6P1	ஆய்வுத் திட்டக் கட்டுரை Project (EEC)	9
UG	2017	BA	FT	6	BIA6V1	Extension Activites	1
பருவமுறைப் பாடங்ககள் – தரப்புள்ளிகள்						41	146

மானுடவியல் மற்றும் அறிவியல்-Humanitics and Science (HS) முதன்மைப் பாடம் -Major Core (MC)
தகுதி விரிவாக்க பயிற்சி -Eligible Enhancement Course (EEC) சார்புப் பாடம் -Major Electives (ME)
திறன் அடிப்படையிலான பாடம் -Skill Based Elective(SBE)
துறைசாரா விருப்பப் பாடம் -Non Major Elective(NME)

BAL101	**தமிழ்**– I						L	T	P	C	
	Total Contact Hours – 45						3	0	0	3	
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department : திருமதி ஸ்ரீதேவி .கோ.அ .&தமிழ்த்துறை										
COURSE OBJECTIVES : இருபதாம்நூற்றாண்டுஇலக்கியத்தை அறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	பாரதியார், பாரதிதாசன், கவிமணிஆகியோரின்மரபுக்கவிதைகளைஅறிவர்										
CO2	கண்ணதாசன், அப்துல்ரகுமான், நா.முத்துக்குமார் ஆகியோரின் புதுக்கவிதைகளை அறிவர்										
CO3	இருபதாம் நூற்றாண்டு உரைநடை கட்டுரைகளை அறிவர்										
CO4	இருபதாம் நூற்றாண்டு சிறுகதைக்கலையின் நுட்பத்தை அறிவர்										
CO5	இக்கால இலக்கிய வரலாற்றைப் பற்றி அறிவர்										
CO6	இருபதாம்நூற்றாண்டுஇலக்கியத்தைப் பற்றி அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1

மரபுக்கவிதைகள்: பாரதியார்- தேசியகீதங்கள்- தமிழ்நாடு- செந்தமிழ்நாடு, தமிழ்
பாரதிதாசன்- தமிழ்- இன்பத்தமிழ், எங்கள்தமிழ்

கவிமணிதேசிகவிநாயகம்பிள்ளை- வாழ்க்கைத்தத்துவங்கள், வாழ்க்கைநிலையாமை

அலகு2 9

புதுக்கவிதைகள்: கண்ணதாசன்- அழுகை, பிறப்பின்வருவதுயாதெனக்கேட்டேன்!
அப்துல்ரகுமான்- கல்லின்காயம், பாருக்குள்ளேநல்லநாடு
நா.முத்துக்குமார்- வளர்தலும்வளர்தல்நிமித்தமும், கைநீட்டினால்தண்ணீர்வரும்குழாய்

அலகு3 9

கட்டுரைகள்: திரு.வி.கலியாணசுந்தரனார்- பாஷைவளர்வதெப்படி
அறிஞர்அண்ணா- வீட்டிற்கோர்புத்தகசாலை
வ.சுப. மாணிக்கம்- தேசியமறைதிருக்குறள்

அலகு4 9

சிறுகதைகள்: வ.வே.சு. ஐயர்- குளத்தங்கரைஅரசமரம்- 'தமிழ்ச்சிறுகதையின்தந்தை- தமிழின்முதல்சிறுகதை'
மௌனி- அழியாச்சுடர்- 'தமிழ்ச்சிறுகதையின்திருமூலவர்'
புதுமைப்பித்தன்- காஞ்சனை- 'தமிழ்ச்சிறுகதையின்மன்னன்'

அலகு5 9

இக்காலஇலக்கியவரலாறு: இருபதாம்நூற்றாண்டுகவிதைஇலக்கியவரலாறு
இருபதாம்நூற்றாண்டுஉரைநடைஇலக்கியவரலாறு
இருபதாம்நூற்றாண்டுசிறுகதைஇலக்கியவரலாறு

பாடநூல்கள்:

1. தி.சா.ராஜு, "பாரதியார்&பாரதிதாசன்கவிதைகள்", வானவில்பிரசுரம், 1977
2. சி.தேசிகவிநாயகம்பிள்ளை, "கவிமணிகவிதைகள்", பூம்புகார்பதிப்பகம், 2011
3. கண்ணதாசன், "கவிஞர்கண்ணதாசன்கவிதைகள்", கண்ணதாசன்பதிப்பகம், 2012
4. அப்துல்ரகுமான், "கவிக்கோகவிதைகள்', நேஷனல்பப்ளிஷர்ஸ், 2013
5. நா.முத்துக்குமார், "கவிதைகள்-அனாஆவன்னா, பட்டாம்பூச்சிபதிப்பகம், 2016
6. இராமச்சந்திரன், "திரு.வி.க.வின்தேசபக்தன்கட்டுரைகள்",புவனேஸ்வரிபதிப்பகம்,2001
7. அண்ணா, 'சொற்பொழிவு-வீட்டிற்கோர்புத்தகசாலை', முத்தமிழ்நிலையம், 2008

பார்வை நூல்கள்:

1. ந.வேலுசாமி, "திருக்குறளைதேசியநூலாகஅறிவிக்கவேண்டும்", Coral Publisher, 2017
2. வ.வே.சு.ஐயர், "குளத்தங்கரைஅரசமரம்", வ.உ.சி.நூலகம், 2007
3. மௌனி, "மௌனிபடைப்புகள்", காலச்சுவடுபதிப்பகம், 2010
4. புதுமைப்பித்தன், "காஞ்சனை", அன்னம்பதிப்பகம், 2013

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BEH101	ENGLISH-I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level English				
	Course Coordinator Name& Department : Mrs. SHEEBA - English				
COURSE OBJECTIVES : To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.					
COURSE OUTCOMES (COs)					
CO1	Rememberand recall the words according to the given context.				
CO2	Understand the necessity of grammar in Communication				
CO3	Apply the plots and themes discussed				
CO4	Analyze the various characters involved				

CO5	Evaluate the characters and summarizes the prescribed literature										
CO6	Create essays by evaluating the literary techniques and devices used.										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT-I POETRY **9**

Lucy Gray -William Wordsworth– Author Biography -Theme –Poetic devices – Annotations - Summary – Critical analysis; **Ulysses-Alfred Lord Tennyson** -Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis; **The Road Not Taken** – **Robert Frost** -Author Biography -Theme –Poetic devices – Annotations - Summary – Critical analysis

UNIT-II – ONE ACT PLAYS **9**

The Boy Comes Home-A.A.Milne– Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Referee- W.H.Andrews and Geoffrey Dearmer** -Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis

UNIT -III SHORT STORIES **9**

The Unicorn in the Garden – **James Thurber** - Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Avenger** – **Anton Chekov** - Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis

UNIT IV PROSE **9**

Six Thinking Hats- Edward de Bono–Author Biography - Self analysis technique, Summary; **My Early Days-Abdul Kalam** - Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis;**I Have a Dream (Speech) -Martin Luther King-** Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis

UNIT V **9**

Introduction to Basics of Communication – Definitions – Types – Listening, Speaking, Reading& Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam,October 7,2013

REFERENCE BOOKS:

1. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan),2007
2. Basic Communication Skills for Technology by Rutherfoord(DorligKindersly),2007
3. English for Professionals A Practice Book of Communication Skills in English by Dr.Miglani (Vayu Education of India),2010.

CourseCoordinator **HOD**

BIA101		இக்கால இலக்கியம்– I			L	T	P	C			
		Total Contact Hours – 60			4	0	0	4			
		Prerequisite course – B.A.தமிழ் / B.Litt / பகுதி I அல்லது பகுதி II தமிழுடன் எந்தபட்டமும்									
		Course Coordinator Name& Department :முனைவர் .இரா.பாலகிருஷ்ணன்&தமிழ்த்துறை									
COURSE OBJECTIVES : இக்காலஇலக்கியங்களைபற்றிஅறியச்செய்தல்.											
COURSE OUTCOMES (COs)											
CO1	காலத்தால்முந்தியமரபுக்கவிதைகளைப்பற்றிஅறிவர்										
CO2	உரைநடைச்சாயலில்கவிதைகளைப்பற்றிஅறிவர்										
CO3	கதைகூறும்புனைவுவகைஉரைநடையைஅறிவர்										
CO4	உரைநடையில்அமைந்தநீள்கதைஇலக்கியத்தைஅறிவர்										
CO5	நாடகக்கலை, உரைநடைபற்றிஅறிவர்										
CO6	இக்காலஇலக்கியங்களை அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H								
	CO2	M	H								

	CO3	M	H						M	H	M
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

அலகு1 12

மரபுக்கவிதை: பாரதியார்கவிதைகள்-தேசியகீதங்கள்- பாரதநாடு- நாட்டுவணக்கம், பாரததேசம், எங்கள்நாடு,தாயின்மணிக்கொடிபாரீர்- தமிழ்நாடு- செந்தமிழ்நாடு, தமிழ்த்தாய், தமிழ், தமிழ்மொழிவாழ்த்து.பாரதிதாசன்கவிதைகள்-தமிழுக்குஅமுதென்றுபேர்- தமிழுக்குவாழ்வதேவாழ்வு, எதுஎன்ஆசை, தமிழர்க்குஅழைப்பு, தமிழர்வாழ்க, தமிழன்னைவிழிக்க, தமிழ்தமிழன்உயிர், எழுகதமிழர், தமிழன், தமிழன்னை

அலகு2 12

புதுக்கவிதை: மு.மேக்தா-ஊர்வலம்- கால்களால்நடந்தகதை, இசை, உன்பழையகடிதங்கள், சுதந்திரச்சிந்தனைகள், கருப்பை .வைரமுத்து-தமிழுக்குநிறம்உண்டு- தேடல், இன்பம், தவம், உலகம், மீண்டும்சந்திப்போம்

அலகு3 12

சிறுகதையும்கட்டுரையும்: வ.வே.சு.ஐயர்-குளத்தங்கரைஅரசமரம், பாரதியார்-ஆறில்ஒருபங்கு, சி.சு.செல்லப்பா, மாலன்-தமிழில்முதலில்தோன்றியசிறுகதைகுறித்தகட்டுரைகள்

அலகு4 12

மூன்றுநாவல்கள்: பிரதாபமுதலியார்சரித்திரம்-கதைச்சுருக்கம், நீதிஉபதேசம், உபகதைகள், நிகழ்ச்சிகள்இணைதல், மர்மமும்வெளிப்பாடும், ஒரேவகைநிகழ்ச்சிகள், பொருத்தமற்றநிகழ்ச்சிகள், பெண்களின்உயர்வு .கமலாம்பாள்சரித்திரம்-கதைச்சுருக்கம், கதையின்வளர்ச்சி, முத்துசாமிஐயர், ஆசிரியரின்அநுபவம், கமலாம்பாள், அம்மையப்பபிள்ளை, பிறபாத்திரங்கள், முன்அறிகுறி, பிறஇயல்புகள் .பத்மாவதிசரித்திரம்-சங்கரன், ஐயமும்முதிர்வும், சிக்கல்தெளிதல், நாராயணன், பத்மாவதி, பிறபாத்திரங்கள், சாவித்திரி, கல்யாணி, டாக்டர்மில்லர், சிலசிறுகுறைகள்

அலகு5 12

நாடகமும்உரைநடையும்: பம்மல்சம்மந்தனார்- சபாபதி(முதலிருபாகங்கள்) - தேவநேயப்பாவாணர்-தமிழின்தொன்மை, தமிழன்பிறந்தகம்

பாடநூல்கள்:

1. மு. மேத்தா, "ஊர்வலம்", திருமகள்நிலையம், 2009
2. சிற்பிபாலசுப்பிரமணியம், "சர்ப்பயாகம்", அன்னம்(பி) லிட், 1976
3. வைரமுத்து, "தமிழுக்குநிறம்உண்டு", திருமகள்நிலையம், 2010
4. வ.வே.சு.ஐயர், "குளத்தங்கரைஅரசமரம்", வ.உ.சி.நூலகம், 2007

பார்வைநூல்கள்:

1. கி.வா.ஜகந்நாதன், "தமிழ்நாவலின்தோற்றமும்வளர்ச்சியும்",எழுத்தாளர்சங்கம், 2011
2. பம்மல்சம்பந்தமுதலியார், "சபாபதி", புஸ்தகாடிஜிட்டல்மீடியா, 2017
3. தேவநேயப்பாவாணர்உரைகள், "புலவர்அ.நக்கீரன்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2007

பாடநெறி ஒருங்கிணைப்பாளர் துறைத் தலைவர்

BIA102	**இலக்கணம்- நன்னூல்–எழுத்து**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 தேர்ச்சி										
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி &தமிழ்த்துறை										
COURSE OBJECTIVES : தமிழின்எழுத்துஇலக்கணத்தைக்கற்பித்தல்											
COURSE OUTCOMES (COs)											
CO1	நூலுக்குரியஇலக்கணங்கள்எவை, அதனையார்செய்யவேண்டும், நூலைச்சொல்லும்ஆசிரியர், மாணாக்கர்ஆகியோரதுதன்மைஆகியவற்றைஅறிவர்										
CO2	எழுத்தியலில்உள்ள12 கூறுகளை72 நூற்பாக்கள்மூலம்அறிவர்										
CO3	பதவியலில்உள்ள5 கூறுகளை23 நூற்பாக்கள்மூலம்அறியச்செய்தல்										
CO4	உயிரீற்றுப்புணரியலை53 நூற்பாக்கள்மூலம்அறிவர்										
CO5	மெய்யீற்றுப்புணரியல், உருபுப்புணரியலைமுறையே36, 18 நூற்பாக்கள்மூலம்அறிவர்										
CO6	தமிழின்எழுத்துஇலக்கணத்தை அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H								
	CO2	M	H								
	CO3	M	H							H	M
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

பாயிரவகை – நூல், நூல்வகைகள்- பத்துக்குற்றம்- பத்துஅழகு – முப்பத்திரண்டுஉத்தி – சூத்திரம்- உரை, உரைவகைஆசிரியர்- ஆசிரியர்ஆகாதோர்இலக்கணம்- மாணாக்கர், மாணாக்கராகாதோர்இலக்கணம்- பாடங்கேட்டலின்வரலாறு.

அலகு2 12

எழுத்துக்களின்எண், பெயர், முறை – எழுத்துக்களின்பிறப்பு – முதலெழுத்துக்களும், சார்பெழுத்துக்களும்- எழுத்துக்கள்பிறக்குமிடம்- உருவம்- மாத்திரை – முதல்நிலை- இறுதிநிலை – போலி – சந்தியக்கரம்- சாரியைகள்.

அலகு3 12

பதம்- பகுபதம்- பகாப்பதம்-ஓரெழுத்துஒருமொழி – பகுதி – விகுதி- இடைநிலை – வடமொழியாக்கம்.

அலகு4 12

உயிரீற்றுப்புணரியல்- எல்லாஈற்றின்முன்னும்மெல்லினமும்இடையினமும்புணர்தல்- உயிரீற்றுச்சிறப்புப்புணர்ச்சி- உயிரீற்றின்முன்வல்லினம்- ஊ,ஏ,ஐஆகியவற்றிற்குச்சிறப்புவிதி.

அலகு5 12

மெய்யீற்றுப்புணரியல், மெய்யீற்றின்முன்உயிர்- மெய்யீற்றின்முன்மெய்- ணகர, னகர, மகர, - யகர, ரகரழகரஈறுகள்- உருபுப்புணரியல்- எட்டுஉருபுகள்சாரும்இடவகை – வேற்றுமைஉருபுகள்நிலைமொழிவருமொழிகளோடுபுணர்தல்

பாடநூல்கள்:

1. ஆறுமுகநாவலர், "நன்னூல்காண்டிகையுரை-எழுத்ததிகாரம்", பாரிநிலையம், 2014
2 .பவணந்தி, "நன்னூல்காண்டிகையுரை: எழுத்ததிகாரம்" கழகவெளியீடு, 1999
3. அ.தாமோதரன், நன்னூல் - கூழங்கைத்தம்பிரான்உரை, க்ரியாவெளியீடு, 2010

பார்வைநூல்கள்:

1. தேவிரா, நன்னூல் எழுத்ததிகாரம் - தேவிரா உரை, நந்தினி பதிப்பகம், 2017
2. சோம.இளவரசு, நன்னூல் எழுத்ததிகாரம், மணிவாசகர் பதிப்பகம், 2010
3. ப.இப்ராஹிம், நன்னூல் எளிய உரை, நியூ செஞ்சுரி புக் ஹவுஸ், 2018

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA103	**தமிழ்இலக்கியவரலாறு**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர் ஜெஅந்தோணி.ஜெய ஷீலா&தமிழ்த்துறை				
COURSE OBJECTIVES :தமிழ்இலக்கியநூல்களின்தோற்றம், வளர்ச்சியைப்அறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	முச்சங்கத்தையும், சங்கஇலக்கியத்தையும்அறிவர்				
CO2	சங்கம்மருவியகாலஇலக்கியங்களைஅறிவர்				
CO3	சோழர்காலஇலக்கியங்களைஅறிவர்				
CO4	பக்திஇலக்கியங்களையும்சிற்றிலக்கியங்களையும்அறிவர்				
CO5	இக்காலஇலக்கியங்களைஅறிவர்				
CO6	தமிழ்இலக்கியநூல்களின்தோற்றம், வளர்ச்சிஆகியனவற்றை அறிவர்				

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H	M	M
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

அலகு1 12

சங்கம்பற்றியசெய்திகள்- முதல், இடை, கடைச்சங்கங்கள்- சங்கஇலக்கியங்கள்- பத்துப்பாட்டு, எட்டுத்தொகை

அலகு2 12

சங்கம்மருவியகாலஇலக்கியங்கள்- இரட்டைக்காப்பியங்கள்- பதினெண்கீழ்க்கணக்குநூல்கள்

அலகு3 12

ஐம்பெருங்காப்பியங்கள்- ஐஞ்சிறுகாப்பியங்கள்- கம்பராமாயணம்- பெரியபுராணம்- சீறாப்புராணம்- தேம்பாவணி

அலகு4 12

பக்திஇலக்கியங்கள்- சிற்றிலக்கியங்கள்- பிள்ளைத்தமிழ்- கலம்பகம்- உலா- தூது- அந்தாதி- தனிப்பாடல்கள்

அலகு5 12

தற்காலஇலக்கியங்கள்- மரபுக்கவிதை- புதுக்கவிதை- உரைநடை- சிறுகதை- புதினம்- நாடகம்- கட்டுரை

பாடநூல்கள்:

1. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", கண்மணிபதிப்பகம், 2013
2. சி.பாலசுப்பிரமணியன், "தமிழ்இலக்கியவரலாறு", மணமலர்ப்பதிப்பகம், 2018
3. கா.கோ.வேங்கடராமன், "தமிழ்இலக்கியவரலாறு", நியூசெஞ்சுரிபுக்ஹவுஸ், 2012

பார்வைநூல்கள்:

1. மு.வரதராசன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2008
2. தமிழண்ணல், "புதியநோக்கில்தமிழ்இலக்கியவரலாறு", சிந்துவெளியீடு, 2008
3. பாக்யமேரி, "வகைமைநோக்கில்தமிழ்இலக்கியவரலாறு",நியூசெஞ்சுரிபுக்ஸ்,2011

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA104	**தமிழகவரலாறும்பண்பாடும்** – I				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2										
	Course Coordinator Name &Department : திரு மு.பரந்தாமன் &தமிழ்த்துறை										
COURSE OBJECTIVES :- தமிழர்நாகரீகம்பண்பாடுபற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	பழங்காலதமிழரின்சமூகஅமைப்பைப்பற்றிஅறிவர்										
CO2	பண்டைத்தமிழர்திருமணமுறைநல்லறம்- குடும்பவாழ்வுபற்றி அறிவர்										
CO3	பழங்காலதமிழரின்கல்விநிலை, வானியல்அறிவுபற்றிஅறிவர்										
CO4	தமிழரின் வணிகம், சமயம் மருத்துவம் பற்றி அறிவர்										
CO5	தமிழரின் வாய்மொழி இலக்கியங்களும் பழமொழியும் பற்றி அறிவர்										
CO6	தமிழக வரலாறும் பண்பாடும் பற்றி ஆழ்ந்த அறிவைப் பெறுவர்										
	Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		H	M	H	M			H	M	M
	CO2		H	M	H	M					
	CO3		H	M	H	M					
	CO4		H	M	H	M					
	CO5		H	M	H	M					
	CO6		H	M	H	M					
3	Category	Part I Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
					✓						
4	Approval	Academic Council Meeting									

அலகு1 12

நாகரிகமும்பண்பாடும்- சங்ககாலத்துஅரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்- மகளிர்நிலை

அலகு2 12

பண்டைத்தமிழர்திருமணமுறைநல்லறம்- குடும்பவாழ்வுபற்றியதமிழர்கொள்கை- பண்டையத்தமிழரின்உணவு, உடை, உறையுள்- சங்ககாலவிழாக்கள்

அலகு3 12

பண்டைத்தமிழரின்கல்விநிலை- பண்டைத்தமிழரின்வானியல்அறிவு- பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4 12

தமிழ்நாட்டு வணிக வளம் -தமிழரின் சமய வாழ்வு - மருத்துவக்கலை

அலகு5 12

வாய்மொழி இலக்கியங்களும் தமிழ்ப் பண்பாடும் – பழமொழியும் பண்பாடும்

பாடநூல்கள்:

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2017
2. பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம்,2017
2. கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", மணிவாசகர் பதிப்பகம், 2015

பார்வைநூல்கள்:

1. நா. வானமாமலை, தமிழர் பண்பாடும் தத்துவமும், அலைகள் வெளியீட்டகம், 2016
2. பேரின்பன், தமிழர் வரலாறு:சில கேள்விகளும் தேடல்களும், அலைகள் வெளியீட்டகம், 2011
3. மா.இராசமாணிக்கனார், தமிழக வரலாறும் தமிழர் பண்பாடும், செண்பகா பதிப்பகம், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

	தமிழ்- II	L	T	P	C
BAL201	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				

	Course Coordinator Name& Department :திருமதி ஸ்ரீதேவி .கோ.அ .&தமிழ்த்துறை										
COURSE OBJECTIVES : சிற்றிலக்கியம்மற்றும்சமயஇலக்கியத்தை அறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	தூது,பள்ளு,குறவஞ்சிஎன்றசிற்றிலக்கியங்கள்பற்றிஅறிவர்										
CO2	சைவஇலக்கியமானதேவாரம், திருவாசகம், அற்புதத்திருவந்தாதிப்பற்றிஅறிவர்										
CO3	வைணவஇலக்கியமானநாலாயிரதிவ்யப்பிரபந்தம்பற்றிஅறிவர்										
CO4	பௌத்த, இசுலாம், கிறித்துவசமயஇலக்கியங்களைப்பற்றிஅறிவர்										
CO5	சிற்றிலக்கியம்மற்றும்சமயஇலக்கியவரலாறுபற்றிஅறிவர்										
CO6	சிற்றிலக்கியம் , சமயஇலக்கியம்பற்றியதெளிவானஅறிவைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H	M	
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

அலகு1 9

அழகர்கிள்ளைவிடுதூது - 1 - 20

முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35

திருக்குற்றாலக்குறவஞ்சி - குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 9

அற்புதத்திருவந்தாதி - 1 - 5

தேவாரம் - திருவெண்காட்டுப்பதிகம் - திருஞானசம்பந்தர் - 1 - 10

திருவாசகம் - திருச்சாழல் - மாணிக்கவாசகர் - 1 - 10

அலகு3 9

நாலாயிரதிவ்யப்பிரபந்தம் - முதல்திருமொழி - பெரியாழ்வார் - 1 - 10
நாலாயிரதிவ்யப்பிரபந்தம் - திருப்பாவை - ஆண்டாள் - 1 - 10
நாலாயிரதிவ்யப்பிரபந்தம் - திருமாலை - தொண்டரடிப்பொடிஆழ்வார்- 1 - 5

அலகு4 9
ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10
பராபரக்கண்ணி - குணங்குடிமஸ்தான்சாகிபு - 1 - 20
இயேசுகாவியம் - பாடுகளின்பாதை - கண்ணதாசன்

அலகு5 9
சிற்றிலக்கியவரலாறு- சமயஇலக்கியவரலாறு

பாடநூல்கள்:
1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
3. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
4. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
5. சோ.கந்தசாமி "பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
6. த.கோவேந்தன்,"நாலாயிரத்திவ்யப்பிரபந்தம்எளியஉரையும்",சாரதாபதிப்பகம்,2015
7. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
8. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
9. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்:
1. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
2. மா.ராசமாணிக்கனார், சமயஇலக்கியவரலாறு, காவ்யாபதிப்பகம், 2012
3. மு.பொன்னுசாமி, தமிழ்சிற்றிலக்கியவரலாறு, பாரிநிலையம், 2008

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BEH201	ENGLISH II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level English				
	Course Coordinator Name& Department :.: Mr.S.KUMARESAN - English				

COURSE OBJECTIVES : To have a better understanding of the English language skills and its implementation it in day to day life activities.

COURSE OUTCOMES (COs)	
CO1	Rememberand recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								

	CO3	H	L						H		
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT 1: PROSE **9**

The Refugee – **K.A. Abbas** – Author Biography – Plot – Theme - Summary - Critical analysis; **The Lion and the Lamb** – **Leonard Clark**–Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2: POETRY **9**

The Solitary Reaper – **William Wordsworth**– Author Biography -Theme –Poetic devices – Annotations - Summary – Critical analysis;**Gift** – **Alice Walker**- Author Biography -Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT 3: SHORT STORIES **9**

The Fortune-Teller – **Karel Capek**– Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis;**The Postmaster** – **Rabindranath Tagore** – Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT 4: ONE-ACT PLAYS **9**

The Death Trap – **Saki (H.H. Munro)**– Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis; **The Dear Departed**: **A Comedy in One-Act – Stanley Houghton**- Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT 5: GRAMMAR **9**

Communicative Grammar- Seeking and giving information – statements and questions Being informal – phrasal verbs, Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki,2001
2. Pooja Khanna, “English Communication”, S.CHAND Publishing,2016
3. Rabindranath Tagore, “The Postmaster”, Penguin India, 2000

REFERENCE BOOKS:

1. K.A.AbbasSuresh Kohli, “An Evening in Calcutta”, HarperCollins, 2015
2. Stanley Houghton, “Five one act plays”, Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, “Strings of Gold (Part- II)”, MacMillan, 2016

CourseCoordinator **HOD**

BIA201	இக்கால இலக்கியம் - II				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2										
	Course Coordinator Name &Department : முனைவர். ஜெ.அந்தோணி ஜெயஷீலா &தமிழ்த்துறை										
COURSE OBJECTIVES :- இக்காலஇலக்கியங்கள்கவிதை, சிறுகதை, உரைநடை அறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	பாரதியார், பாரதிதாசன்கவிதைகளைஅறிவர்.										
CO2	புதுக்கவிதைகளைபற்றிஅறிவர்										
CO3	பி.எஸ்.ராமையா, ஜெயகாந்தன், சுஜாதாஇவர்களுடையசிறுகதைகளைஅறிவர்										
CO4	ரா.பி.சேதுப்பிள்ளை, பாவாணர், மு.வஇவர்களதுஉரைநடைகளைஅறிவர்										
CO5	கவிதை,புதுக்கவிதை,உரைநடை,சிறுகதைபோன்றவைகளின்வரலாறுபற்றிஅறிவர்										
CO6	இக்கால இலக்கியங்களைப் பற்றி தெளிவான அறிவைப் பெறுவர்										
	Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low										
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity	
				✓					
4	Approval	Academic Council Meeting							

அலகு1 12

(மரபுக்)கவிதை: பாரதியார்-கண்ணன்பிறப்பு- சிவசக்திபுகழ்- அல்லா- ஏசுகிறிஸ்து
பாரதிதாசன்- தமிழ்- தமிழின்இனிமை- இன்பத்தமிழ்- எங்கள்தமிழ்

அலகு2 12

புதுக்கவிதை: நாமக்கல்கவிஞர்- சமுதாயப்பாடல்கள்- புதியசமுதாயம், கவிமணி- இலக்கியம்- இலக்கியபஞ்சகம், மீரா- ஏற்றம்காண்போம், பட்டுக்கோட்டைகல்யாணசுந்தரம்- தத்துவம்- எதுசொந்தம், கண்ணதாசன்- தவறு-மன்னிப்பு, கவிக்கோஅப்துல்ரகுமான்- பித்தன், மு.மேத்தா- வெளிச்சம்வெளியேஇல்லை, ஈரோடுதமிழன்பன்- அகல்விளக்காகஇரு, கவிஞர்வாலி-தமிழுக்குஅமுதென்றுபேர், நா.முத்துக்குமார்-காதலித்துக்கெட்டுப்போ

அலகு3 12

சிறுகதை: கி. ராஜநாராயணன்- கதவு, ஜெயகாந்தன்- அக்கினிப்பிரவேசம்,சுஜாதா- நகரம்

அலகு4 12

உரைநடை: ரா.பி.சேதுப்பிள்ளை - தமிழ்இன்பம்- காதலும்கற்பும்
மொழிஞாயிறுஞா.தேவநேயப்பாவாணர் - செந்தமிழ்ச்சிறப்பு- தமிழின்தனியியல்புகள்
டாக்டர்.மு.வரதராசன் - இலக்கியத்திறன்- இலக்கியம்

அலகு5 12

இலக்கியவரலாறு: கவிதை, புதுக்கவிதை, உரைநடை, சிறுகதை- தோற்றமும்வளர்ச்சியும்

பாடநூல்கள்:

1. தி.சா.ராஜு, "பாரதியார்- பாரதிதாசன்கவிதைகள்", வானவில்பிரசுரம், 1977
2. வெ. இராமலிங்கம், "நாமக்கல்கவிஞரின்கவிதைகள்", மணிமேகலைபிரசுரம், 2001
3. கவிமணிசி.தேசிகவிநாயகம்பிள்ளை, "கவிமணிகவிதைகள்", பூம்புகார்பதிப்பகம், 2011
4. மீரா, "மீராகவிதைகள்", பூம்புகார்பதிப்பகம், 2010
5. பட்டுக்கோட்டையார், "பட்டுக்கோட்டையார்பாடல்கள்', கற்பகம்புத்தகாலயம், 2010
6. கண்ணதாசன், "கவிஞர்கண்ணதாசன்கவிதைகள்", கண்ணதாசன்பதிப்பகம், 2012
7. அப்துல்ரகுமான், "கவிக்கோகவிதைகள்', யுனிவர்சல் பப்ளிஷர்ஸ், 2013
8. மு.மேத்தா, "மு.மேத்தாகவிதைகள்", கவிதாபப்ளிகேஷன், 2012
9. தமிழன்பன், "ஈரோடுதமிழன்பன்கவிதைகள்", பூம்புகார்பதிப்பகம், 2014
10. வாலி, "கவிஞர்வாலிகவிதைகள்", விகடன்பிரசுரம், 2016
11. நா.முத்துக்குமார், "நா.முத்துக்குமார்கவிதைகள்", பட்டாம்பூச்சிபதிப்பகம், 2013

பார்வைநூல்கள்:

1. மு.வரதராசன், "இலக்கியத்திறன்", டாக்டர்மு.வ. பதிப்பகம், 1992
1. ரா.பி.சேதுப்பிள்ளை, "தமிழ்இன்பம்", ஸ்ரீசெண்பகாபதிப்பகம், 2012
3. ஞா.தேவநேயப்பாவாணர், "செந்தமிழ்ச்சிறப்பு", பூம்புகார்பதிப்பகம், 2003

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA202	**இலக்கணம் - நன்னூல் - சொல்**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை										
COURSE OBJECTIVES : நால்வகைச்சொற்களின்இலக்கணத்தைக்கற்றுத்தருதல்											
COURSE OUTCOMES (COs)											
CO1	சொற்பாகுபாடு, பெயர்ச்சொல்ஆகியவற்றைஅறிவர்										
CO2	பெயரியலில், வேற்றுமையை29 நூற்பாக்கள்மூலம்அறிவர்										
CO3	வினையியலை32 நூற்பாக்கள்மூலம்அறிவர்										
CO4	பொதுவியலை68 நூற்பாக்கள்மூலம்அறிவர்										
CO5	இடையியல், உரியியலைமுறையே22, 11 நூற்பாக்கள்மூலம்அறிவர்										
CO6	நால்வகைச்சொற்களின்இலக்கணத்தை அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H							H	H
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

சொல்லின்பொதுவிலக்கணம்- மூவகைமொழிகள்- பெயர்ச்சொல்- திணை, பால், இடம், இயல்புவழக்கும், தகுதிவழக்கும்- சொல்லின்வகைகள்- உயர்திணை, அஃறிணைப்பொதுப்பெயர்கள், தொழிற்பெயரும்வினையாலணையும்பெயரும்- ஆகுபெயர்.

அலகு2 12

வேற்றுமைஎன்பதன்விளக்கம்- பாகுபாடு – பெயர்வேற்றுமை- இரண்டாம்வேற்றுமைமுதல்ஏழாம்வேற்றுமைமுடியஉரியஉருபுகளும்அவைஉணர்த்தும்பொருள்களும்- விளிவேற்றுமை – விளிப்பொருளைஉணர்த்தும்முறைகள்- விளிவேற்றுமைஉருபுகள்- விளிஉருபுஏலாப்பெயர்கள்- உருபுமயக்கம்.

அலகு3 12

வினைச்சொல்விளக்கம்- பாகுபாடுகள்முற்றுவினை- எச்சவினை- தெரிநிலைவினை – குறிப்புவினை – செய்யும்என்னும்வாய்ப்பாட்டுவினைவினைமுற்று – எதிர்மறைவினை – உருபும்வினையும்அடுக்கிவருதல்- இடைப்பிறவரல்- முடிக்கும்சொல்நிற்கும்இடம், திணை, பால், இடம், பொதுமைநீங்குநெறிகள், எச்சங்களின்முடிவு.

அலகு4 12

தொகைநிலைத்தொடர்மொழிகள்-வேற்றுமை, வினை, பண்பு, உவமை, உம்மை, அன்மொழித்தொகைத்தொடர்கள்- தொகாநிலைத்தொடர்மொழிகள், வழாநிலைகளும், வழுவமைதிகளும்- பொருள்கோள்கள்.

அலகு5 12

இடைச்சொல்இலக்கணம்- வகைகள், இடைச்சொற்கள்உணர்த்தும்பொருள்கள்- அசைச்சொல்- உரிச்சொல்இலக்கணம்- வகைகள்(புறனடைநீங்கலாக)

பாடநூல்கள்:

1. ஆறுமுகநாவலர், நன்னூல்காண்டிகையுரைசொல்லதிகாரம், பாரிநிலையம், 2014
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பார்வைநூல்கள்:

1. தேவிரா, நன்னூல் சொல்லதிகாரம், தேவிரா உரை, நந்தினி பதிப்பகம், 2017
2. சோம.இளவரசு, நன்னூல் சொல்லதிகாரம், மெய்யப்பன் பதிப்பகம், 2012
3. ச.திருஞானசம்பந்தம், நன்னூல் சொல்லதிகாரம் (காண்டிகைஉரை), மெரினா புக்ஸ்,2009

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

	ஊடகவியல்	L	T	P	C
BBC206	Total Contact Hours –	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department : முனைவர் ஜெ.அந்தோணி ஜெய ஷீலா&தமிழ்த்துறை				
COURSE OBJECTIVES : ஊடகங்களைஅறிமுகப்படுத்திஅதன்மூலம்வேலைவாய்ப்புகளைஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	பழங்காலத்துஊடகமானகல்வெட்டு, ஓலைச்சுவடி, செப்பேடுகளைஅறிவர்				
CO2	ஓலைச்சுவடி, செப்பேடுகளைஅறிவர்				
CO3	அச்சுஊடகத்தைஅறிவர்				
CO4	மின்னணுஊடகத்தைஅறிவர்				
CO5	அச்சுமுறையின்இடைக்காலமற்றும்தற்காலவளர்ச்சிகள் பற்றி அறிவர்				
CO6	இணையஇதழ்கள்- அலைபேசி– குறுஞ்செய்தி பற்றி அறிவர்				

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1			H			M	H			L
	CO2			H			M	H			
	CO3			H			M	H			
	CO4			H			M	H			
	CO5			H			M	H			
	CO6			H			M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
							✓				
4	Approval		Academic Council Meeting								

அலகு1 6

மறுமொழிஊடகம்- கல்வெட்டு–

அலகு2 6

ஓலைச்சுவடி- செப்பேடு

அலகு3 6

அச்சுஊடகம்- அச்சுத்தொடர்புசாதனங்கள்- மேல்நாட்டில்தோன்றியவகை- இந்தியாவில்அவற்றின்தொடக்கம்–

அலகு4 6

அச்சுமுறையின்இடைக்காலமற்றும்தற்காலவளர்ச்சிகள்

அலகு5 6

மின்னணுஊடகம்- இணையஇதழ்கள்- அலைபேசி- குறுஞ்செய்தி

பாடநூல்கள்:

1. "ஊடகவியல்", தமிழ்த்துறைவெளியீடு, திருச்சிலுவைகல்லூரி, 2014
2. வி. பார்வதி, 'தமிழில்தகவல்தொடர்புஊடகங்கள்" நியூசெஞ்சுரிபுக்ஹவுஸ், 2012
3. இராஜாவரதராஜா, "மக்கள்தகவல்தொடர்பியல்", ஆராபதிப்பகம், 2012

பார்வைநூல்கள்;

1. மா.சு.சம்பந்தன், தமிழ் இதழியல் வரலாறு, தமிழர் பதிப்பகம், 1987
2. மா.சு.சம்பந்தன், அச்சும் பதிப்பும், தமிழர் பதிப்பகம், 1980
3. கி. இராசா , இதழியல், தாமரை பப்ளிகேஷன்ஸ், 2005

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA204	**தமிழகவரலாறும்பண்பாடும்** -II	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2				
	Course Coordinator Name &Department : திரு மு.பரந்தாமன் &தமிழ்த்துறை				
COURSE OBJECTIVES :- தமிழகத்தின்தொன்மை, அரசாட்சி,சமூகவாழ்க்கையை அறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	தமிழகவரலாற்றின்பல்வேறுகாலங்களைப்பற்றிஅறிவர்				
CO2	தமிழகத்தின்தொன்மை, சமூகநிலை, பல்லவர்காலஆட்சியைப்பற்றிஅறிவர்				
CO3	சோழப்பேரரசின்தோற்றம், வளர்ச்சி, வீழ்ச்சி, மக்களின்வாழ்க்கைபற்றிஅறிவர்				
CO4	பாண்டியப்பேரரசின்தோற்றம், வளர்ச்சி, வீழ்ச்சி, மக்களின்வாழ்க்கைபற்றிஅறிவர்				
CO5	ஆங்கிலேயர்ஆட்சி, இவ்வாட்சியைஎதிர்த்துஎழுந்தசுதந்திரக்கிளர்ச்சியைஅறிவர்				
CO6	தமிழகத்தின்தொன்மை, அரசாட்சிமுறை, சமூகவாழ்க்கைகளைப்பற்றி நன்கு அறிந்து கொள்வர்				

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		H	M	H	M			H	M	M
	CO2		H	M	H	M					
	CO3		H	M	H	M					
	CO4		H	M	H	M					
	CO5		H	M	H	M					
	CO6		H	M	H	M					
3	Category	Part I Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			

					✓				
4	Approval	Academic Council Meeting							

அலகு1 12

தமிழகவரலாற்றுக்குரியசான்றுகள்செப்பேடுகள்- கல்வெட்டுகள்- இலக்கியங்கள்- வெளிநாட்டார்குறிப்புகள்- வரலாற்றுக்குமுற்பட்டகாலம்

அலகு2 12

தமிழகத்தின்தொன்மை – குமரிக்கண்டம்- சங்ககாலச்சேரர், பாண்டியர், சோழர்வரலாறு – சங்ககாலச்சமூகநிலை – பெண்டிர்நிலைகல்விநிலை – சங்ககாலம்தமிழகத்தின்பொற்காலம்- களப்பிரர்ஆட்சியும், தமிழகமும். பல்லவர்தோற்றமும், வரலாறும்- முற்காலப்பல்லவர்கள்இடைக்காலப்பல்லவர்கள்- பிற்காலப்பல்லவர்கள்

அலகு3 12

பிற்காலச்சோழப்பேரரசின்தோற்றமும், வளர்ச்சியும்- சோழர்வரலாறு– முதல்இராசராசன், முதல்இராசேந்திரன்ஆகியோரின்தனிச்சிறப்பு – சோழரும், இராட்டிரடரும்- சோழரும்- சாளுக்கியரும்தமிழகத்துக்கும்இலங்கைக்குமுள்ளதொடர்புகள்

அலகு4 12

முதல்பாண்டியப்பேரரசு – பாண்டியநாட்டில்சோழராட்சிஎழுச்சியும், இரண்டாம்பாண்டியப்பேரரசுஉருவாக்கமும்- பாண்டியர்வீழ்ச்சியும்

அலகு5 12

ஆங்கிலேயர்ஆட்சிதமிழகத்தில்வேரூன்றல்-ஆங்கிலேயர்சமூகநிலை – கல்விநிலை – பொருளாதாரநிலை- ஆங்கிலஆட்சி- பூலித்தேவன், கட்டபொம்மன், மருதுசகோதரர்கள்வரலாறு- வேலூர்க்கலகம்

பாடநூல்கள்:

1. கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்",தமிழாராய்ச்சிநிறுவனம்,2015
2. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2017
3. பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம்,2017

பார்வைநூல்கள்:

1. வே.தி.செல்லம், "தமிழகவரலாறும்பண்பாடும்", மணிவாசகர்பதிப்பகம், 2002
2. மா. இராசமாணிக்கனார், "தமிழகவரலாறும்பண்பாடும்", சாரதாபதிப்பகம், 2016
3. நா. வானமாமலை, தமிழர் பண்பாடும் தத்துவமும், அலைகள் வெளியீட்டகம், 2016

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

	தமிழ்– III	L	T	P	C

BAL301	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திருமதி. அ.கோ. ஸ்ரீதேவி &தமிழ்த்துறை				

COURSE OBJECTIVES : காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தை அறியச் செய்தல்	
COURSE OUTCOMES (COs)	
CO1	ஐம்பெரும்காப்பியங்களில்சிலப்பதிகாரம், மணிமேகலை, சீவகசிந்தாமணிபற்றிஅறிவர்
CO2	பிற்கால காப்பியங்களில் கம்பராமாயணம், தேம்பாவணி, சீறாப்புராணம் பற்றி அறிவர்
CO3	முக்கால நீதி இலக்கியங்களில் திருக்குறள், நாலடியார், இனியவை நாற்பது பற்றி அறிவர்
CO4	பிற்கால நீதி இலக்கியங்களில் மூதுரை, நன்னெறி, ஆத்தி சூடி பற்றி அறிவர்
CO5	காப்பியம் மற்றும் நீதி இலக்கிய வரலாற்றைப் பற்றி அறிவர்
CO6	காப்பியம், நீதி இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H		M
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval	Academic Council Meeting

அலகு1 9

சிலப்பதிகாரம் -இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219

மணிமேகலை - சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115

சீவகசிந்தாமணி - திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம் - 851 - 860

அலகு2 9

கம்பராமாயணம்- கம்பர்- அயோத்தியகாண்டம்- கங்கைப்படலம் - 10

தேம்பாவணி - வீரமாமுனிவர்- நாட்டுப்படலம் - 10

சீறாப்புராணம் -உமறுப்புலவர்-நுபூவத்துக்காண்டம்-மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 9

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10

நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10

இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 9

மூதுரை - அவ்வையார் - 1- 10

நன்னெறி - சிவப்பிரகாசர் - 8,12,18,24,39

புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 9

காப்பியஇலக்கியவரலாறு- நீதிஇலக்கியவரலாறு

பாடநூல்கள்:

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
3. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
4 அ.ச.ஞானசம்பந்தன், "கம்பராமாயணம்மூலமும்உரையும்", நியூசெஞ்சுரிபுக்ஸ்,2010
5. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
6. செய்குத்தம்பிபாவலர், "சீறாப்புராணம்", யுனிவர்சல்பப்ளிஷர்ஸ், 2010

பார்வைநூல்கள்:

1. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999
2. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
3. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BEH301	ENGLISH III	L	T	P	C
	Total Contact Hours –	3	0	0	3
	Prerequisite course – +2 Level English				
	Course Coordinator Name& Department :Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES : To enable them to realize the value of language, communicate effectively and develop career skills	
COURSE OUTCOMES (COs)	
CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L								
	CO2	H	L								

	CO3	H	L						H		
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
		✓									
4	Approval		Academic Council Meeting								

UNIT 1-LISTENING SKILLS 9

Types of Listening (Theory / Definition) -Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2-TELEPHONE SKILLS 9

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message -Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3-WRITING SKILLS 9

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 -CAREER SKILLS 9

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 –PERSONAL SKILLS 9

Empathy(Understanding third person’s point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack,2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Createspace Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010

CourseCoordinator **HOD**

BIA301	**இரட்டைக்காப்பியம்- சிலப்பதிகாரம்**			L	T	P	C				
	Total Contact Hours – 60			4	0	0	4				
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :திருமதி நூ அமீதாராணி.&தமிழ்த்துறை										
COURSE OBJECTIVES : இல்லறத்தைவலியுறுத்துவதாகஅமைந்தகாப்பியத்தைகற்பித்தல்											
COURSE OUTCOMES (COs)											
CO1	மங்கலவாழ்த்து, இந்திரவிழவூர்எடுத்தகாதையைஅறிவர்										
CO2	கானல்வரி, மதுரைக்காண்டத்தில்வேட்டுவவரிபாடல்களைஅறிவர்										
CO3	மதுரைக்காண்டத்தில்அடைக்கலக்காதை, கொலைக்களக்காதைகளைஅறிவர்										
CO4	வழக்குரைகாதை, வஞ்சிக்காண்டத்தில்குன்றக்குரவையையஅறிவர்										
CO5	வஞ்சிக்காண்டத்தில்நடுகல்காதை, வரந்தருகாதைகளைஅறிவர்										
CO6	சிலப்பதிகாரகாப்பியஇலக்கியவழிவாழ்வியலைதெரிந்துகொள்வர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	M						H		M
	CO2	L	M								
	CO3	L	M								
	CO4	L	M								
	CO5	L	M								
	CO6	L	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

அலகு1 12
மங்கலவாழ்த்துப்பாடல், இந்திரவிழவூர்எடுத்தகாதை

அலகு2 12
கானல்வரி, வேட்டுவவரி

அலகு3 12
அடைக்கலக்காதை, கொலைக்களக்காதை

அலகு4 12
வழக்குரைகாதை, குன்றக்குரவை

அலகு5 12
நடுகல்காதை, வரந்தருகாதை

பாடநூல்கள்:
1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்மூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. சிலம்பொலிசு.செல்லப்பன், "சிலப்பதிகாரம்தெளிவுரை", பாரதிபதிப்பகம், 1994
3. புலியூர்க் கேசிகன், "சிலப்பதிகாரம் மூலமும் உரையும்", கொளரா பதிப்பகம், 2016

பார்வைநூல்கள்:
1.இளங்கோ அடிகள், "சிலப்பதிகாரம்",புரோடிஜி தமிழ் பதிப்பகம், 2010
2. கே. ஜி. ஜவர்லால், "சிலப்பதிகாரம்", கிழக்கு பதிப்பகம், 2010
3. இளங்கோ அடிகள், "சிலப்பதிகாரம்", கிழக்கு பதிப்பகம் , 2010

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA302	**இலக்கணம்- தொல்காப்பியம்- பொருள்**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை										
COURSE OBJECTIVES : பண்டைத் தமிழ் மக்களின் வாழ்வு, கலை, பண்பாடுகளை அறியச் செய்தல்											
COURSE OUTCOMES (COs)											
CO1	கருப்பொருள்உரிப்பொருள்களைஅறிவர்										
CO2	அரண்அமைக்கும்முறைபோர்செய்யும்முறைபற்றிஅறிவர்										
CO3	ஒத்தபண்புமுடையகாதலர்கள்திருமணத்திற்குமுன்ஒன்றுபடுதலைஅறிவர்										
CO4	இல்லறக்கிழமைபூண்டொழுகும்உலகியல்வாழ்வுமுறையைஅறிவர்										
CO5	நான்குஇயல்களுக்கும்பொதுப்படஅமைத்தபகுதியைஅறிவர்										
CO6	பண்டைத்தமிழ்ப்பெருமக்களின்வாழ்வு, குறிக்கோள், கலை, பண்பாடுகளை அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H								
	CO2	L	H								
	CO3	L	H							H	H
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

அலகு1 12
அகத்திணையியல்(1-58)

அலகு2 12
புறத்திணையியல்(59-88)

அலகு3 12
களவியல்(89-139)

அலகு4 12
கற்பியல்(140-192)

அலகு5 12
பொருளியல்(193-244)

பாடநூல்கள்:

1. இளம்பூரணார், "தொல்காப்பியம்பொருளதிகாரம்", சாரதாபதிப்பகம், 2017
2. நச்சினார்க்கினியர், தொல்காப்பியம் பொருளதிகாரம் , அமராவதி பதிப்பகம், 2017
3. பேராசிரியர், தொல்காப்பியம் பொருளதிகாரம், அமராவதி பதிப்பகம், 2017

பார்வைநூல்கள்:

1. கு.வெ. பாலசுப்பிரமணியன், தொல்காப்பியம், நியூசெஞ்சுரிபுக்ஸ், 2017
2. கி.இராசா, தொல்காப்பியம் பொருளதிகாரம், பாவை பப்ளிகேஷன்ஸ் , 2013
3. வ.த.இராம சுப்பிரமணியன், தொல்காப்பியம்–பொருளதிகாரம், பூம்புகார் பதிப்பகம், 2015

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA303	**பதினெண்கீழ்க்கணக்குநூல்கள்**- I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திரு மு.பரந்தாமன் &தமிழ்த்துறை				
COURSE OBJECTIVES : சங்கம்மருவியகாலத்தில்அகம், புறம்வழியிலாகஅமைந்தபதினெண்கீழ்க்கணக்குநூல்களைவிளக்குதல்					
COURSE OUTCOMES (COs)					
CO1	முப்பால்எனபெயர்பெற்றதிருக்குறளைஅறிவர்				
CO2	நீதிபுகட்டும்நாலடியார்பற்றிஅறிவர்				
CO3	இன்னாநாற்பது, இனிமையானவிடயங்களைகூறும்இனியவைநாற்பதுபற்றிஅறிவர்				

CO4	ஐந்திணைஐம்பது, ஐந்திணைஎழுபதுகளைஅறிவர்
CO5	திணைமொழிஐம்பது, திணைமாலைநூற்றையம்பதுபற்றிஅறிவர்
CO6	அகம், புறம், அறம்வழியிலாகஅமைந்தபதினெண்கீழ்க்கணக்குநூல்களைஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1			M		H			H		M
	CO2			M		H					
	CO3			M		H					
	CO4			M		H					
	CO5			M		H					
	CO6			M		H					
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

அலகு1 12

திருக்குறள்:

அறத்துப்பால் - இனியவைகூறல், புறங்கூறாமை, நடுவுநிலைமை, ஈகை

பொருட்பால் - கல்லாமை, காலமறிதல், தெரிந்துதெளிதல், ஊக்கம்உடைமை

காமத்துப்பால் - குறிப்பறிதல், பிரிவாற்றாமை, கனவுநிலைஉரைத்தல், குறிப்பறிவுறுத்தல்

அலகு2 12

நாலடியார்:

அறத்துப்பால் - செல்வம்நிலையாமை, அறன்வலியுறுத்தல், சினமின்மை, மெய்ம்மை

பொருட்பால் - பெரியாரைப்பிழையாமை, கூடாநட்பு, அவையறித்தல், பன்னெறி

காமத்துப்பால் - பொதுமகளிர், கற்புடைமகளிர், காமநுதலியல்

அலகு3 12

நானாற்பது;

கார்நாற்பது - பாடல்எண்4,10,12, 25,33,40 களவழிநாற்பது - பாடல்எண்3,23,25,26,33,41

இன்னாநாற்பது- பாடல்எண்1,16,19,25,32,36 இனியவைநாற்பது- பாடல்எண்1,11,17,27,30,32

அலகு4 12

ஐந்திணைஐம்பது, **ஐந்திணைஎழுபது**:

ஐந்திணைஐம்பது - முல்லை- பாடல்1 – 10 குறிஞ்சி - பாடல்1 – 10

ஐந்திணைஎழுபது - பாலை- பாடல்1 – 10 மருதம் - பாடல்1 – 10 நெய்தல் - பாடல்1 – 10

அலகு5 12

திணைமொழிஐம்பது, **திணைமாலைநூற்றைம்பது**:

திணைமொழிஐம்பது - குறிஞ்சி- பாடல்1 – 10 பாலை - பாடல்1 – 10 முல்லை- பாடல்1 – 10

திணைமாலைநூற்றைம்பது- நெய்தல்- பாடல்1 – 10 மருதம் - பாடல்1 – 10

பாடநூல்கள்:

1. ந.மு.வேங்கடசாமிநாட்டார், பதிணென்கீழ்க்கணக்குநூல்கள் , தமிழ்மண்பதிப்பகம், 2012
2. துரை.இராஜாராம், பதினெண்கீழ்க்கணக்குதொகுதி1-2, முல்லைநிலையம், 2012
3. வ.வெ.சுப்ரமணியன், பதினெண் கீழ்க்கணக்கு நூல்கள், மணிவாசகர் பதிப்பகம், 2011

பார்வைநூல்கள்:

1. ஆசிரியர் குழு, பதிணென்கீழ்க்கணக்கு நூல்கள், சென்னைப் பல்கலைக்கழகம், 1944
2. ஆசிரியர் குழு, பதிணென்கீழ்க்கணக்கு நூல்கள் - உரை, சாரதா பதிப்பகம், 2012
3. கி.இராசா,பதினெண்கீழ்க்கணக்கு அக நூல்கள், செஞ்சுரி புக் ஹவுஸ், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA304	**சிற்றிலக்கியங்கள்**- I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர் ஜெ.அந்தோணிஜெய ஷீலா&தமிழ்த்துறை				

COURSE OBJECTIVES : அறம், பொருள், இன்பம்,
வீடுஎனும்நான்குஉறுதிப்பொருள்களுள்ஏதேனும்ஒன்றைத்தருவதாகஅமையும்சிற்றிலக்கியத்தைகற்பித்தல்

COURSE OUTCOMES (COs)	
CO1	குற்றாலக்குறவஞ்சிஇலக்கியத்தைப்பற்றிஅறிவர்
CO2	தமிழ்விடுதூதுஇலக்கியத்தைபற்றிஅறிவர்
CO3	மீனாட்சியம்மைப்பிள்ளைத்தமிழ்இலக்கியத்தைபற்றிஅறிவர்
CO4	நந்திவர்மன்மேல்பாடப்பட்டநந்திக்கலம்பகஇலக்கியத்தைஅறிவர்
CO5	நாட்டில்வழங்கிவரும்பழமொழிகளைஅறிவர்
CO6	அறம், பொருள், இன்பம், வீடுஎனும் உறுதிப் பொருள்களை பற்றி அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		M			H			H		M
	CO2		M			H					
	CO3		M			H					
	CO4		M			H					
	CO5		M			H					
	CO6		M			H					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

அலகு1 12
திருக்குற்றாலக்குறவஞ்சி(திரிகூடநாதர்கினைச்சிறப்புக்கூறுதல்வரை1-60)

அலகு2 12
தமிழ்விடுதூது(1-100)

அலகு3 12
மீனாட்சியம்மைப்பிள்ளைத்தமிழ்(முத்தப்பருவம்வரை- 1-52)

அலகு4 12
நந்திக்கலம்பகம்(1 - 61)

அலகு5 12
பழமொழிவிளக்கம்என்னும்தண்டலையார்சதகம்(1-50)

பாடநூல்கள்:

1. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", ஸ்ரீசெண்பகாபதிப்பகம், 2010
2. கதிர்முருகு, "தமிழ்விடுதூதுமூலமும்உரையும்", சாரதாபதிப்பகம், 2018
3. கதிர்முருகு, "மதுரைமீனாட்சியம்மைபிள்ளைத்தமிழ்", சாரதாபதிப்பகம், 2009
4. முத்து. இராமமூர்த்தி,"நந்திக்கலம்பகம் -உரை", கௌராபதிப்பகக்குழுமம், 2017
5. படிக்காசுபுலவர், "தண்டலையார்சதகம்-உரை", கௌராபதிப்பகுழுமம், 2016

பார்வைநூல்கள்:

1. திரிகூடராசப்பக் கவிராயர், திருக்குற்றாலக் குறவஞ்சி, பூம்புகார் பதிப்பகம், 2001
2. பா. ஆனந்தகுமார், தமிழ் விடு தூது, நியூ செஞ்சுரி புக் ஹவுஸ், 2010
3. செ.உலகநாதன், மதுரை மீனாட்சியம்மை பிள்ளைத்தமிழ், பாரி நிலையம், 2013
4. கதிர் முருகு, நந்திக் கலம்பகம்: மூலமும் உரையும், சீதை பதிப்பகம், 2006
5. புலியூர்க்கேசிகன், பழமொழி நானூறு, சாரதா பதிப்பகம், 2010

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA301	**கணினியல்**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர். இரா.பாலகிருஷ்ணன் &தமிழ்த்துறை				

COURSE OBJECTIVES :	கணினியையும்அதன்பயன்பாட்டையும்அறியச்செய்தல்
COURSE OUTCOMES (COs)	
CO1	கணினித்தலைமுறையும், வகைகளையும்அறிவர்
CO2	கணினியின்முறைமைகளைஅறிவர்
CO3	சொல்செயலியில்ஆவணங்களைக்கையாளுதலைப்பற்றிஅறிவர்
CO4	சொல்செயலியில் பிழைதிருத்தம், கூடுதல்வசதிகள்பற்றிஅறிவர்
CO5	விரிதாள்செயலியில்பணித்தாள்களைக்கையாளுதலைப்பற்றிஅறிவர்
CO6	கணினியையும்அதன்பயன்பாட்டையும் அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1						M	H			M
	CO2						M	H			
	CO3						M	H			
	CO4						M	H			
	CO5						M	H			
	CO6						M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			
4	Approval		Academic Council Meeting							

அலகு1 10

கணினித்தலைமுறைகள்- கணினிவகைகள்- கணினிமுறைமை(Computer System)

அலகு2 10

சொல்செயலி(MS Word) - ஆவணங்களைக்கையாளுதல்(Handling of Documents) - ஆவணவடிவமைப்பு(Document Formating) - பிழைதிருத்தம்- கூடுதல்வசதிகள்

அலகு3 10

விரிதாள்(Spreadsheet) - பணித்தாள்களைக்கையாளுதல்(Handling of Worksheets) – பணித்தாள்வடிவமைப்பு(Worksheet Formating) - வரைபடங்கள்(Charts) - அட்டவணைச்செயல்பாடுகள்

பாடநூல்கள்:

1. கணேஸ்வரன், "தமிழ்மூலம்MS WORD", Quick Tec Academy, 2000
2. கணேஸ்வரன், "தமிழ்மூலம்MS EXCEL", Quick Tec Academy, 2000
3. ஜெ.வீரநாதன், எம்.எஸ் ஆபீஸ், எஸென்ஷியல் பப்ளிகேஷன்ஸ், 2018

பார்வைநூல்கள்:

1.ம.லெனின், எளியதமிழில் எக்ஸெல், சிக்ஸ்த்சென்ஸ் பப்ளிகேஷன்ஸ், 2008
2.கே.புவனேஸ்வரி, மைக்ரோசாஃப்ட் வேர்ட் 2013, கண்ணதாசன் பதிப்பகம், 2008
3. கே.புவனேஸ்வரி, கம்ப்யூட்டர் A to Z, விகடன் பிரசுரம், 2016

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BAL401	**தமிழ்**– IV	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திருமதி. அ.கோ. ஸ்ரீதேவி &தமிழ்த்துறை				
COURSE OBJECTIVES : சங்கஇலக்கியத்தைப்பற்றிஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	எட்டுத்தொகையில்நற்றிணை, குறுந்தொகை, கலித்தொகைஇலக்கியங்களைஅறிவர்				
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்				
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்				

CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்
CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்
CO6	சங்கஇலக்கியத்தைப்பற்றியஉயரியசிந்தனையைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H	M	M
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval	Academic Council Meeting

அலகு1 9

நற்றிணை - 10, 110, 129
குறுந்தொகை - 8, 25, 32
கலித்தொகை - 6, 37, 51

அலகு2 9

புறநானூறு - 89, 109, 204
பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 9

பொருநராற்றுப்படை - 151 - 213
பெரும்பாணாற்றுப்படை - 5 - 15,
- 170 - 184

அலகு4 9

நெடுநல்வாடை - 1 - 25
பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 9

எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாடநூல்கள்:

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
4. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
5. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்து" , சாரதாபதிப்பகம், 2008
6. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010

பார்வைநூல்கள்:

1.ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006
2. மாராசமாணிக்கம்., சங்க இலக்கிய வரலாறு, காவ்யா, 2012
3. சுசண்முகசுந்தரம்., சங்க இலக்கிய வரலாறு, மணிவாசகர் பதிப்பகம், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BEH401	ENGLISH IV	L	T	P	C
	Total Contact Hours –	3	0	0	3
	Prerequisite course – +2 Level English				
	Course Coordinator Name& Department :Ms.E.REKHA - English				

COURSE OBJECTIVES : To understand the trait of personality	
COURSE OUTCOMES (COs)	
CO1	Remember the basic concepts of English literature
CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

UNIT 1 - PROSE 9

Lalajee – Jim Corbett – biography- character sketch- summary – analysis; Face of Judas – Bonnie Chamberlin - biography- character sketch - summary – analysis.

UNIT 2 - POETRY 9

Laugh and Be Merry – John Masefield –biography- annotation- summary; Matilda - Hilaire Belloc- biography- truthfulness –annotation - summary.

UNIT 3: SHORT STORIES 9

Hunchback Sundari – C.Raja Gopalachari – biography – character sketch– summary - analysis; The Eyes Are Not There- Ruskin Bond- character sketch – summary – analysis.

UNIT 4: ONE-ACT PLAYS 9

Macbeth Soliloquy – Out, Out, Brief Candle - Shakespeare – character sketch – summary – analysis; Julius Ceasar - Anthony's Funeral Speech – Shakespeare – character sketch – conspiracy - summary – analysis.

UNIT 5: FUNCTIONAL ENGLISH 9

Wh –Questions - pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

Stories of Innocent by C.Rajagopalachari, BharathiyaVidya Bhavan, 2009

Macbeth by Shakespeare, Macmillan Publisher, 2014

REFERENCE BOOKS:

1. Macbeth by Shakespeare, UBS Publisher's Distibutors Pvt.Ltd, 2004
2. Matilda - Hilaire Belloc
3. Lalajee – Jim Corbett

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA401	**இரட்டைக்காப்பியம்–மணிமேகலை**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திருமதி நூ.அமீதாராணி &தமிழ்த்துறை				

COURSE OBJECTIVES : மணிமேகலைதுறவறத்தைவலியுறுத்துவதாகஅமைந்தகாப்பியத்தைகற்பித்தல்	
COURSE OUTCOMES (COs)	
CO1	ஊர்அலர்உரைத்தகாதை, மணிமேகலாதெய்வம்வந்துதோன்றியகாதைகளைஅறிவர்
CO2	பாத்திரம்பெற்றகாதை, அறவணர்த்தொழுதகாதைகளைஅறிவர்
CO3	உலகஅறவிபுக்ககாதை, உதயகுமரன்அம்பலம்புக்ககாதைகளைஅறிவர்
CO4	சிறைக்கோட்டம்அறக்கோட்டம்ஆக்கியகாதை, சிறைசெய்காதையைஅறிவர்
CO5	சமயக்கணக்கர்தம்திறம்கேட்டகாதை, தவத்திறம்பூண்டுதருமம்கேட்டகாதையைஅறிவர்
CO6	மணிமேகலைகாப்பியகாலமக்களின்வாழ்வியலைஅறிந்துகொள்வர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	M						L		M
	CO2	L	M								
	CO3	L	M								
	CO4	L	M								
	CO5	L	M								
	CO6	L	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

அலகு1 12

ஊர்அலர்உரைத்தகாதை, மணிமேகலாதெய்வம்வந்துதோன்றியகாதை

அலகு2 12

பாத்திரம்பெற்றகாதை, அறவணர்த்தொழுதகாதை

அலகு3 12

உலகஅறவிபுக்ககாதை, உதயகுமரன்அம்பலம்புக்ககாதை

அலகு4 12

சிறைக்கோட்டம்அறக்கோட்டம்ஆக்கியகாதை, சிறைசெய்காதை

அலகு5 12

சமயக்கணக்கர்தம்திறம்கேட்டகாதை, தவத்திறம்பூண்டுதருமம்கேட்டகாதை

பாடநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ந.மு. வேங்கடசாமிநாட்டார், "மணிமேகலைமூலமும்உரையும்காப்பியம்", சாரதாபதிப்பகம், 2009
3. சீத்தலை சாத்தனார், மணிமேகலை, கிழக்கு பதிப்பகம், 2010

பார்வைநூல்கள்:

1. என். சொக்கன், "மணிமேகலை" கிழக்கு பதிப்பகம், 2012
2. உ.வே.சா, "மணிமேகலை மூலமும் உரையும்", உ.வே.சா. நூல் நிலையம், 2002
3. பிரேம நந்தகுமார், "மணிமேகலை மொழிபெயர்ப்பு", தமிழ்ப் பல்கலைக்கழகம் , 1989

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA402	**இலக்கணம்- புறப்பொருள்வெண்பாமாலை**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை				
COURSE OBJECTIVES : :-பழந்தமிழரின் புறவாழ்க்கை நெறி, போர் நெறிகளை அறியச் செய்தல்					
COURSE OUTCOMES (COs)					
CO1	வெட்சி, கரந்தைபடலங்களில்முறையே19, 13 துறைகளைஅறிவர்				
CO2	வஞ்சி, காஞ்சிப்படலங்களில்முறையே20, 21 துறைகளைஅறிவர்				
CO3	நொச்சி, உழிஞை, தும்பைப்படலங்களில்முறையே8, 28, 23 துறைகளைஅறிவர்				
CO4	வாகை, பாடாண், பொதுவியல்படலங்களில்முறையே32, 47, 37 துறைகளைஅறிவர்				

CO5	கைக்கிளை, பெருந்திணை, ஒழிபுபடலங்களில்முறையே19, 36, 18 துறைகளைஅறிவர்										
CO6	பழந்தமிழரின்புறவாழ்க்கைநெறிகளையும், போர்நெறிகளையும் அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H		H
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

அலகு1 12
வெட்சிப்படலம், கரந்தைப்படலம்

அலகு2 12
வஞ்சிப்படலம், காஞ்சிப்படலம்

அலகு3 12
நொச்சிப்படலம், உழிஞைப்படலம், தும்பைப்படலம்

அலகு4 12
வாகைப்படலம், பாடாண்படலம், பொதுவியல்படலம்

அலகு5 12
கைக்கிளைப்படலம், பெருந்திணைப்படலம், ஒழிபு

பாடநூல்கள்:

1. புலியூர்க்கேசிகன், "புறப்பொருள்வெண்பாமாலை", செண்பகாபதிப்பகம், 2010
2. ச.திருஞானசம்பந்தம், "புறப்பொருள்வெண்பாமாலை", பாரிநிலையம், 2012

3. கதிர் முருகு, புறப்பொருள் வெண்பாமாலை மூலமும் உரையும், சாரதா பதிப்பகம், 2015

பார்வைநூல்கள்:

1. க.தமிழ்செல்வன், புறப்பொருள் வெண்பாமாலை - தெளிவுரை, சாரதா பதிப்பகம், 2018
2. கு. முத்துராசன், எளிய உரையில் புறப்பொருள் வெண்பாமாலை, நாகு வெளியீடு, 2011
3. ஐயனாரிதனார், புறப்பொருள் வெண்பாமாலை - உரை, கமர்ஷியல் கூடம், 1924

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA403	**பதினெண்கீழ்க்கணக்குநூல்கள்**- II	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திரு மு.பரந்தாமன் &தமிழ்த்துறை				

COURSE OBJECTIVES : பழந்தமிழரின்வாழ்க்கைநெறிகளை பயிற்றுவித்தல்	
COURSE OUTCOMES (COs)	
CO1	பழமொழிசார்ந்தநீதிகூறப்படும்பழமொழிநானூறுஇலக்கியத்தைஅறிவர்
CO2	வாழ்வில்கடைப்பிடிக்கவேண்டியநன்னெறிகளைமுதுமொழிக்காஞ்சிமூலம்அறிவர்
CO3	ஒழுக்கம், நீதிகளைகூறும்ஆசாரக்கோவையையும், நான்மணிக்கடிகையும்அறிவர்
CO4	சிறுபஞ்சமூலம், ஏலாதி, திரிகடுகம்இலக்கியங்களைஅறிவர்
CO5	கைந்நிலை, இன்னிலைஇலக்கியங்களைஅறிவர்
CO6	பழந்தமிழரின்புறவாழ்க்கைநெறிகளை அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1			M		H			H		M
	CO2			M		H					
	CO3			M		H					
	CO4			M		H					
	CO5			M		H					
	CO6			M		H					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

அலகு1 12

பழமொழிநானூறு: ஒழுக்கம், நட்பின்இயல்பு, இல்வாழ்க்கை, அறஞ்செய்தல்

அலகு2 12

முதுமொழிக்காஞ்சி: சிறந்தபத்து, அறிவுப்பத்து, பழியாப்பத்து, அல்லபத்து, எளியபத்து

அலகு3 12

ஆசாரக்கோவை, **நான்மணிக்கடிகை**:

ஆசாரக்கோவை-பாடல்1 – 25 நான்மணிக்கடிகை-பாடல்1 - 25

அலகு4 12

சிறுபஞ்சமூலம், **திரிகடுகம்**, **ஏலாதி**:

சிறுபஞ்சமூலம்-பாடல்1 – 25 திரிகடுகம்-பாடல்1 - 25 ஏலாதி - பாடல்1 - 25

அலகு5 12

கைந்நிலை, **இன்னிலை**

கைந்நிலை-முல்லை, மருதம்; இன்னிலை- பொருட்பால், இன்பத்துப்பால்,வீட்டுப்பால்

பாடநூல்கள்:

1. ந.மு.வேங்கடசாமிநாட்டார், பதிணென்கீழ்க்கணக்குநூல்கள் , தமிழ்மண்பதிப்பகம், 2012
2. துரை.இராஜாராம், பதினெண்கீழ்க்கணக்குதொகுதி1-2, முல்லைநிலையம், 2012
3. வ.வெ.சுப்ரமணியன், பதினெண் கீழ்க்கணக்கு நூல்கள், மணிவாசகர் பதிப்பகம், 2011

பார்வைநூல்கள்:

1. ஆசிரியர் குழு, பதிணென்கீழ்க்கணக்கு நூல்கள், சென்னைப் பல்கலைக்கழகம், 1944
2. ஆசிரியர் குழு, பதிணென்கீழ்க்கணக்கு நூல்கள் மூலம் உரை, சாரதா பதிப்பகம், 2012
3. கி.இராசா, பதினெண்கீழ்க்கணக்கு அக நூல்கள், செஞ்சுரி புக் ஹவுஸ், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA404	**சிற்றிலக்கியங்கள்**– II	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர் ஜெ.அந்தோணிஜெய ஷீலா&தமிழ்த்துறை				

COURSE OBJECTIVES : அறம், பொருள், இன்பம், வீடுஎனும்நான்குஉறுதிப்பொருள்களுள்ஏதேனும்ஒன்றைத்தருவதாகஅமையும்சிற்றிலக்கியத்தைகற்பித்தல்	
COURSE OUTCOMES (COs)	
CO1	சோழனின்கலிங்கப்போர்வெற்றிகுறித்துகூறும்கலிங்கத்துப்பரணியைஅறிவர்
CO2	சிவபெருமான்பாட்டுடைத்தலைவனாகபாடப்பட்டமுக்கூடற்பள்ளுவைஅறிவர்
CO3	அபிராமியைபாட்டுடைத்தலைவியாகபாடப்பட்டஅந்தாதிஇலக்கியத்தைஅறிவர்
CO4	சோழன்மூவர்மீதுபாடப்பட்டமூவருலாஇலக்கியத்தைஅறிவர்
CO5	சந்திரவாணன்என்னும்சிற்றரசனைமீதுபாடப்பட்டதஞ்சைவாணன்பற்றிஅறிவர்
CO6	அறம், பொருள், இன்பம், வீடுஎனும்உறுதிப் பொருள்களை அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		M			H			H		M
	CO2		M			H					
	CO3		M			H					
	CO4		M			H					
	CO5		M			H					
	CO6		M			H					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

அலகு1 12
கலிங்கத்துப்பரணி- போர்பாடியது(404-471)

அலகு2 12
முக்கூடற்பள்ளு- மூத்தபள்ளிமுறையிடுதல்வரை(1-57)

அலகு3 12
அபிராமிஅந்தாதி(1-50)

அலகு4 12
மூவருலா- விக்கிரமசோழனுலா(உலாவில்உடன்வருவோர்வரை1-180)

அலகு5 12
தஞ்சைவாணன்கோவை- கற்பியல்(பாங்கற்கூட்டம்வரை1-62)

பாடநூல்கள்:

1. பி.ரா. நடராசன், "கலிங்கத்துப்பரணி", திருமகள்நிலையம், 2008
2. புலியூர்க்கேசிகன், "முக்கூடற்பள்ளு", பாரிநிலையம், 2011
3. இறையன்பன், "அபிராமிஅந்தாதிவிளக்கஉரையுடன்", நர்மதாபதிப்பகம், 2012
4. துரை. இராசாராம், "மூவருலாவிளக்கவுரை", பாரிநிலையம், 2012
5. கதிர்முருகு, "தஞ்சைவாணன்கோவை", கௌராபதிப்பகுழுமம், 2011

பார்வைநூல்கள்:

1. புலியூர்க் கேசிகன், கலிங்கத்துப் பரணி, செண்பகா பதிப்பகம், 2010
2. கதிர்முருகு, முக்கூடற்பள்ளு மூலமும் உரையும், சாரதா பதிப்பகம், 2017
3. கவிஞர் கண்ணதாசன், அபிராமி அந்தாதி, கண்ணதாசன் பதிப்பகம், 2011

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA405	**கணினித்தமிழ்- இணையம்**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர். இரா.பாலகிருஷ்ணன் &தமிழ்த்துறை				
COURSE OBJECTIVES : கணினிவலையமைப்புகளைஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	இணையம்வரலாறுபயன்களைஅறிவர்				

CO2	இணையஇணைப்புகள்- அக்ஸஸ்வகைகள். பற்றி அறிவர்
CO3	இணையஇணைப்புக்குத்தேவையானவைகளைஅறிவர்
CO4	டொமைன்பெயர், டாப்லெவல்டொமைன், ஐ.பி. முகவரி பற்றி அறிவர்
CO5	இணையத்தைப்பயன்படுத்துவதைப்பற்றிஅறிவர்
CO6	ஈமெயில்,நியூஸ்குரூப்,மெயிலிங்லிஸ்ட்,வலை ,வலைப்பூக்கள் பற்றி அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1						M	H			M
	CO2						M	H			
	CO3						M	H			
	CO4						M	H			
	CO5						M	H			
	CO6						M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval	Academic Council Meeting

அலகு1 10

இணையம்அறிமுகம்- வரலாறு- இணையத்தைநிர்வகிப்பவர்- பயன்கள்- இணையஇணைப்புகள்- அக்ஸஸ்வகைகள்.

அலகு2 10

இணையஇணைப்புக்குத்தேவையானவை- அக்கவுண்ட்கணினிமோடம்தகவல்தொடர்பு- மென்பொருள்தொலைபேசிஇணைப்பு- முகவரிகள்- முக்கியத்துவம்- கணினிமுக்கியத்துவம்- பயன்பாட்டாளன்முகவரி- டொமைன்பெயர்- டாப்லெவல்டொமைன்- ஐ.பி. முகவரி.

அலகு3 10

இணையத்தில்நுழையும்வழிமுறைகள்- லாகின்பெயர்- பாஸ்வேர்ட்- வெப்வரலாறு – ஹோம்பேஜ்- வெப்சைட்டிற்குள்நுழைதல்- வெப்பேஜ்தகவலைப்பாதுகாத்தல்- வெப்பில்தேடல்- பைலைபயன்படுத்துதல்- ஈமெயில்- நியூஸ்குரூப்- மெயிலிங்லிஸ்ட்- வலை – வலைப்பூக்கள்- தமிழ்விக்கிபீடியா – டெல்நெட்- இன்டிராநெட்- அறிமுகப்படுத்தல்.

பாடநூல்கள்:

1. கே.புவனேஸ்வரி, "இன்டர்நெட்A to Z", விகடன்பிரசுரம், 2016
2. துரை.மணிகண்டன், "இணையமும்தமிழும்", நல்நிலம்(ஸ்கைடெக்பப்ளிகேசன்ஸ்), 2008

3. மா.லெனின், "இனிஎல்லாம்இண்டர்நெட்", சிக்ஸ்த்சென்ஸ்பப்ளிகேஷன்ஸ், 2012

பார்வைநூல்கள்:

1. கே.புவனேஸ்வரி, இன்டர்நெட் எக்ஸ்புளோர், மணிமேகலை பிரசுரம், 2002
2. ராம்குமார், கணினி – இணையம் மி. வணிகம், மணிவாசகர் பதிப்பகம், 2012
3. இராம்குமார், தகவல் தொழில் நூட்பம், கழகப் பதிப்பகம், 1998

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA406	**ஆளுமைத்திறன்**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திருமதி. அ.கோ. ஸ்ரீதேவி &தமிழ்த்துறை				

COURSE OBJECTIVES : ஆளுமைகுறித்தவிழிப்புணர்வைஏற்படுத்தல்	
COURSE OUTCOMES (COs)	
CO1	முன்னேற்றத்திற்குவேண்டுவதுபற்றிஅறிவர்
CO2	புத்தகங்களில்புதையல்பற்றிஅறிவர்
CO3	வாழ்வில்வெற்றி, தோல்விகளைசரிசமமாகபார்க்கும்திறனைஅறிவர்
CO4	வாழ்க்கைஒருகணிதம் என்று அறிவர்
CO5	இளமையையெவ்வாறுபயனுள்ளதாகமாற்றுவதுகுறித்துஅறிவர்
CO6	ஆளுமைகுறித்த அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1			L		H	M	H			M
	CO2			L		H	M	H			
	CO3			L		H	M	H			
	CO4			L		H	M	H			
	CO5			L		H	M	H			
	CO6			L		H	M	H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
									✓	
4	Approval		Academic Council Meeting							

அலகு1 10

காலம்அழைக்கிறது- வெளிச்சம்- வெற்றிக்குவியர்வை- முன்னேற்றத்திற்குவேண்டுவது- வழியெல்லாம்வெற்றி- புத்தகங்களில்புதையல்- பாராட்டு.

அலகு2 10

போதிமரங்களைப்போற்றுவோம்- வாழ்வில்வெற்றி- வாழ்க்கைஒருகணிதம்- நினைப்பில்இருக்கிறதுவெற்றி- நடைபோடு- அவமானம்தரும்வெகுமானம்.

அலகு3 10

சிரமங்களைத்தாண்டினால்சிகரம்- இளமைக்குள்இருக்கிறது- ஊனத்தைவென்றவர்கள்- தடுமாறும்வயசு- சுறுசுறுப்பு- சேவைசெய்யுங்கள்

பாடநூல்கள்:

1. க.இராமச்சந்திரன், "உனக்குள்ளேசக்திஇருக்கு", குமரன்பதிப்பகம், 2012
2. தயாநிதி, ஆளுமைத் திறன், கண்ணதாசன் பதிப்பகம், 2013
3. எஸ்.சுந்தரசீனிவாசன், ஆளுமை மேம்பாடு, தாமரை பப்ளிகேஷன்ஸ், 2008

பார்வைநூல்கள்:

1. குன்றில்குமார், ஆளுமைத்திறனை அடைவது எப்படி?, சங்கர் பதிப்பகம், 2010
2. சுவாமி ஸ்ரீகாந்தானந்தர், உண்மையான ஆளுமைத்திறன் எது?, ஸ்ரீ ராமகிருஷ்ண மடம்,2013
3. இரத்தின நடராசன், கம்பன் காவியத்தில் ஆளுமைத் திறன்கள், ஏகம் பதிப்பகம், 2009

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA501	**சமயஇலக்கியம்**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திரு கே.வி.பரந்தாமன் &தமிழ்த்துறை				

COURSE OBJECTIVES : மன அழுக்கைக் கழுவி, உள்ளுணர்வை வெளிப்படுத்தி, உலக நிலையாமையை அறிவுறுத்திய, மானிட இனத்தை உயர்த்திய இலக்கியங்களை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	சிவபெருமான்மீதுமூன்றுஇறையடியார்களால்பாடப்பட்டதேவாரப்பாடல்களைஅறிவர்
CO2	திருவாசகம், திருவிளையாடல்புராணம், கந்தபுராணம்பற்றிஅறிவர்
CO3	திருப்பாவையை, திருமொழியையும், திருவாசிரியத்தைபற்றிஅறிவர்
CO4	தேம்பாவணிதூதுரைப்படலம், ரட்சணியயாத்திரிகம்-கடைத்திறப்புப்படலம்பற்றிஅறிவர்
CO5	சீறாப்புராணம்ஓநாய்பேசியபடலத்தையும், சாகிபுவின்நிராமயக்கண்ணியையும்அறிவர்
CO6	சமயஇலக்கியங்களை பற்றிஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	M			H		M	H	M	M
	CO2	L	M			H		M			
	CO3	L	M			H		M			
	CO4	L	M			H		M			
	CO5	L	M			H		M			
	CO6	L	M			H		M			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					
4	Approval		Academic Council Meeting							

அலகு1 12

மூவர்தேவாரம்:

திருஞானசம்பந்தர் - திருவீழிமிழலை(பண்- தக்கராகம்) - 11 - பாடல்கள்

திருநாவுக்கரசர்- திருக்கயிலாயம்- போற்றித்திருத்தாண்டகம் - 11 - பாடல்கள்

சுந்தரமூர்த்தி - திருஅஞ்சைக்களம்(பண்- இந்தளம்) - 10 - பாடல்கள்

அலகு2 12

திருவாசகமும்புராணமும்:

மாணிக்கவாசகர்- திருவாசகம்- திருஅம்மானை - 20 - பாடல்கள்

திருவிளையாடற்புராணம்- தருமிக்குப்பொற்கிழிஅளித்தபடலம் - 20 - பாடல்கள்

கந்தபுராணம்- சூரபன்மன்வதைப்படலம் - 20 - பாடல்கள்

அலகு3 12

நாலாயிரதிவ்யபிரபந்தம்;

ஆண்டாள்- திருப்பாவைமுழுவதும் - 30 - பாடல்கள்

பெரியாழ்வார்திருமொழி- நாலாம்திருமொழி- சென்னியோங்கு - 20 - பாடல்கள்

நம்மாழ்வார்- திருவாசிரியம் - 07 - பாடல்கள்

அலகு4 12

தேம்பாவணியும்இரட்சணியயாத்திரிகமும்:

தேம்பாவணி- தூதுரைப்படலம் - 25 - பாடல்கள்

இரட்சணியயாத்திரிகம்- கடைத்திறப்புப்படலம் - 25 - பாடல்கள்

அலகு5 12

சீறாப்புராணமும்குணங்குடிமஸ்தான்சாகிபுமும்:

சீறாப்புராணம்- ஓநாய்பேசியபடலம் - 29 - பாடல்கள்

குணங்குடிமஸ்தான்சாகிபு-நிராமயக்கண்ணி - 20 - கண்ணிகள்

பாடநூல்கள்:

1. ச.வே. சுப்பிரமணியன், "பன்னிருதிருமுறை(மெகாபதிப்பு)", மணிவாசகர்பதிப்பகம், 2012
2. த.கோவேந்தன், நாலாயிரத்திவ்யப்பிரபந்தமும்எளியஉரையும்,சாரதாபதிப்பகம், 2015
3. வீரமாமுனிவர், "தேம்பாவணி(மூலமும்உரையும்)", கௌராபதிப்பகுழுமம், 2014
4. தமிழவேள், "இரட்சணியயாத்திரிகம்- கடைத்திறப்புப்படலம்", திருமகள், 1978
5. செய்குத்தம்பிபாவலர், "சீறாப்புராணம்" , யுனிவர்சல்பப்ளிஷர்ஸ், 2014
6. கமலாமுருகன், "நிராமயக்கண்ணிபராபரக்கண்ணிஉரை", சாரதாபதிப்பகம், 2013

பார்வைநூல்கள்:

1. இரா.தண்டாயுதம், சமய இலக்கிய விளக்கம், தமிழ்ப்புத்தகாலயம், 2014
2. மா.ராசமாணிக்கனார், சமய இலக்கிய வரலாறு, காவ்யா, 2012
3. ஆ.வேலுப்பிள்ளை, தமிழர் சமய வரலாறு, தமிழ்ப்புத்தகாலயம், 1980

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA502	**இலக்கணம்- யாப்பருங்கலக்காரிகை**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி &தமிழ்த்துறை				
COURSE OBJECTIVES : செய்யுளுக்குஇலக்கணம்கூறும்யாப்பருங்கலக்காரிகையைகற்பித்தல்					
COURSE OUTCOMES (COs)					
CO1	எழுத்து, அசை, சீர், தளை, அடி, தொடைஎன்பனபற்றியஇலக்கணங்களைஅறிவர்				

CO2	வெண்பாவையும்ஆசிரியப்பாவையும்அறிவர்
CO3	கலிப்பாவையும்வஞ்சிப்பாவையும்அறிவர்
CO4	பாவினங்களின்வகைகளும்அவற்றின்இலக்கணங்களையும்அறிவர்
CO5	உறுப்பியலிலும்செய்யுளியலும்சொல்லாதவற்றுக்குஒழிபியல்இலக்கணங்களைஅறிவர்
CO6	செய்யுளுக்குஇலக்கணம்கூறும்யாப்பருங்கலக்காரிகையை அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H		H
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

அலகு1 **செய்யுளுறுப்புக்கள்**: 12

எழுத்து- குறில், நெடில், ஒற்று- அசை- நேர், நிரை- சீர்- அசைச்சீர்- ஈரசைச்சீர்- காய்ச்சீர்- கனிச்சீர்- எழுவகைத்தளைகள்- அடிகள்- குறளடி – சிந்தடி- அளவடி- நெடிலடி- கழிநெடிலடி- தொடைகள்- மோனை- எதுகை- இயைபு- முரண்- அளபெடைத்தொடைகள்- சீர்வகைத்தொடையும்அடிவகைத்தொடையும்- செந்தொடை

அலகு2 **வெண்பாவும்ஆசிரியப்பாவும்**: 12

பாவின்ஓசைகள்- செப்பல்- அகவல்- துள்ளல்- தூங்கல்- வெண்பாவின்பொதுவிலக்கணம்- குறள்வெண்பா – குறள்வெண்செந்துறை- குறட்டாழிசை- சிந்தியல்வெண்பா- நேரிசைவெண்பா- இன்னிசைவெண்பா- பஃறொடைவெண்பா- வெண்பாவின்ஈறு.

ஆசிரியப்பாவின்பொதுவிலக்கணம்- நேரிசைஆசிரியப்பா- நிலைமண்டிலஆசிரியப்பா- இணைக்குறளாசிரியப்பா- அடிமறிமண்டிலஆசிரியப்பா

அலகு3 **கலிப்பாவும்வஞ்சிப்பாவும்**: 12

கலிப்பாவின்பொதுவிலக்கணம்- தரவு- தாழிசை- அராகம்- அம்போதரங்கம்- தனிச்சொல்- சுரிதகம்ஆகியகலிப்பாவுறுப்புக்கள்- நேரிசைஒத்தாழிசைக்கலிப்பா- அம்போதரங்கஒத்தாழிசைக்கலிப்பா- வண்ணகஒத்தாழிசைக்கலிப்பா- கலிவெண்பா- வெண்கலிப்பா- கொச்சகக்கலிப்பா- தரவுகொச்சகக்கலிப்பா- தரவிணைக்கொச்சகக்கலிப்பா- சிஃறாழிசைக்கொச்சகக்கலிப்பா- பஃறாழிசைக்கொச்சகக்கலிப்பா- மயங்கிசைக்கொச்சகக்கலிப்பா- வஞ்சிப்பாவின்பொதுவிலக்கணம்- குறளடிவஞ்சிப்பா- சிந்தடிவஞ்சிப்பா- மருட்பா

அலகு4 **பாவினங்கள்**: 12

வெண்டாழிசை- வெண்டுறை- வெளிவிருத்தம்- ஆசிரியத்தாழிசை- ஆசிரியத்துறை- ஆசிரியவிருத்தம்- கலித்தாழிசை-

கலித்துறை- கலிவிருத்தம்- வஞ்சித்தாழிசை- வஞ்சித்துறை- வஞ்சிவிருத்தம்

அலகு5 **ஒழிபியல்**: 12

சீரும்தளையும்சிதைவுறின்குற்றியலுகரம், குற்றியலிகரம், அளபெடைஅலகுபெறாமை- மாஞ்சீர்கலிப்பாவில்வாராமை- விளங்கனிச்சீர்கலிப்பாவிலும்ஆசிரியப்பாவிலும்வாராமை- ஆசிரியப்பாவில்பிறதளைகள்பயின்றுவருதல்- தன்சீர், தன்தளை- பிறசீர்- பிறதளைபற்றியமரபுகள்- கடை, கடையிணை, பின்கடைக்கூழை, இடைப்புணர், முரண்தொடைகள்- வருக்கமோனை, வருக்கஎதுகை- நெடில்மோனை, நெடில்எதுகை- இனமோனை, இனஎதுகை, தலையாயெதுகை, இடையாயெதுகை, கடையாயெதுகை, ஆயெதுகைமுதலியன- கூன்- விகாரம்- வகையுளி- வாழ்த்து- வசை- வனப்பு- நிரல்நிறை- பொருள்கோள்கள்- வண்ணம்நூறுவகையில்அமைதல்- செய்யுட்குற்றம்

பாடநூல்கள்:

1. ந.மு.வேங்கடசாமி, யாப்பருங்கலக்காரிகைமூலமும்உரையும், சாரதாபதிப்பகம், 2016
2. கு.முத்துராசன், "எளியமுறையில்யாப்பருங்கலக்காரிகை", பூங்குழல்பதிப்பகம், 2012
3. கு.கண்ணன், யாப்பருங்கலக்காரிகை, பாவை பப்ளிகேஷன்ஸ், 2009

பார்வைநூல்கள்:

1. புலியூர்க் கேசிகன், யாப்பருங்கலக் காரிகை மூலமும் உரையும், சாரதா பதிப்பகம், 2012
2. கதிர்முருகு, யாப்பருங்கலக் காரிகை மூலமும் உரையும், சாரதா பதிப்பகம், 2017
3. ஆசிரியர் குழு, யாப்பருங்கலக் காரிகை மூலமும் உரையும், சாரதா பதிப்பகம், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA503	பண்டைய இலக்கியம் - அகம்புறம்	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department : முனைவர். த. கிறிஸ்டல் ரெஜி &தமிழ்த்துறை				

COURSE OBJECTIVES : வாழ்க்கையைப்பிரதிபலிக்கும் கண்ணாடியான இலக்கியத்தின் மூலம் பண்டையகால மக்களின் நாகரிகம்பண்பாடுகளை அறியச் செய்தல்.

COURSE OUTCOMES (COs)	
CO1	தலைவன், தலைவிக்குயிடையே நடக்கும் களவு, கற்பு சார்ந்தவைகளை அவரவர் கூற்றுகளின் மூலம் விளக்குதல்
CO2	தலைவன், தலைவிக்குயிடையே நடக்கும் களவு, கற்பு சார்ந்தவைகளையும், ஆற்றுப்படுத்துவதையும்அவரவர் கூற்றுகளின் மூலம் விளக்குதல்.
CO3	காவிரியின் சிறப்பு,சோழ நாட்டின் சிறப்புகளை அறியச் செய்தல்
CO4	ஏழுவள்ளல்களின் சிறப்பு, நல்லியங்கோடனது புகழ்பண்புகளை சிறுபாணாற்றுப்படை மூலமும், குறிஞ்சி, முல்லை, மருத நிலக் காட்சிகளைபெரும்பாணாற்றுப்படை மூலமும் அறியச் செய்தல்
CO5	உழவர்செய்யும் உபசாரம், நன்னனது கொடைச்சிறப்புகளை மலைபடுகடாம் மூலமும், நால்வகைப் படைகளை மதுரைக்காஞ்சிமூலமும் அறியச் செய்தல்
CO6	வாழ்க்கையைப்பிரதிபலிக்கும் கண்ணாடியான இலக்கியத்தின் மூலம் பண்டையகால மக்களின் நாகரிகம்பண்பாடுகளைஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H		H
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
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BIA504	**மொழியியல்**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :முனைவர். இரா.பாலகிருஷ்ணன் &தமிழ்த்துறை										
COURSE OBJECTIVES : மொழியியலைப்பற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	மொழியியல்வளர்ச்சிவரலாறுபற்றிஅறிவர்										
CO2	ஒலியியல்பற்றிஅறிவர்										
CO3	ஒலியனியல்பற்றிஅறிவர்										
CO4	உருபனியல்பற்றிஅறிவர்										
CO5	தொடரியல்பற்றிஅறிவர்										
CO6	மொழியியலைப்பற்றிஅறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H								
	CO2	L	H								
	CO3	L	H							H	H
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

அலகு2 12
ஒலியியல்

அலகு3 12
ஒலியனியல்

அலகு4 12
உருபனியல்

அலகு5 12
தொடரியல்

பாடநூல்கள்:

1. மோகனதாஸ்ராமசாமி, "மொழியும்தொடர்பியல்சாதனமும்", Universiti PendidikanSultanIdris, 2013
2. கி.கருணாகரன், வ.ஜெயா, "மொழியியல்", மெய்யப்பன்பதிப்பகம், 2007
3. ராசீனிவாசன்., மொழியியல், பாரி நிலையம், 2013

பார்வைநூல்கள்:

1. வி.டெரன்ஸ்கார்டன், மொழியியல்: தொடக்கநிலையினருக்கு, அடையாளம்பதிப்பகம், 2013
2. முத்துச்சண்முகன், இக்கால மொழியியல், பாரி நிலையம், 2014
3. கிகருணாகரன்., மொழியியல், மணிவாசகர் பதிப்பகம், 2007

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA505	**ஆராய்ச்சிமுறையியல்ஓர்அறிமுகம்**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திரு கே.வி.பரந்தாமன் &தமிழ்த்துறை				
COURSE OBJECTIVES : ஆய்வுப்பற்றியும், ஆய்வேடுஉருவாக்கும்முறையைக்கற்பித்தல்					
COURSE OUTCOMES (COs)					
CO1	ஆராய்ச்சியின்வளர்ச்சிப்படிகளைஅறிவர்				
CO2	ஆய்வுக்குரியதகவல்களைசேகரிக்கவும்பகுக்கவும்அறிவர்				
CO3	ஆய்வேட்டின்அமைப்புப்பற்றிஅறியச்செய்தல்				
CO4	ஆய்வேட்டில், ஆய்வுரைஎழுதுதல்பற்றிஅறிவர்				

CO5	ஆய்வேட்டில், ஆய்வுரைஎழுதுதல்பற்றிஅறிவர்										
CO6	ஆய்வுப்பற்றியும், ஆய்வேடுஉருவாக்கும்முறையை அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		M			H		H		H	H
	CO2		M			H		H			
	CO3		M			H		H			
	CO4		M			H		H			
	CO5		M			H		H			
	CO6		M			H		H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

அலகு1 12

ஆராய்ச்சியின்வளர்ச்சிப்படிகள்

அலகு2 12

ஆய்வுமூலஉண்மைக்கூறுகள், களஆய்வும்மூலஉண்மைக்கூறுகள்சேகரித்தலும், உண்மைக்கூறுபகுத்தல்

அலகு3 12

ஆய்வேட்டின்அமைப்பு, துணைநூற்பட்டியல், சுருக்கவிளக்கங்கள், அடிக்குறிப்புகள்

அலகு4 12

மேற்கோள்கள், பின்னிணைப்புகள், அட்டவணைகளும்விளக்கப்படங்களும், ஆய்வேட்டின்நடை, ஆய்வுரைஎழுதுதல், தட்டெழுத்தும்கட்டமைப்பும்

அலகு5 12

வாய்மொழித்தேர்வு, இலக்கியஆய்வுநோக்குகள்

பாடநூல்கள்:

1. மு.பொன்னுசாமி, "ஆராய்ச்சிமுறையியல்ஒர்அறிமுகம்", கலாபதிப்பகம், 1983
2. தமிழண்ணல், எம்.எஸ்.இலக்குமணன், "ஆய்வியல்அறிமுகம்", பாரிநிலையம், 2016
3. க.பஞ்சாங்கம், ஆய்வு நெறிமுறைகள், அன்னம் - அகரம், 2017

பார்வைநூல்கள்:

1. பொற்கோ, ஆராய்ச்சி நெறிமுறைகள்,ஐந்திணை பதிப்பகம், 2004
2. கு.வெ. பாலசுப்பிரமணியன், ஆய்வியல் நெறிமுறைகள், பாரி நிலையம், 201
3. க. நாராயணன் , ஆய்வு எது? எப்படி? ஏன்? , தமிழ்ப்புத்தகாலயம் ,1987

பாடநெறி ஒருங்கிணைப்பாளர்துறைத்தலைவர்

BIA5E1	**இலக்கியதிறனாய்வியல்**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :திரு மு.பரந்தாமன் &தமிழ்த்துறை										
COURSE OBJECTIVES : திறனாய்வின்முக்கியத்துவத்தைஅறியச்செய்தல்.											
COURSE OUTCOMES (COs)											
CO1	இலக்கியதிறணாய்வு, இலக்கியமதிப்பீடுகளைஅறிவர்										
CO2	இலக்கியத்தில்உள்ளஉணர்ச்சி, கற்பனைஆகியவற்றைஅறிவர்										
CO3	மானிடஉண்மைகள், வடிவம், கலைகளைப்பற்றிஅறிவர்										
CO4	பாட்டு, காப்பியம், நாடகம்ஆகியவற்றைதிறனாய்வுசெய்வதுபற்றிஅறிவர்										
CO5	புதினம், சிறுகதை, கட்டுரைஆகியவற்றைதிறனாய்வுசெய்வதுபற்றிஅறிவர்										
CO6	திறனாய்வுசெய்வதன்மூலம்சிறந்தஅறிவைப்பெறுவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H					M		M	H
	CO2	M	H					M			
	CO3	M	H					M			
	CO4	M	H					M			
	CO5	M	H					M			
	CO6	M	H					M			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					

4	Approval		Academic Council Meeting

அலகு1 12

இலக்கியஆய்வு – திறனாய்வு- திறனாய்வின்இருவகைப்பணி – திறனாய்வு- இலக்கியம்- இலக்கியமதிப்பீடு- இலக்கியக்கலை

அலகு2 12

இலக்கியஉணர்ச்சிகள்- கற்பனை

அலகு3 12

மானிடஉண்மைகள்- வடிவம்- கலைகலைக்காகவே.

அலகு4 12

பாட்டு – காப்பியம்- நாடகம்

அலகு5 12

புதினம்- நனவோடைப்புதினம்- சிறுகதை – கட்டுரை- இலக்கியஇயக்கங்கள்.

பாடநூல்:

1.தா.ஏ.ஞானமூர்த்தி, "இலக்கியத்திறனாய்வியல்", ஐந்திணைபதிப்பகம், 2011
2.சு.பாலச்சந்திரன், "இலக்கியத்திறனாய்வு", நியூசெஞ்சுரிபுக்ஹவுஸ், 2009
3. மு.வரதராசனார், "இலக்கியத்திறன்", பாரிநிலையம், 2009

பார்வைநூல்கள்:

1. க. பஞ்சாங்கம், "தமிழ் இலக்கியத் திறனாய்வு வரலாறு" ,அன்னம்-அகரம் பதிப்பகம், 2012
2. சுப்பையா, "இலக்கியத் திறனாய்வு" , பாவை பப்ளிகேஷன்ஸ், 2007
3. க. கைலாசபதி, "இலக்கியத் திறனாய்வுக் கோட்பாடு", நியூ செஞ்சரி புக் ஹவுஸ், 2009

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA5E2	**மொழிபெயர்ப்பியல்**				L	T	P	C			
	Total Contact Hours – 30				2	0	0	2			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :முனைவர். இரா.பாலகிருஷ்ணன் &தமிழ்த்துறை										
COURSE OBJECTIVES : இருமொழிப்புலமையைக்கற்பித்தல்											
COURSE OUTCOMES (COs)											
CO1	மொழிபெயர்ப்பின்தோற்றம்பற்றிஅறிவர்										
CO2	மொழிபெயர்ப்பின்வளர்ச்சியைஅறிவர்										
CO3	மொழிபெயர்ப்பின்வகைகளைஅறிவர்										
CO4	மொழிபெயர்ப்பின் பயன்கள்பற்றிஅறிவர்										
CO5	அறிவியல்மொழிபெயர்ப்புப்பற்றிஅறிவர்										
CO6	இருமொழிப்புலமையை பற்றிஅறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H							H	H
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
									✓		
4	Approval		Academic Council Meeting								

அலகு1 10

மொழிபெயர்ப்பின்தோற்றமும்வளர்ச்சியும்- கி.பி. 16 ஆம்நூற்றாண்டின்தொடக்கத்தில்மொழி-மொழிபெயர்ப்பின்கொள்கைவரலாற்றுஅடிப்படையில்- 17 ஆம்நூற்றாண்டு, 18 ஆம்நூற்றாண்டு, 19 ஆம்நூற்றாண்டு, 20 ஆம்நூற்றாண்டு- இந்தியாவில்மொழிபெயர்ப்பு- தமிழ்நாட்டில்மொழிபெயர்ப்பு

அலகு2 10

மொழிபெயர்ப்புவிளக்கம்- மொழிபெயர்ப்பாளரின்பண்பு- பயன்கள்- ஒருமொழிக்குள்ளேசெய்யப்படும்மொழிபெயர்ப்பு- இருமொழிகளுக்கிடையேசெய்யப்படும்மொழிபெயர்ப்பு- ஒலிபெயர்ப்பு- சந்தமொழிபெயர்ப்பு-

கவிதையையுரைநடையாகமொழிபெயர்த்தல்- எதுகைமோனைமொழிபெயர்ப்பு- சொல்லுக்குச்சொல்மொழிபெயர்த்தல்- விரிவானமொழிபெயர்ப்பு- சரியானமொழிபெயர்ப்பு- சுருக்கமானமொழிபெயர்ப்பு- தழுவல்- மொழியாக்கம்- குழந்தைகளுக்கானமொழிபெயர்ப்பு- திரைப்படவசனங்கள்மொழிபெயர்ப்பு- சமயமொழிபெயர்ப்பு

அலகு3 10

அறிவியல்மொழிபெயர்ப்பு- சட்டத்துறை- மொழியின்அமைப்பிற்குத்தக்கவாறுமொழிபெயர்த்தல்- வழக்கிலுள்ளசொற்களைபயன்படுத்துதல்- புதியசொல்லைஉருவாக்குதல்- அறிவியல்மொழிபெயர்ப்புசிலவழிமுறைகள்

பாடநூல்கள்:

1. சி.சிவசண்முகம், வே.தயாளன், "மொழிபெயர்ப்பியல்", அன்னம்(பி) லிட், 2009
2. சு.சண்முகவேலாயுதம், "மொழிபெயர்ப்பியல்', உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. ச.ஈஸ்வரன், "மொழிபெயர்ப்பியல்", பாலைப்பதிப்பகம், 2005

பார்வைநூல்கள்:

1. க. பட்டாபிராமன், "மொழிபெயர்ப்புக்கையேடு", நியூசெஞ்சுரிபுக்ஹவுஸ், 2009
2. மு.வளர்மதி, மொழிபெயர்ப்புக்கலை, திருமகள் நிலையம், 2012
3. க.பட்டாபிராமன், மொழிபெயர்ப்பியல், உலகத் தமிழாராய்ச்சிக் கழகம், 2011

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

	இதழியல்கலை	L	T	P	C
BIA5E3	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திரு கே.வி.பரந்தாமன் &தமிழ்த்துறை				

COURSE OBJECTIVES : ஊடகவியல்அல்லதுஇதழியல்பற்றிகற்பித்தல்	
COURSE OUTCOMES (COs)	
CO1	இதழ்கள்வகைகளும்இயல்புகளும்பற்றிஅறிவர்
CO2	இதழ்களின் கோட்பாடுகள் ,இதழியல்தொழில்பற்றிஅறிவர்
CO3	இதழியல்வளர்ச்சிவரலாறு பற்றிஅறிவர்
CO4	செய்தித்தாள்நிர்வாகஅமைப்புப்பற்றி அறிவர்
CO5	பல்வேறுவகையானசெய்திகள்சேகரிப்பதைப்பற்றிஅறிவர்
CO6	ஊடகவியல்/இதழியல்பற்றி அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1			H			M	H			
	CO2			H			M	H			
	CO3			H			M	H			L

	CO4			H			M	H			
	CO5			H			M	H			
	CO6			H			M	H			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
									✓		
4	Approval		Academic Council Meeting								

அலகு1 10

இதழியல்விளக்கம்- இதழ்களின்பணிகளும்பொறுப்புகளும்- இதழ்கள்வகைகளும்இயல்புகளும்- மக்களாட்சியில்இதழியல்- இதழ்களின்சுதந்திரம்- இதழ்களின்நடத்தையறக்கோட்பாடுகள்- இதழியல்தொழில்வாய்ப்புகள்.

அலகு2 10

இதழியல்வளர்ச்சிவரலாறு – தமிழகத்தில்இதழியல்வளர்ச்சி – பத்திரிகைச்சட்டங்கள்- பத்திரிகைமன்றம்- இதழ்கள்தொடங்குவதற்குரியவழிமுறைசெய்தித்தாள்நிர்வாகஅமைப்பு.

அலகு3 10

செய்தியாளர்- செய்தி – செய்தியின்உள்ளடக்கங்கள்- செய்திதிரட்டுதல்- செய்திநிறுவனங்கள்- பேட்டிகுற்றச்செய்திகள்- பல்வேறுவகையானசெய்திகள்- செய்திகளும்சிறப்புத்தனிஇயல்புகளும்- படங்களும்இதழ்களும்.

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பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA601	**இலக்கணம்- தண்டியலங்காரம்**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை										
COURSE OBJECTIVES : அணிஇலக்கணத்தைப்பயிலச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	பொதுஅணிஇயல்- செய்யுள்பற்றிஅறிவர்										
CO2	பொதுஅணிஇயல்- செய்யுள்நெறிபற்றிஅறிவர்										
CO3	31 அணிகளுக்காணஇலக்கணத்தைஅறிவர்– I										
CO4	31 அணிகளுக்காணஇலக்கணத்தைஅறிவர்– II										
CO5	சொல்லணி, மடக்கு, சித்திரகவி, வழுக்களின்வகைகள்ஆகியவைகளைப்பற்றிஅறிவர்										
CO6	அணிஇலக்கணத்தை அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	L	H						H		H
	CO2	L	H								
	CO3	L	H								
	CO4	L	H								
	CO5	L	H								
	CO6	L	H								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
					✓						
4	Approval		Academic Council Meeting								

அலகு1 12

பொதுஅணிஇயல்- **செய்யுள்**: செய்யுள்வகை- முத்தகச்செய்யுள்- குளகச்செய்யுள்- தொகைநிலைச்செய்யுள்- தொடர்நிலைச்செய்யுள்- பொருள்தொடர்நிலைச்செய்யுள்- பெருங்காப்பியம்- புறனடை- காப்பியம்- சொல்தொடர்நிலைச்செய்யுள்.

அலகு2 12

பொதுஅணிஇயல்- **செய்யுள்நெறி**: செய்யுள்நெறி-வைதருப்பநெறி- கௌடநெறி- செறிவு- தெளிவு- சமநிலை- இன்பம்- ஒழுகிசை- உதாரம்- உய்த்தலில்பொருண்மை- காந்தம்- வலி- சமாதி- புறனடை

அலகு3 12

பொருள்அணிஇயல்- I : பொருள்அணிஇயல்- பொருள்அணிகள்- தன்மைஅணி- உவமைஅணி- உவமைவகை- உவமைச்சொற்கள்- உருவகஅணி- தீவகஅணி- பின்வருநிலைஅணி- முன்னவிலக்குஅணி- வேற்றுப்பொருள்வைப்புஅணி- வேற்றுமைஅணி- விபாவனைஅணி- ஒட்டுஅணி- ஒட்டுஅணிவகை- அதிசயஅணி- தற்குறிப்பேற்றஅணி- ஏதுஅணி- காரகஏது- ஞாபகஏது- அபாவஏது- சித்திரஏது- நுட்பஅணி- இலேசஅணி-

அலகு4 12

பொருள்அணிஇயல்- II : நிரல்நிறைஅணி- ஆர்வமொழிஅணி- சுவைஅணி- தன்மேம்பாட்டுஉரைஅணி- பரியாயஅணி- சமாகிதஅணி- உதாத்தஅணி- அவநுதிஅணி- சிலேடைஅணி- விசேடஅணி- ஒப்புமைக்கூட்டஅணி- விரோதஅணி- மாறுபடுபுகழ்நிலைஅணி- புகழாப்புகழ்ச்சிஅணி- நிதரிசனஅணி- புணர்நிலைஅணி- பரிவர்த்தனைஅணி- வாழ்த்ததணி- சங்கீரணஅணி- புறனடை- பாவிகஅணி

அலகு5 12

சொல்அணிஇயல்: சொல்அணிஇயல்- சித்திரகவி- வாழுக்களின்வகை- பிரிபொருள்சொற்றொடர்- சிறப்புவிதி- மாறுபாடுபொருள்மொழி- மொழிந்ததுமொழிவு, சிறப்புவிதி- கவர்படுபொருள்மொழி, சிறப்புவிதி- நிரல்நிறைவழு, சிறப்புவிதி- சொல்வழு, சிறப்புவிதி- யதிவழு, சிறப்புவிதி- செய்யுள்வழு, சிறப்புவிதி- சந்திவழு, சிறப்புவிதி- இடமலைவு- காலமலைவு- கலைமலைவு- உலகமலைவு- நியாயமலைவு- ஆகமமலைவு- மலைவுக்குச்சிறப்புவிதி- புறனடை

பாடநூல்கள்:

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2. தண்டியாசிரியர், தண்டியலங்காரம், மதராஸ் ரிப்பன் , 1920
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பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA602	**முத்தொள்ளாயிரம்**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை				
COURSE OBJECTIVES : மூவேந்தர்களின்நாடு, அரண், படைச்சிறப்பு, போர்த்திறம், வீரம், ஈகைமுதலானவற்றைஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	பாண்டியன்புகழ்பற்றிஅறிவர்				
CO2	பாண்டியன்புகழ்பற்றிஅறிவர்				
CO3	பாண்டியன்புகழ்பற்றிஅறிவர்				

CO4	சோழன்புகழ்பற்றிஅறிவர்
CO5	சேரன்புகழ்பற்றிஅறிவர்
CO6	மூவேந்தர்களின்நாடு, அரண், படைச்சிறப்பு, போர்த்திறம், வீரம், ஈகைபற்றிஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		H	M	H	M			H	M	M
	CO2		H	M	H	M					
	CO3		H	M	H	M					
	CO4		H	M	H	M					
	CO5		H	M	H	M					
	CO6		H	M	H	M					

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
					✓					

4	Approval		Academic Council Meeting

அலகு1 12
பாண்டியன்புகழ்பாடல்கள்(1-20)

அலகு2 12
பாண்டியன்புகழ்பாடல்கள்(21-40)

அலகு3 12
பாண்டியன்புகழ்பாடல்கள்(41-57)

அலகு4 12
சோழன்புகழ்பாடல்கள்(58-87)

அலகு5 12
சேரன்புகழ்பாடல்கள்(88-108)

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பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA6E4	**திறனாய்வுக்கலை**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :திரு மு.பரந்தாமன் &தமிழ்த்துறை				

COURSE OBJECTIVES : திறனாய்வுஅணுகுமுறைகளைஅறியச்செய்தல்	
COURSE OUTCOMES (COs)	
CO1	திறனாய்வுவகைகளைஅறிவர்
CO2	அறிவியல்வழிஅணுகுமுறையையும்சமுதாயவியல்திறனாய்வுபற்றியும்அறிவர்
CO3	வரலாற்றியல், உளவியல்அணுகுமுறைகளைஅறிவர்
CO4	மொழியியல், உருவவியல்அணுகுமுறைகளைஅறிவர்
CO5	அமைப்பியல்,அறநெறிஅணுகுமுறைகளையும்மார்க்சியத்திறனாய்வுபற்றியும்அறிவர்
CO6	திறனாய்வுசெய்யும்அறிவைப்பெற்றுஆளுமையைவளர்ப்பர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H					M		M	H
	CO2	M	H					M			
	CO3	M	H					M			
	CO4	M	H					M			
	CO5	M	H					M			
	CO6	M	H					M			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
						✓				
4	Approval		Academic Council Meeting							

அலகு1 12

திறனாய்வாளனும்திறனாய்வும்- திறனாய்வுவகைகள்- விளக்கமுறைத்திறனாய்வு, ஒப்பீட்டுத்திறனாய்வு, மதிப்பீட்டுத்திறனாய்வு, ரசனைமுறைஅல்லதுஅழகியல்திறனாய்வு, பாராட்டுமுறைத்திறனாய்வு, முடிபுமுறைத்திறனாய்வு, விதிமுறைத்திறனாய்வு, செலுத்துநிலைஅல்லதுபடைப்புவழிதிறனாய்வு, பகுப்புமுறைத்திறனாய்வு

அலகு2 12

திறனாய்வில்அறிவியல்வழிஅணுகுமுறை- சமுதாயவியல்திறனாய்வு

அலகு3 12

வரலாற்றியல்அணுகுமுறை- உளவியல்அணுகுமுறை

அலகு4 12

மொழியியல்அணுகுமுறை- உருவவியல்அணுகுமுறை

அலகு5 12

அமைப்பியல்- பின்னைஅமைப்பியல்- அறநெறிஅணுகுமுறை- மார்க்சியத்திறனாய்வு

பாடநூல்கள்:

1. தி.சு.நடராசன்,"திறனாய்வுக்கலைஅணுகுமுறைகளும்கொள்கைகளும்",செஞ்சுரிபுக்ஹவுஸ்,2018
2. கு.பகவதி, "திறனாய்வுஅணுகுமுறைகள்" உலகத்தமிழாராய்ச்சிநிறுவனம், 2007
3. கே.எஸ்.சிவகுமாரன், "திறனாய்வுஎன்றால்என்ன?", மணிமேகலைபிரசுரம், 2004

பார்வைநூல்கள்:

1. மு.வரதராசன், இலக்கியத்திறன், மு.வ. பதிப்பகம், 1992
2. மு.வரதராசன், அறமும்அரசியலும், பாரிநிலையம், 2005
3. மு.வரதராசன், இலக்கியமரபு, பாரிநிலையம், 2006

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA6E5	**ஒப்பிலக்கியம்**				L	T	P	C			
	Total Contact Hours – 60				4	0	0	4			
	Prerequisite course – +2 Level Tamil										
	Course Coordinator Name& Department :திரு கே.வி.பரந்தாமன் &தமிழ்த்துறை										
COURSE OBJECTIVES : :- படைப்பாளிகளையும், பன்மொழிபடைப்புகளையும், ஒரேமொழியில்வெவ்வேறுதுறைகளின்படைப்புப்போக்குகளையும்ஒப்பீட்டுஆய்வதுபற்றிஅறியச்செய்தல்											
COURSE OUTCOMES (COs)											
CO1	ஒப்பிலக்கியத்தின்தோற்றம்வளர்ச்சியைப்பற்றிஅறிவர்										
CO2	கலை, ஓவியம், சிற்பம், இசை, கூத்துஆகியவற்றில்ஒப்பீடுசெய்வதைஅறிவர்										
CO3	தொல்காப்பியமும்வடமொழிஇலக்கியக்கொள்கைகளும், நடையும்ரீதியும்பற்றிஅறிவர்										
CO4	தமிழ் – கிரேக்க வீரயுகப்பாடல்கள், பிறமொழி அறஇலக்கியங்கங்களையும்அறிவர்										
CO5	படைப்பாளிகளின்இலக்கியங்களைஒப்பியல்நோக்கோடுபார்வையிட்டுஅறிவர்										
CO6	ஒப்பீட்டுஆய்வதுபற்றி அறிவர்										
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low											
1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		H	M	M	M		M	H	M	H
	CO2		H	M	M	M		M			
	CO3		H	M	M	M		M			
	CO4		H	M	M	M		M			
	CO5		H	M	M	M		M			
	CO6		H	M	M	M		M			
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR	
						✓					
4	Approval		Academic Council Meeting								

அலகு1 12

ஒப்பீடும்ஒப்பிலக்கியமும்- ஒப்பிலக்கியத்தின்தோற்றமும்வளர்ச்சியும்- தமிழில்ஒப்பிலக்கியவளர்ச்சி- நான்குவகைஇலக்கியப்பார்வை- தாக்கமும்இணைநிலையும்.

அலகு2 12

இலக்கியமும்கலைகளும்- இலக்கியமும்ஓவியமும்- இலக்கியமும்சிற்பமும்- இலக்கியமும்இசையும்- இலக்கியமும்கூத்தும்

அலகு3 12

தொல்காப்பியமும்வடமொழிஇலக்கியக்கொள்கைகளும்-
மெய்ப்பாடும்ரஸக்கோட்பாடும்குறிப்புப்பொருளும்தொனியும்- நோக்கும்சித்தியமும்- நடையும்ரீதியும்

அலகு4 12

தமிழ்- கிரேக்கவீரநிலைக்காலப்பாடல்கள், திருக்குறளும்பிறமொழிஅறஇலக்கியங்களும், தமிழ்வீரயுகப்பாடல்கள்.

அலகு5 12

ஒப்பியல்நோக்கு- கம்பனும்வால்மீகியும்பாரதியும்விட்மனும்- இளங்கோவும்சேக்ஸ்பியரும்இந்தியஇலக்கியவகைகள்.

பாடநூல்கள்:

1. தமிழண்ணல், "ஒப்பிலக்கியஅறிமுகம்", மீனாட்சிபுத்தகநிலையம், 2005
2. ஜிஜான்சாமுவேல், "இலக்கியஒப்பாய்வுக்களங்கள்", ஆசியவியல்நிறுவனம், 1997
3. க.கைலாசபதி, "ஒப்பியல்இலக்கியம்", குமரன்புத்தகஇல்லம், 2014

பார்வைநூல்கள்:

1. கி. இராசா, ஒப்பிலக்கியம், நியூசெஞ்சுரிபுக்ஹவுஸ், 2016
2. கருப்பத்தேவன், ஒப்பிலக்கியக்கொள்கைகள்நோக்கும்போக்கும், சீதைபதிப்பகம், 2015
3. ச.சிவகாமி, ஒப்பிலக்கியத்தமிழ், அமுதநிலையம், 2012

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

BIA6P1	**ஆய்வுத்திட்டக்கட்டுரை**	L	T	P	C
	Total Contact Hours –	0	0	18	9
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை				
COURSE OBJECTIVES : ஆய்வுசெய்துஆய்வேடுதயாரிப்பதுபற்றிஅறியச்செய்தல்					
COURSE OUTCOMES (COs)					
CO1	ஆய்வுதலைப்பு, இவ்வாய்வுத்தலைப்பையொட்டிஆய்வுசெய்தவரின்பதிவுகளைஅறிவர்				
CO2	களப்பணியோடுநூலகங்களைப்பயன்படுத்திதகவல்களைசேகரிப்பதுபற்றிஅறிவர்				

CO3	இயல்கள்பகுப்பது, அடிக்குறிப்பு, குறியீட்டுவிளக்கம், பின்னிணைப்புகள்பற்றிஅறிவர்
CO4	மூலநூற்பட்டியல், மேற்கோள்நூற்பட்டியல்குறித்துஅறிவர்
CO5	கணிப்பொறிமூலம்தட்டச்சுசெய்துஆய்வேடுதயாரிப்பதுபற்றிஅறிவர்
CO6	ஆய்வுபற்றியஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1		M	M	H	H		H		M	H
	CO2		M	M	H	H		H			
	CO3		M	M	H	H		H			
	CO4		M	M	H	H		H			
	CO5		M	M	H	H		H			
	CO6		M	M	H	H		H			

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
										✓

4	Approval	Academic Council Meeting

இலக்கியம்தொடர்பானஆய்வுமேற்கொண்டுஆய்வேடுதயாரித்தல்.

ஆய்வுதலைப்பைமேற்பார்வையாளர்மூலம்தெரிவுசெய்து,
இவ்வாய்வுத்தலைப்பையொட்டிஆய்வுசெய்தவரின்பதிவுகளைபார்வையிட்டு, களப்பணியாற்றி, நூலகங்களைப்பயன்படுத்தி, தகவல்களைசேகரித்து, இயல்களாகபகுத்து, (ஆராய்ச்சிமுறையியல்ஒர்அறிமுகம்-ஐந்தாம்பருவம்) பாடத்தைபார்வையிட்டு, இயல்கள், அடிக்குறிப்பு, குறியீட்டுவிளக்கம், பின்னிணைப்புகள், மூலநூற்பட்டியல், மேற்கோள்நூற்பட்டியல்இவைகளைத்தயாரித்து, கணிப்பொறிமூலம்தட்டச்சுசெய்துகுறித்ததேதியில்மேற்பார்வையாளரிடம்ஆய்வேட்டைசமர்ப்பிக்கவேண்டும்.

பாடநெறி ஒருங்கிணைப்பாளர் துறைத்தலைவர்

Syllabus-2015
BA- English
SEMESTER I

TAMIL – I

BAL101	TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :-இருபதாம் நூற்றாண்டு இலக்கியம் மற்றும் மொழி வரலாற்றை அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	இருபதாம் நூற்றாண்டு கவிதைஇலக்கியத்தைப் பற்றி அறிவர்
CO2	இருபதாம் நூற்றாண்டுகட்டுரைஇலக்கியத்தைப் பற்றி அறிவர்
CO3	இருபதாம் நூற்றாண்டுசிறுகதைஇலக்கியத்தைப் பற்றி அறிவர்
CO4	இக்கால இலக்கிய வரலாறுபற்றி அறிவர்
CO5	மொழி வரலாறு – செம்மொழிபற்றி அறிவர்
CO6	தற்கால இலக்கியத்தில் ஆழ்ந்த அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

அலகு -1 **இருபதாம் நூற்றாண்டு கவிதைகள்** 9

1. பாரதியார் -யாமறிந்த மொழிகளிலே 2. பாரதிதாசன்-நீங்களே சொல்லுங்கள்!
3. கண்ணதாசன் -அழுகை 4. பெருஞ்சித்திரனார்- தமிழா நீ எங்கே?
5. தமிழ் ஒளி - (I) வள்ளைப்பாட்டு (II) பட்டமரம்
6. அப்துல் ரகுமான் - கல்லின் காயம்

அலகு -2 **உரைநடை** (I) 4 **கட்டுரைகள்** 9

1. மனிதனும் அழகும் - திரு.வி.க.2. வீட்டிற்கோர் புத்தகசாலை-அறிஞர் அண்ணா
3. பொறியியல் தமிழ் - நா. மால் முருகன்
4. தேசியமறை திருக்குறள் - வ.சுப.மாணிக்கம்

அலகு -3 **உரைநடை** (II) **சிறுகதை** - 4 **கதைகள்** 9

1. நட்சத்திரக் குழந்தைகள் - பி.எஸ்.இராமையா2. விடியுமா-கு.ப.ராசகோபாலன்
3. குருபீடம் – ஜெயகாந்தன்4. கடவுளும் கந்தசாமிப் பிள்ளையும்–புதுமைப்பித்தன்

அலகு -4 **இக்கால இலக்கிய வரலாறு** 9

1. இருபதாம் நூற்றாண்டு கவிதை இலக்கிய வரலாறு
2. இருபதாம் நூற்றாண்டு உரைநடை இலக்கிய வரலாறு
3. இருபதாம் நூற்றாண்டு சிறுகதை இலக்கிய வரலாறு

அலகு -5 **மொழி வரலாறு** 9

1. தமிழ்மொழி வரலாறு 2. உலகச் செம்மொழிகளின் வரலாறு
3. தமிழுக்கும் உலகச் செம்மொழிகளுக்குமான உறவு வரலாறு

பாடநூல்

1. இருபதாம் நூற்றாண்டு கவிதை, உரைநடை, சிறுகதை(அலகு-3) பாரத் பல்கலைக்கழக வெளியிடு

பார்வை நூல்கள்

1. சு. ஆனந்தன்,"தமிழ் இலக்கிய வரலாறு", பாரி நிலையம், 2012
2. ஞானப்பிரகாசர்,"தமிழ் அமைப்புற்றவரலாறு", வியாபார ஐக்கிய சங்கம்,2012
3. ஞா.தேவநேயன்,"தமிழ் வரலாறு", பூம்புகார் பதிப்பகம், 2009
4. ஞா.தேவநேயன்,"முதல் தாய்மொழி", பூம்புகார் பதிப்பகம்,2008
5. ஞா.தேவநேயன்,"சுட்டு விளக்கம்" , பூம்புகார் பதிப்பகம்,2006

Course Coordinator HOD

HINDI I

BAL10X	HINDI I	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				

COURSE OBJECTIVES:-

To understand , read, write and speak Hindi language with grammatical.

COURSE OUTCOMES (COs)

CO1	Remember the behavior
CO2	Understand the importance of money by story
CO3	Apply the concept of Hindi grammar
CO4	Analyze the usage of translation from English to Hindi
CO5	Evaluate the unseen passage to answer the questions
CO6	Create the knowledge in Hindi Language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	1	3	3	1	1	1	3		
	CO2	3	3	2	2	2	2	3		
	CO3	3	3	2	1	2	1	3		
	CO4	3	3	2	1	1	2	3		
	CO5	3	2	2	1	1	1	3		
	CO6	2	3	3	2	3	3	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I

09

NAVEEN GADYA CHAYANIKA – 2 - Bholaram ka jeev - Mehamaan se Bhagavaan bachaaye - Numberovali Thijori – Kaffan - Gunda

UNIT II **09**

NON DETAILED TEXT: KAHANI KUNJ - Stories: 6 – 10 only

UNIT III **09**

GRAMMAR: SHABDA VICHAR ONLY - NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS - Theoretical & Applied

UNIT IV **09**

TRANSLATION - English – Hindi only - ANUVADH ABHYAS – III - 1 – 15 Lessons Only

UNIT V **09**

COMPREHENSION - 1 Passage from ANUVADH ABHYAS – III (16 – 30)

TEXT BOOKS:

UNIT 1 - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

UNIT II - Govind Prakashan, Sadhar Bagaar, Mathura, Uttar Pradesh – 281001 - Editor: Dr V.P. Amithab

UNIT III - Vyakaran Pradeep by Ramdev - Hindi Bhavan, 36, Tagor Town, Allahabad – 211002.

UNIT IV - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017.

UNIT V - Dakshina Bharat Hindi Prachar Sabha, Chennai – 600017

Course Coordinator **HOD**

FRENCH I

BAL10X	FRENCH I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES:-

To introduce students to basic principles and practice of oral and written communication.

COURSE OUTCOMES (COs)

CO1	To understand the basics of the language.
CO2	To analyze the sentence patterns and form the grammar.
CO3	To learn the basics of grammar along with its principles.
CO4	To remember the anatomy of conjugations.
CO5	To create dialogs and conversation on their own within the language & to practice oral and written skills.
CO6	To remember the necessary rules of the language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	1	3	2	1	1	1	3		
	CO2	3	3	3	1	2	1	3		
	CO3	3	3	3	1	3	1	3		
	CO4	3	3	3	1	1	1	3		
	CO5	3	3	3	3	1	1	3		
	CO6	3	3	3	2	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I - Vous comprenez **9**

Alphabets - French Accents - Les Nombres – Pronunciations.

UNIT II Au travail! **9**

Masculine Singular and Feminine singular - Conjugaison des verbes (present tense) -

Les articles définis.

UNIT III En se detend? **9**

Conjugaison (faire-aller-venir-Vouloir-Pouvoir-Devoir)

UNIT IV Racontez-moi **9**

La date et l'heure – les saisons – les couleurs

UNIT V Bon voyage! **9**

Adjectifs demonstratives - Adjectifs possessives - Les Voyages / les transport-Bon appétit!- Article

partitif - Emploi des articles - Interrogation (Forme avec inversion) - Les repas - La fête

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

ENGLISH I

BEH101	**ENGLISH I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. SHEEBA - English				

COURSE OBJECTIVES:- :- To use English effectively for study purpose and enable the learner to communicate appropriately in real life situation.

COURSE OUTCOMES (COs)	
CO1	Remember and recall the words according to the given context.
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarizes the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT I –POETRY **12**

Lucy Gray William Wordsworth – Author biography – Summary – Critical Analysis - Ulysses Alfred Lord Tennyson– Author biography – Summary – Critical Analysis - The Road Not Taken – Robert Frost – Author biography – Summary – Critical Analysis

UNIT II – ONE ACT PLAYS **12**

The Boy Comes Home - A.A.Milne – Author biography – Summary – Critical Analysis - The Referee - W.H.Andrews and Geoffrey Dearmer – Author biography – Summary – Critical Analysis

UNIT III- SHORT STORIES **12**

The Unicorn in the Garden – James Thurber – Author biography – Summary – Critical Analysis - The Avenger – Anton Chekov – Author biography – Summary – Critical Analysis - The Gift of the Magi - O.Henry – Author biography – Summary – Critical Analysis

UNIT IV –PROSE B **12**

Six Thinking Hats - Edward de Bono– Author biography – Summary – Critical Analysis - My Early Days Abdul Kalam – Author biography – Summary – Critical Analysis- I Have a Dream Martin Luther King– Author biography – Summary – Critical Analysis.

UNIT V – GRAMMAR **12**

Introduction to Basics of Communication Definitions, Types Listening Speaking Reading Writing

TEXT BOOKS:

1. Six Thinking Hats by Edward de Bono, Little Brown and Company, 1985
2. My Early Days by Abdul Kalam, October 7, 2013

REFERENCE BOOKS:

1. English for Communication by Board of Editors, Emerald

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019
3. Strings of Gold (Part- II) Edited by Prof. Jasbir Jain (MacMillan), 2007

Course Coordinator **HOD**

PROSE

BBE101	**PROSE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator : Mrs.S.SUBATHRA & Department of English				

COURSE OBJECTIVES:- To enable the students in enjoying the flair of literature through the classical prose works of great writers

COURSE OUTCOMES (COs)	
CO1	Remember the knowledge of classical prose writer
CO2	Understand the prose from a variety of cultures and historic periods
CO3	Apply prose as a literary art form
CO4	Analyse the formation of new words, understand grammar and reading & writing skills
CO5	Evaluate the didactic purpose of the work
CO6	Create the essays from the text
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	M	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I 12

Bacon – 1. Of Studies, Author Biography – theme - summary – critical analysis; 2. Of Truth – Author Biography – summary – reading and writing techniques - critical analysis

UNIT II 12

Goldsmith - Beau Tibbs- Author Biography – Plot - Theme - summary - critical analysis

Steele -- Spectator Club- Author Biography – Plot - Theme - summary - critical analysis

UNIT - III 12

Charles Lamb -- Dream Children- Author Biography – Plot - Theme - summary - critical analysis
Thomas Dequincy – Literature- Author Biography – Plot - Theme - summary - critical analysis

UNIT IV 12

Ruskin - King's Treasuries - Author Biography – Plot - Theme - summary - critical analysis
Newman – Knowledge its own end - Author Biography – Plot - Theme - summary - critical analysis

UNIT V 12

Stephen Leacock - With the Photographer - Author Biography – Plot - Theme - summary - critical analysis
Shaw – Spoken English and Broken English - Author Biography – Plot - Theme - summary - critical analysis

TEXT BOOKS:

1. Ed. M.G. Nayar, "Galaxy of English Essayists (From Bacon to Berhorm)", Macmillan, 2nd edition.,1986
2. Francis Bacon, "Of Studies", Quotidiana, first edition, 2007
3. Oliver Goldsmith, "Man in Black", "The Essays of Oliver Goldsmith", Nabu Press, 2nd edition, 2012

REFERENCE BOOKS:

1. Francis Bacon, "The Essays by Francis Bacon", Renaissance Classics, first edition, 2012
2. Charles Lamb, "Poor Relations", "Charles Lambs Essays", Andesite Press, 1st edition, 2015

Course Coordinator HOD

FICTION

BBE102	FICTION	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Mr.S.ANGEL & Department of English				

COURSE OBJECTIVES:- To familiarize the students with the various genres of fiction with selected authors and appreciate the beauty of the language

COURSE OUTCOMES (COs)

CO1	Remember the various genres in fiction
CO2	Understand the plot and themes in fiction
CO3	Apply the various characters of texts
CO4	Analyse the different narrative technique of the novels
CO5	Evaluate the them and plot of the novels
CO6	Create the summary and essays of texts
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	M	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

UNIT – I 12

Oscar Wilde - The Happy Prince -

WW Jacobs - The Monkey's Paw Author Biography – Plot – Theme - Summary - Character analysis - critical analysis

UNIT – II 12

Saki - The Open Window - Author Biography – Plot – Theme - Summary - Character analysis - critical analysis O' Henry - The Gift of the Magi - Author Biography – Plot – Theme - Summary - Character analysis - critical analysis

Maupassant - The Diamond necklace- Author Biography – Plot – Theme - Summary - Character analysis - critical analysis -Leo Tolstoy - God Sees the truth but waits- Author Biography – Plot – Theme - Summary - Character analysis - critical analysis

UNIT – III 12

Dickens - Oliver Twist - Author Biography – Plot – Theme - Summary - Character analysis - critical analysis

UNIT - IV 12

R. L. Stevenson - Dr. Jekyll and Mr. Hyde - Author Biography – Plot – Theme - Summary - Character analysis - critical analysis

UNIT - V 12

Emile Bronte - Wuthering Heights- Author Biography – Plot – Theme - Summary - Character analysis - critical analysis

TEXT BOOKS:

1. WW Jacobs, "The Monkey's Paw", Perfection Learning, 1979
2. Oscar Wilde, "The HappyPrince", Maple Press, 2013
3. Saki, "Masterpieces of World Fiction: Selected Stories", Rupa Publications India, 2014
4. Maupassant, "The Diamond Necklace", Createspace Independent Pub., 2014

REFERENCE BOOKS:

1. R . L. Stevenson, "Dr. Jekyll and Mr Hyde", Paper Clip Books, 2014
2. "50 World's Greatest Short Stories", Fingerprint Publishing, 2017

Course Coordinator HOD

SOCIAL HISTORY OF ENGLAND

BBE 103	SOCIAL HISTORY OF ENGLAND	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator :Mrs.S.SUBATHRA & Department of English				

COURSE OBJECTIVES:- The paper provides the students with a basic knowledge of the political and social history of England with reference to important incidents and movements in English history

COURSE OUTCOMES (COs)	
CO1	Remember the exposure on the chronicles of England and to be cognizant with their evolution
CO2	Understand the impact of Literature socially, politically, economically.
CO3	Apply the diverse nature England culture
CO4	Analyse the complex relationships between authors, texts, and historical contexts
CO5	Evaluate the categories and concepts of critical or close reading
CO6	Create the knowledge of literary canon in English, as well as strategies for critiquing the
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO 2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	M	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT- I 12

Medieval and Tudor England - Renaissance - Reformation - **1.** The Renaissance as a multi faced European movement and its impact on England - 2. The Reformation – the causes and the progress to the reigns of Henry VII, Edward VI, Mary and Elizabeth - 3. The dissolutions of Monasteries–the causes and consequences

UNIT - II 12

The Civil War and the Restoration England -- The conflict between the Monarchy and the Parliament and the establishment of the supremacy of Parliament the reigns of James I , Charles I , Charles II, James II and its culmination of Glorious Revolution – 1. Life in the Restoration England – 2. The Coffee Houses and their Social relevance

UNIT III 12

The Age of Queen Anne - Industrial revolution – Background – Literature study – Biography of literary writers; 2. The Agrarian revolution - Background – Literature study – Biography of literary writers - French revolution - Background – Literature study – Biography of literary writers

UNIT IV 12

Victorian Age - The social changes – political changes, material changes and intellectual changes reflected in the literature of Victorian England

UNIT V 12

Twentieth Century- - political changes, material changes and intellectual changes reflected in the literature of Twentieth Century

TEXT BOOKS:

1. A.G. Xavier: Introduction to the Social History of England, Orient Blackswan, 2011
2. Padmaja Ashok, "Social History of England", Orient Blackswan, 1 edition, 2011

REFERENCE BOOKS:

1. Choudhury, "English Social and Cultural History: An Introductory Guide and Glossary", Prentice Hall India Learning Private Limited, 1 edition, 2005

2. Thomas Macaulay, "The History of England", Penguin, Reprint edition,1979

Course Coordinator HOD

COMPARATIVE LITERATURE-I

BBE104	COMPARATIVE LITERATURE-I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Mrs.D.THILAGAM: & Department of English				

COURSE OBJECTIVES:- Aims to offer the study of Literature and cultural expression across linguistic, national and disciplinary boundaries

COURSE OUTCOMES (COs)

CO1	Analyse the literary contexts of the prescribed literature
CO2	Ability to evaluate a good work of art
CO3	Identify the difference in literary works across cultures
CO4	Acknowledge the uniqueness of individual works from different region
CO5	Assess the different literature through translated works
CO6	Critically evaluates the importance of different culturally created texts
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	M	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

UNIT - I 12

Definition and scope – National literature. General literature

UNIT - II 12

The French and American Schools of comparative literature.

UNIT III 12

Influence and Imitation - Epoch, School, Movement

UNIT IV 12

Genre Studies , Thematology

UNIT - V 12

Literature and other Disciplines Literature and other Arts Relationship between literature and other disciplines of study; **Literature and other Arts -** Relationship between literature and other arts reflecting culture, tradition, social background etc

REFERENCES: Ulrich Weinstein: Comparative Literature, and other arts
Wellek and Warren: Theory of literature (Part – II)
S.S.Prawan: Comparative literature

TEXT BOOKS:

1. Das, Bijay Kumar, 'Comparative literature", Atlantic Pub. & Distributors Pvt. Ltd., 2000
2. Ben Hutchinson, "Comparative Literature: A Very Short Introduction", Oxford University Press, 2018

REFERENCE BOOKS:

1. Ulrich Weisstein, "Comparative Literature and Literary Theory", Indiana University Press, 1974
2. J T Deshpande, "Indian poetics", Popular Prakashan Pvt Ltd., 2009

Course Coordinator HOD

SEMESTER II

TAMIL II

BAL201	TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL – I				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- சிற்றிலக்கியம் மற்றும் சமய இலக்கியத்தை அறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	சிற்றிலக்கியமான தூது,பள்ளு ,குறவஞ்சி பற்றி அறிந்துகொள்வர்
CO2	சைவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO3	வைணவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO4	பௌத்த, இசுலாம், கிறித்துவ சமயஇலக்கியம்பற்றி அறிந்துகொள்வர்
CO5	சிற்றிலக்கியம் மற்றும் சமய இலக்கிய வரலாறுபற்றி அறிந்துகொள்வர்
CO6	சிற்றிலக்கியம் மற்றும்சமய இலக்கியம் பற்றிய தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு1 9

அழகர்கிள்ளைவிடுதூது - 1 - 20

முக்கூடற்பள்ளு - நாட்டுவளம் - 21,22,25,26,35

திருக்குற்றாலக்குறவஞ்சி- குறத்திமலைவளம்கூறுதல் - 1 - 5

அலகு2 9

அற்புதத்திருவந்தாதி - 1 - 5

திருஞானசம்பந்தர் - தேவாரம் - திருவெண்காட்டுப்பதிகம் - 1 - 10

மாணிக்கவாசகர் -திருவாசகம் - திருச்சாழல் - 1 - 10

அலகு3 9

பெரியாழ்வார் - முதல்திருமொழி - 1 - 10

ஆண்டாள் - திருப்பாவை - - 1 - 10

தொண்டரடிப்பொடிஆழ்வார் - திருமாலை - 1 - 5

அலகு4 9

ஆசியஜோதி - கருணைக்கடல் - அறவுரைகூறுதல் - 1 - 10

பராபரக்கண்ணி - குணங்குடிமஸ்தான்சாகிபு - 1 - 20

இயேசுகாவியம் - பாடுகளின்பாதை- கண்ணதாசன்

அலகு5 9

சிற்றிலக்கியவரலாறு ,சமயஇலக்கியவரலாறு

பாட நூல்கள்

1. கதிர்முருகு, "அழகர்கிள்ளைவிடுதூது", சாரதாபதிப்பகம், 2011
2. சோ.கந்தசாமி"பன்னிருதிருமுறை", உலகத்தமிழாராய்ச்சிநிறுவனம், 2008
3. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014

பார்வைநூல்கள்

1. கதிர்முருகு, "முக்கூடற்பள்ளுமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. புலியூர்க்கேசிகன், "திருக்குற்றாலக்குறவஞ்சி", செண்பகாபதிப்பகம், 2010
3. தமிழமுதன், "அற்புதத்திருவந்தாதி", பாரிநிலையம், 2011
4. த.கோவேந்தன், "நாலாயிரத்திவ்யப்பிரபந்தம்உரை", சாரதாபதிப்பகம், 2015
5. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
6. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
7. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

Course Coordinator HOD

HINDI II

BAL20X	HINDI	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				

COURSE OBJECTIVES:-

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana In Sabari part
CO2	Understand the historical stories
CO3	Apply the concept of translation
CO4	Analyze and develop the letter writing skills
CO5	Evaluate and develop the speaking skills
CO6	Create knowledge in letter writing and speaking skills

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	3	2	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	2	2	1	3		
	CO4	3	3	2	1	1	2	3		
	CO5	2	3	2	1	1	1	3		
	CO6	3	3	3	2	3	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I **09**

MODERN POETRY - SHABARI

UNIT II **09**

ONE ACT PLAY - EKANKI
SANKALAM

UNIT III **09**

TRANSLATION - HINDI – ENGLISH
ONLY

UNIT IV **09**

LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter

UNIT V **09**

CONVERSATION - Doctor & Patient - Teacher & Student - Storekeeper & Buyer - Two Friends - Booking clerk & Passenger at Railway station – Auto rickshaw driver and passenger.

Text Books:

By Naresh Mehtha,Veerendra Kumar Mishra

Reference Books:

UNIT 1 – Publisheres - Lokbharathi Prakashan ,1 Floor, Duebari Building,Mahathma Gandhi Marg, Allahabad – 1.
UNIT II – Publishers – Vani Prakasam, New Delhi-110002
UNIT III – Publishers – Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator **HOD**

FRENCH II

BAL20X	**FRENCH**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

To introduce students to the complexity of the grammar and how to overcome it with simple rules.

COURSE OUTCOMES (COs)

CO1	To being able to interpret the language.
CO2	To familiarize with methodological approaches in the study of literary and cultural texts, such as close reading, socio-historical contextualization, and literary and cultural theory.
CO3	To obtain advanced proficiency in spoken and written French.
CO4	To encourage the development of skills in linguistics, translation, and comparative studies.
CO5	To remember the anatomy of conjugations in past tense.
CO6	To evaluate the given text critically and enhance communication skills.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	1	3	2	1	1	1	3		
	CO2	3	3	3	1	2	1	3		
	CO3	3	3	3	1	2	1	3		
	CO4	3	3	3	1	1	2	3		
	CO5	3	3	3	3	1	1	3		
	CO6	3	3	2	3	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I -Quelle journee! **9**

La Conjugaison pronominale -L'imperatif -L'expression de la quantite (peu-in peu de- quelque – etc.)

UNIT II - Qu'on est bien ici ! 9

Prepositions et adverbs de lieu - Verbs experimant un deplacement (employ des prepositions)

Le lodgement/la localisation/ l'orientation/l'etat physique/le temps qu'il fait

UNIT III -En se detend? 9

L'imparfait-Emplois du passé compose et de l'imparfait-Expression de la duree-L'enchainement des idees (alors, donc, mais) /Le sens reciproque

UNIT IV- On s'appelle? 9

Les pronoms complements direct -Les pronoms compliments indirects de personne -c'est/ il est-Imperatif des verbs avec pronoms-La fornation des mots

UNIT V Un bon conseil ! 9

Expression du deroulement de l'action--passe recent--Present progressif-future proche-Les phrases rappotrees- La place de l'adjectif- La proposition relative finale avec -qui

TEXT BOOKS:

A1 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator HOD

ENGLISH II

BEH201	**ENGLISH II**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept.: Mr.S.KUMARESAN - English				

COURSE OBJECTIVES:- To have a better understanding of the English language skills and its implementation it in day to day life activities.

COURSE OUTCOMES (COs)	
CO1	Remember and recall the concepts of English language
CO2	Understand the necessity of grammar in Communication
CO3	Apply the plots and themes discussed
CO4	Analyze the various characters involved
CO5	Evaluate the characters and summarize the prescribed literature
CO6	Create essays by evaluating the literary techniques and devices used.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								

4	**Approval**	Academic Council Meeting

UNIT 1: PROSE **12**

The Refugee – K.A. Abbas – Author biography – Summary – Critical Analysis.- The Lion and the Lamb – Leonard Clark – Author biography – Summary – Critical Analysis.

UNIT 2: POEMS **12**

1. The Solitary Reaper – William Wordsworth – Author biography – Summary – Critical Analysis.- Gift – Alice Walker – Author biography – Summary – Critical Analysis.

UNIT 3: SHORT STORIES **12**

The Fortune-Teller – Karel Capek – Author biography – Summary – Critical Analysis - The Postmaster – Rabindranath Tagore – Author biography – Summary – Critical Analysis.

UNIT 4: ONE-ACT PLAYS **12**

The Death Trap – Saki (H.H. Munro) – Author biography – Summary – Critical Analysis -. The Dear Departed: A Comedy in One-Act – Stanley Houghton – Author biography – Summary – Critical Analysis.

UNIT 5: COMMUNICATIVE GRAMMAR **12**

Seeking and giving information – statements and questions 2. Being informal – phrasal verbs 3. Expressing ability, possibility, etc – Modals and other devices

TEXT BOOKS:

1. The Death Trap by Saki, The Novels and Plays of Saki, 2001
2. Pooja Khanna, "English Communication", S.CHAND Publishing, 2016
3. Rabindranath Tagore, "The Postmaster", Penguin India, 2000

REFERENCE BOOKS:

1. K.A.Abbas Suresh Kohli, "An Evening in Calcutta", HarperCollins, 2015
2. Stanley Houghton, "Five one act plays", Alpha Edition, 2019
3. Edited Prof. Jasbir Jain, "Strings of Gold (Part- II)", MacMillan, 2016

Course Coordinator **HOD**

POETRY- I

BBE201	**POETRY- I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Ms.A.ANNIE CHRISTY & Department of English				

COURSE OBJECTIVES:- To make the students appreciate the beauty and elegance of English literature through the prescribed poems

COURSE OUTCOMES (COs)

CO1	Remember the literature and beauty of language through poetry
CO2	Understand the rhyme scheme of the poetry and the poetic devices
CO3	Apply the connotative meaning of the prescribed poetry
CO4	Analyse the differentiate between the poetical language and other genres
CO5	Evaluate the minds of the poet and critically the poems
CO6	Creative thinking and literary criticism
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	M	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - I 12

William Shakespeare - Sonnet 116 - Let me not – Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **John Donne - Death be not Proud -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **John Dryden - The Portrait of Zimri -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT II 12

Oliver Goldsmith - The Village Preacher - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **John Keats - Ode toAutumn -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT - III 12

Tennyson - Tithonus - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Hopkins - God's Grandeur -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT - IV 12

W.B. Yeats - Easter 1916 - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **D.H.Lawrence - Snake -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis .

UNIT - V 12

Larkin - Lines on a young lady's photograph Album -- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

Ted Hughes - Thrushes - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

TEXT BOOKS:

1. Winged Bird- An Anthology of Poetry, Columbia University Press, November 2012
2. W.B. Yeats, "The Collected Works of W.B. Yeats Volume I: The Poems", Simon & Schuster, 1996
3. D.H.Lawrence, "Snake and Other Poems", Dover Publications Inc., 2003

REFERENCE BOOKS:

1. William Blake, 'Songs of Innocence and Songs of Experience", Dover Publications 1992
2. Bloom, Harold, "The Best Poems of the English Language: From Chaucer Through Robert", Harper Perennial, 2007
3. John Keats, "The Odes (Complete Edition)", E-Artnow, 2018

Course Coordinator HOD

HISTORY OF ENGLISH LITERATURE

BBE202	**HISTORY OF ENGLISH LITERATURE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator: Mrs.D.Thilagam & Department of English				

COURSE OBJECTIVES:- To enrich the students with a wide knowledge of the historical and biographical details of the literary stalwarts of various ages.

COURSE OUTCOMES (COs)

CO1	Remember the chronicles and memoir of conspicuous legends of different ages
CO2	Understand and illustrate the literary movement and genres of the period
CO3	Apply the works with their socio-cultural contexts
CO4	Analyse the characteristics of literature development through history
CO5	Evaluate familiar with important literary figures of various periods
CO6	Critically analyzes the development of literature from different parts of the world
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	M	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I 12

Chaucer and Shakespeare - Chaucer – Spencer – Shakespeare – Donne – Milton - Dryden and Pope - Author Biographies and study of their works- summaries

UNIT II 12

Age of Milton and Dryden - Author Biographies and study of their works- summaries

UNIT III 12

Webster: The Duchess of Malfi - Author Biographies and study of their works- summaries.

UNIT – IV 12

Thomas Kyd - The Spanish Tragedy - Author Biographies and study of their works - summaries

UNIT - V 12

Beaumont and Fletcher - Philaster- Author Biographies and study of their works- summaries

TEXT BOOKS:

1. W. H. Hudson, "An Outline History of English Literature", Rupa Pub. Pvt. Ltd., 2015

REFERENCE BOOKS:

2. Edward Albert, "History of English Literature", Oxford Press, 2017
3. Compton Rickett, "A History of English Literature", UBS Publishers & Distributors Pvt. Ltd. 2009

Course Coordinator HOD

Comparative Literature - II

BBE203	**Comparative Literature - II**	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite – UG Level English				
	Course coordinator & Dept: Dr. P. Arockia Nathan – English				

COURSE OBJECTIVES:- The course aims at introducing the students to the concepts, approaches, problems, and techniques of comparative literature

COURSE OUTCOMES (COs)

CO1	To attain a broad knowledge of various literary traditions
CO2	To interpret a literary text or other cultural artifact in a non-native target language
CO3	**To develop advanced skills in order to compare texts from a variety of different traditions, genres, periods, and areas.**
CO4	Standing at the forefront of innovative work in literary, theoretical, and cultural studies,
CO5	comparative literature is one of the most exciting fields in the humanities
CO6	As a discipline it requires exceptional linguistic ability, theoretical knowledge, and high intellectual caliber.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						M	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/
									✓	

4	Approval	47th Academic Council Meeting

UNIT I 12

- Epistemology of comparative literature.
- Development of the discipline methodology.

UNIT II 12

- Historiography
- History and literary history.
- Element of literary history.

UNIT III 12

- Theory of genres
- Oral and written
- Ancient and modern

UNIT IV 12

- Comparative and Indian literature
- Tradition
- Movements

UNIT V 12

- Literary theory
- Indian poetics
- Western literary theory.

Text Books:

1. Subramanian N., Padma Srinivasan, and G.R. Balakrishnan, Introduction to the Study of Comparative Literature: Theory and Practice. Madurai: Teesi, 1997

2. Steven. "Multilingual Bibliography of (Text)Books in Comparative Literature, World Literature(s), and Comparative Cultural Studies". *CLCWeb: Comparative Literature and Culture* (*Library*) (1999–).

Reference Books:

1. Weisstein, Ulrich: Comparative Literature and Literary Theory Bloomington: IU Press, 1974.

2. Companion to Comparative Literature, World Literatures, and Comparative Cultural Studies. Ed. Steven Tötösy de Zepetnek and Tutun Mukherjee. New Delhi: Cambridge University Press India, 2013.

3"New Work in Comparative Literature in Europe". Marina Grishakova, Lucia Boldrini, and Matthew Arnolds (eds.). Special Issue CLCWeb: Comparative Literature and Culture 15.7 (2013).

Course Coordinator HOD

INDIAN WRITING IN ENGLISH-I

BBE204	INDIAN WRITING IN ENGLISH-I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Mrs.B.JANUA SHERLY & Department of English				

COURSE OBJECTIVES:- The paper aims at illuminating the important trends in Indian Literature in English. Selected texts provide the students with the Indian attitude of life, thus giving them a comprehensive view of literature in general

COURSE OUTCOMES (COs)

CO1	Remember the comprehensive knowledge about various Indian writers in English
CO2	Understand the anti-colonial resistance through writing in English
CO3	Apply the impact of colonization left on Indian Writers
CO4	Analyzes the uniqueness of Indianized English
CO5	Evaluate Acknowlege the contribution of Indian linguists towards English
CO6	Create the critical essays on significant nature of Indian Engish
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H		M			M		H	H	M
	CO2	H		M			M				
	CO3	H		M			M				
	CO4	H		M			M				
	CO5	H		M			M				
	CO6	H		M			M				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

Unit I **Poetry** **12**

Toru Dutt -The Casuarina Tree- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

Sri Aurobindo -The Tiger and the Deer - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

Unit II **12**

Nissim Ezekiel -The Night of the Scorpion- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

A.K.Ramanujam – River- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

Unit III **Prose** **12**

Swami Vivekananda -The Secret of Work - Author Biography – Plot – Theme - Summary - Critical analysis

Nehru -The Panorama of India's Past- Author Biography – Plot – Theme - Summary - Critical analysis

Unit IV **Drama** **12**

Girish Karnad -Tughlaq- Author Biography – Plot – Theme - Summary - Critical analysis

Unit V **Fiction** **12**

R.K.Narayan -The Guide - Author Biography – Plot – Theme - Summary - Critical analysis

TEXT BOOKS:

1. K.R. Srinivasa Iyengar, "Indian Writing in English", Sterling Publishers Pvt.Ltd
2. Mahasweta Devi, "Mother of 1084", Oxford India Perennials, 2012

REFERENCE BOOKS:

1. Mulkraj Anand, "Coolie", Penguin Books India Pvt. Ltd., 1993
2. Grish Karnad, "Tuglaq", Oxford India Perennials, 1997

Course Coordinator HOD

ENVIRONMENTAL STUDIES

BCI204	**Environmental Science**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –Higher Secondary studies				
	Course Coordinator Name & Department:- – Dr. G. Gurumoorthy / Chemistry				

COURSE OBJECTIVES :-

To make the students learn about the science from the basic and understood all theoretical background with all concepts thoroughly to protect the habitat of biotic and abiotic ecosystem.

COURSE OUTCOMES (COs)

CO1	Remember the fundamental concept of environmental impact and importance of natural Resources
CO2	Understand about the Ecosystem, Biodiversity and its conservation
CO3	Understand the various environmental pollution, effects and prevention.
CO4	Apply the environmental legislations and environmental production act.
CO5	Apply the human rights, value education, environment and human health: women and child welfare, public awareness
CO6	Analyze the local area, local polluted site and local simple ecosystem.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H	L	H			H		H		
	CO2	H	L	H			H				
	CO3	H	L	H			H				
	CO4	H	L	H			H				
	CO5	H	L	H			H				
	CO6	H	L	H			H				

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								
4	Approval		Academic Council Meeting							

Unit – I: Introduction to Environmental Sciences: Natural Resources: 6

Environmental sciences – relevance – significance – public awareness – forest resources – water resources – mineral resources – food resources – conflicts over resource sharing – exploitation – land use pattern – environmental impact – fertilizer – pesticide Problems - case studies.

Unit – II: Exosystem, Biodiversity and its conservation: 6

Ecosystem – concept – structure and function – producers, consumers and decomposers – food chain – food web – ecological pyramids – energy flow – forest, grassland, desert and aquatic ecosystem – definition – genetic, species and ecosystem diversity – biodiversity – definition – genetic, species and ecosystem diversity – values and uses of biodiversity –

biodiversity at global, national (india) and local levels – hotspots, threats to biodiversity – conservation of biodiversity – insitu and ex-situ.

Unit – III: Environmental Pollution and Management **6**

Environmental pollution – causes – effects and control measures of air, water , marine, soil, solid waste. Thermal, nuclear pollution and disaster management – floods, earth quake, cyclone and land slides, role of individuals in prevention of pollution – pollution case studies.

Unit – IV: Social issues – Human population: **6**

Urban issues – energy – water conservation – environmental ethics – global warming – resettlement and rehabilitation issues – environmental legislations – environmental production act. 1986 – air, water, wildlife and forest B.C.A.: syllabus (CBCS) conservation act - population growth and explosion – human rights and value education – environmental health – HIV/AIDS – role of it in environment and human health – women and child welfare – public awareness – case studies.

Unit – V: Field Work:

Visit to a local area / local polluted site / local simple ecosystem – report submission.

Text book:

1. K. Kumarasamy, A. Alagappa Moses and M. Vesanthy, 2004, Environmental Studies, Bharathidasan University Pub, 1, Trichy.
2. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
3. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub., Trichy.

Reference book:

1. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
2. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub. Trichy.
3. G. TylerMiller, Scott Spoolman, 2018, Environmental science, 16th edition.

Course Coordinator **HOD**

VALUE EDUCATION

BBC206	VALUE EDUCATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary level				
	Course Coordinator Name & Department:- Ms. G. Vinothini, Commerce				

COURSE OBJECTIVES:-

- To enable the students to understand the Social values.
- To provide knowledge on the features for life.
- To acquire the knowledge on Human rights.
- To impart the knowledge on Environment and Ecological balance.
- To educate the knowledge on Social evils.

COURSE OUTCOMES (COs)

CO1	List out the Formation and Essential Elements of Contract.
CO2	Determine the Self esteem, duties and responsibilities of individuals, Social values
CO3	Apply to create peace and non violence and Dr. APJ Abdul Kalam's ten points for Enlightened citizenship
CO4	Determine the Environment and Ecological balance
CO5	Measure the Knowledge on Environmental conservations and enrichment
CO6	Formulate the awareness on Corruption, crime, terrorism, Alcoholism, Drug addiction, Dowry

Mapping of Course Outcomes with Program outcomes (POs)
(L/M/H indicates strength of correlation) H-High M-MediumL-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	H	H							
	CO2	H	M	H							
	CO3	H	M	H					H		
	CO4	M	H	H							
	CO5	H	M	H							
	CO6	M	M	H							

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		✓							✓	
4	Approval	Academic Council Meeting								

UNIT I **6**

Value education: Definition- relevance to present day – concept of human values – self introspection – Self esteem- duties and responsibilities of individuals- Social values- role of

media in value building.

UNIT II **6**

Salient features for life: Truth, commitment,, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity and inclusiveness, Team work- positive creative thinking.

UNIT III **6**

Human rights: Universal declaration of Human rights- human rights violation – National integration – peace and non violence – Dr. APJ Abdul Kalam's ten points for enlightened citizenship

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UNIT IV **6**

Environment and Ecological balance: Interdependent of all being – living and non living – the binding of man and nature – Environmental conservations and enrichment.

UNIT V **6**

Social evils : Corruption – cyber crime, terrorism, Alcoholism, Drug addiction, Dowry – Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.

TEXT BOOK

1. N. Arumugam, S. Mohana, Lr. Palkani- value based education- Saras Publication, 2009
2. DN Ghose, Value Education- dominant publishers, 2005
3. M.G. Chitakra, Education and Human values, A.P.H Publishing Corporation. New Delhi

REFERENCE BOOKS

1) For Life, for the future: Reserves and Remains – UNESCO Publications.
2) Values, A Vedanta kesari presentations, Sri Ramakrishna Math, Chennai

Course Coordinator **HOD**

SEMESTER III

TAMIL III

BAL301	TAMIL – III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –II				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தைஅறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	ஐம்பெரும் காப்பியங்களைபற்றி அறிவர்
CO2	பிற்கால காப்பியங்களைபற்றி அறிவர்
CO3	முக்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO4	பிற்கால நீதி இலக்கியங்களைபற்றி அறிவர்
CO5	காப்பிய மற்றும் நீதி இலக்கிய வரலாற்றைபற்றி அறிவர்
CO6	காப்பியம் மற்றும் நீதி இலக்கியங்களில் தெளிவான அறிவைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு1 9

சிலப்பதிகாரம்-இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219

மணிமேகலை- சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறம்அறிவித்தகாதை-1 - 115

சீவகசிந்தாமணி- திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம்- 851 - 860

அலகு2 9

கம்பராமாயணம்- **கம்பர்**- அயோத்தியகாண்டம்- கங்கைப்படலம் - 10

தேம்பாவணி- வீரமாமுனிவர்- நாட்டுப்படலம் - 10

சீறாப்புராணம்-உமறுப்புலவர்--மானுக்குப்பிணைநின்றபடலம்- 1- 10

அலகு3 9

திருக்குறள் - திருவள்ளுவர் - கல்வி - 1 - 10

நாலடியார் - பொருட்பால் - நட்பாராய்தல் - 1 - 10

இனியவைநாற்பது - பூதஞ்சேந்தனார் - 1 – 10

அலகு4 9

மூதுரை-அவ்வையார்- 1- 10 நன்னெறி- சிவப்பிரகாசர் - 8,12,18,24,39

புதியஆத்திசூடி - பாரதியார் - 1- 25

அலகு5 9

காப்பியஇலக்கியவரலாறு , நீதிஇலக்கியவரலாறு

பாட நூல்கள்

1. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்", ராமையாபதிப்பகம், 2010
2. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
3. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010

பார்வைநூல்கள்:

1. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
2. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
3. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
4. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
5. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
6. அ.சீனிவாசன், "பாரதியின்புதியஆத்திச்சூடி: ஒருவிளக்கவுரை" , 1999

Course Coordinator HOD

HINDI III

BAL30X	**HINDI III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				

COURSE OBJECTIVES:-

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember of Ramayana in Panchavati part
CO2	Understand the history of Hindi literature
CO3	Apply the concept of Hindi grammatical speech
CO4	Analyze and develop the translation skills
CO5	Evaluate and develop the unseen passage skills
CO6	Create the skills in Hindi language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	2	1	1	3	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	2	1	3	1	3		
	CO4	3	2	2	1	1	2	3		
	CO5	2	2	2	1	1	1	3		
	CO6	3	3	3	2	3	3	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I **09**

POETRY - PANCHAVATI

UNIT II **09**

HISTORY OF HINDI LITERATURE - Aadi Kaal and Bhakthi Kaal - general knowledge of the trends of the difference streams

UNIT III **09**

ALANKAR – Anupras – Yamak - Slesh - Vakrokthi Upama – Rupak – Drishtanth - Virodhabas.

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

By Maithilisharan Gupt, Anuvadh Abhyas – III

Reference Books:

Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator **HOD**

FRENCH III

BAL30X	FRENCH III	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

To develop the technical aspects of the language and varied grammatical nuances to interpret the subject matter.

COURSE OUTCOMES (COs)

CO1	To impart the various aspects that makeup the language.
CO2	To learn some facts, procedures, practice certain grammatical structures, and practice communicative strategies.
CO3	To learn the culture of the language natives.
CO4	To analyse the differences between the basic and advanced grammar.
CO5	To remember the interlink between the conjugations
CO6	To understand grammatical strictures.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	1	3	2	1	1	1	3		
	CO2	3	3	3	3	2	1	3		
	CO3	3	3	3	1	3	1	3		
	CO4	2	3	3	1	1	1	3		
	CO5	3	3	3	1	1	2	3		
	CO6	3	3	3	2	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

Le future- La comparaison des qualities, des quantities et des actions

UNIT II Le Tu as du boulot? 9

Le pronom (en)-Le pronom (Y)-Expression de la condition

UNIT III -Qu'en pensez - vous? 9

Le subjonctif (employ lie a quelques verbs)- Expression de la quantite (poids et mesure-evaluation-restriction)

UNIT IV - C'est tout un programme! 9

Les propositions relatives introduites par (qui, que, ou)-Les adverbs (place, formation des adverbs en-ment)-

La forme ((en + participle present))

UNIT V On se retrouve !
9

Emploi et conjugaison des quatre temps de l'indicatif quatre temps de l'indicatif:--passe recent--Present -Passe compose-Imparfait et future

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

ENGLISH- III

BEH301	**ENGLISH- III**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept: Mrs. B.JANUA SHERLY – English				

COURSE OBJECTIVES:- To enhance the reading, writing, listening and speaking of the English language skills..

	COURSE OUTCOMES (COs)
CO1	Remember and recollect the value of LSRW skills.
CO2	Understand the competence of the four modes of language skills.
CO3	Apply the grammatical concepts and the correct usage of the English language.
CO4	Analyze their personality traits and develop interpersonal skills for a better career in life
CO5	Evaluate the knowledge and write resume official letters and reports
CO6	Create and develop their ability as critical thinkers and readers.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - LISTENING SKILLS **12**

Types of Listening (Theory / Definition) - Tips for Effective Listening -Academic Listening (Lectures) - Listening to Radio and Television

UNIT 2 - TELEPHONE SKILLS **12**

Basics of Telephone communication -How to handle calls- telephone manners -Leaving a message - Making requests -Greeting and Leave Taking over phone (etiquette) - Handling the situations especially trouble shooting Teleconference - handling Tele interviews for Call Centers

UNIT 3 - WRITING SKILLS **12**

Standard Business letter - Report writing- Email drafting and Etiquettes - Preparing Agenda and writing minutes for meetings - Making notes on Business conversations

UNIT 4 - CAREER SKILLS **12**

Applying for job -Cover letters -Resume and Effective Profiling - Interviews - Group discussions

UNIT 5 – PERSONAL SKILLS **12**

Empathy (Understanding third person's point of view) -Intrapersonal skills -Interpersonal skills- Problem solving

TEXT BOOKS:

1. Improve Your IELTS Listening and Speaking Skill by Barry Cusack, 2007

2. Roche Marc, "Advanced English Writing Skills: Master class for English Language, Roche Publishing ESL, 2019

REFERENCE BOOKS:

1. Frederick H. Wentz, "A Workbook to Develop Skills For Employment", Create space Independent Pub,2012

2. S. P. Dhanavel, "English and Soft Skills", Orient Black Swan, First edition, 2010
3. English for Communication by Board of Editors, Emerald

Course Coordinator **HOD**

DRAMA- I

Sub code:	Subject Name : DRAMA -I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
BBE301	Prerequisite course – UG level English				
	Course Coordinator:Mr.S.KUMARESAN & Department of English				

COURSE OBJECTIVES:- To familiarize the students with the various genres of modern plays and playwright

COURSE OUTCOMES (COs)

CO1	Remember the knowledge about various types of drama.
CO2	Understand an interest in theatrical forms
CO3	Apply their own ideas into dramtic action for performance
CO4	Analyse the didactic purpose from the work
CO5	Evaluate a literary art form of drama
CO6	Create the various roles and elements of Drama
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	2	3		
	CO2	3	3	3	3	3	3	3		
	CO3	2	3	2	2	2	2	2		
	CO4	2	2	2	2	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	3	2	3	3	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

Unit - I: **TRAGEDY** **12**

Marlowe - Dr.Faustus - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

Unit - II :**COMEDY** **12**

Ben Johnson - Volpone - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

Unit - III: TRAGEDY **12**

Webster - The Duchess of Mallfi - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

Unit - IV :**HISTORICAL PLAY** **12**

Thomas Kyd - The Spanish Tragedy - Author Biography – Plot – Theme - Summary – Character analysis - Critical analysis

Unit - V :**TRAGIC COMEDY** **12**

Beaumount & Fletcher - Philaster - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

TEXT BOOKS:

1. Marlowe, Dr.Faustus, New Mermaids, 2018.
2. Ben Johnson, Volpone, Peacock Books, 2019
3. John Webster & John Ford, The Duchess of Malfi, Penguin Critical ed. Edition, 2014

REFERENCE BOOKS:

1. Philip Massinger, "The Works of Francis Beaumont and John Fletcher", Createspace Independent Pub., 2015
2. Thomas Kyd, The Spanish Tragedy, CreateSpace Independent Publishing Platform, 2014

Course Coordinator **HOD**

LITERARY FORMS

Sub code:	Subject Name : LITERARY FORMS	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
BBE302	Prerequisite course – UG level English				
	Course Coordinator :Mrs.M.SHEEBA & Department of English				

COURSE OBJECTIVES:- The students know the important literary genres and their sub divisions, significant literary movements in English and the origin of English language, change and growth of the language

COURSE OUTCOMES (COs)

CO1	Remember the variety of genres and to have knowledge about the history of English language
CO2	Understand the representative literary and cultural texts within a significant context
CO3	Apply critical and theoretical approaches to the reading and analyzing texts
CO4	Analyze , interpret and describe the critical ideas
CO5	Evaluate a variety forms of literary.
CO6	Create variety of written sources of literary forms.
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	2	2		
	CO2	3	3	3	3	3	3	3		
	CO3	2	2	2	2	2	2	2		
	CO4	2	3	2	2	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	3	2	2	2	2	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

UNIT I - POETRY **9**

Poetry – Nature of Elements of Poetry – Definition – Classification of Poetry – Subjective – Objective.

UNIT II POETRY **9**

Subjective Poetry: The Lyric, the Sonnet, the Elegy, the Ode – Definitions - poetic techniques – meter – rhyme scheme – poetic devices

Narrative Poetry: Ballad, Epic, Satire, Dramatic Monologue – Definitions - Poetic techniques – Meter – Rhyme scheme – Poetic Devices

UNIT III – PROSE **9**

The Essay: Definition – Characteristics – Development; **Types:** personal and impersonal essay - the Aphoristic essay - the Periodical essay

UNIT IV – DRAMA **9**

Elements of Drama, Tragedy, Comedy- Characteristics – Development – Types – Melodrama – Farce and Masque

UNIT V – FICTION **9**

Elements of Fiction: the characteristics – development – types - the Picaresque novel - the Historical novel – the Gothic novel - the Detective Novel - the Science Fiction and the Stream of Consciousness

TEXT BOOKS:

1. M. H, Abrams., & Harpham, Geoffrey Galt, "A Glossary of Literary Terms", Cengage Learning India Private Limited, 2015
2. Upham, A. H., "The typical Forms of English Literature",AITBS Pub. And Dist., Delhi, 1998

REFERENCE BOOKS:

1. 'The Penguin Dictionary of Literary Terms and Literary Theor'y, Penguin Books, 2015
2. Padmaja Ashok, "A Companion to Literary Forms", The Orient Blackswan Pub., 2015

Course Coordinator **HOD**

LITERARY CRITICISM-I

Sub Code :	Subject Name: LITERARY CRITICISM-I	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
BBE303	Prerequisite course – UG level English				
	Course Coordinator :Mrs.D.THILAGAM & Department of English				

COURSE OBJECTIVES:- To provide students with information on the literary theories and the works of significant critics.

COURSE OUTCOMES (COs)

CO1	Remember about critics & read Critical essays
CO2	Understand ways of criticisizing various literary forms
CO3	Apply the literary theory in the prescribed texts
CO4	Analyzes a literary work with literary perspective
CO5	Evaluate the view towards any work of art of author
CO6	Create the criticism of various literaty works
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	2	2		
	CO2	3	3	3	3	3	3	3		
	CO3	2	2	2	2	2	2	2		
	CO4	2	3	3	2	2	2	2		
	CO5	3	2	2	3	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I **12**

Aristotle- Poetics – Author Biography **-** Central idea – difference between poetry, drama and short stories **-** summary – critical analysis

UNIT-II **12**

Alexander Pope- Essay on Criticism – Author Biography **-** Theme – summary – poetic devices **-** critical analysis

UNIT-III **12**

Dr. Johnson – Preface to Shakespeare – Author Biography **-**character of eighteenth century literary criticism - appreciative analysis of the "excellences" and "defects" of Shakespeare's works

UNIT- IV **12**

Wordsworth – Preface to Lyrical Ballads - Author Biography - three principles guiding the composition of such lyrical ballads – Theme – Summary – Critical Analysis

UNIT V **12**

T.S. Eliot – Tradition and Individual Talent - Author Biography – reading and writing techniques - critical analysis; **Sigmund Freud – Psychological Criticism -** Author Biography – reading and writing techniques - critical analysis

TEXT BOOKS:

1. An Introduction to English Criticism, B.Prasad. Macmillan 2012
2. Owen Holland & Piero, "Introducing Literary Criticism", Icon Books, 2016

REFERENCE BOOKS:

1. R.S. Malik and Jagdish Batra: A New Approach to Literary theory and Criticism; Atlantic Publishers and Distributors, 2014
2. Alfred S. West, Alexander Pope's "Essay on Criticism", Cambridge University Press, 2014

Course Coordinator **HOD**

COMMUNICATIVE ENGLISH I

Sub code :	Subject Name : COMMUNICATIVE ENGLISH I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
BBE304	Prerequisite course – UG level English				
	Course Coordinator :Mrs.B.CAROLINE & Department of English				

COURSE OBJECTIVES:- To Enhance the knowledge of the Students in the basics of communication skills and make them to communicate efficiently (Oral &Written)

COURSE OUTCOMES (COs)

CO1	Know the easy way to learn English and improve themselves
CO2	Understand the scope and Significance of English language
CO3	Increase their level of communication
CO4	Usage Grammar efficiently while speaking and writing
CO5	Develop the skill of reading and writing English
CO6	Apply their skill in sentence formation in a more comprehensive way
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	3	3	3	3		
	CO2	3	3	3	3	3	3	3		
	CO3	3	3	2	2	2	2	3		
	CO4	3	2	3	3	2	2	3		
	CO5	3	3	3	2	2	2	3		
	CO6	3	3	2	3	3	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - I READING **9**

Reading Comprehension – Types of reading **–** skimming – scanning **- Reading Stories –** Narrative techniques **-** Extensive reading

UNIT - II GRAMMAR **9**

Grammar : Definition- Types of Grammar - Usage of Grammar - Noun - Definition- types of noun with examples - Pronoun - Definition- types of noun with examples- Adjectives - Definition- types of noun with examples- Adverb - Definition- types of noun with examples- Gerunds - Definition- types of noun with examples**.**

UNIT - III SPEAKING **9**

Self Introduction: Beginning- effective profiling- voice - tone- formal and informal; **Welcome address and Vote of Thanks**: Functions of welcome speech - Making an opening statement - Greeting the audience – Introducing and Greeting Special guests; **Accepting and Declining Invitations**: Making invitation - Formal and informal invitation - Content of invitation - Accepting an invitation – Declining; **Narrating Stories**: Definition -Types of narration - Narration techniques - Stream of consciousness - Point of view – Articulation

UNIT - IV FORMAL COMMUNICATION **9**

Dialogue in different Situations: List of Situational Dialogues - phrases and vocabulary - Phrases for Conversation - Phrases for various situations; **Greetings**: Conversation Practice - types of greetings - Greeting gestures - Greeting and expressions; **Leave taking**: Asking – letter writing- reasoning- making request; **Making Requests**: Types of requests - Asking - Offering - Responding to offers; **Expressing Gratitude**, **Apologizing**: Forms of Apologies - Asking & Accepting apology; **Complaint**: Types of complaints - complaint in sentemce - Complaint letter - venting Complaint.

UNIT - V Writing **9**

Sentence Completion: Sentence pattern - Projective techniques - Structure Words - Word fitting - Transitional words - Indicators - Punctuation - Process of elimination; **Paragraph Writing**: Paragraph and topic sentences - Paragraph structure - Content of Paragraph - Maintaining coherence - Concluding a Paragraph.

TEXT BOOKS:

1. Terry O' Brien, “Effective Speaking Skills”, Rupa Publications India Pvt. Ltd., 2011
2. Judith F.Olson, “Writing Skills: Success in 20 Minutes a Day”, Goodwill Publishing House, 2013

REFERENCE BOOKS:

1. Revised by Dr.N.D.V. Prasada Rao, Wren and Martin, “High School English Grammar and composition”, S Chand Publishing; Regular edition, 2017.
2. S.C. Gupta, “English Grammar and Composition”, Arihant Publications; Second edition, 2014

Course Coordinator **HOD**

BASIC TAMIL I

BAL002	BASIC TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – +2 Level Tamil				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ் எழுத்துக்களைஅறிவர்
CO2	தமிழ் எழுத்துக்களில் உள்ள வேறுபாடுகளைஅறிவர்
CO3	சொல்லமைப்புபற்றிஅறிவர்
CO4	சொற்களை உருவாக்கும்அறிவைப்பெறுவர்
CO5	சொற்களை தொடராக மாற்றும்திறனைப்பெறுவர்
CO6	எழுத்துக்கள், சொற்கள், தொடர்கள்பற்றிதெளிவானஅறிவைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

அலகு –1 9

தமிழ் எழுத்து அறிமுகம் - உயிரெழுத்து - மெய்யெழுத்து - பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - சுட்டு வினா எழுத்துக்கள் - எழுத்துக்களை கண்டறியும் பயிற்சி

அலகு – 2 12

உயிர்மெய் எழுத்துக்கள் - எண்ணிக்கை, பெயர், முறை , வடிவம், ஒலி அளவு (மாத்திரை) - எழுத்துக்களை அகரவரிசைப்படுத்துதல் - எழுத்து வேறுபாடு அறியும் பயிற்சி

அலகு – 3 12

சொல்லமைப்பு - ஒரேழுத்துச் சொற்கள், பல எழுத்துச் சொற்கள் - சொல்வகை - பெயர் வினை - சொற்பொருள் வேறுபாடு அறிதல் - சொற்களை உருவாக்கும் பயிற்சி

அலகு – 4 12

தொடர் அமைப்பு - சொற்கள் தொடராக அமையும் முறை - தொடர் வேறுபாடு - செய்தித் தொடர், வினாத் தொடர், உணர்ச்சித் தொடர், ஏவல் தொடர்- சொற்களை தொடரில் பயன்படுத்தும் பயிற்சி

பாட நூல்கள்

.1ஆறுமுகநாவலர்,"தமிழ் இலக்கணம்", பாரிநிலையம், 2012
2. கழகப்புலவர்குழுவினர்,"நன்னூல்–எழுத்ததிகாரம்", கழகவெளியீடு, 1996
3. கழகப்புலவர்குழுவினர்,"நன்னூல்–சொல்லதிகாரம்", கழகவெளியீடு, 1996

பார்வைநூல்கள்

1. பவணந்திமுனிவர், "நன்னூல் -எழுத்ததிகாரம்", முல்லைநிலையம், 1994
2. சோம.இளவரசு,"நன்னூல்சொல்லதிகாரம்", : மெய்யப்பன்பதிப்பகம், 2012
3. கூழங்கைத்தம்பிரான்,"நன்னூல்",உலகத்தமிழாராய்ச்சிநிறுவனம், 1998

Course Coordinator HOD

SPECIAL TAMIL - I

BCA3E1	SPECIAL TAMIL – I	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Tamil Under Part 1				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- பண்டைத்தமிழரின்நாகரிகமும்பண்பாடும்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழரின்அரசியல், தொழில், சமூகஅமைப்புபற்றிஅறிவர்
CO2	தமிழர்திருமணமுறை, குடும்பவாழ்வுபற்றிஅறிவர்
CO3	தமிழரின்உணவு, உடை, உறைவிடம்பற்றிஅறிவர்
CO4	தமிழரின்கல்வி, வானியல், விளையாட்டு, மகளிர், விழாக்கள்பற்றி அறிவர்
CO5	சங்ககாலமருத்துவம், கட்டடக்கலைப்பற்றி அறிவர்
CO6	சங்ககாலதமிழரின்நாகரிகம்பண்பாடுபற்றிதெளிவானஅறிவைப்அறிவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M			H				H	M	M
	CO2	M			H						
	CO3	M			H						
	CO4	M			H						
	CO5	M			H						
	CO6	M			H						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

அலகு1 9

நாகரிகமும்பண்பாடும் -சங்ககாலத்துஅரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும்சமூகஅமைப்பும்

அலகு2 9

பண்டைத்தமிழர்திருமணமுறை ,நல்லறம் - குடும்பவாழ்வுபற்றியதமிழர்கொள்கை - பண்டையத்தமிழரின்உணவு, உடை, உறையுள்

அலகு3 9

பண்டைத்தமிழரின்கல்விநிலை - பண்டைத்தமிழரின்வானியல்அறிவு - பண்டைத்தமிழரின்விளையாட்டும்பொழுதுபோக்கும்

அலகு4 9

மகளிர் நிலை - சங்கத் தமிழரின் சமய வாழ்வு - சங்ககால விழாக்கள்

அலகு5 9

இந்திய நாகரீகத்தில் தமிழ்ப் பண்பாட்டுக்கூறுகள் - மருத்துவக் கலை - தமிழகக் கோயில் கட்டிடக்கலை வளர்ச்சி

பாடநூல்கள்

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும்பண்பாடும்",ஐந்திணைப்பதிப்பகம், 2010
2.பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2012
3கே.கே.பிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", மணிவாசகர் பதிப்பகம், 2012

பார்வைநூல்கள்

1. நா. வானமாமலை, "தமிழர்பண்பாடும்தத்துவமும்", அலைகள்வெளியீட்டகம், 2011

2. பேரின்பன், "தமிழர்வரலாறு:சிலகேள்விகளும்தேடல்களும்", அலைகள்வெளியீட்டகம்,2011

3. மா.இராசமாணிக்கனார், "தமிழகவரலாறும்தமிழர்பண்பாடும்", செண்பகாபதிப்பகம், 2012

Course Coordinator HOD

SEMESTER IV

TAMIL - IV

BAL401	TAMIL – IV	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – TAMIL –III				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- சங்க இலக்கியத்தைப் பற்றி அறியச் செய்தல்

COURSE OUTCOMES (COs)

CO1	எட்டுத்தொகையில் நற்றிணை, குறுந்தொகை, கலித்தொகை இலக்கியங்களை அறிவர்
CO2	எட்டுத்தொகையில் புறநானூறு, பதிற்றுப்பத்து இலக்கியங்களை அறிவர்
CO3	பத்துப்பாட்டு இலக்கியத்தில் பொருநராற்றுப்படை, பெரும்பாணாற்றுப்படை பற்றி அறிவர்
CO4	பத்துப்பாட்டில் நெடுநல்வாடை, பட்டினப்பாலை, முல்லைப்பாட்டு பற்றி அறிவர்
CO5	எட்டுத்தொகை, பத்துப்பாட்டு இலக்கிய வரலாற்றை அறிவர்
CO6	சங்க இலக்கியத்தைப் பற்றிய உயரிய சிந்தனையைப் பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
		✓								

4	Approval		Academic Council Meeting

அலகு1 9

நற்றிணை - 10, 110, 129
குறுந்தொகை - 8, 25, 32
கலித்தொகை - 6, 37, 51

அலகு2 9

புறநானூறு - 89, 109, 204
பதிற்றுப்பத்து - 42,46,49(5ம்பத்து)

அலகு3 9

பொருநராற்றுப்படை - 151 - 213
பெரும்பாணாற்றுப்படை - 5 - 15,
- 170 - 184

அலகு4 9

நெடுநல்வாடை - 1 - 25
பட்டினப்பாலை - 106 - 158
முல்லைப்பாட்டு - 1 - 28

அலகு5 9

எட்டுத்தொகைவரலாறு- பத்துப்பாட்டுவரலாறு

பாட நூல்கள்

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015

பார்வைநூல்கள்

1. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
2. ஔவைசு.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துஉரை", சாரதாபதிப்பகம், 2008
3. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
4. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

Course Coordinator HOD

BBE40X	**HINDI IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department:- Mrs Rani Selvan / Hindi				

COURSE OBJECTIVES:-

To understand and improve the skills in the Language of Hindi

COURSE OUTCOMES (COs)

CO1	Remember the skills of the leadership
CO2	Understand and develop the skills to overcome the mistake
CO3	Apply the concept of Hindi essay writing
CO4	Analyze and develop the translation skills
CO5	Evaluate the unseen passage skills
CO6	Create and develop the Hindi language skills

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	3	2	1	1	1	1	3		
	CO2	3	3	1	2	2	1	3		
	CO3	3	3	2	1	3	1	3		
	CO4	3	2	2	1	1	2	3		
	CO5	2	2	2	1	1	1	3		
	CO6	2	3	3	2	3	3	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I **09**

DRAMA – Andher Nagari

UNIT II **09**

NOVEL - GABAN - Premchand

UNIT III **09**

GENERAL ESSAY

UNIT IV **09**

TRANSLATION - HINDI – ENGLISH

UNIT V **09**

COMPREHENSION

Text Books:

By Bharathendu Harischandra**,** Veerendra Kumar Mishra, Anuvadh Abhyas – III

Reference Books:

UNIT 1 - Publisher – Vani Prakashan, New Delhi – 110 002.

UNIT II – Publisher - Rajkamal Prakashan, New Delhi – 110 002

UNIT III – Aadarsh Nibnandh, Vinodh Pustak Mandir, Hospital Road, Agra - 282002

UNIT IV - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

UNIT V - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

Course Coordinator **HOD**

FRENCH IV

BAL40X	FRENCH IV	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Grade 12				
	Course Coordinator Name & Department: - Ms. Tushita Naidu K / Département De Française				

COURSE OBJECTIVES: -

To introduce students to the advanced levels of the language.

COURSE OUTCOMES (COs)

CO1	To learn the culture of the language natives in advanced setup.
CO2	To understand the integral grammar structure in French.
CO3	To encourage the development of skills in linguistics
CO4	To evaluate the Oral and Written skill set
CO5	To remember the language construction
CO6	To enhance advanced fluency in language

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	CO1	1	3	3	1	1	1	3		
	CO2	3	3	3	1	2	2	3		
	CO3	3	3	3	1	3	1	3		
	CO4	3	3	3	1	1	1	3		
	CO5	3	3	3	2	1	2	3		
	CO6	3	3	3	1	1	1	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	Approval	Academic Council Meeting								

UNIT I Vous plaisantez!

9

Le conditionnel present -expression de l'hypothese-demandes polies-suggestions et conseils

UNIT II On s'entend bien!

9

Les constructions du discours rapport-Les constructions (faire + verbe)-et (laisser + verbe)

UNIT III A vos risqué et perils!

9

Le subjonctif Present- La construction passive pour metre en valeur l'object direct de l' action

UNIT IV C'est tout un programme! **9**

Les pronom possessives -Les adjectifs et les pronoms indefinis-Les pronom demonstratifs:

Les constructions --celui+de

UNIT V C'est la fete ! **9**

Les fornes de l'appreciation : trop/ pas assez –si-Les constructions verbe+verbes

TEXT BOOKS:

A2 ECHO- J. GIRARDET, J. PECHEURB CLE PUBLICATION.

Course Coordinator **HOD**

ENGLISH IV

BEH401	**ENGLISH- IV**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – + 2 level English				
	Course Coordinator Name & Dept. :Ms.E.REKHA - English				

COURSE OBJECTIVES:- To focus on the balanced development of the English language communication skills.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of English literature
CO2	Understand the importance of the English language.
CO3	Apply the themes and values by comprehending the given text.
CO4	Analyse the grammar and the literary texts.
CO5	Evaluate the characters and the genre prescribed.
CO6	Create comprehensive essays efficiently.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PSO2	PS O3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Eng Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
		✓								
4	**Approval**	Academic Council Meeting								

UNIT 1 - PROSE **12**

Lalajee – Jim Corbett – Author Biography – Plot – Theme - Summary - Critical analysis; **Face of Judas** – Bonnie Chamberlin - Author Biography – Plot – Theme - Summary - Critical analysis.

UNIT 2 - POETRY **12**

Laugh and Be Merry – **John Masefield** – Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Matilda - Hilaire Belloc**- Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis.

UNIT 3: SHORT STORIES **12**

Hunchback Sundari – **C.Raja Gopalachari** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **The Eyes Are Not There - Ruskin Bond**- Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 4: ONE-ACT PLAYS **12**

Macbeth Soliloquy – **Out, Out, Brief Candle - Shakespeare** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis; **Julius Ceasar - Anthony's Funeral Speech** – Author Biography - Plot – Theme - Character sketch – Summary – Critical analysis.

UNIT 5: FUNCTIONAL ENGLISH **12**

Wh – Questions - Pattern – Active and Passive voice – usage of passive voice – structure of passive verb; Modal verbs – Tenses.

TEXT BOOKS:

1. Corbett, "My India", Rupa Publications India Pvt. Ltd., 2018
2. Stories of Innocent by C.Rajagopalachari, Bharathiya Vidya Bhavan, 2009

REFERENCE BOOKS:

1. **Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005**
2. Hilaire Belloc, "Matilda", Random House UK, 1994
3. Shakespeare, "Macbeth", Macmillan Publisher, 2014

Course Coordinator **HOD**

POETRY II

Sub Code : BBE401	Subject Name : POETRY II	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Mr.S.ANGEL & Department of English				

COURSE OBJECTIVES:- To make the students appreciate the elegance of English literature through the poems

COURSE OUTCOMES (COs)

CO1	Remember the literature and beauty of language through poetry
CO2	Understand the rhyme scheme of the poetry and the poetic devices
CO3	Apply the connotative meaning of the prescribed poetry
CO4	Aalyse rhe difference between the poetical language and other genres
CO5	Evaluate the minds of the poet and critically analyse the poems
CO6	Create the thinking and literary criticism of the texts.
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	3	2	2	2		
	CO2	3	3	3	3	3	3	3		
	CO3	2	3	2	3	2	3	2		
	CO4	2	2	3	2	2	2	3		
	CO5	3	3	2	3	3	2	2		
	CO6	3	2	3	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I **12**

Milton – Paradise Lost Book IX - Author Biography - Theme – Poetic devices - publications

UNIT II - **Milton -Paradise Lost Book IX** - Annotations - Summary - work of arts **12**

UNIT-III - **Milton -Paradise Lost Book IX** - Critical analysis **12**

UNIT IV – **12**

Gray – An Elegy Written in a Country Church Yard - Author Biography - Theme – Poetic devices - Annotations - Summary – Critical analysis; **Collins – Ode to Evening -** Author Biography - Theme – Poetic devices - Annotations - Summary – Critical analysis

UNIT V **12**

Browning – My Last Duchess - Author Biography - Theme – Poetic devices - Annotations - Summary – Critical analysis; **T.S. Eliot – Journey of the Magi -** Author Biography - Theme – Poetic devices - Annotations - Summary – Critical analysis

TEXT BOOKS:

1. Browning**, "**My Last Duchess and Other Poems", Dover Thrift Editions, 1993.
2. Winged Bird- An Anthology of Poetry, Columbia University Press, November 2012

REFERENCE BOOKS:

1. Bloom, Harold, "The Best Poems of the English Language: From Chaucer Through Robert", Harper Perennial; Reprint Edition. Aug 7, 2007.
2. Ferguson, Margaret. (edi) Stallworthy Jon. (edi) The Norton Anthology of Poetry. W.W.Norton & Company; 4th sub Edition. Oct 1996

Course Coordinator **HOD**

DRAMA II

Sub Code: BBE402	Subject Name : DRAMA II	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Ms.E.REKHA& Department of English.				

COURSE OBJECTIVES:- To familiarize the students with the various genres of modern plays and playwright.

COURSE OUTCOMES (COs)

CO1	Remember the knowledge about various types of drama.
CO2	Understand the genre, plot and themes
CO3	Apply the theatrical forms of art
CO4	Analyse the different perspectives of characters
CO5	Evaluate the didactic purpose of the art
CO6	Create concepts of literary criticism and analyse the prescribed literature
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	2	3	3	2	2	2		
	CO2	3	3	3	2	2	2	2		
	CO3	3	3	2	2	2	2	3		
	CO4	2	2	2	2	3	2	2		
	CO5		3	3	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I **12**

Sheridan – The Rivals - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

UNIT II **12**

G.B. Shaw – Pygmalion - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

UNIT III **12**

Galsworthy – Justice - Author Biography – Plot – Theme - Summary –Character analysis - Critical analysis

UNIT IV – **12**

T.S. Eliot – Murder in the Cathedral - Author Biography – Plot – Theme - Summary – Character analysis - Critical analysis

UNIT V – **12**

Samuel Beckett – Waiting for Godot - Author Biography – Plot – Theme - Summary – Character analysis - Critical analysis

TEXT BOOKS:

1. Sheridan, "The Rivals", Dover Thrift Editions,1998
2. G.B. Shaw, "Pygmalion", Penguin Classics, 2003
3. T. S. Eliot, "Murder in the Cathedral", Faber& Faber, 1938.
4. Samuel Beckett, Waiting for Godot, Grove Press, 2011.

REFERENCE BOOKS:

1. Ed.,Harold Love, Restoration Literature; Critical Approaches, Methuen &Co . Ltd, London, 1972
2. A.C.Ward, Longman Companion to Twentieth Century Literature, Second Edn., Longman, London, 1975
3. Kennedy, Andrew, Six Dramatists In Search of A Language, Cambridge University Press, London, 1976

Course Coordinator **HOD**

LITERARY CRITICISM - II

Sub code : BBE403	Subject Name : LITERARY CRITICISM-II	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator :Mrs.D.THILAGAM & Department of English				

COURSE OBJECTIVES:- To provide students with information on the literary theories and the works of significant Critic

COURSE OUTCOMES (COs)	
CO1	Remember the various concepts and approaches to literary criticism
CO2	Understand the works of the critics and their Criticism
CO3	Analyse the significance of literary theories
CO4	Apply literary criticism in literary contexts
CO5	Evaluate an insight for critical analysis
CO6	Create a good work of art acquired mastery in criticism
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	3	3	3	3		
	CO2	3	3	3	2	2	2	2		
	CO3	2	2	2	2	2	2	2		
	CO4	3	3	3	3	3	3	3		
	CO5	2	2	2	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT-I **12**

I.A. Richards - Four kinds of meaning - Author Biography – Plot – Theme - Summary - Critical analysis

UNIT - II **12**

Dryden - Essay on dramatic Poesy - Author Biography – Plot – Theme - Summary - Critical analysis

UNIT - III **12**

Matthew Arnold - Study of Poetry - Author Biography – Plot – Theme - Summary - Critical analysis

UNIT - IV **12**

S.T. Coleridge – Biographia Literaria Chap-XVIII - Author Biography – Plot – Theme - Summary - Critical analysis

UNIT - V **12**

Empson- Seven Types of Ambiguity - Author Biography – Plot – Theme - Summary - Critical analysis

TEXT BOOKS:

1. An Introduction to English Criticism,B.Prasad. Macmillan 2012
2. Empson, "Seven Types of Ambiguity", Read Books, 2007
3. Matthew Arnold, "Study of Poetry", Createspace Independent Pub., 2016

REFERENCE BOOKS:

1. S.T. Coleridge, "Biographia Literaria Chap-XVIII", Forgotten Books, 2012
2. R.S. Malik and Jagdish Batra, "A New Approach to Literary theory and Criticism", Atlantic Publishers and Distributors (P) Ltd., 2014

Course Coordinator **HOD**

CANADIAN LITERATURE

Sub code :	Subject Name : CANADIAN LITERATURE	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
BBE404	Prerequisite course – UG level English				
	Course Coordinator:Ms.A.ANNIE CHRISTY & Department of English				

COURSE OBJECTIVES:- To impart the students with the knowledge of Country's dual origin and its official bilingualism.

COURSE OUTCOMES (COs)

CO1	Remember the significance of Indigenous culture
CO2	Understand the diverse nature of Canadian Literature
CO3	Apply the characteristic of Canadian literature
CO4	Analyse the the work of art in systematic way
CO5	Evaluate the work of art in a different perspective
CO6	Create the summary of text.
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	2	3	2	3	2	2	2		
	CO2	2	3	3	2	2	2	3		
	CO3	3	3	2	2	2	2	3		
	CO4	3	2	3	3	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	2	3	2	2	2	3		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

UNIT I – POETRY **12**

Elizabeth Bishop - The Moose - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Margaret Atwood - Death of a Young Son Drowning -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT II – SHORT STORIES **12**

Collection: Margaret Atwood and Robert Weaver

Sinclair Ross: The Lampat Noon - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis; **Margaret Lawrence: The Loons -** Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT III – DRAMA 12

George Ryga: The Ecstasy of Rita Joe - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT IV – NOVEL 12

Margaret Laurence- The Stone Angel - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

UNIT V – NOVEL 12

Yann Martel – Life of Pie - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

TEXTS BOOKS

1. Ed., Eva-Marie Kröller, "The Cambridge Companion to Canadian Literature", Cambridge University Press; 2 edition, 2017
2. Ed. Elspeth Cameron, Canadian Culture: An Introductory Reader", Canadian Scholars, 1996
3. Ed., C D Narasimhiah, An Anthology of Commonwealth Poetry, Laxmi Publications, 2016

REFERENCE BOOKS:

1. Ed Ajay Heble, Donna Palmateer Pennee and J R Struthers, "New Contexts of Canadian Criticism", Broadview Press Ltd; 1 edition, 1997
2. Ed. Daniel David Moses and Terry Goldie, "An Anthology of Canadian Native Literature", Oxford University Press, 2nd Edition, 2016

Course Coordinator **HOD**

BAL004	BASIC TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – Basic Tamil – I				
	Course Coordinator Name & Department :- ஸ்ரீதேவி&தமிழ்த்துறை				

COURSE OBJECTIVES :- தமிழ்மொழியின்அடிப்படைக்கூறுகள்பற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தமிழ்மொழியின்சொல்வகை, திணை, பால்பாகுபாடுபற்றிஅறிவர்
CO2	அடுக்குத்தொடர், இரட்டைக்கிளவி, ண,ன,ர,ற,ள,ழவேறுபாடுபற்றிஅறிவர்
CO3	பத்திகளைசுருக்கியும், விரிவாக்கிஎழுதும்அறிவைப்பெறுவர்
CO4	சொற்களைகையாண்டுஉரையாடுவதுபற்றிபெறுவர்
CO5	கட்டுரை, கடிதம்எழுதும்அறிவைப்பெறுவர்
CO6	தமிழ்மொழியில்சரளமாகபேசும்எழுதும்திறனைப்பெறுவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	M	H						M	H	M
	CO2	M	H								
	CO3	M	H								
	CO4	M	H								
	CO5	M	H								
	CO6	M	H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

அலகு –1 12

1.1 தமிழ் மொழி அறிமுகம்
1.2 சொல் வகைகள்
1.3 திணை, பால் பாகுபாடு

அலகு – 2 12

2.1 அடுக்குத் தொடர், இரட்டைக் கிளவி
2.2 ஒரு ஓர் வேறுபாடு
2.3 ண,ன,ர,ற,ள,ழ வேறுபாடு

அலகு – 3 12

3.1 பத்தியிலிருந்து வினாக்களுக்குரிய விடைகளை கண்டறியும் பயிற்சி
3.2 சுருக்கி வரைதல்
3.3 விரிவாக்கி எழுதுதல்

அலகு – 4 9

4.1 உரையாடல்
4.2 கட்டுரை
4.3 மடல் வரைதல்

பாட நூல்கள்

1. மருதூர் அரங்கராசன்,"தவறின்றித் தமிழ் எழுத", ஐந்திணைப்பதிப்பகம், 2012
2. ஞா.தேவநேயப்பாவாணர், "உயர்தரக் கட்டுரை இலக்கணம்", கௌராபதிப்பகம்,2013
3. க. கயிலாயநாதன்,"தமிழ் மொழி விளக்கம்", முல்லைநிலையம், 2006

பார்வை நூல்கள்

1. பாரதிதாசன், "தவறின்றித்தமிழ்எழுத", நாம்தமிழர்பதிப்பகம், 2013
2. ஆசிரியர்குழு, "கடிதம்வரைதல்', லியோபப்ளிகேஷன்ஸ், 2013
3. பாவாணர், "கட்டுரைவரைவதுஎப்படி?", தமிழ்மண்பதிப்பகம், 2012

Course Coordinator HOD

BCA4E1	SPECIAL TAMIL – II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – SPECIAL TAMIL – I				
	Course Coordinator Name& Department :முனைவர்.ம.சித்ராகண்ணு&தமிழ்த்துறை				

COURSE OBJECTIVES :- நாட்டுப்புறவாழ்வியலைபற்றிஅறியச்செய்தல்

COURSE OUTCOMES (COs)

CO1	தாலாட்டுமற்றும்குழந்தைப்பாடல்கள்பற்றிஅறிவர்
CO2	தொழிற்பாடல், காதல்பாடல், கொண்டாட்டப்பாடல்கள்பற்றிஅறிவர்
CO3	சங்ககாலமக்களின்விடுகதை, நம்பிக்கை, சடங்குகள்பற்றிஅறிவர்
CO4	பழமொழிகள், நாட்டுப்புறமருத்துவம், சமயவழிபாடுகள்பற்றிஅறிவர்
CO5	நாட்டுப்புற இலக்கிய வரலாறுபற்றிஅறிவர்
CO6	வாய்மொழிஇலக்கியம்மூலம்சங்ககாலமக்களின்வாழ்வியலைஅறிவர்

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	M						H	M	M
	CO2	H	M								
	CO3	H	M								
	CO4	H	M								
	CO5	H	M								
	CO6	H	M								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
							✓			

4	Approval		Academic Council Meeting

அலகு1 9

தாலாட்டுப்பாடல்- குழந்தைப்பாடல்- விளையாட்டுப்பாடல்

அலகு2

தொழிற்பாடல்கள் - காதல்பாடல்கள்- கொண்டாட்டப்பாடல்கள்

அலகு3 9

விடுகதைகள் - நம்பிக்கைகள் -சடங்குகள்

அலகு4 9

பழமொழிகள் -நாட்டுப்புறமருத்துவம் - சமயவழிபாடுகள்

அலகு5 9

நாட்டுப்புற இலக்கிய வரலாறு

பாடநூல்கள்

1. சு.சக்திவேல், "நாட்டுப்புறஇயல்ஆய்வு", மணிவாசகர்பதிப்பகம், 2015
2. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
3. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014

பார்வைநூல்கள்

1. ஆறு.இராமநாதன், "நாட்டுப்புறபாடல்வகைகள்", புலமைவெளியீடு, 1982
2. சரசுவதிவேணுகோபால், "தமிழகநாட்டுப்புறவியல்", தாமரைவெளியீடு, 1981
3.கழனியூரன், "நாட்டுப்புறவியல்கட்டுரைகள்", காவ்யாபதிப்பகம், 2014

Course Coordinator HOD

SEMESTER V

SHAKESPEARE

Sub code : BBE501	Subject Name: SHAKESPEARE	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Mr.S.KUMARESAN & Department of English				

COURSE OBJECTIVES:- T understand the greatness of Shakespeare as a master craftsman in the genre, appreciate the original and creative use of language and read, enjoy and appreciate the poetry and his plays

COURSE OUTCOMES (COs)	
CO1	Remember the beauty of Shakespeare's language and his contribution to English literature and language
CO2	Understand the psychological insights through characters
CO3	Apply the literature and experience enhancement in critical reading
CO4	Analyse the connotative and contextual meaning
CO5	Evaluate the literature and critically analyse it
CO6	Create the contextual meanings through history.
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PSO	PS O
2	CO1	3	2	3	3	2	2	2		
	CO2	3	3	3	2	2	2	3		
	CO3	2	2	2	2	2	2	2		
	CO4	2	2	2	2	2	2	2		
	CO5	2	3	3	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I

12

Twelfth Night - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT II

12

Henry IV Part I - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT III

12

Macbeth - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT V

12

The Tempest - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT V

12

Sonnet 18, 106, 118 - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** Main Characteristic features of Shakespearian Plays **– Tragedies – Comedies - Last plays etc.;** Characters - **women characters – villains - clowns etc.**

TEXT BOOKS:

1. **Prof. Peter Alexander, "The Complete Works of Shakespeare", Collins; New Alexander Text edition edition, 2013**
2. Ed. Roger Warren and Stanley Wells, "Twelfth Night", Oxford UniversityPress, 2008
3. Ed. Gary Taylor, "Henry IV", Oxford University Press, 2008

REFERENCE BOOKS:

1. **Arnold Kettle, "Shakespeare in a Changing World", Lawrence and Wishart, 1971**
2. Muir, Kenneth, Shakespeare's Tragic Sequence, 1972.
3. Brown, John Russell: Shakespeare and His Comedies, London, Methuen, 1957.
4. Charlton, H.B.: Shakespearean Comedy, London, Methuen, 1957.

Course Coordinator **HOD**

INDIAN WRITING IN ENGLISH-I

Sub code :	**Subject Name: INDIAN WRITING IN ENGLISH-I**	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
BBE502	Prerequisite course – UG level English				
	Course Coordinator :Mrs.B.JANUA SHERLY & Department of English				

COURSE OBJECTIVES:- To provide the students with the Indian attitude of life, thus giving them a comprehensive view of literature in general

COURSE OUTCOMES (COs)

CO1	Remember the comprehensive knowledge about various Indian writers in English
CO2	Understand the impact of colonization in Indian writers
CO3	Apply the strategies of Anti-colonial resistance
CO4	Analyse the purpose of writing in english
CO5	Evaluate the nature of Indianized English
CO6	Cereate the text in Social and Historical context
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	3	3	3	3		
	CO2	3	3	3	3	3	3	3		
	CO3	2	3	2	2	2	2	3		
	CO4	2	2	2	2	2	2	2		
	CO5	3	3	2	2	2	2	3		
	CO6	3	3	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

UNIT- I POETRY **9**

Toru Dutt - Our Casuarina Tree - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Aurobindo – The Tiger and the Deer -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Kamala Das - Woman and Man -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT- II PROSE **9**

Vivekananda- Education and Society - Author Biography – Theme - summary – critical analysis; **Dr. Radhakrishnan- The World community -** Author Biography – Theme - summary – critical analysis

UNIT - III DRAMA **9**

Tagore - Chitra - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT - IV- FICTION **9**

R.K. Narayanan - Swami and Friends - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT - V FICTION **9**

Arundati Roy - God of small things - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

TEXT BOOKS:

1. Toru Dutt, "Ancient Ballads and Legends of Hindustan", Createspace Independent Pub., 2015
2. Vivekananda, "My Idea of Education", Vedanta Press, 2010
3. R.K. Narayanan, "Swami and Friends", Indian Thought Publications, 2008
4. Kamala Das, "Selected Poems", Penguin Books India, 2014

REFERENCE BOOKS:

1. O.P. Budholia, "Critical Essays on Indian Writing in English", Book Enclave, 2003.
2. Kaushal Kishore, "The Life and Times of Sri Aurobindo Ghosh", Prabhat Prakashan, 1 edition, 2016
3. Rabindranath Tagore, "Selected Poems", Collins Classics, William Collins, 1Edition, 2013

Course Coordinator **HOD**

AMERICAN LITERATURE

Sub code : BBE503	Subject Name : AMERICAN LITERATURE	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator :Dr.P.AROCKIA NATHAN & Department of English				

COURSE OBJECTIVES:- To introduce the students to the world of American life and culture and provide an outline knowledge of various aspects of American Literature.

COURSE OUTCOMES (COs)

CO1	Remember the major American writers and their writing
CO2	Understand the diverse nature of American culture
CO3	Apply the difference between American English and British English
CO4	Analyse the fluency in English by appreciating literature
CO5	Evaluate the impact of colonization on Literature
CO6	Create the critical analysis of the texts
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	4	6	7	9	10	11	PS O	PS O
2	CO1	3	3	3	2	2	2	2		
	CO2	2	3	3	2	2	2	2		
	CO3	2	3	3	2	2	2	2		
	CO4	2	2	2	2	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I 12

Emerson – Brahma - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** Whitman – When Lilacs in the Door Yard Bloomed - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis**

UNIT II 12

Frost – Stopping by Woods on a Snowy Evening - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** Sylvia Plath – Mirror - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis**

UNIT III 12

Abraham Lincoln – The Gettysburg Address - **Author Biography – Plot – Theme - Summary - Critical analysis;** Martin Luther King – I've a Dream - **Author Biography – Plot – Theme - Summary - Critical analysis**

UNIT IV 12

Eugene O' Neil – The Heiry Ape - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

UNIT V 12

Hemingway – The Old Man and the Sea - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis;** Steinbeck – The Grapes of Wrath - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

TEXT BOOKS:

1. **Nathaniel Hawthorne, "The Scarlet Letter: A romance", Samuel E. Cassino, 1989**
2. Ed., John Russell Brown and Bernard Harris, "American Theatre", Edward Arnold., 1970,
3. Ed., Daniel Hoffman, "Harvard Guide to Contemporary American Writing", Oxford University Press, New Delhi, 1979

REFERENCE BOOKS:

1. Sujata Gurudev, "American Literature: Studies on Emerson, Thoreau, Hawthrone, Melville and Whitman", Atlantic,1st Edition 2011
2. Abraham Lincoln, "Gettysburg Address: And, Bunker Hill Oration", Palala Press, 2016
3. Eugene O' Neil, "Three Great Plays: The Emperor Jones, Anna Christie, the Hairy Ape", Dover Publications Inc., 2005

Course Coordinator **HOD**

WOMEN WRITERS IN ENGLISH

Sub code : **BBE504**	**Subject Name : WOMEN WRITERS IN ENGLISH:**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator:Mrs.M.SHEEBA & Department of English				

COURSE OBJECTIVES:- To the study of various literary genres written by women of different nationalities such as poetry, prose, essay and drama.

COURSE OUTCOMES (COs)

CO1	Remember the knowledge about the various genres written by women of different nationalities.
CO2	Understand the distinct literary characteristics of women's writing.
CO3	Apply the communicate ideas related to the literary works during class and in group activities.
CO4	Analyse interpret the text in a feminist perspective
CO5	Evaluate the structure and meaning of various literary works
CO6	Create the plight of Women over the years
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

Approval	COs/Pos	PO 1	4	6	7	9	10	11	PS O	PS O
2	CO1	3	3	3	3	2	2	2		
	CO2	3	2	2	2	2	2	2		
	CO3	2	2	3	2	2	2	2		
	CO4	3	2	2	2	2	2	2		
	CO5	3	2	2	3	2	3	2		
	CO6	3	3	3	3	3	3	3		

3	Category	Humanities & Social Studies	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - I– 12

Margaret Atwood – Circle Game - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** Kamala Das – Freaks - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis**

UNIT - II 12

Shastri Desh Pande – Writing from the Margins - **Author Biography –Theme - Summary - Critical analysis;** Elaine Showalter – Towards a Feminist Poetics - **Author Biography –Theme - Summary - Critical analysis**

UNIT - III 12

Dorris Lessing – England vs England - **Author Biography – plot – theme - summary - character analysis - critical analysis;** Bharathi Mukerjee – Wife - **Author Biography – plot – theme - summary - character analysis - critical analysis**

UNIT - IV 12

Toni Morrison – Beloved - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis;** Pearl S. Buck – Letter from Peking - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

UNIT - V 12

Anita Nair – The Ladies Coupe - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis;** Margaret Lawrence – The Stone Angel - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

TEXT BOOKS:

1. Bharathi Mukerjee, “Wife”, Fawcett; Reprint edition, 1992
2. Shastri Desh Pande, “Writing from the Margins”, Penguin India, 2003
3. Anita Nair, “The Ladies Coupe”, Penguin Books Ltd., 2015

REFERENCE BOOKS:

1. Margaret Walters, “Feminism: A Very Short Introduction”, Oxford University Press, 2005.
2. Ellen Rooney, “The Cambridge Companion to Feminist Literary Theory”, Cambridge

   University Press, 2000

Course Coordinator **HOD**

TRANSLATION THEORY AND PRACTICE

Sub code :	Subject Name: TRANSLATION THEORY AND PRACTICE	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
BBE505	Prerequisite course – UG level English				
	Course Coordinator :Mrs.S.SUBATHRA & Department of English				

COURSE OBJECTIVES:- To aim at giving a practical exposure to various forms of Translations from English to Tamil and vice versa.

COURSE OUTCOMES (COs)	
CO1	Remember the various aspects and nuances of translation
CO2	Understand the value of translated Literature
CO3	Apply the various theories of Translation
CO4	Analyse an insight towords translation
CO5	Evaluate the complex nature of Translation
CO6	Create the translate literary texts from English to mother tongue and vice versa
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	2	3		
	CO2	3	3	3	3	2	2	2		
	CO3	3	2	2	2	2	2	2		
	CO4	3	3	3	3	3	3	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I – TRANSLATION 9

Translation – Definition, Types and Principles of Translation- Decoding and Recoding
Problems of Equivalence – Untranslatability

UNIT II – HISTORY OF TRANSLATION 9

History of Translation – The Romans, Bible Translations, Early Theorists – The Renaissance – 17th Century 18th Century – Romanticism – Victorians – 20th Century.

UNIT III – PROBLEMS IN TRANSLATION

9

Problems in Translation – Structures, Poetry, Prose and dramatic translation

UNIT IV - PRACTICE

9

Practice – **Students will be trained to translate articles of common interest both from English to Regional Language and the other way round**

UNIT V - PRACTICE

9

Practice – **Students will be trained to translate articles of common interest both from English to Regional Language and the other way round**

TEXT BOOKS:

1. S.Kanagaraj & Samuel Kirubakar-The Anatomy of Translation, Madurai Prem Publishers, 1995
2. Susan Bassnett, "Translation Studies", Routledge Publishers, 1980
3. Dr. Rekha Sharma, "Translation Theory and Practice", Authorspress, 2015

REFERENCE BOOKS:

1. **Susan Bassnett – McGuire – Translation Studies, Routledge Pub., 3rd Edition, 2018**
2. **Ed., Daniel Weissbort, Astradur EysteinssonTranslation, "Theory and Practice: A Historical Reader" Oxford University Press, 2006**
3. John C Catford , "A Linguistic theory of Translation: An Essay in Applied Linguistics", Oxford University Press

Course Coordinator **HOD**

COMMUNICATIVE ENGLISH II

Sub code :	Subject Name : COMMUNICATIVE ENGLISH	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
BBE506	Prerequisite course – UG level English				
	Course Coordinator :Mrs.B.CAROLINE & Department of English				

COURSE OBJECTIVES:- To Enhance the knowledge of the Students in the basics of communication skills and make them to communicate efficiently (Oral &Written)

COURSE OUTCOMES (COs)

CO1	Know the easy way to learn English and improve themselves
CO2	Understand the scope and Significance of English language
CO3	Increase their level of communication
CO4	Usage Grammar efficiently while speaking and writing
CO5	Develop the skill of reading and writing English
CO6	Apply their skill in sentence formation in a more comprehensive way
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	3	3	3	3		
	CO2	3	3	3	3	3	3	3		
	CO3	3	3	2	2	2	2	3		
	CO4	3	2	3	3	2	2	3		
	CO5	3	3	3	2	2	2	3		
	CO6	3	3	2	3	3	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT I

Introduction – Self, Others, Invitations.

UNIT II

Word accent, Intonation and Stress

UNIT III

Transformation of sentences Active to Passive,

Questions Framing and Question Tags

UNIT IV

Welcome Address and Vote of Thanks, Accepting and declining Invitations.

UNIT V

Reading and Narrating Story – Imaginative features.

SEMESTER VI

INDIAN WRITING IN ENGLISH-II

Sub code :	Subject Name: INDIAN WRITING IN ENGLISH-II	L	T	P	C
	Total Contact Hours – 45	3	0	0	3
BBE601	Prerequisite course – UG level English				
	Course Coordinator :Mrs.B.JANUA SHERLY & Department of English				

COURSE OBJECTIVES:- To provide the students with the Indian attitude of life, thus giving them a comprehensive view of literature in general

COURSE OUTCOMES (COs)

CO1	Remember the comprehensive knowledge about various Indian writers in English
CO2	Understand the impact of colonization in Indian writers
CO3	Apply the strategies of Anti-colonial resistance
CO4	Analyse the purpose of writing in english
CO5	Evaluate the nature of Indianized English
CO6	Cereate the text in Social and Historical context
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	3	3	3	3		
	CO2	3	3	3	3	3	3	3		
	CO3	2	3	2	2	2	2	3		
	CO4	2	2	2	2	2	2	2		
	CO5	3	3	2	2	2	2	3		
	CO6	3	3	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT- I POETRY **9**

Toru Dutt - Our Casuarina Tree - Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Aurobindo – The Tiger and the Deer -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis; **Kamala Das - Woman and Man -** Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis

UNIT- II PROSE **9**

Vivekananda- Education and Society - Author Biography – Theme - summary – critical analysis; **Dr. Radhakrishnan- The World community -** Author Biography – Theme - summary – critical analysis

UNIT - III DRAMA **9**

Tagore - Chitra - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT - IV- FICTION **9**

R.K. Narayanan - Swami and Friends - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

UNIT - V FICTION **9**

Arundati Roy - God of small things - Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis

TEXT BOOKS:

5. Toru Dutt, "Ancient Ballads and Legends of Hindustan", Createspace Independent Pub., 2015
6. Vivekananda, "My Idea of Education", Vedanta Press, 2010
7. R.K. Narayanan, "Swami and Friends", Indian Thought Publications, 2008
8. Kamala Das, "Selected Poems", Penguin Books India, 2014

REFERENCE BOOKS:

4. O.P. Budholia, "Critical Essays on Indian Writing in English", Book Enclave, 2003.
5. Kaushal Kishore, "The Life and Times of Sri Aurobindo Ghosh", Prabhat Prakashan, 1 edition, 2016
6. Rabindranath Tagore, "Selected Poems", Collins Classics, William Collins, 1Edition, 2013

Course Coordinator **HOD**

COMMONWEALTH LITERATURE

Sub code : BBE602	Subject Name : COMMONWEALTH LITERATURE	L	T	P	C
	Total Contact Hours – 60	4	0	0	4
	Prerequisite course – UG level English				
	Course Coordinator :Ms.A.ANNIE CHRISTY & Department of English				

COURSE OBJECTIVES:- To familiarize the students with the consequence of colonization and its impact on Literature

COURSE OUTCOMES (COs)	
CO1	Remember the impact of colonization on people and society through Literature
CO2	Understand diverse nature of culture through texts
CO3	Apply to learn the anti-colonial strategies through texts
CO4	Analyse the acknowledge of historical revolution against colonization
CO5	Evaluate the fluency in the basic skills in English
CO6	Ceate the literature regarding marginalization and identity crisis
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	3	3		
	CO2	2	3	3	3	2	2	3		
	CO3	3	3	3	2	2	2	2		
	CO4	2	3	3	3	2	2	3		
	CO5	3	3	3	2	2	2	2		
	CO6	2	3	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

A.D. Hope – Australia - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** Margaret Atwood – Journey to the Interior - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** A.M. Klein – Portrait of my Mother - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis**

UNIT II – POETRY 12

Derek Walcott – A Far Cry From Africa - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis;** J.P. Clark – The Casualties - **Author Biography - Theme – Poetic devices – Annotations - Summary – Critical analysis**

UNIT III – SHORT STORIES 12

Margaret Atwood – The Sin Eater - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis;** Joyce Marshal – The Old Woman - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

UNIT IV – DRAMA 12

Wole Soyinka – The Lion and the Jewel - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

UNIT V – NOVELS 12

Achebe – Things Falls Apart - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis;** Atwood – Surfacing - **Author Biography – Plot – Theme - Summary - Character analysis - Critical analysis**

TEXT BOOKS:

1. **Chinua Achebe, Things Falls Apart, RHUS; Anchor Books, 1994**
2. **Wole Soyinka, "The Lion and the Jewel", Oxford University Press, 1974**
3. **B. Duffus, "Study Guide - Wole Soyinka's The Lion and the Jewel", Bariki Publishing, 2015**

REFERENCE BOOKS:

1. **Margaret Atwood, "Dancing Girls and Other stories", Vintage; Revised Edition, 2020**
2. Dr. R. K. Dhawan, "Contemporary Commonwealth Literature",Prestige Books, 2006

Course Coordinator **HOD**

DEVELOPING LANGUAGE SKILLS

Sub code : BBE603	Subject Name : DEVELOPING LANGUAGESKILLS	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – UG level English				
	Course Coordinator :Ms.E.REKHA & Department of English				

COURSE OBJECTIVES:- To bestow the students with the expertise in the four basic language skills in English subsequently developing their fluency.

COURSE OUTCOMES (COs)	
CO1	Remember the detail about LSRW skills
CO2	Understand the process of communication
CO3	Apply the knowledge of four basic language skills
CO4	Analyse the methods of improving the basic skills for communication
CO5	Evaluate the fluent communication in English
CO6	Create the writing techniques to understand, interpret and create literature
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	2	3		
	CO2	3	3	3	2	3	3	2		
	CO3	2	3	2	3	2	3	2		
	CO4	3	3	3	2	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - I 9

Listening – (Short stories, News items, Speeches by International Personalities)

UNIT - II 9

Reading - current prose pieces from Newspapers, Reports

UNIT - III 9

Speaking – Accent, Intonation, Pronunciation

UNIT - IV 9

Writing - Subject Matter, Content and Blogs

UNIT - V 9

Testing – Listening – Listening to Comprehension
Reading – Reading a Passage
Speaking – Self Introduction

TEXT BOOKS:

1. **S.C. Sood**, "**Developing language skills: Oral communication and Reading comprehension Writing skills and Workbook", Manohar Publisher, 2003.**

REFERENCE BOOKS:

1. **Kamlesh Sadanand, " Teaching Listening Speaking", Orient Blackswan Private Limited,New Delhi, 2012**
2. **Julian Northbook, "Think English, Speak English", Northbrook Languages Ltd,2018.**

Course Coordinator **HOD**

PRESENTATION SKILLS

Sub code : BBE604	Subject Name :PRESENTATIN SKILLS	**L**	**T**	**P**	**C**
	Total Contact Hours – 45	3	0	0	3
	Prerequisite course – UG level English				
	Course Coordinator :Ms.E.REKHA & Department of English				

COURSE OBJECTIVES:- To bestow the students with the expertise in the four basic language skills in English subsequently developing their fluency.

COURSE OUTCOMES (COs)	
CO1	Remember the detail about LSRW skills
CO2	Understand the process of communication
CO3	Apply the knowledge of four basic language skills
CO4	Analyse the methods of improving the basic skills for communication
CO5	Evaluate the fluent communication in English
CO6	Create the writing techniques to understand, interpret and create literature
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	3	3	2	2	2	3		
	CO2	3	3	3	2	3	3	2		
	CO3	2	3	2	3	2	3	2		
	CO4	3	3	3	2	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	2	2	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	

4	Approval	47th Academic Council Meeting

UNIT: I Definitions, Preparation, Structure, Timing and Delivery (full script versus notes)

UNIT: II Form of language Environment (equipment, facilities) Visual aids / material for distribution Verbal (voice, intonation, appropriate language) Non-verbal (eye-contact, body language, hand gestures)

UINT: III Interacting with audience and managing questions

UNIT: IV Effective Communication: Writing, Design, and Presentation

UNIT: V Online interview skills, Types of presentation- persuasive, explanatory, instructional and briefing

TextBooks:

1.Bradbury, A., (2010).*Successful presentation skills* (4th ed.), Kogan Page.

2.Cottrell, S. (2008).*The study skills Handbook* (3rd ed.), Palgrave Macmillan

Reference Books:

1.Van Emden, J., Becker, L., (2010).*Presentation skills for students* (2nd ed), Palgrave Macmillan.

2. Adair, John.(2008).*Effective Communication*.London: Pan Macmillan Ltd.

3.Collins, Patrick. (2009). *Speak with Power and Confidence*. New York: Sterling.

PROJECT

Sub code: BBE6P1	Subject name :PROJECT	L	T	P	C
	Total Contact Hours – 10	0	0	20	10
	Prerequisite – UG level English				
	Course Designed by Mr. VC JAIN Dept. of English				

COURSE OBJECTIVES: To facilitate the students to understand the current scenario in English literature and present the research report on their findings as per the acceptable format

COURSE OUTCOMES (COs)

CO1	Remember the concept and objectives, nature, types and methods of project.
CO2	Understanding the process and steps involved in preparation of project work
CO3	Apply research and methodology
CO4	Analyse the data of the project work
CO5	Evaluate the review of the project work
CO6	Create the final project work by getting suggestion & conclusion
Category	

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	2	3	3	2	2	2	3		
	CO2	2	3	3	2	2	2	2		
	CO3	3	3	2	2	2	3	3		
	CO4	2	3	3	2	2	2	2		
	CO5	3	3	3	2	2	2	2		
	CO6	3	3	3	2	2	2	2		

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
										✓
4	Approval	47th Academic Council Meeting								

PROJECT (DISSERTATION AND VIVA-VOCE) 10

The project topics are to be finalized to the students at the end of the second semester with a time schedule to carryout various stages of work. During the semester vocation, the data Collection may be commenced. The theme selected by each student for the Dissertation should

be related to various problems and issues pertaining to Literature of Engish. Each candidate should submit three copies of dissertation as per the guidelines to the department concerned.

Marks

Dissertation	**150**
Viva- Voce Examination	**50**

Course Coordinator
HOD

EXTENSION ACTIVITIES

BBE6V1	EXTENSION ACTIVITIES	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	1	0	0	1
	Prerequisite – UG level English				
	Course Designed by – Dept. of English				
COURSE OBJECTIVES: To enable the students through yoga for their increasing vitality, muscle strength,tone and health.					

BUSINESS PROCESS OUTSOURCING

BBA011	**BUSINESS PROCESS OUTSOURCING-**	**L**	**T**	**P**	**C**
	Total Contact Hours– 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name& Department:- Ms.D.K.Sowmiyalaskshmi,BBA				

COURSE OBJECTIVES:-

- To familiarize the students with the basic fundamentals of BPO.
- To impart knowledge on type of BPO and call centers .
- To enable the students onthe conceptHealthcare BPO & Transaction BPO.
- To peep into the concept of Human Resource BPO and the career opportunities in BPO.

COURSE OUTCOMES(COs)

CO1	Describe the basic fundamentals of BPO.
CO2	Discuss and develop the awareness about Types of BPOs and Call Centers
CO3	Identify the concept of Health care BPOs
CO4	Examine the concept of Transaction BPOs
CO5	Develop the confidence in Human Resource BPO and career opportunities in BPOs
CO6	Formulate the Types of Transaction Processing BPO in India

Mapping of Course Outcomes with Program outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	CO1	H							H		
	CO2				H						
	CO3			H							
	CO4		M								
	CO5	M									
	CO6		H								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR
4	Approval		Academic Council Meeting							

UNIT-I **6**

Business Process Outsourcing– Basics – Benefits of BPO– BPO companies in India.

UNIT-II **6**

BPO Industry – Employment Opportunities– types of BPO – Call centers– Types of Call Centers–

Issues and Problems.

UNIT-III **6**

Health Care-BPO - Structure of foreign Health Care sector– Future Trends and Threats.

UNIT-IV **6**

Transaction Processing BPO– Elements of Back Office services– Types of Transaction Processing

BPO in India.

UNIT-V **6**

Human Resource BPO-Reasons for outsourcing HR– Activities involved in HR BPO– HR

Outsourcing Trends– Carrier in HR BPO.

Text Books:

1. John K. Holvey, Borboro Murphy Melby, Business Process Outsourcing–Wiley Publisher-2007

2. SarikaKulkarni –Business Process Outsourcing–Jai co Publishing house – 2005

3. .RickL.Click, Thomas N.Duening,BusinessProcess Outsourcing–John Willey &sons,Publisher

2004

Reference Books:

1. Deepak Shikapur – BPO DIGEST– Ameya (Inspiring books) – 2004.

2. Clifton – System analysis for business data processing– Prentice hall Publications.

3. Anandkumar, V. &Biswas, S., 2008. Business Process Outsourcing, Sage Publications Pvt. Ltd

Course Coordinator **HOD**

	DESKTOP PUBLISHING	L	T	P	C
BBE002	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of Computer Hardware and basic Software

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Computer Hardware and basic Software
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthebasic Principles and development of publishing and printing .
CO4	Identify the basic Knowledge and operations of a prepress computer system
CO5	Demonstrate the typography.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT-1

Classification of Computer Hardware and basic Software.Different Hardware and Software with• their uses.Types of Software i.e. System, - Application etc. Different types of Input & Output devices.Workshop safety and environmental awareness - Principles and development of publishing and printing - Desktop publishing.

UNIT-2

Knowledge and operations of a prepress computer system – Typography - Image processing.

UNIT -3

Finished art work - Other related processes – Case Study.

Reference Books:-

G.Dalin. M.Sc software engineering, HSI PUBLICATIONS

BCA001	COMPUTER APPLICATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the basic operations of a computer system, computer applications software, input, and output and storage devices.

COURSE OUTCOMES (COs)

CO1	Define the Characteristics, History, Classification, Personal Computers and Applications.
CO2	Demonstrate understanding of the basic operations of a computer system.
CO3	Explain the principles of operations of computer systems used in a particular application, specifically in terms of the systems' hardware and software components.
CO4	Discuss the various types of Processors, Input and Output devices, OS & DOS command.
CO5	Identify the suitable Storage Devices and Software's to solve the problem.
CO6	Use computer applications software to solve problems.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PS O3
2	**CO1**	H	L						H		
	CO2	H	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	-								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professiona l Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT–I:-

Brief History of Development of Computers ,Computer System Concept, Computer System

BCA002	GRAPHICAL AND WEB DESIGNING	L	T	P	C

Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.

UNIT–II:-

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT–III:-

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .

TEXT & REFERENCE BOOKS:-

1. **COMPUTERS TODAY BY S.K. BASANDRA, GALGOTIA PUBLICATIONS.**
2. **FUNDAMENTALS OF INFORMATION TECHNOLOGY BY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING HOUSE, NEW DELHI.**
3. **DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS**.

	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Nil				
	Course Coordinator Name &Department :- Jennifer P. & CS				

COURSE OBJECTIVES :-

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Remember the web basics and graphic design.
CO2	Understand thedeisgn principle.
CO3	Analyze the color theory and tyogrpahy.
CO4	Apply the basic principle and drawing design.
CO5	Implement the communication design and layout techniques
CO6	Illustrate a real time application using image processing concept.

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	-								
	CO5	M	L								
	CO6	H	L								
3	Category	Part I Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

GRAPHICAL AND WEB DESIGN

Unit-1:-

Introduction to Graphic Design – Drawing – Design Principle.

Unit -2:-

Color theory – Typography – Idea Generation.

Unit -3:-

Stylisation – Communication Design – Lay outing Techniques – Image Processing – Page Layouting.

Reference Books:-

1. **Computer Graphics: Principles and Practice in C, by J. D. Foley, A. Van Dam, S. K. Feiner, J. F. Hughes. Addison-Wesley, 2nd ed**

BCA003	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the principles of different types of media and able to identify the proper applications of multimedia, how multimedia can be used in various application areas, and evaluate the appropriate multimedia systems and develop effective multimedia applications.

COURSE OUTCOMES (COs)	
CO1	Gain knowledge of basic concepts of multimedia
CO2	Analyze the multimedia application problems.
CO3	Discuss the Video capturing, Sound capturing, editing concepts.
CO4	Identify the basic multimedia design principles.
CO5	Demonstrate the multimedia system and Design Process
CO6	Test real time application using a multimedia concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L						H		
	CO2	M	L								
	CO3	H	-								
	CO4	H	L								
	CO5	M	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT-1:-

Multimedia Fundamentals: Define the concept of multimedia, fundamental criteria for the design of a multimedia presentation, multimedia application goals &objectives, opportunities in multimedia production, Role of multimedia development team members, avoiding problems in planning a multimedia application.

UNIT-2:-

Multimedia Building Blocks: Text, Graphics, video capturing, Sound capturing, editing. Basic design principle: proximity, visual hierarchy, Symmetry / Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

UNIT-3 :-

Design, Development and evaluation of multimedia a system:The development of user interface design, Design Process,

Reference Books:-

1. **John Villamil-Casanova, Louis Molina, An introduction to multimedia**
2. **Mohammad Dastbaz, Desgning Interactive Multimedia Systems**
3. **Bohdan O. Szuprowicz, Multimedia Networking**
4. **Stephen McGloughlin, Multimedia on the web**

BCA004	NETWORKING AND MAINTENANCE	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary Studies.				
	Course Coordinator Name &Department :- E.Srimathi/CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprosser, Controller, Server and to demonstrate the traditional imperative design of CPUs, cards,PCs and BIOS.

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the Computer Organisation& Operating Systems(Windows And Linux) Types Of Computer
CO5	Working with Background And Number System
CO6	Used to develop the Backups, Switches Routers, BIOS, Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	L								
	CO5	H	-								
	CO6	H	L								
3	Category	Part 1 Tamil/Linguistic Study	Part II Linguistic English	Part III Core	Part III Substream	Part III Project	Part IV Basic/ Advanced Tamil/ EVS/VE/ SBE/ Soft Skill	Part V Extension Activity			
							✓				
4	Approval	Academic Council Meeting									

UNIT -1 :- COMPUTER HARDWARE

Computer Organizations and Operating Systems(Windows and Linux) , Basic Electrical Engineering and Electronics , Microprocessors , Computer Hardware , Internet and Viruses , Principles of Data Communication & Network Maintenance , Digital Fundamentals , Computer Assembling and Software Installations , Hardware Lab , Project

UNIT -2:- COMPUTER ORGANISATION & OPERATING SYSTEMS(WINDOWS AND LINUX)TYPES OF COMPUTER

Analog, Digital, and Hybrid type, Hardware, Software, System software, Application software, Stored Program Concept and Von Newman Architecture, Firm ware, Human ware, Stored Program Concept, Evolution of computers, Generation of computer.

UNIT-3: - BACKGROUND AND NUMBER SYSTEM

Information Representation and Codes, Data Types, Complements, Addition and Subtraction of Binary Numbers, Fixed Point and Floating Point Representation, Octal and Hexadecimal System , Conversion of Number Systems, Alpha Numeric Codes – ASCII & EBCDIC, Error Detection Codes, Building Blocks of Computers, Combinational Blocks (Gates, Multiplexes, Decoders, Encoders etc.), Sequential Building Blocks (Flip Flops, Registers, Counters, Random Access Memory, etc.)

Reference Books:

1. **IBM PC and CLONES, B.Govindrajalu, Tata McGrawhill Publishers, IBM PC and CLONES**
2. **Computer Installation and Servicing, D.Balasubramanian, Tata McGraw Hill**
3. **Computer Installation and Servicing**
4. **The complete PC upgrade and Maintenance, Mark Minasi, BPB Publication, The complete PC upgrade and Maintenance**
5. **Troubleshooting, Maintaining and Repairing PCs, Stephen J Bigelow ,Tata MCGraw Hill Publication ,Troubleshooting Maintaining and Repairing PCs**

BCA006	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department:- V.Ramya& BCA				

COURSE OBJECTIVES: -

To gain knowledge in basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Definethe web basics and server side scripting.
CO2	Execute the HTML coding and linking process.
CO3	Analyze the hyperlinks and special characters.
CO4	Relatethe Embedded Style Sheets & Linking External Style Sheets.
CO5	Use the backgrounds and user style sheets.
CO6	Test real time application using web designing concept.

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
2	CO1	H	L							H	
	CO2	M	L								
	CO3	H	-								
	CO4	H	-								
	CO5	H	-								
	CO6	H	-								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT -1

Introduction, Syllabus, Calendar, Terminology, Files and Folders, Purchasing Domain/Hosting, Remote Hosting, FTP, HTML basics, Starting a Website, HTML Coding

UNIT-2

Terminology, Starting a Website, HTML Coding

UNIT-3

HTML Coding, Wireframe, Website Design/Development, FTP, Basics of CSS Coding, CSS Coding, Internal CSS

Reference Books:-

1. **Blanck, Peter.** *eQuality: The Struggle for Web Accessibility by Persons with Cognitive*
2. *Disabilities*, **Cambridge Disability Law and Policy Series, 2015.**
3. **Burgstahle, Sheryl.** *Universal Design in Higher Education: From Principles to Practice*, **Harvard Education Press, 2008.**
4. **Byrne, Jim.** *60 hot to touch Accessible Web Design tips – the tips no web developer can live without!*, **Jim Byrne, 2006, (ISBN: 978-1-4116-6729-7).**
5. **Chisholm, and May.** *Universal Design for Web Applications: Web Applications That Reach Everyone*, **O'Reilly Media, 2008.**
6. **Clark, Joe.** *Building Accessible Websites*, **New Riders Publishing, 2002.**

BSC001	**ANIMATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- N.Mathimagal& BCA				

COURSE OBJECTIVES:-

The learner will have the knowledge about the use of animation, digitized sound, video control, and scanned images.

COURSE OUTCOMES (COs)

CO1	Gain knowledge of basic concepts of Animations
CO2	Analyze the use of Netscape to access the Course Home Page and Tips and Tricks. .
CO3	Discussthe basic instructional design principles in the development of stacks..
CO4	Identify the basicFormulate a working definition of interactive multimedia.
CO5	Demonstrate the competence in using the authoring program Hyper Studio.
CO6	Test real time application using a basic concept.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO 1**	**PSO 2**	**PSO3**
2	**CO1**	**H**	**L**						H		
	CO2	**M**	**L**								
	CO3	**H**	**-**								
	CO4	**H**	**L**								
	CO5	**M**	**L**								
	CO6	**H**	**L**								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
									✓	
4	Approval	Academic Council Meeting								

Unit - 1

INTRODUCTION:

Elements of Information Technology - Introduction to Programming Languages - Basics of Animation.-Foundation Art. -Computer Based 2D Animation. - Multimedia &

Computer Graphics. Introduction to 3D Animation & Modeling- Introduction to Mass Communication & Media Literacy

Unit - 2

3-D Animation-I.- Production Process-I. - Multimedia-I. - Composing and Editing. - Color Theory.

Unit- 3

Script Writing-I. - Content Development Direction-I. - Gaming Technology - Digital Editing and Motion Graphics-I. - Visual Effects-I. - V.F.X.-I.

REFERENCE BOOKS :

1. **Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill**
2. **The Media in your life - By Jean Folkerts& Stephen Lacy by Pearson Publications.**

BSC002	**COMPUTER HARDWARE AND NETWORKING**	**L**	**T**	**P**	**C**

	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS				

COURSE OBJECTIVES :-

Learners familiar with the basic concepts of Microprocessor,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.

COURSE OUTCOMES (COs)

CO1	Define the structure of Micro Processor and PCs and CPUs
CO2	State the structure of PC architecture and the study of various PCs
CO3	Describe the basics of Processor
CO4	Study the CPU,Chips,Processor and Controllers
CO5	Examine the working of Internal Components cards and Higher Level Processor
CO6	Relate the Backups,SwitchesRouters,BIOS,Floppy Disk and zip Driver

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	**COs/Pos**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**PSO3**
2	**CO1**	H	-						H		
	CO2	H	L								
	CO3	H	L								
	CO4	M	-								
	CO5	H	L								
	CO6	M	-								
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)	
									✓		
4	Approval	Academic Council Meeting									

UNIT-1

Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors

UNIT - 2

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and

Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory.

UNIT-3

Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. Introduction of Network Cable like UTP, STP, Fiber Optics, Hub, Unmanageable Switch, Manageable Switch, Router, Modem, Wi-Fi, Access Point, PCI Wireless Card, USB Wireless Device, Print Server, USB Network Sharer, Backup Device, Server Hardware etc.

Reference Book:

(1) Microprocessor Architecture Programming and Application with the 8085 Ramesh GaonkarPenram International Publication.

(2) Electronics and Radio Engineering M.L. Gupta Dhanpatrai& Sons, New Delhi.

(3) PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govindarajalu, Tata Mc-graw-Hill Publication.

(4) PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

BSC003	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be familiar with the programming language C, Algorithm,and Design the flowchart and implement the programs using the concept such asFunctions,Pointers and Strings.

COURSE OUTCOMES (COs)

CO1	Apply and Write the clear, structure and Looping of elementary C programs.
CO2	Explain algorithmic thinking and apply it to programming.
CO3	Describe problem-solving techniques.
CO4	Ability to use C with Various operators Expressions and Decision making control.
CO5	Write Code using Arrays with single dimensions, Two dimensions and Multidimensional and Various Strings operations
CO6	Examine programs using Functions, Pointers, Structures and Union

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT-1:-

INTRODUCTION:-

Generation and Classification of Computers – Basic organization of a Computer – Number System –Binary – Decimal – Conversion – Problems. Need for logical Analysis and thinking algorithm – Pseudo code –Flow Chart.

UNIT-2:-

PROGRAMMING BASICS:-

Problem formulation – Problem solving – introduction to "C" programming – Fundamentals – structure of C Program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C- Managing input and output operations – Decision making and Branching – Looping Statements – Solving simple scientific and statistical problems.

UNIT -3:-

ARRAYS, STRINGS, FUNCTIONS AND STRUCTUES:-

Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String – String Operations – String Arrays.Simple programs – sorting – searching – matrix operations. Function – definition of function – declaration of function – Recursion – pointers – pointer and arrays – example problems – need for structure data type – structure definition – structure declaration – structure within a structure – union - storage classes, pre-processor directives.

Text Books:-

1. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", Dorling Kindersley (India) Pvt Ltd., Pearson Education in South Asia 2011.
2. PradipDey, ManasGhosh, "fundamentals of computing and programming in c", First edition, Oxford University Press, 2009.
3. Yashavant P. Kanethar, "Let Us C", BPB Publications, 2011.

Reference Books:-

1. **Byron S Gottfried, " Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill 2006.**
2. **Dromey R.G., How to Solve it by Computer", Pearson Education, Fourth Reprint, 2007.**
3. **Kernighan., B.W and Ritchie, D.M, " The C Programming Lanaguage", Second Edition, Pearson Education, 2006.**

BSC004	COMPUTER TECHNOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Higher Secondary Level				
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS				

COURSE OBJECTIVES :-

Learners will be Explore and demonstrate knowledge of how to maintain computer equipment and solvecommon hardware problems

COURSE OUTCOMES (COs)

CO1	Design, implement and evaluate computer technologies.
CO2	Think critically, creatively and analytically in developing technological solutions to simpleand complex problems. .
CO3	Plan, analyze, design and construct information systems to identified specifications.
CO4	Ability to efficient code in the relevant programming language(s). .
CO5	Evaluate, and use computer software. Use software tools for creating, finding, organizing, and communicating information.
CO6	Work effectively as a team member to achieve a common stated goal.

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
2	**CO1**	H	-						H	
	CO2	H	L							
	CO3	H	L							
	CO4	H	-							
	CO5	M	L							
	CO6	H	-							
3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
									✓	
4	Approval	Academic Council Meeting								

UNIT - 1

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point).

Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage. Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps

UNIT - 2

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

UNIT -3

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization. Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Databases: ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), File structures (sequential files, indexing, B and B+ trees), Transactions and concurrency control.

Reference Books:

1. A First Course in Computers" by Sanjay Sexena

2. Computer Organization and Architecture – Carl Hamcher&SafatZaky

3. Computer Architecture and Organization – J. P. Hayes