

**SEMESTER I**

<b>S.No.</b>	<b>CATEGORY</b>	<b>SUB. CODE</b>	<b>SUBJECT</b>	<b>TCH</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>THEORY</b>								
1.	HS	U18HSTA101/ U18HSFR101/ U18HSHI101	Tamil / French/ Hindi	5	3	0	0	3
2.	HS	U18HSEN102	English	5	3	0	0	3
3.	MC	U18MCSA101	Introductory Statistics	5	3	1	0	4
4.	MC	U18MCSA102	Descriptive Statistics	5	3	1	0	4
5.	NC	U18NCMA106	Allied Statistics-I	5	3	1	0	4
<b>PRACTICAL</b>								
6.	NC	U18MCSA1L1	Major Pratical-1	4	3	1	0	2
<b>Total</b>				29	18	4	0	20

**SEMESTER II**

S.No.	CATEGORY	SUB. CODE	SUBJECT	TCH	L	T	P	C
<b>THEORY</b>								
1.	HS	U18HSTA201/ U18HSFR201/ U18HSHI201	Tamil / French/ Hindi	4	3	0	0	3
2.	HS	U18HSEN202	English	4	3	0	0	3
3.	MC	U18MCSA201	Actuarial Statistics	5	3	1	0	4
4.	MC	U18MCSA202	Probability and Random variables Allied Statistics-II	4	3	1	0	4
5.	NC	U18NCMA206	Allied Statistics-II	5	3	1	0	4
6	HS	U18HSCH201	Environmental Studies	2	2	0	0	2
7	HS	U18HSBC202	Value Education	2	2	0	0	2
<b>PRACTICAL</b>								
8.	NC	U18MCSA2L1	Major Practical -2	4	3	1	0	2
<b>Total</b>				30	22	4	0	24

**SEMESTER III**

S.No.	CATEGORY	SUB. CODE	SUBJECT	TCH	L	T	P	C
<b>THEORY</b>								
1.	HS	U18HSTA301/ U18HSFR301/ U18HSHI301	Tamil / French/ Hindi	4	3	0	0	3
2.	HS	U18HSEN302	English	5	3	0	0	3
3.	MC	U18MCSA301	Distribution Theory	5	3	1	0	4
4.	MC	U18MCSA302	Numerical Analysis	4	3	1	0	4
5.	NC	U18NCSA301	Managerial Economics	5	3	1	0	4
6	NME	U18NETA301	Non Major Elective I – for those who studied Tamil under Part I a) Basic Tamil for other language students	2	2	0	0	2
		U18NETA302	b) Special Tamil for those who studied Tamil upto 10th +2 but opt for other languages in degree programme					
<b>PRACTICAL</b>								
7	NC	U18MCSA3L1	Major practical –III	4	3	1	0	2
<b>Total</b>				29	20	4	0	22

**SEMESTER IV**

S.No.	CATEGORY	SUB. CODE	SUBJECT	TCH	L	T	P	C
<b>THEORY</b>								
1.	HS	U18HSTA401/ U18HSFR401/ U18HSHI401	Tamil / French/ Hindi	4	3	0	0	3
2.	HS	U18HSEN402	English	4	3	0	0	3
3.	MC	U18MCSA401	Theory of Estimation	5	3	1	0	4
4.	MC	U18MCSA402	Testing of Hypotheses	4	3	1	0	4
5.	NC	U18NCSC403	Programming in C	5	3	1	0	4
6	NME	U18NETA401	Non Major Elective II – for those who studied Tamil under Part I Basic Tamil for other language students	2	2	0	0	2
		U18NETA402	Special Tamil for those who studied Tamil upto 10 <sup>th</sup> +2 but opt for other languages in degree programme.					
7.	SBE		Skill Based Eelective 1	2	2	0	0	2
<b>PRACTICAL</b>								
8.	NC	U18NCSC4L1	Allied Practical- I (Programming in C)	4	0	0	4	2
<b>Total</b>				30	19	3	4	24

**SEMESTER V**

<b>S.No.</b>	<b>CATEGORY</b>	<b>SUB. CODE</b>	<b>SUBJECT</b>	<b>TCH</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>THEORY</b>								
1.	MC	U18MCSA501	Design of Experiments	4	3	1	0	4
2.	MC	U18MCSA502	Sampling Theory	5	3	1	0	4
3.	MC	U18MCSA503	Real Analysis	4	3	1	0	4
4.	MC	U18MCSA504	Statistical Quality Control	5	3	1	0	4
5.	NC	U18MESA011	Major Elective – I Operations research	4	3	1	0	4
6	SBE		Skill Based Eelective 2	2	2	0	0	2
7	SBE		Skill Based Eelective 3	2	2	0	0	2
<b>PRACTICAL</b>								
8.	MC	U18MCSA4L1	Major Practical – IV	4	3	1	0	2
<b>Total</b>				30	22	6	0	26

**SEMESTER VI**

<b>S.No.</b>	<b>CATEGORY</b>	<b>SUB. CODE</b>	<b>SUBJECT</b>	<b>TCH</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>THEORY</b>								
1.	MC	U18MCSA601	Applied Statistics	5	3	1	0	4
2.	MC	U18MCSA602	Stochastic Process	5	3	1	0	4
3.	MC	U18MCSA603	Matrix Algebra	5	3	1	0	4
4.	ME	U18MESA023	Major Elective – II Elementary Number theory	4	3	1	0	4
<b>PRACTICAL</b>								
5.	EE	U18EESA6P1	Mini project		0	0	20	10
6	HS	U18HSCA6L1	Extension Activities	2	0	0	2	1
<b>Total</b>				21	12	4	22	27

## LIST OF ELECTIVES

### MAJOR ELECTIVES: I

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
U18MESA011	<b>OPERATION RESEARCH</b>	3	1	0	4
U18MESA012	<b>BIO – STATISTICS</b>	3	1	0	4
U18MESA013	<b>DISCRETE MATHEMATICS</b>	3	1	0	4

### MAJOR ELECTIVES: II

Sub Code	Sub Name	No. of periods per week			C
		L	T	P	
U18MESA021	<b>SPECIAL FUNCTIONS</b>	3	1	0	4
U18MESA022	<b>ASTRONOMY</b>	3	1	0	4
U18MESA023	<b>ELEMENTARY NUMBER THEORY</b>	3	1	0	4

**LIST OF SKILL BASED ELECTIVES**

Choose any three courses – one in semester IV &amp; two in semester V

<b>S.No.</b>	<b>Sub Code</b>	<b>Subjects</b>	<b>Total Contact Hrs</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	U18SEBC001	Business Process Outsourcing – Management	2	2	0	0	2
2	U18SEBC002	Customer Relationship Management	2	2	0	0	2
3	U18SEBC003	Entrepreneurial Development	2	2	0	0	2
4	U18SEBC004	Human Resource Management	2	2	0	0	2
5	U18SEBC005	Marketing Management	2	2	0	0	2
6	U18SEBC006	Office Management	2	2	0	0	2
7	U18SEBC007	Retail Marketing	2	2	0	0	2
8	U18SEBC008	Salesmanship and Advertising	2	2	0	0	2
9	U18SEEN001	Soft Skills	2	2	0	0	2
10	U18SESC001	Computer Application	2	2	0	0	2
11	U18SESC002	Multimedia	2	2	0	0	2
12	U18SESC003	Advanced Excel	2	2	0	0	2
13	U18SESC004	Web Designing	2	2	0	0	2
14	U18SESC005	Photoshop	2	2	0	0	2
15	U18SESC006	Flash	2	2	0	0	2
16	U18SESC007	Computer Hardware and Networking	2	2	0	0	2
17	U18SESC008	Computer Programming	2	2	0	0	2
18	U18SESC009	Office Automation Tools	2	2	0	0	2
19	U18SEMA001	Quantitative and Aptitude Reasoning -I	2	2	0	0	2
20	U18SEMA002	Quantitative and Aptitude Reasoning-II	2	2	0	0	2
21	U18SEMA003	Regression Analysis with SPSS	2	2	0	0	2

**SEMESTER-I**

U18HSTA101	பாடத்தின் பெயர் : தமிழ்- I							L	T	P	C	
	மொத்தவகுப்புநேரம்- 45							3	0	0	3	
	முன்நிபந்தனைபடிப்பு ++ 2											
	பாடநெறி ஒருங்கிணைப்பாளர் : முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை											
பாடத்தின்நோக்கம் :- இருபதாம்நூற்றாண்டுஇலக்கியத்தை அறியச் செய்தல்												
பாடத்தின்விளைவுகள்(பா.வி.) [COURSE OUTCOMES (COs)]												
CO1	பாரதியார், பாரதிதாசன், கவிமணிஆகியோரின்மரபுக்கவிதைகளைஅறிவார்											
CO2	கண்ணதாசன், அப்துல்ரகுமான், நா.முத்துக்குமார் ஆகியோரின் புதுக்கவிதைகளை அறிவார்											
CO3	இருபதாம் நூற்றாண்டு உரைநடை கட்டுரைகளை அறிவார்											
CO4	இருபதாம் நூற்றாண்டு சிறுகதைக்கலையின் நுட்பத்தை அறிவார்											
CO5	இக்கால இலக்கிய வரலாற்றைப் பற்றி அறிவார்											
CO6	இருபதாம்நூற்றாண்டுஇலக்கியத்தைப் பற்றி அறிவார்											
பாடத்தின் விளைவுகளுடன்(Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2//3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்												
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O		
2	CO1	3	3	3	1	3	1	3				
	CO2	3	3	3	2	3	1	3				
	CO3	3	2	2	2	3	1	2				
	CO4	3	3	3	1	3	1	3				
	CO5	3	2	2	2	3	1	2				
	CO6	3	2	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/		
		✓										
4	Approval	Academic Council Meeting										

**அலகு1**

9

மரபுக்கவிதைகள்:

பாரதியார் - தேசியகீதங்கள்- தமிழ்நாடு- செந்தமிழ்நாடு, தமிழ்

பாரதிதாசன்- தமிழ்- இன்பத்தமிழ், எங்கள்தமிழ்

கவிமணிதேசிகவிநாயகம்பிள்ளை- வாழ்க்கைத்தத்துவங்கள், வாழ்க்கைநிலையாமை

**அலகு2**

9

புதுக்கவிதைகள்:

கண்ணதாசன்- அழகை, 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'  
மெளனி- அழியாச்சுடர்- 'தமிழ்ச்சிறுகதையின்திருமூலவர்'  
புதுமைப்பித்தன்- காஞ்சனை- 'தமிழ்ச்சிறுகதையின்மன்னன்'

அலகு5

9

இக்காலஇலக்கியவரலாறு:

இருபதாம்நூற்றாண்டுகவிதைஇலக்கியவரலாறு  
இருபதாம்நூற்றாண்டுகவிதைஇலக்கியவரலாறு  
இருபதாம்நூற்றாண்டுகவிதைஇலக்கியவரலாறு

பார்வைநூல்கள்:

1. தி.சா.ராஜ், "பாரதியார்கவிதைகள்", வானவில்பிரசுரம், 1977
2. கோமுகிசுப்பிரமணியன், "பாரதிதாசன்கவிதைகள்", அருள்சுடர்பதிப்பகம், 2014
3. சி.தேசிகவிநாயகம்பிள்ளை, "கவிமணிகவிதைகள்", பூம்புகார்பதிப்பகம், 2011
4. கண்ணதாசன், "கவிஞர்கண்ணதாசன்கவிதைகள்", கண்ணதாசன்பதிப்பகம், 2012
5. அப்துல்ரகுமான், "கவிக் கோகவிதைகள்", நேஷனல்பப்ளிஷர்ஸ், 2013
6. நா.முத்துக்குமார், "நா.முத்துக்குமார்கவிதைகள்- அனாஆவன்னா, பட்டாம்பூச்சிபதிப்பகம், 2016
7. டி.என்.இராமச்சந்திரன், "திரு.வி.க.வின் தேசபக்தன்கட்டுரைகள்", புவனேஸ்வரிபதிப்பகம், 2001
8. அண்ணா, 'சொற்பொழிவுகளின்தொகுப்பு-வீட்டிற்கோர்புத்தகசாலை', முத்தமிழ்நிலையம், 2008
9. ந.வேலுசாமி, "திருக்குறளைஏன் இந்தியாவின் தேசியநூலாக அறிவிக்கவேண்டும்?", Coral Publisher, 2017
10. வ.வே.சு. ஐயர், "குளத்தங்கரைஅரசமரம்", வ.உ.சி.நூலகம், 2007
11. மெளனி, "மெளனிபடைப்புகள்", காலச்சுவடுபதிப்பகம், 2010
12. புதுமைப்பித்தன், "காஞ்சனை", அன்னம்பதிப்பகம், 2013
13. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

CourseCoordinator

HOD

<b>U18HSFR101</b>	<b>FRENCH</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45						3	0	0	3
	Prerequisite course – Grade 12									
	Course Coordinator Name & Department:-Ms. Tushita Naidu K /Département De Française									
<b>COURSE OBJECTIVES:-</b> To introduce students to basic principles and practice of oral and written communication.										
<b>COURSE OUTCOMES (COs)</b>										
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	PS O1	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

**TEXT BOOKS:**

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

**CourseCoordinator**

**HOD**

<b>U18HSHI101</b>	<b>HINDI</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45							3	0	0	3
	Prerequisite course – Grade 12										
	Course Coordinator Name & Department:-Mrs Rani Selvan / Hindi										
<b>COURSE OBJECTIVES:-</b> To understand , read, write and speak Hindi language with grammatical.											
<b>COURSE OUTCOMES (COs)</b>											
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	PS O1	PS O2	
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

**CourseCoordinator**

**HOD**

<b>U18HSEN102</b>	<b>ENGLISH-I</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45						3	0	0	3
	Prerequisite course – + 2 level English									
	Course Coordinator : Mrs.M.SHEEBA & Department of English									
<b>COURSE OBJECTIVES:-</b> To understand the power of knowledge about LRSW( i.e.) listening, reading speaking and writing, and various forms of literature.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Rememberthe authors of the prescribed literature									
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 critical essays by evaluating the literary techniques and devices used									
<b>Category</b>	HS									
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	3	3	2	2		
	CO2	2	2	3	3	3	3	2		
	CO3	3	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	3	2	2	3	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/
4	<b>Approval</b>	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 Rutherford(DorligKindersly),2007
3. English for Professionals A Practice Book of Communication Skills in English by Dr.Miglani (Vayu Education of India),2010.

CourseCoordinator

HOD

<b>U18MCSA101</b>	<b>INTRODUCTORY STATISTICS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name &Department: -Dr.P.Sumathi/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on statistical methods, Essentials of sampling, attributes and association of attributes.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Statistical methods									
CO2	To Know the Essentials of sampling.									
CO3	To Know the concept of Pictorial Representation of data-Types									
CO4	Understand the usage of Formulation of discrete and continuous frequency distribution									
CO5	Understand Attributes and association of attributes.									
CO6	Understand the concept of sampling.									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

**UNIT I DEFINITION OF STATISTICS****12**

Meaning and definition of Statistics, importance and scope of Statistics, functions of Statistics and limitations of Statistics.

**UNIT II DIAGRAMMATIC REPRESENTATIONS OF DATA****12**

Diagrammatic representations of data - Bar diagrams - simple, component, multiple and percentage. Graphical representations - Frequency curve, frequency polygon.

**UNIT III MEASURES OF CENTRAL TENDENCY****12**

Measures of Central Tendency – Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic Mean and derivation of their properties, Merits and Demerits and problems.

**UNIT IV SKEWNESS****12**

Skewness - concept, measures of Skewness – Karl Pearson's and Bowley's coefficient of skewness. Moments – Raw and Central. Kurtosis - Concept and measures. Problems.

**UNIT V REGRESSION****12**

Regression - Definitions, Types and Properties of Regression coefficient (statement and proof). Regression lines and its properties, uses and problems.

**TEXT BOOK:**

1. Gupta S.C., and V.K.Kapoor, "Fundamental of Mathematical Statistics". - Sultan Chand & Sons, New Delhi. (2013)

**REFERENCE BOOK:**

Gupta S.P, "Statistical Methods", Sultan Chand & Sons, New Delhi. (1995).

Hogg, RV and Craig, AT "An Int to Mathematical Statistics" 6<sup>th</sup>Edn. Pearson Education Pub. New Delhi. (2009)

**Course Coordinator****HOD**

<b>U18MCSA102</b>	<b>DESCRIPTIVE STATISTICS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: -Ms. P.S.Sharmila/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on limitation on statistics, skewness, kurtosis and regression lines.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop the concept of frequency polygon									
CO2	Understand to develop limitations of Statistics.									
CO3	Understand to develop the concept of central tendency.									
CO4	To Know the usage of Skewness - concept, measures of Skewness									
CO5	Understand the Regression lines									
CO6	To Know the concept of frequency curve.									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	2	1	1	1	2	3		
	CO2	3	2	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	3	2	1	1	1	2	3		
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

### UNIT I DEFINITION OF STATISTICS

12

Meaning and definition of Statistics, importance and scope of Statistics, functions of Statistics and limitations of Statistics.

### UNIT II DIAGRAMMATIC REPRESENTATIONS OF DATA

12

Diagrammatic representations of data - Bar diagrams - simple, component, multiple and percentage. Graphical representations - Frequency curve, frequency polygon.

### UNIT III MEASURES OF CENTRAL TENDENCY

12

Measures of Central Tendency – Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic Mean - derivation of their properties, Merits and Demerits and problems.

**UNIT IV SKWNESS****12**

Skewness - concept, measures of Skewness – Karl Pearson's and Bowley's coefficient of skewness. Moments – Raw and Central. Kurtosis - Concept and measures. Problems.

**UNIT V REGRESSION****12**

Regression - Definitions, Types and Properties of Regression coefficient (statement and proof). Regression lines and its properties, uses and problems.

**TEXT BOOK:**

1. Gupta S.C., and V.K.Kapoor, "Fundamental of Mathematical Statistics". - Sultan Chand & Sons, New Delhi. (2013)

**REFERENCE BOOK:**

Gupta S.P, "Statistical Methods", Sultan Chand & Sons, New Delhi. (1995)

Hogg, RV and Craig, AT "An Int to Mathematical Statistics" 6<sup>th</sup>Edn. Pearson Education Pub. New Delhi. (2009)

**Course Coordinator****HOD**

<b>U18NCMA106</b>	<b>ALLIED STATISTICS-I</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Mr.V.Nandakumar/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on summation of series, Cayley Hamilton theorem, polynomial equations with real coefficients hyperbolic and inverse hyperbolic equations.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Summation of series - simple problems									
CO2	Understand the Cayley-Hamilton theorem									
CO3	To Know the concept of Polynomial equations with real coefficients									
CO4	Understand the usage of Hyperbolic and inverse hyperbolic functions									
CO5	Understand Inverse Laplace Transform (usual types)									
CO6	To Know the concept of Laplace Transform.									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	2	1	1	1	2	3		
	CO2	3	2	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	3	2	1	1	1	2	3		
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

**UNIT I ALGEBRA and NUMERICAL METHODS:**

**12**

**ALGEBRA:** Summation of series - simple problems.

**NUMERICAL METHODS:** Operators  $E, \Delta, \nabla$  difference tables; Newton-Raphson method; Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula.

Chapter 2, Section 2.1.3, 2.2, 2.2.1, 2.3, 2.3.3

Chapter 3, Section 3.4.1 and Chapter 5, Section 5.1 and 5.2.

**UNIT II MATRICES:****12**

Symmetric, Skew-Symmetric, Orthogonal, Hermitian, Skew-Hermitian and Unitary matrices. Eigen values and Eigen-vectors, Cayley-Hamilton theorem (without proof) – verification- Computation of inverse of matrix using Cayley - Hamilton theorem.

Chapter 4, Section 4.1.1 to 4.1.6, 4.5, 4.5.2, 4.5.3.

**UNIT III THEORY OF EQUATIONS:****12**

Polynomial equations with real coefficients, irrational roots, complex roots, symmetric functions of roots, transformation of equation by increasing or decreasing roots by a constant, reciprocal equation. Newton's method to find a root approximately - simple problems.

Chapter 3, Section 3.1 to 3.4.1

**UNIT IV TRIGONOMETRY:****12**

Expansions of  $\sin(n\theta)$  and  $\cos(n\theta)$  in a series of powers of  $\sin\theta$  and  $\cos\theta$  - Expansions of  $\sin^n\theta$ ,  $\cos^n\theta$ ,  $\tan^n\theta$  in a series of sines, cosines and tangents of multiples of " $\theta$ " - Expansions of  $\sin\theta$ ,  $\cos\theta$  and  $\tan\theta$  in a series of powers of " $\theta$ " – Hyperbolic and inverse hyperbolic functions - Logarithms of complex numbers. Chapter 6, Section 6.1 to 6.5

**UNIT V LAPLACE TRANSFORMS:****12**

Laplace Transform; Inverse Laplace Transform (usual types); Convolution theorem; Applications of Laplace Transform to solution of first order linear differential equations.

**TEXT BOOK:**

1. Chapter 1, Section 1.1 to 1.3.2 and 1.4.3 Content and treatment as in Allied Mathematics Volume I and II by P. Duraipandian and S. Udayabaskaran, S. Chand Publications

**REFERENCE BOOK:**

1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.
2. Allied Mathematics by Dr. A. Singaravelu.

**Course Coordinator****HOD**

<b>U18MCSA1L1</b>		<b>MAJOR PRACTICAL I</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
		Total Contact Hours – 30						3	1	0	2
		Prerequisite course –Mathematics Studied in Higher Secondary studies									
		Course Coordinator Name & Department: - Ms. P.S.Sharmila/Mathematics									
<b>COURSE OBJECTIVES: -</b>											
To introduce the concepts and develop working knowledge on continuous frequency distribution, quartiles, deciles and percentiles and moments, skewness and kurtosis.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Understand to develop Formulation of continuous frequency distribution										
CO2	Understand the Quartiles, Deciles and Percentiles										
CO3	The gain the concept of Moments, Skewness and Kurtosis										
CO4	Understand the usage of Regression equations										
CO5	Understand Multiplication of matrices										
CO6	Understand to develop Formulation of continuous frequency distribution										
<b>Mapping of Course Outcomes with Program outcomes (POs)</b> (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	PS O2	
2	CO1	3	2	1	1	1	2	3			
	CO2	3	2	1	1	1	2	3			
	CO3	3	2	1	1	1	2	3			
	CO4	3	2	1	1	1	2	3			
	CO5	3	2	1	1	1	2	3			
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)	
						✓					
4	Approval	Academic Council Meeting									

## UNIT I

Formulation of continuous frequency distribution (SPSS output)

## UNIT II

Measures of Central tendency:

- Calculation of Mean, Median, Mode, Harmonic mean, Geometric mean,
- Quartiles, Deciles and Percentiles

### **UNIT III**

Measures of Dispersion:

- a. Calculation of range and quartile deviation
- b. Mean deviation about mean, median and mode
- c. Standard deviation, variance and coefficient of variation
- d. Moments, Skew ness and Kurtosis
- e. Association of attributes.

### **UNIT IV**

Coefficient of Correlation andRegression:

- a. Karl Pearson's coefficient of correlation (Raw and Grouped data)
- b. Spearman's Rank correlation
- c. Regression equations

### **UNIT V**

Matrices:

- a. Multiplication of matrices
- b. Adjoint and Inverse of a matrix of order upto [4x4]
- c. Rank of a matrix
- d. Solution of linear equations
- e. Characteristic roots and vectors
- f. Reduction of quadratic forms

**Course Coordinator**

**HOD**

## SEMESTER-II

<b>U18HSTA201</b>	<b>தமிழ்- II</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	மொத்தவகுப்புநேரம்- 45					3	0	0	3	
	முன்நிபந்தனைபடிப்பு - + 2									
	பாடநெறிஒருங்கிணைப்பாளர் : முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை									
பாடத்தின்நோக்கம் :- சிற்றிலக்கியம்மற்றும்சமயஇலக்கியத்தை அறியச் செய்தல்										
<b>பாடத்தின்விளைவுகள்(பா.வி.) [COURSE OUTCOMES (COs)]</b>										
CO1	தூது,பள்ளு,குறவஞ்சிஎன்றசிற்றிலக்கியங்கள்பற்றிஅறிவர்									
CO2	சைவஇலக்கியமானதேவாரம், திருவாசகம், அற்புதத்திருவந்தாதிப்பற்றிஅறிவர்									
CO3	வைணவஇலக்கியமானநாலாயிரதிவ்யப்பிரபந்தம்பற்றிஅறிவர்									
CO4	பௌத்த, இசுலாம், கிறித்துவசமயஇலக்கியங்களைப்பற்றிஅறிவர்									
CO5	சிற்றிலக்கியம்மற்றும்சமயஇலக்கியவரலாறுபற்றிஅறிவர்									
CO6	சிற்றிலக்கியம் , சமயஇலக்கியம்பற்றியதெளிவானஅறிவைப்பெறுவர்									
பாடத்தின் விளைவுகளுடன்(Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	2	3	2	3	1	2		
	CO2	3	2	3	2	3	1	2		
	CO3	3	2	3	2	3	1	2		
	CO4	3	2	3	2	3	1	3		
	CO5	3	2	3	2	3	1	2		
	CO6	3	2	3	2	3	1	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/
		✓								
4	<b>Approval</b>	Academic Council Meeting								

அலகு1

அழகர்கிள்ளைவிடுதூது

முக்கூடற்பள்ளு

திருக்குற்றாலக்குறவஞ்சி

- நாட்டுவளம்

- குறத்திமலைவளம்கூறுதல்

9

- 1 - 20

- 21,22,25,26,35

- 1 - 5

அலகு2

அற்புதத்திருவந்தாதி

தேவாரம் - திருவெண்காட்டுப்பதிகம்

திருவாசகம் - திருச்சாழல்

- திருஞானசம்பந்தர்

- மாணிக்கவாசகர்

9

- 1 - 5

- 1 - 10

- 1 - 10

அலகு3

9

நாலாயிரதிவ்யப்பிரபந்தம்	- முதல்திருமொழி	- பெரியாழ்வார்	- 1 - 10
நாலாயிரதிவ்யப்பிரபந்தம்	- திருப்பாவை	- ஆண்டாள்	- 1 - 10
நாலாயிரதிவ்யப்பிரபந்தம்	- திருமாலை	- தொண்டரடிப்பொடி ஆழ்வார்	- 1 - 5

அலகு4			9
ஆசியஜோதி	- கருணைக்கடல்	- அறவுரைசூறுதல்	- 1 - 10
பராபரக்கண்ணி	- குணங்குடிமஸ்தான்சாகிபு		- 1 - 20
இயேசுகாவியம்	- பாடுகளின்பாதை	- கண்ணதாசன்	

அலகு5 9  
 சிற்றிலக்கியவரலாறு- சமயஇலக்கியவரலாறு

பார்வைநூல்கள்:

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, "நாலாயிரதிவ்யப்பிரபந்தம்மூலமும்எளியஉரையும்", சாரதாபதிப்பகம், 2015
7. கமலாமுருகன், "ஆசியஜோதிமூலமும்உரையும்", சாரதாபதிப்பகம், 2012
8. கமலாமுருகன், "பராபரக்கண்ணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2013
9. கண்ணதாசன், "இயேசுகாவியம்", கண்ணதாசன்பதிப்பகம், 2014
10. சு. ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018

CourseCoordinator

HOD

		<b>FRENCH</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>U18HSFR201</b>	Total Contact Hours – 45	3	0	0	3						
	Prerequisite course – Grade 12										
	Course Coordinator Name & Department: -Ms. Tushita Naidu K /Département De Française										
<b>COURSE OBJECTIVES: -</b> To introduce students to the complexity of the grammar and how to overcome it with simple rules.											
<b>COURSE OUTCOMES (COs)</b>											
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	PS O1	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 journée!

9

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

### UNIT II - Qu'on est bien ici !

9

Prepositions et adverbs de lieu - Verbs exprimant un déplacement (employ des prepositions)  
Le lodgement/la localisation/ l'orientation/l'état physique/le temps qu'il fait

**UNIT III -En se detend?**

**9**

L'imparfait-Emplois du passé composé et de l'imparfait-Expression de la durée-L'enchaînement des idées (alors, donc, mais) /Le sens réciproque

**UNIT IV- On s'appelle?**

**9**

Les pronoms compléments directs -Les pronoms compléments indirects de personne -c'est/ il est-Imperatif des verbes avec pronoms-La formation des mots

**UNIT V Un bon conseil !**

**9**

Expression du déroulement de l'action--passé récent--Présent progressif-future proche-Les phrases rapportées- La place de l'adjectif- La proposition relative finale avec -qui

**TEXT BOOKS:**

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

**CourseCoordinator**

**HOD**

<b>U18HSHI201</b>		<b>HINDI</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
		Total Contact Hours – 45							3	0	0	3
		Prerequisite course – Grade 12										
		Course Coordinator Name & Department:-Mrs Rani Selvan / Hindi										
<b>COURSE OBJECTIVES:-</b> To understand and improve the skills in the Language of Hindi												
<b>COURSE OUTCOMES (COs)</b>												
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	PS O1	PS O2		
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										

<b>UNIT I</b> MODERN POETRY - SHABARI	<b>09</b>
<b>UNIT II</b> ONE ACT PLAY - EKANKI SANKALAM	<b>09</b>
<b>UNIT III</b> TRANSLATION - HINDI – ENGLISH ONLY	<b>09</b>
<b>UNIT IV</b> LETTER WRITING - Leave letter - Job Application - Ordering books - Letter to Publisher - Personal letter	<b>09</b>
<b>UNIT V</b>	<b>09</b>

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 – Publisher - Lokbharathi Prakashan ,1 Floor, Duebari Building, Mahatma Gandhi Marg, Allahabad – 1.

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

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

**CourseCoordinator**

**HOD**

<b>U18HSEN202</b>	<b>ENGLISH II</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45							3	0	0	3
	Prerequisite course – + 2 level English										
	Course Coordinator: Mr.S.KUMARESAN& Department of English										
<b>COURSE OBJECTIVES:-</b> To know the themes of literary texts and understand the language skills and how to implement it in day to day life activity											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Rememberthe authors of the prescribed literature										
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.										
<b>Category</b>	HS										
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	3			
	CO2	3	3	3	3	3	3	3			
	CO3	2	2	2	2	3	3	3			
	CO4	2	2	2	2	3	3	3			
	CO5	2	2	2	2	2	2	2	2		
	CO6	3	3	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	<b>Approval</b>	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**

<b>U18MCSA201</b>	<b>ACTUARIAL STATISTICS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms. P.S.Sharmila/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on permutation and combinations, classification of annuity construction of mortality tables.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Permutation and combinations.									
CO2	To Know the Classification of annuity									
CO3	To gain the concept of Construction of mortality tables									
CO4	Understand the usage of Life assurance and life annuity values									
CO5	Understand Net premium for assurance and annuity plans									
CO6	Understand the concept of life tables									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	2	1	1	1	2	3		
	CO2	3	2	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	3	2	1	1	1	2	3		
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT I PROBABILITY THEORY

12

Probability theory: Mathematical and statistical definition - Properties – Addition and multiplication theorems - Permutation and combinations. Principles of Compound Interest: Compound interest - Compound amount - Nominal and effective rates - Discount and discounted values - Varying rates of interest - Equation of values and equated time of payment.

## UNIT II ANNUITY

12

valuation of annuity - Annuity certain present and accumulated values of immediate annuity - Deferred annuity certain - Annuity due - Perpetuities and variable annuities.

## UNIT III MORTALITY 12

Mortality: Mortality experience - Mortality tables – Construction of mortality tables - Stationary populations - Expectation of life.

## UNIT IV LIFE ASSURANCE AND LIFE ANNUITY VALUE 12

Life assurance and life annuity values: Life assurance - General classifications of life assurance premium - Assurance benefits - Types of assurance benefits – Endowment - Pure endowment - Whole life assurance and increasing assurance. Life annuities – Present values of immediate annuities and annuity due - Temporary immediate annuity - Deferred temporary annuity - Increasing annuity – Increasing temporary life annuity.

## UNIT V NET PREMIUM FOR ASSURANCE AND ANNUITY PLANS 12

Net premium for assurance and annuity plans: Natural premium – Level annual premium – Mathematical expressions for level annual premium under various assurance plans - Net premium - Annuity plans – Immediate annuities and deferred annuities.

### TEXT BOOK:

1. **Mathematical Basis of Life Assurance (IC-81)** (2000), Published by insurance institute of India, Bombay. (Chapter 1 and 2 for unit I, Chapter 4 for unit II, Chapter 5 for unit III, Chapters 8, 9 and 10 for unit IV and Chapters 11 and 12 for unit V).

2. Shaillaja R Deshmuk (2009), *Actuarial Statistics an introduction using R*, University Press, India.

### REFERENCE BOOK:

1. Frenk Ayres, J. R (1983), **Theory and Problems of Mathematics of Finance**, Schaum's outlineseries, McGraw-Hill book Company, Singapore.
2. Benjamin and pollard, J. H (1980), **Analysis of Mortality and other Actuarial Statistics**, second edition, Heinemann, London.
3. Gupta, S. C and Kapoor, V. K (2001), **Fundamentals of Applied Statistics**, Sultan Chand and sons, New Delhi.

<b>U18MCSA202</b>	<b>PROBABILITY AND RANDOM VARIABLES</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	Total Contact Hours – 60					3	1	0	4	
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.L.Radhika/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on random experiments sample space, Pair – wise independence and complete independence, Variance, Covariance and their properties										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Random Experiments and Sample Space									
CO2	Understand the Pair-wise independence and complete independence									
CO3	To gain the concept of Discrete and continuous random variables									
CO4	To Know the usage of c Variance, Covariance and their properties									
CO5	Understand Schwartz Inequality and its applications									
CO6	Understand the concept of stochastic independence									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	2	1	1	1	2	3		
	CO2	3	2	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	3	2	1	1	1	2	3		
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT I RANDOM EXPERIMENTS AND SAMPLE SPACE

12

Random Experiments and Sample Space - Types of events: Exhaustive, Mutually exclusive, Equally likely and Independent events - Basic theorems on probability using axiomatic approach - Addition theorem on probability for  $n$  events - Boole's Inequality - Conditional probability- Multiplication theorem on probability for  $n$  events.

## UNIT II PAIR-WISE INDEPENDENCE AND COMPLETE INDEPENDENCE

12

Pair-wise independence and complete independence - Extended axiom of addition of probability and the axiom of continuity - Bayes theorem and its applications – Bayes theorem for future events.

### **UNIT III RANDOM VARIABLES**

**12**

Random variables: Discrete and continuous random variables - Probability function and probability density function - Bivariate random variables: Joint probability density function - Marginal and conditional density functions - Stochastic independence.

### **UNIT IV MATHEMATICAL EXPECTATION**

**12**

Mathematical expectation - Variance, Covariance and their properties - Moment generating function and its properties - Cumulant generating function - Characteristic function.

### **UNIT V SCHWARTZ INEQUALITY AND ITS APPLICATIONS**

**12**

Schwartz Inequality and its applications - Chebyshev's Inequality and its applications - Marginal and conditional expectations - Conditional variances - Correlation - Relationship between unconditional and conditional expectations.

(The concepts specified in the Units 1, 3, and 4 have to be discussed with examples).

#### **TEXT BOOK:**

1. Gupta, S. C and Kapoor, V. K (2002), **Fundamentals of Mathematical Statistics**, Sultan Chand and Sons, New Delhi.

#### **REFERENCE BOOK:**

1. Hogg, R. V and Craig, A. T (2002), **Introduction to Mathematical Statistics**, Pearson Education, New Delhi.
2. Saxena, H. C (1968), **Statistical Inference**, Sultan Chand and Sons, New Delhi.

**Course Coordinator**

**HOD**

<b>U18NCMA206</b>	<b>ALLIED STATISTICS –II</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.S.Kavitha/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on scalar point functions, Line, surface and Volume integrals.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop non- homogeneous differential equations									
CO2	To Know the Scalar point functions									
CO3	Understand the concept of Scalar point functions									
CO4	Understand the usage of Line, surface and volume integrals									
CO5	Understand the Distance of a plane from a point									
CO6	To gain the concept of homogeneous equations									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	2	1	1	1	2	3		
	CO2	3	2	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	3	2	1	1	1	2	3		
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

## UNIT I ORDINARY DIFFERENTIAL EQUATIONS

12

Second order non- homogeneous differential equations with constant coefficients of the form  $ay'' + by' + cy = X$  where  $X$  is of the form  $e^x, \sin x, \cos x, X^2, e^{\alpha x} \cos \beta x$  and  $e^{\alpha x} \sin \beta x$ .

## UNIT II INTEGRAL CALCULUS

12

Bernoulli's formula, simple problems, Fourier series for functions in  $(\alpha, \alpha+2\pi)$ , Half range sine and cosine series.

Chapter 2, Section 2.7 and 2.9

Chapter 4, Section 4.1 to 4.2

**UNIT III VECTOR DIFFERENTIATION:****12**

Introduction, Scalar point functions, Vector point functions, Vector differential operator  $\nabla$  Gradient, Divergence, Curl, Solenoidal, irrotational, identities. Chapter 8, Section 8.1 to 8.4.4

**UNIT IV VECTOR INTEGRATION:****12**

Line, surface and volume integrals, Gauss, Stoke's and Green's theorems (without proofs)-Simple problems.

Chapter 8, Section 8.5 to 8.6.3

**UNIT V ANALYTICAL GEOMETRY:****12**

Coordinates in space-Direction cosines of a line in space-angle between lines in space – equation of a plane in normal form. Angle between planes – Distance of a plane from a point.

Chapter 1: Sec 1.5 to 1.9, Chapter II Sec 2.1 to 2.3, Pages : 10-31.

Chapter 2: Sec 2.4 to 2.8 pages : 32-47 of [1].

**TEXT BOOK:**

1.Content and treatment as in Allied Mathematics Volume I and II by P. Duraipandian and S. Udayabaskaran, S. Chand Publications

**REFERENCE BOOK:**

1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.

2. Allied Mathematics by Dr. A. Singaravelu

3. P.Duraipandian& others- Analytical Geometry 3 Dimensional – Edition.

**Course Coordinator****HOD**

<b>U18MCSA2L1</b>	<b>MAJOR PRACTICAL – II</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	2
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Dr.P.Sumathi/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand the Fitting of discrete distributions and testing the goodness of fit									
CO2	Understand the Fitting of continuous distributions and testing goodness of fit									
CO3	Understand the Estimation of parameters by the method of moments and maximum likelihood									
CO4	Understand the Derivation of confidence intervals									
CO5	Understand the Test of Hypothesis									
CO6	Understand the Non-parametric 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	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PS O2
2	CO1	3	2	1	1	1	2	3		
	CO2	3	2	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	3	2	1	1	1	2	3		
	CO6	3	2	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

- 1) Fitting of discrete distributions and testing the goodness of fit:
  - a. Binomial distribution
  - b. Poisson distribution
  - c. Geometric distribution
  - d. Negative Binomial distribution
  
- 2) Fitting of continuous distributions and testing goodness of fit:
  - a. Normal distribution (Using Area and Ordinate methods)
  - b. Exponential Distribution

- 3) Estimation of parameters by the method of moments and maximum likelihood for
  - a. Binomial distribution
  - b. Poisson distribution
  - c. Normal distribution
  
- 4) Derivation of confidence intervals for the parameters of
  - a. Binomial distribution
  - b. Poisson distribution
  - c. Exponential distribution
  - d. Normal distribution
  
- 5) Test of Hypothesis:
  - a. Power of the test
  - b. Test of significance
    - i. Mean
    - ii. Difference of means and variance
    - iii. Equality of two variances from normal distribution
    - iv. Test of significance of correlation coefficients
  
- 6) Non-parametric methods:
  - a. Sign test
  - b. Signed rank test
  - c. Median test
  - d. Mann Whitney U-test
  - e. Wald – Wolfowitz run test
  - f. Test of randomness of sample

**Course Coordinator**

**HOD**

<b>U18HSCH201</b>	<b>ENVIRONMENTA STUDIES</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course –Higher Secondary studies									
	Course Coordinator Name & Department:- – Mrs. S. Vinitha / Chemistry									
<b>COURSE OBJECTIVES:-</b>										
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.										
<b>COURSE OUTCOMES (COs)</b>										
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	PS O1	PS O2
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	47 <sup>th</sup> 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:**

**6**

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.

**Reference book:**

1. Rajamannar, 2004, Environmental Studies, EVR College Pub, Trichy.
2. S. Kalavathy, (ED.) 2004, Environmental Studies, Bishop Heber College Pub., Trichy.

**Course Coordinator**

**HOD**

		VALUE EDUCATION						L	T	P	C
U18HSBC202	Total Contact Hours – 30	2	0	0	2						
	Prerequisite course – Higher Secondary level										
U18MCBC204	Course Coordinator Name & Department:- Ms. G. Vinothini, Commerce										
<b>COURSE OBJECTIVES:-</b>											
<ul style="list-style-type: none"> <li>To enable the students to understand the Social values.</li> <li>To provide knowledge on the features for life.</li> <li>To acquire the knowledge on Human rights.</li> <li>To impart the knowledge on Environment and Ecological balance.</li> <li>To educate the knowledge on Social evils.</li> </ul>											
<b>COURSE OUTCOMES (COs)</b>											
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	PS O1	PS O2	
2	CO1	3	3	3	1	2	3	2			
	CO2	3	2	3	2	1	3	3			
	CO3	3	1	2	2	3	3	1			
	CO4	2	3	3	3	3	1	3			
	CO5	3	2	3	2	2	1	3			
	CO6	2	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 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
- 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**

U18HSTA301	தமிழ்- III						L	T	P	C
	மொத்தவகுப்புநேரம்- 45						3	0	0	3
	முன்நிபந்தனைபடிப்பு - +2									
	பாடநெறி ஒருங்கிணைப்பாளர் : முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை									
பாடத்தின்நோக்கம் :- காப்பியஇலக்கியம்மற்றும்நீதிஇலக்கியத்தை அறியச் செய்தல்										
பாடத்தின்விளைவுகள்(பா.வி.) [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 இலக்கியம்பற்றியதெளிவானஅறிவைப்பெறுவர்									
பாடத்தின் விளைவுகளுடன்(Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	1	2	3	3	1	3		
	CO2	3	1	1	3	3	1	3		
	CO3	3	1	1	3	3	1	3		
	CO4	3	1	2	3	3	1	3		
	CO5	3	1	2	3	3	1	3		
	CO6	3	1	1	3	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/
		✓								
4	Approval	Academic Council Meeting								

**அலகு1**

சிலப்பதிகாரம் -இளங்கோவடிகள்- அடைக்கலக்காதை - 115-148, 201-219 **9**  
 மணிமேகலை - சீத்தலைச்சாத்தனார்-ஆபுத்திரன்திறும்அறிவித்தகாதை-1- 115  
 சீவகசிந்தாமணி - திருத்தக்கத்தேவர்- குணமாலையார்இலம்பகம் - 851 - 860

**அலகு2**

கம்பராமாயணம்- கம்பர்- அயோத்தியகாண்டம்- கங்கைப்படலம் - 10 **9**  
 தேம்பாவணி - வீரமாமுனிவர்- நாட்டுப்படலம் - 10  
 சீறாப்புராணம் -உமறுப்புலவர்-நூபுவத்துக்காண்டம்-மானுக்குப்பிணைநின்றபடலம்- 1- 10

<b>அலகு3</b>				<b>9</b>
திருக்குறள்	- திருவள்ளுவர்	- கல்வி	- 1 - 10	
நாலடியார்	- பொருட்பால்	- நட்பாராய்தல்	- 1 - 10	
இனியவைநாற்பது	- பூதஞ்சேந்தனார்		-	1 - 10

<b>அலகு4</b>				<b>9</b>
மூதுரை	- அவ்வையார்		-	1 - 10
நன்னெறி	- சிவப்பிரகாசர்		- 8,12,18,24,39	
புதியஆத்திசூடி - பாரதியார்			- 1 - 25	

<b>அலகு5</b>				<b>9</b>
காப்பியஇலக்கியவரலாறு- நீதிஇலக்கியவரலாறு				

**பார்வைநூல்கள்:**

1. சு.ஆனந்தன், "தமிழ்இலக்கியவரலாறு", பாரிநிலையம், 2018
2. ந.மு.வேங்கடசாமிநாட்டார், "சிலப்பதிகாரம்மூலமும்உரையும்", ராமையாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "மணிமேகலைமூலமும்உரையும்", சாரதாபதிப்பகம், 2017
4. ஆசிரியர்குழு, "சீவகசிந்தாமணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
5. அ.ச.ஞானசம்பந்தன், "கம்பராமாயணம்மூலமும்உரையும்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2010
6. வீரமாமுனிவர், "தேம்பாவணிமூலமும்உரையும்", சாரதாபதிப்பகம், 2014
7. செய்குத்தம்பிபாவலர், "சீறாப்புராணம்மூலமும்உரையும்", யுனிவர்சல்பப்ளிஷர்ஸ், 2010
8. கலைஞர்மு.கருணாநிதி, "திருக்குறள்கலைஞர்உரை", திருமகள்நிலையம், 2010
9. பத்மதேவன், "நாலடியார்மூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2010
10. தமிழ்ப்பிரியன், "இனியவைநாற்பதுமூலமும்உரையும்", கற்பகம்புத்தகாலயம், 2007
11. ந.மு.வேங்கடசாமிநாட்டார், "மூதுரைபதவுரையும்பொழிப்புரையும்", ராதாபதிப்பகம், 2010
12. கதிர்முருகு, "நன்னெறிமூலமும்உரையும்", சாரதாபதிப்பகம், 2016
13. அ.சீனிவாசன், "பாரதியின்புதியஆத்திசூடி: ஒருவிளக்கவுரை", 1999

<b>U18HSFR301</b>		<b>FRENCH</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
		Total Contact Hours – 45						3	0	0	3
		Prerequisite course – Grade 12									
		Course Coordinator Name & Department: -Ms. Tushita Naidu K /Département De Française									
<b>COURSE OBJECTIVES: -</b>											
To develop the technical aspects of the language and varied grammatical nuances to interpret the subject matter.											
<b>COURSE OUTCOMES (COs)</b>											
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	PS O1	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!**

**9**

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

<b>U18HSHI301</b>		<b>HINDI</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
		Total Contact Hours – 45							3	0	0	3
		Prerequisite course – Grade 12										
		Course Coordinator Name & Department:-Mrs Rani Selvan / Hindi										
<b>COURSE OBJECTIVES:-</b> To understand and improve the skills in the Language of Hindi												
<b>COURSE OUTCOMES (COs)</b>												
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) (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	PS O2		
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**  
**COMPREHENSION**

**09**

**Text Books:**

By Maithilisharan Gupt, Anuvadh Abhyas – III

**Reference Books:**

Publisheres - Dakshin Bharath Hindi Prachar Sabha, Chennai- 17

**CourseCoordinator**

**HOD**

<b>U18HSEN302</b>	<b>ENGLISH- III</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45						3	0	0	3
	Prerequisite course – + 2 level English									
	Course Coordinator : Mrs.B.JANUA SHERLY& Department of English									
<b>COURSE OBJECTIVES:-</b> To enable them to realize the value of language, communicate effectively and develop career skills.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Remember the value of LSRW skills.									
CO2	Understand the language skills and know the accuracy of writing skill									
CO3	Apply the significance and learn how to write resume, official letters and reports									
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 differentiate various official letters and reports and the language to be used in E-mails, Business letters etc.									
<b>Category</b>	HS									
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	2	3	3	2	2	3		
	CO4	2	2	2	2	2	2	2		
	CO5	3	3	2	2	2	3	3		
	CO6	3	3	3	3	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	<b>Approval</b>	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 of someone else points 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: Masterclass 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 BlackSwan, First edition, 2010

**CourseCoordinator**

**HOD**

<b>U18MCSA301</b>	<b>DISTRIBUTION THEORY</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60							3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department: - Ms.P.S.Sharmila/Mathematics										
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms											
<b>COURSE OUTCOMES (COs)</b>											
CO1	To develop Probability distribution function and its Properties										
CO2	Understand the Continuous distributions										
CO3	To gain the concept of Continuous distributions										
CO4	Understand the usage of Derivation of their density functions and their properties										
CO5	Understand Poisson distribution as a limiting case of Binomial										
CO6	To Know the convergence of distribution										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	1	1	1	2	3			
	CO2	3	3	1	1	1	2	3			
	CO3	3	2	1	1	1	2	3			
	CO4	3	2	1	1	1	2	3			
	CO5	2	2	1	1	1	2	3			
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

### UNIT I PROBABILITY DISTRIBUTION FUNCTION AND ITS PROPERTIES 12

Probability distribution function and its Properties - Points of infinite discontinuity of probability distribution functions - Derivations of probability density functions of transformations of one-dimensional random variables - Derivations of probability density functions only with respect to sum, difference, product and quotient of two-dimensional random variables.

### UNIT II DISCRETE DISTRIBUTIONS

12

Discrete distributions: Binomial, Trinomial and Multinomial distributions and their properties - Poisson, Negative Binomial and Geometric distributions and their properties.

**UNIT III C****12**

c: Normal, Uniform, Exponential and their properties.

**UNIT IVSAMPLING DISTRIBUTIONS****12**

Sampling distributions : Chi-square, Student's t and F distributions - Derivation of their density functions and their properties.

**UNIT V- LIMITING DISTRIBUTIONS****12**

Basic Central Limit Theorem (statement only) - Limiting distributions : Poisson distribution as a limiting case of Binomial - Poisson distribution as a limiting case of Negative Binomial distribution - Convergence of Binomial, Poisson, Gamma and Chi-square distribution to Normal distribution using Moment generating function, Limiting form of t distribution - Convergence of F distribution to Chi-square distribution.

**TEXT BOOK:**

1. Gupta, S. C and Kapoor, V. K (2002), **Fundamentals of Mathematical Statistics**, Sultan Chand and Sons, New Delhi.

**REFERENCE BOOK:**

1. Hogg, R. V and Craig, A. T (2002), **Introduction to Mathematical Statistics**, Pearson Education Asia, India.

**Course Coordinator****HOD**

<b>U18MCSA302</b>	<b>NUMERICAL ANALYSIS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Mr.V.Nandakumar/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms..										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Properties of operators E and $\Delta$									
CO2	Understand the Central differences interpolation formulae									
CO3	Gain the concept of Numerical differentiation by Newton’s Forward									
CO4	To Know the usage of Numerical Integration- Trapezoidal Rule									
CO5	Understand the Numerical Solution of ordinary differential equations									
CO6	To equip the students on the knowledge of modified 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	PO2	PO3	PO4	PO5	PO6	PO7	PS O1	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

### UNIT I FINITE DIFFERENCES

12

Finite differences – Introduction, Properties of operators E and  $\Delta$  - Estimation of one or more missing values, Newton’s Forward, Backward (for equal intervals) and Lagrange’s Formulae.

### UNIT II INTERPOLATION

12

Central differences interpolation formulae - Gauss forward, Gauss Backward Stirling’s and Bessel’s formulae.

### UNIT III NUMERICAL DIFFERENTIATION

12

Numerical differentiation by Newton’s Forward and Newton’s Backward, Gauss Forward, Gauss

Backward and Bessel's formulae (up to 2<sup>nd</sup> order).

**UNIT IV NUMERICAL INTEGRATION**

**12**

Numerical Integration- Trapezoidal Rule, Simpson's 1/3<sup>rd</sup> Rule, Simpson's 3/8<sup>th</sup> Rule and Weddle's rules.

**UNIT V NUMERICAL SOLUTION**

**12**

Numerical Solution of ordinary differential equations - Taylor series method, Euler's Method, Modified Euler method and Fourth order Runge-Kutta Method.

**TEXT BOOK:**

1.Sastry.S.S., "Introduction Methods of Numerical Analysis", Prentice -Hall of India, 3rd Edition.(2000)

**REFERENCE BOOK:**

1.E.Balagusamy, "Numerical Methods", Tata McGraw Hill Publishing Company Limited, New Delhi.(2004)

2. Kandasamy.P, K.Thilagavathy, and K.Gunavathy, "Numerical Methods" S.Chand& Co, New Delhi (2007)

3. Dixit J.B. "Numerical Methods". University Science Press, New Delhi, (2010).

**Course Coordinator**

**HOD**

<b>U18NCSA301</b>	<b>MANAGERIAL ECONOMICS DEMOGRAPHY – I</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.P.S.Sharmila/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Sources of health statistics									
CO2	Understand the Method of collecting demographic data									
CO3	To gain the concept of Measures of Fertility									
CO4	Understand the usage of Demography: Population growth – Age									
CO5	Understand Population growth and change									
CO6	To Know concept of geometric progression method									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

## UNIT I HEALTH STATISTICS

12

Health Statistics: Introduction – Utilization of basic data - Sources of health statistics -Problems in the collection of sickness data - Measurements of sickness - Hospital statistics- The international classification of diseases.

## UNIT IIDEMOGRAPHIC DATA

12

Sources of Demographic data - Method of collecting demographic data : Census, Registration and Survey methods – Extent of under registration - Measures of mortality rates : Crude Death Rate -

Specific death rate – Infant mortality rate - Neonatal mortality rate - Foetal death rate - Maternal mortality rate – Causes of death - Direct and indirect standardization of death rates.

**UNIT III MEASURES OF FERTILITY 12**

Measures of Fertility: Crude Birth Rate (CBR) - General and specific fertility rates - General Marital Fertility Rate (GMFR) - Age specific fertility rate - Total fertility rate - Gross reproduction rate - Net reproduction rate – Life tables - Uses of life tables.

**UNIT IV DEMOGRAPHY 12**

Demography: Population growth - Age and sex composition - Dependency ratios.

**UNIT V POPULATION GROWTH AND CHANGE 12**

Population growth and change: Introduction – Population estimation - The method of natural increase - The arithmetic progression method - The geometric progression method - Linear growth curve - Modified exponential curve - Gompertz curve - Logistic curve.

**TEXT BOOK:**

1. Sundar Rao, P. S. S and Richard, J (1999), **An Introduction to Bio-Statistics**, Prentice Hall of India, New Delhi.
2. Gupta, S. C and Kapoor, V. K (2001), **Fundamentals of Applied Statistics**, Sultan Chand and sons, New Delhi.
3. Baskar, D. Misra (2000), **An introduction to the Study of Population**, South Asian Publishers Pvt. Ltd.

**Course Coordinator**

**HOD**

<b>U18MCSA3L1</b>	<b>MAJOR PRACTICAL – III</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						3	1	0	2
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.L.Radhika/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Formulation of an LPP									
CO2	Understand the Testing for Optimality using MODI method									
CO3	To know the concept of Hungarian Algorithm									
CO4	Understand the usage of Sequencing Problem									
CO5	Understand the Determination of Floats									
CO6	To gain the Knowledge on Critical Path									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

## **I. Operations Research**

- 1) Linear Programming Problems:
  - a) Formulation of an LPP
  - b) Graphical Method of Solution
  - c) Simplex Method
  - d) Big-M method
  - e) Two-Phase Method
  - f) Duality
- 2) Transportation Problems:
  - a) Initial Basic Feasible Solutions by  
North West Corner Rule, Least Cost Method and  
Vogel's Approximation Method
  - b) Testing for Optimality using MODI method
- 3) Assignment Model:
  - a) Hungarian Algorithm
- 4) Sequencing Problem:
  - a)  $n$  jobs through two machines
  - b)  $n$  jobs through three machines
  - c)  $n$  jobs through  $m$  machines
- 5) Game theory:
  - a) Saddle point strategy
  - b) Algebraic Method of solving a  $2 \times 2$  game
  - c) Dominance Property
  - d) Graphical solution for  $2 \times n$  and  $m \times 2$  games
  - e) Solving game using Linear Programming Method
- 6) PERT and CPM:
  - a) Determination of Floats and Critical Path
  - b) Determination of Mean and Variance and hence PERT.

## **II. Sampling Theory**

- 1) Simple random sampling and Estimates
- 2) Stratified random sampling and Estimates
- 3) Optimum and proportional allocations
- 4) Systematic sampling and Estimates
- 5) Single stage Cluster sampling

## **III. Regression Analysis**

- 1) Calculation of partial and multiple correlation coefficients
- 2) Fitting of multiple regression equations
- 3) Testing goodness of fit

\* A minimum of 40 exercises to be done covering all the above topics.

**Course Coordinator**

**HOD**

U18NETA301	பாடத்தின் பெயர் : அடிப்படைத்தமிழ்- I						L	T	P	C
	மொத்தவகுப்புநேரம்- 30						2	0	0	2
	முன்நிபந்தனைபடிப்பு - + 2									
	பாடநெறி ஒருங்கிணைப்பாளர் : திருமதி. அ.கோ.ஸ்ரீதேவி & தமிழ்த்துறை									
பாடத்தின்நோக்கம் :- தமிழ்மொழியினைப்பயிற்றுவித்தல்										
பாடத்தின்விளைவுகள்(பா.வி.) [COURSE OUTCOMES (COs)]										
CO1	தமிழ்எழுத்துக்களில்உயிர்எழுத்துக்களைஅறிவர்									
CO2	தமிழ்எழுத்துக்களில்மெய்எழுத்துக்களைஅறிவர்									
CO3	தமிழில்எண்கள், நாட்கள்பற்றி அறிவர்									
CO4	தமிழ்மாதங்கள்பற்றி அறிவர்									
CO5	உறவுமுறைபெயர்களைப்பற்றிஅறிவர்									
CO6	தமிழ்மொழியை அறியாதவர்கள் தமிழை எழுத படிக்கத் தெரிந்து கொள்வர்									
பாடத்தின் விளைவுகளுடன்(Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	1	3	1	1	1	1	2		
	CO2	1	3	1	1	1	1	2		
	CO3	1	3	1	1	1	1	2		
	CO4	1	3	1	1	1	1	2		
	CO5	1	3	1	1	1	1	2		
	CO6	1	3	1	1	1	1	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/
							✓			
4	Approval	Academic Council Meeting								

அலகு1

10

தமிழ்எழுத்துக்களைஅறிமுகம்செய்தல்- உயிர்எழுத்துக்கள், மெய்எழுத்துக்கள்

அலகு2

10

குறில், நெடில்எழுத்துக்கள், வல்லினம், மெல்லினம், இடையினம்

அலகு3

10

எண்கள்- ஒன்றுமுதல்ஐம்பதுவரை, பத்துஇலக்கஎண்கள், நூறுஇலக்கஎண்கள், ஆயிரயிலக்கஎண்கள்

தமிழில்நாட்கள், தமிழ்மாதங்கள், ஆங்கிலமாதங்கள்

உறவுமுறைபெயர்கள்- பெயர்சொற்கள்- வினைச்சொற்கள்

பார்வைநூல்கள்:

1. என்.ஹெச்.எம், "தமிழ்எழுத்துகள்", புரோடிஜிதமிழ், 2009

2. அருணா, "என்சுவடிவாய்பாடு", அருணாபப்ளிகேசன்ஸ்

U18NETA302	சிறப்புத்தமிழ் - I				L	T	P	C		
	மொத்தவகுப்புநேரம்- 30				2	0	0	2		
	முன்நிபந்தனைபடிப்பு - + 2									
	பாடநெறி ஒருங்கிணைப்பாளர் : முனைவர். ஜெ.அந்தோணி ஜெயவீலா & தமிழ்த்துறை									
பாடத்தின் நோக்கம் :- தமிழர்நாகரீ கம்பண்பாடுபற்றி அறியச்செய்தல்										
பாடத்தின் விளைவுகள் (பா.வி.) [COURSE OUTCOMES (COs)]										
CO1	பழங்காலத்தமிழரின் சமூக அமைப்பைப்பற்றி அறிவர்									
CO2	பண்டைத்தமிழர்திருமணமுறைநல்லறம்- குடும்பவாழ்வுபற்றி அறிவர்									
CO3	பண்டைத்தமிழரின் கல்வி, வானியல் அறிவுபற்றி அறிவர்									
CO4	தமிழரின் உணவு, உடை, உறையுள்- சங்ககாலவிழாக்கள்பற்றி அறிவர்									
CO5	பண்டைத்தமிழரின் கல்வி, வானியல் அறிவுபற்றி அறிவர்									
CO6	தமிழர்நாகரீ கம்பண்பாடுபற்றி அறிவர்									
பாடத்தின் விளைவுகளுடன் (Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	2	3	2	3	1	3		
	CO2	3	2	3	2	3	1	3		
	CO3	3	2	3	2	3	1	3		
	CO4	3	2	3	2	3	1	3		
	CO5	3	2	3	2	3	1	3		
	CO6	3	2	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/
							✓			
4	Approval	Academic Council Meeting								

அலகு 1

நாகரிகமும் பண்பாடும்- சங்ககாலத்து அரசியல்நிலை- சங்ககாலத்தொழிற்பிரிவினரும் சமூக அமைப்பும்- மகளிர்நிலை

10

அலகு 2

பண்டைத்தமிழர்திருமணமுறைநல்லறம்- குடும்பவாழ்வுபற்றிய தமிழர்கொள்கை- பண்டையத்தமிழரின் உணவு, உடை, உறையுள்- சங்ககாலவிழாக்கள்

10

அலகு 3

பண்டைத்தமிழரின் கல்விநிலை- பண்டைத்தமிழரின் வானியல் அறிவு- பண்டைத்தமிழரின் விளையாட்டும் பொழுதுபோக்கும்- மருத்துவக்கலை

10

பாடநூல்:

1. அ.தட்சிணாமூர்த்தி, "தமிழர்நாகரிகமும் பண்பாடும்", ஐந்திணைப்பதிப்பகம், 2017

**பார்வைநூல்கள்:**

1. ஞா.தேவநேயப்பாவாணர், "பண்டைத்தமிழர்நாகரிகமும்பண்பாடும்", பூம்புகார்பதிப்பகம், 2017
2. கேகேபிள்ளை, "தமிழகவரலாறுமக்களும்பண்பாடும்", உலகத்தமிழாராய்ச்சிநிறுவனம், 2015

**Course Coordinator**

**HOD**

**SEMESTER IV**

U18HSTA401	தமிழ்- IV		L	T	P	C				
	மொத்தவகுப்புநேரம்- 45		3	0	0	3				
	முன்நிபந்தனைபடிப்பு - +2									
	பாடநெறி ஒருங்கிணைப்பாளர் : முனைவர். த. கிறிஸ்டல் ரெஜி&தமிழ்த்துறை									
பாடத்தின்நோக்கம் :- சங்கஇலக்கியத்தைப்பற்றி அறியச்செய்தல்										
பாடத்தின்விளைவுகள்(பா.வி.) [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	சங்கஇலக்கியத்தைப்பற்றிய உயரிய சிந்தனையைப்பெறுவர்									
பாடத்தின் விளைவுகளுடன்(Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	3	2	1	1	3	1	3		
	CO2	3	2	1	1	3	1	3		
	CO3	3	2	2	1	3	1	3		
	CO4	3	2	1	1	3	1	3		
	CO5	3	2	2	1	3	1	3		
	CO6	3	2	1	1	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/
		✓								
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			

**பார்வைநூல்கள்:**

1. வேங்கடராமன், "நற்றிணைமூலமும்உரையும்", உ.வே.சாநூல்நிலையம்,2013
2. புலியூர்க்கேசிகன், "குறுந்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
3. புலியூர்க்கேசிகன், "கலித்தொகைமூலமும்உரையும்", சாரதாபதிப்பகம், 2015
4. புலியூர்க்கேசிகன், "புறநானூறுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
5. ஒளவைச.துரைசாமிப்பிள்ளை, "பதிற்றுப்பத்துமூலமும்உரையும்", சாரதாபதிப்பகம், 2008
6. கதிர்முருகு, "பத்துப்பாட்டுமூலமும்உரையும்", சாரதாபதிப்பகம், 2010
7. ச.வே.சுப்ரமணியம், "சங்கஇலக்கியம்", மணிவாசகர்பதிப்பகம், 2006

**Course Coordinator**

**HOD**

<b>U18HSFR401</b>	<b>FRENCH</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45							3	0	0	3
	Prerequisite course – Grade 12										
	Course Coordinator Name & Department: -Ms. Tushita Naidu K /Département De Française										
<b>COURSE OBJECTIVES: -</b> To introduce students to the advanced levels of the language.											
<b>COURSE OUTCOMES (COs)</b>											
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	PS O1	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 plaisez!

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

**TEXT BOOKS:**

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

**CourseCoordinator**

**HOD**

<b>U18HSHI401</b>	<b>HINDI</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45							3	0	0	3
	Prerequisite course – Grade 12										
	Course Coordinator Name & Department:-Mrs Rani Selvan / Hindi										
<b>COURSE OBJECTIVES:-</b> To understand and improve the skills in the Language of Hindi											
<b>COURSE OUTCOMES (COs)</b>											
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	PS O1	PS O2	
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**  
**COMPREHENSION**

**09**

**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**

		ENGLISH- IV						L	T	P	C
<b>U18HSEN402</b>		Total Contact Hours – 45						3	0	0	3
		Prerequisite course – + 2 level English									
		Course Coordinator :Ms.E.REKHA& Department of English									
<b>COURSE OBJECTIVES:-</b> To understand the literature, and there by improve their language and communication skills											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Remember the basic concepts of English literature										
CO2	Understand the literature and beauty of language										
CO3	Apply the themes and values by executing the comprehensive ability in Reading.										
CO4	Analyse the grammar and the literary texts.										
CO5	Evaluate the characters and the genre prescribed.										
CO6	Create comprehensive essays efficiently.										
<b>Category</b>	HS										
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	2	2	2	2	2	2			
	CO4	3	3	3	2	2	2	2			
	CO5	3	3	3	2	2	2	2			
	CO6	2	2	2	2	2	2	2			
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	<b>Approval</b>	Academic Council Meeting									

## UNIT 1 - PROSE

9

**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

9

**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**

**9**

**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**

**9**

**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**

**9**

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
3. Shakespeare, “Macbeth”, Macmillan Publisher, 2014

#### **REFERENCE BOOKS:**

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

**CourseCoordinator**

**HOD**

<b>U18MCSA401</b>	<b>THEORY OF ESTIMATION</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Dr.P.Sumathi/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop the problem of estimation of population characteristics									
CO2	Understand the Condition for MVB estimators to exists									
CO3	Gain the concept of Consistent estimators									
CO4	Understand the usage of Completeness									
CO5	To know the bounded completeness of class of pdfs									
CO6	Understand Definition of confidence intervals									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT I PROBLEM OF ESTIMATION OF POPULATION CHARACTERISTICS 12

The problem of estimation of population characteristics - Definition of Estimator - Properties of a good estimator - Definition of Unbiased Estimator - Bias of an estimator - The relation between the mean square error and variance of an estimator - Asymptotically unbiased estimator - Minimum Variance Unbiased estimator - Uniqueness of MVU Estimator.

## **UNIT II INFORMATION FUNCTION**

**12**

The information function and its importance - The Rao-Cramer Inequality for the variance of an unbiased estimator and its importance - MVB estimators - Condition for MVB estimators to exist.

## **UNIT III CONSISTENT ESTIMATORS**

**12**

Consistent estimators - Properties of consistent estimators - Sufficient condition for an estimator to be consistent - Moment estimators and Maximum Likelihood estimators - Properties of Maximum Likelihood estimators (without proof).

## **UNIT IV COMPLETENESS AND BOUNDED COMPLETENESS OF CLASS OF PDFS**

**12**

Completeness and bounded completeness of class of pdfs - Definition of sufficient statistic and complete sufficient statistics - The factorization theorem on sufficient statistic - The Rao-Blackwell theorem and its applications - The Lehman-Scheffe theorem - Simple problems on Lehman-Scheffe theorem.

## **UNIT V INTERVAL ESTIMATION**

**12**

Interval Estimation : Definition of confidence intervals - Construction of confidence interval for the population mean when the variance is known and the construction of confidence interval for the population variance when the mean is known, in the case of univariate normal distribution - Construction of confidence interval for the difference of means of two independent normal populations having common unknown variance - Derivation of confidence intervals for the ratio of variances of two independent normal populations.

### **TEXT BOOK:**

1. Gupta, S. C and Kapoor, V. K (2002), **Fundamentals of Mathematical Statistics**, Sultan Chand and Sons, New Delhi.
2. Hogg, R. V and Craig, A. T (2002), **Introduction to Mathematical Statistics**, Pearson Education Asia, India.
3. Mood, A. M, Graybill, F. A and Boes, D. C (1998), **Introduction to the Theory of Statistics**, McGraw-Hill, New York.

### **REFERENCE BOOK:**

1. Saxena, H. C (1985), **Statistical Inference**, Sultan Chand and Sons, New Delhi.
2. Bansilal and Arora (1989), **New Mathematical Statistics**, Satya prakashan, New Delhi.

**Course Coordinator**

**HOD**

<b>U18MCSA402</b>	<b>TESTING OF HYPOTHESES</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.L.Radhika/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Hypothesis: Simple and composite hypotheses									
CO2	To Know the Critical regions and sufficient statistics									
CO3	To gain the concept of Likelihood Ratio Test (LRT)									
CO4	Understand the usage of One-tailed and two-tailed tests									
CO5	Understand Sign test for one sample									
CO6	Understand Sign test for 2 samples									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT I HYPOTHESIS

12

Hypothesis: Simple and composite hypotheses – Null hypothesis and alternative hypothesis – Test - Critical region – Type I error and Type II error – Power of the test – Steps involved in solving testing statistical hypothesis – Most Powerful Test – Neymann–Pearson Lemma – Simple applications.

## UNIT II POWERFUL TESTS

12

Most Powerful Tests: Randomized test for the parameters of binomial and Poisson distributions – Critical regions and sufficient statistics – Uniformly Most Powerful Tests – Power function and power

curve – UMP tests for the parameters of univariate binomial, Poisson, normal and exponential distributions.

### **UNIT III LIKELIHOOD RATIO TEST**

**12**

Likelihood Ratio Test (LRT): Definition of LRT - Properties of LRT tests (Statements only) – LRT for the mean and LRT of the variance of univariate normal population – Test for equality of means of 2 independent univariate normal populations with common unknown variance – Test for equality of variances of 2 independent univariate normal populations.

### **UNIT IV TESTS OF SIGNIFICANCE**

**12**

Tests of significance (procedures only): One-tailed and two-tailed tests – Tests of significance of mean, Difference of means, Variance, Equality of two variances of univariate normal distributions and correlation coefficient.

Test of independence of attributes - Homogeneity of variances of normal distributions – Homogeneity of correlation coefficients.

### **UNIT V NON-PARAMETRIC METHODS**

**12**

Non-parametric methods: Sign test for one sample and 2 samples – Signed ranked test for one sample and 2 samples – Median test – Mann-Whitney–Wilcoxon U–test – Wald - Wolfowitz Run test – Test of Randomness of a sample.

#### **TEXT BOOK:**

1. Gupta, S. C and Kapoor , V. K (2002), **Fundamentals of Mathematical Statistics**, Sultan Chand and Sons, New Delhi (Relevant Chapters and Sections only).

#### **REFERENCE BOOK:**

1. Hogg, R. V and Craig, A. T (2002), **Introduction to Mathematical Statistics**, Pearson Education Asia, India.
2. Mood, A. M, Graybill, F. A and Boes, D. C (1998), **Introduction to the Theory of Statistics**, McGraw-Hill, New York.

**Course Coordinator**

**HOD**

<b>U18NCSC403</b>	<b>Programming in 'C'</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60							3	1	0	4
	Prerequisite course –Computer Science / Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department:- P,Jennifer/C.S										
<b>COURSE OBJECTIVES:-</b> To introduce the concepts and develop working knowledge on introduction to C, Control structures, Function arguments - Static and register variables, Arrays and. Strings, File Access.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Understand the concept of Introduction to C, variables, Data types – Declarations.										
CO2	Understand the Expression and Conditional Expressions, Control structures										
CO3	Understand the concept of Arrays and. Strings.										
CO4	Understand the usage of Structures and functions, Arrays of structures, Fields.										
CO5	Understand the concept of File Access, Random access.										
CO6	Understand and write simple programs based on the 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	PS O1	PS O2	
2	CO1	3	3	1	1	1	1	3			
	CO2	3	3	1	2	2	2	3			
	CO3	3	2	3	1	3	3	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

12

Introduction to C, variables, Data types - Declarations, Type conversions, increment and decrement operators, Bitwise, Logical and Assignment operators.

## UNIT II

12

Expression and Conditional Expressions, Control structures, If-Else, SWITCH, WHILE, FOR and DO WHILE Loop structures. Break continue, GO o's and Label Statements. Function, function returning, Non-integers. Function arguments - Static and register variables.

### **UNIT III**

**12**

Arrays and Strings - Array Declaration Multi dimensional Arrays Strings / Character Arrays, Array initialization - Pointers and Addresses. Pointers and Arrays - Pointer to functions.

### **UNIT IV**

**12**

Structures and functions, Arrays of structures, Fields, Unions - type definition standard input and output - formatted output - output - Access to the standard library.

### **UNIT V**

**12**

File Access, File handling in C - File descriptions - Error handling - 'Low level i/o - Read and Write'. Open, Create, Close, Unlink - Random Access - seek and lseek.

### **TEXT BOOKS:**

1. Kapoor, V.K. and Gupta, S.P. (1978): Fundamentals of applied statistics, Sultan Chand & Sons. Gupta, R.C.(1974): Statistical Quality Control.
2. Montgomery, D.C. (1983): Introduction to Statistical Quality Control, John Wiley & Sons.
3. Ekambaram, S K. (1963): Statistical basis of Acceptance sampling, Asia Publishing House.

### **REFERENCE BOOKS:**

- 1.R. Kruse C.L. Tondo and B. Leung, "Data Structures and Program design in C", Second Edition, PHI, 1997.
- 2.Horowitz, S. Sahni, and S. Rajasekaran, "Computer Algorithms", Galgotia Pub. Pvt. Ltd., 1998.

**Course Coordinator**

**HOD**

<b>U18NCSC4L1</b>	<b>ALLIED PRACTICAL 1 (PROGRAMMING IN C)</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	<b>Total Contact Hours – 30</b>					<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	
	Prerequisite course – Computer Science / Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department :- Dr. K.Rajakumari / CS									
<b>COURSE OBJECTIVES :-</b> Learners will be familiar with programming in C concepts and develop working knowledge in C language.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Implement the basic concept of programming in C Structure.									
CO2	Perform the sum of series and mathematical calculations									
CO3	Apply the concept of Arrays for Ascending and Descending order									
CO4	Develop the program for Matrix Operations.									
CO5	Implement recursive functions for Fibonacci series									
CO6	Develop the program using String manipulations & 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
2	CO1	3	3	2	1	1	1	3		
	CO2	3	2	2	2	2	2	3		
	CO3	3	2	3	1	3	1	3		
	CO4	3	2	2	2	1	2	2		
	CO5	3	2	2	1	2	1	3		
	CO6	3	3	3	2	3	3	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								

\* SECOND ALLIED COURSE II - – COMPUTER SCIENCE (C Programming Lab)

S.NO	LIST OF PROGRAMS
1.	Solution of a Quadratic Equation (all cases)
2.	Sum of Series (sine, cosine, ex)
3.	Coverision of Number System (Decimal to Binary, Decimal to Octal)
4.	Largest, Smallest among 'n' numbers (Also use it to find the number of occurrences of a given number)

5.	Ascending and Descending order of numbers using Arrays.
6.	Sorting of names in Alphabetical order.
7.	Matrix Operations (Addition, Subtraction, Multiplication – use Functions.
8.	Finding factorials, generating Fibonacci Numbers using recursive functions.
9.	String manipulations without using string functions (String length, String Comparison, String Concatenation, Palindrome Checking, Counting words and lines in String – use function Pointers).

**Course Coordinator**

**HOD**

U18NETA401	அடிப்படைத்தமிழ்- II					L	T	P	C	
	மொத்தவகுப்புநேரம்- 30					2	0	0	2	
	முன்நிபந்தனைபடிப்பு - + 2									
	பாடநெறி ஒருங்கிணைப்பாளர் : திருமதி. அ.கோ.ஸ்ரீதேவி & தமிழ்த்துறை									
பாடத்தின் நோக்கம் :- தமிழ்மொழியினைப்பயிற்றுவித்தல்										
பாடத்தின் விளைவுகள்(பா.வி.) [COURSE OUTCOMES (COs)]										
CO1	எழுத்துக்கள்மூலம்சொற்கள்அமைப்பதைப்பற்றிஅறிவர்									
CO2	சொற்கள்மூலம்வாக்கியம்அமைப்பதைப்பற்றிஅறிவர்									
CO3	எழுத்துக்களைஇணைத்தல், சரியானசொற்களால்வாக்கியம்அமைப்பதைப்பற்றிஅறிவர்									
CO4	வினாவுக்குரியவிடையளித்தல்பற்றி அறிவர்									
CO5	தன்விவரப்பட்டியல்தயாரிப்பதுபற்றிஅறிவர்									
CO6	தமிழ்மொழியை அறியாதவர்கள் தமிழை எழுத படிக்கத் தெரிந்து கொள்வர்									
பாடத்தின் விளைவுகளுடன்(Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	1	3	1	1	1	1	2		
	CO2	1	3	1	1	1	1	2		
	CO3	1	3	1	1	1	1	2		
	CO4	1	3	1	1	1	1	2		
	CO5	1	3	1	1	1	1	2		
	CO6	1	3	1	1	1	1	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/
							✓			
4	Approval	Academic Council Meeting								

அலகு1

10

எழுத்துக்களைஒழுங்குபடுத்திச்சொற்களாக்குதல்- சொற்களைக்கொண்டுவாக்கியம்அமைத்தல்

அலகு2

10

இனமில்லாதவற்றைஎடுத்துஎழுதுதல்- விடுபட்டஎழுத்துக்களைஇணைத்தல்- சரியானவாக்கியமாகமாற்றுதல்

அலகு3

10

வினாவுக்குரியவிடையளித்தல்- தன்விவரப்பட்டியல்தயாரித்தல்- ஆங்கிலப்பகுதியைத்தமிழாக்குதல்

CourseCoordinator

HOD

Sub. Code: U18NETA402	பாடத்தின் பெயர் : சிறப்புத்தமிழ் - II						L	T	P	C
	மொத்தவகுப்புநேரம்- 30						2	0	0	2
	முன்நிபந்தனைபடிப்பு - + 2									
	பாடநெறி ஒருங்கிணைப்பாளர் : முனைவர். ஜெ. அந்தோணி ஜெயவல்லா & தமிழ்த்துறை									
பாடத்தின் நோக்கம் :- நாட்டுப்புற இலக்கியத்தைப் பற்றி அறியச்செய்தல்										
பாடத்தின் விளைவுகள் (பா.வி.) [COURSE OUTCOMES (COs)]										
CO1	நாட்டுப்புறப்பாடல்கள் பற்றி அறியச்செய்தல்									
CO2	விடுகதைகள் பற்றி அறியச்செய்தல்									
CO3	நம்பிக்கைகள் பற்றி அறியச்செய்தல்									
CO4	சமயவழிபாடுகள் பற்றி அறியச்செய்தல்									
CO5	பழமொழிகள் பற்றி அறியச்செய்தல்									
CO6	நாட்டுப்புறமருத்துவம் பற்றி அறியச்செய்தல்									
பாடத்தின் விளைவுகளுடன் (Cos) பாடநெறி முடிவுகளை (POs) வரைபடமாக்குதல் (1/2/3 தொடர்புகளின் வலிமையைக் குறிக்கிறது) 3- அதிகபட்சம், 2- நடுத்தரம், 1- குறைந்தபட்சம்										
1	COs/Pos	PO 1	2	3	4	5	6	7	PS O	PS O
2	CO1	1	2	3	1	3	1	2		
	CO2	1	2	3	1	3	1	2		
	CO3	1	2	3	1	2	1	2		
	CO4	1	2	3	1	3	1	2		
	CO5	1	2	3	1	2	1	2		
	CO6	1	2	3	1	2	1	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/
							✓			
4	Approval	Academic Council Meeting								

அலகு 1

10

நாட்டுப்புறப்பாடல்கள்- தாலாட்டுப்பாடல்கள், குழந்தைப்பாடல்கள், விளையாட்டுப்பாடல்கள், தொழிற்பாடல்கள், காதல்பாடல்கள், கொண்டாட்டப்பாடல்கள்

அலகு 2

10

விடுகதைகள்- நம்பிக்கைகள்- சமயவழிபாடுகள்

அலகு 3

10

பழமொழிகள்- நாட்டுப்புறமருத்துவம்

பாடநூல்:

1. சு.சக்திவேல், "நாட்டுப்புறஇயல் ஆய்வு", மணிவாசகர்பதிப்பகம், 2015

பார்வைநூல்கள்:

1. சு.சண்முகசுந்தரம், "நாட்டுப்புறஇலக்கியவரலாறு", காவ்யாபதிப்பகம், 2017
2. நா. வானமாமலை, "தமிழர்நாட்டுப்பாடல்கள்", நியூசெஞ்சுரிபுக்ஹவுஸ், 2014
3. கி.வா. ஜகந்நாதன், "மலையருவி(நாடோடிப்பாடல்கள்)", அமுதநிலையம், 2012

**CourseCoordinator**

**HOD**

**SEMESTER V**

<b>U18MCSA501</b>	<b>DESIGN OF EXPERIMENTS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.S.Kavitha/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Analysis of Variance									
CO2	Understand the Estimation of missing values in RBD (one and two)									
CO3	Understand the Estimation of missing values in LSD (one and two)									
CO4	To Know the concept of definitions of contrast									
CO5	To Know the concept of definitions of orthogonal contrast									
CO6	Understand the usage of Confounding in factorial design									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

**UNIT I ANALYSIS OF VARIANCE**

**12**

Analysis of Variance: Definition and assumptions. Cochran's theorems (statement only) ANOVA - One way and Two-way classifications (with one observation per cell). Experimental error.

**UNIT II DESIGN OF EXPERIMENT**

**12**

Design of Experiment: Need, terminology Randomization, Replication and Local control; Completely

Randomized Design (CRD), Randomized Block Design (RBD), Latin Square Design (LSD) - Estimation of missing values in RBD and LSD (one and two).

**UNIT III FACTORIAL EXPERIMENT** **12**

Factorial experiment - main effects and interactions; definitions of contrast and orthogonal contrast; Analysis of  $2^2$  and  $2^3$  experiments.

**UNIT IV CONFOUNDING IN FACTORIAL DESIGN** **12**

Confounding in factorial design –Total Confounding and Partial confounding in  $2^3$  experiments.

**UNIT V ANALYSIS OF CO-VARIANCE** **12**

Analysis of co-variance for a one-way layout with one concomitant variable and an RBD with one concomitant variable.

**TEXT BOOK:**

1. S.C. Gupta and V.K. Kapoor (2013), “Fundamentals of Applied Statistics”, Sultan Chand & Sons, New Delhi. [Units I & II]
2. Das, M.N. and Giri, N.C, (1997), Design and Analysis of Experiments, Wiley Eastern Ltd., New Delhi. [Units III to V]

**REFERENCE BOOK:**

1. Douglas Montgomery (2010), “Design and Analysis of Experiments”, Wiley India, India.
2. Cochran.W.G. & G.M. Cox (1957), Experimental designs, Wiley International edition, India

**Course Coordinator**

**HOD**

<b>U18MCSA502</b>	<b>SAMPLING THEORY</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60							3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department: - Dr.P.Sumathi/Mathematics										
<b>COURSE OBJECTIVES: -</b>											
To introduce the concepts and develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Understand to developPlanning of large-scale sample surveys										
CO2	Understand the Properties of the estimates and their variances										
CO3	To know the concept of Sampling proportions										
CO4	Understand the concept of Sampling percentages										
CO5	Understand the usage of Properties of the estimates and their variances										
CO6	To Knowthe concept of systematic sampling										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	1	1	1	2	3			
	CO2	3	3	1	1	1	2	3			
	CO3	3	2	1	1	1	2	3			
	CO4	3	2	1	1	1	2	3			
	CO5	2	2	1	1	1	2	3			
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

### UNIT I PLANNING OF LARGE-SCALE SAMPLE SURVEYS

12

Planning of large-scale sample surveys – Methods of measurements – Questionnaire versus Schedule – The Frame – The Pretest – Integrated multi-subject survey – Operations required for survey analysis – Dangers of easy-to-use statistical packages – Sources of Non-sampling errors.

### UNIT II RANDOM SAMPLING

12

Simple random sampling - Properties of the estimates and their variances - The finite population correction - Estimation of the standard error from a sample - Confidence limits - Random sampling with

and without replacement.

### **UNIT III SAMPLING PROPORTIONS AND PERCENTAGES**

**12**

Sampling proportions and percentages – Qualitative characteristics - Variances of the sample estimates  
- The estimation of sample size - Inverse sampling - Sample size with more than one item.

### **UNIT IV STRATIFIED RANDOM SAMPLING**

**12**

Stratified random sampling - Properties of the estimates and their variances - Optimum allocation in Stratified Sampling - Proportional allocation – Relative precision of Stratified random and simple random sampling - Stratified Sampling for proportions.

### **UNIT V SYSTEMATIC SAMPLING**

Systematic Sampling - Variance of the estimated mean - Comparison of systematic with stratified random sampling - Populations with linear trend - Single-stage cluster sampling with clusters of equal sizes – Variance in terms of intra cluster correlation

**12**

#### **TEXT BOOK:**

William, G. Cochran (1977), **Sampling Techniques**, 3<sup>rd</sup> edition, Wiley Eastern Limited, New Delhi [Chapters 1, 2 (omit 2.11 to 2.16), 3 (omit 3.4 to 3.12), 4 (omit 4.7, 4.9 to 4.11), 5, 8 (omit 8.5, 8.7 to 8.13), 9 (omit 9.5 and 9.6)].

#### **REFERENCE BOOK:**

1. Parimal Mukhopadhyay (1998), **Theory and Methods of Survey Sampling**, Prentice Hall of India, New Delhi.

2. Rank Yates (1981), **Sampling Methods for Censuses and Surveys**, 4<sup>th</sup> edition, Charles Griffin and Company Limited, London.

**Course Coordinator**

**HOD**

<b>U18MCSA503</b>	<b>REAL ANALYSIS</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60							3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department: - Mr.V.Nandakumar/Mathematics										
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Understand to develop Sets and elements										
CO2	To Know the Definition of a sequence and subsequence										
CO3	Understand the concept of Operations on convergent sequences										
CO4	To equip the usage of Convergence and divergence										
CO5	To equip the usage of divergence										
CO5	Understand Limit of a function on a real line										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	1	1	1	2	3			
	CO2	3	3	1	1	1	2	3			
	CO3	3	2	1	1	1	2	3			
	CO4	3	2	1	1	1	2	3			
	CO5	2	2	1	1	1	2	3			
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

### UNIT ISETS AND ELEMENTS

12

Sets and elements; Operations on sets; functions; real valued functions; equivalence; countability; real numbers; least upper bounds.

Chapter 1 Section 1. 1 to 1.7

### UNIT II DEFINITION OF A SEQUENCE

12

Definition of a sequence and subsequence; limit of a sequence; convergent sequences; divergent

sequences; bounded sequences; monotone sequences;  
Chapter 2 Section 2.1 to 2.6

**UNIT III OPERATIONS ON CONVERGENT SEQUENCES** **12**

Operations on convergent sequences; operations on divergent sequences; limit superior and limit inferior; Cauchy sequences.  
Chapter 2 Section 2.7 to 2.10

**UNIT IV CONVERGENCE AND DIVERGENCE** **12**

Convergence and divergence; series with non-negative numbers; alternating series; conditional convergence and absolute convergence; tests for absolute convergence; series whose terms form a non-increasing sequence; the class 12.  
Chapter 3 Section 3.1 to 3.4, 3.6, 3.7 and 3.10

**UNIT V LIMIT OF A FUNCTION ON A REAL LINE** **12**

Limit of a function on a real line; Metric spaces; Limits in metric spaces. Function continuous at a point on the real line, reformulation, Function continuous on a metric space.  
Chapter 4 Section 4.1 to 4.3 Chapter 5 Section 5.1-5.3

**TEXT BOOK:**

1. Contents and Treatment as in “Methods of Real Analysis”: Richard R. Goldberg (Oxford and IBH Publishing Co.)

**REFERENCE BOOK:**

1. Principles of Mathematical Analysis by Walter Rudin Mathematical Analysis Tom M Apostol

**Course Coordinator**

**HOD**

<b>U18MCSA504</b>	<b>STATISTICAL QUALITY CONTROL</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: -Ms.S.Kavitha/ Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on Statistical Quality Control techniques, X Chart, P chart, Control chart for attributes, Double sampling plans, Variable sampling plans.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to Statistical Quality Control techniques in Industry									
CO2	Understand the Control chart for variables -									
CO3	To Know the concept of Control chart for attributes.									
CO4	Understand the usage of Acceptance of sampling plans for attributes									
CO5	To familiarize the ATI curves for single and Double sampling plans									
CO5	Understand the concept of Variable sampling plans									
CO6										
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT INEED FOR STATISTICAL QUALITY CONTROL TECHNIQUE

12

Need for Statistical Quality Control techniques in Industry - Causes of Quality variation control charts  
 - Use of the Shwhart - control chart - Specification and tolerance limits - 3 sigma limits - warning limits  
 - application of theory of runs in quality control.

**UNIT II CONTROL CHART FOR VARIABLES**

12

Control chart for variables - X Chart - R chart - purpose of the charts - Basis of subgrouping - plotting X and R results - determining the trial control limits - Interpretation of control charts X and R

**UNIT III CONTROL CHART FOR ATTRIBUTES**

12

Control chart for attributes - purpose of the chart - P chart - np chart - construction of P and np chart - choice between chart for P and chart for np - construction of c-chart.

**UNIT IV ACCEPTANCE OF SAMPLING PLANS FOR ATTRIBUTES**

12

Acceptance of sampling plans for attributes - Producer's risk and consumer's risk - concepts of AQL, LTPD, AOQ, AOQL, ATI and ASN - single, double and Multiple sampling plans - OC, AOQ, ATI curves for single and Double sampling plans.

**UNIT V VARIABLE SAMPLING PLANS**

12

Variable sampling plans - Sigma known and sigma unknown determination of n and k for one sided specification - OC curve.

**TEXT BOOK:**

- 1.Kapoor, V.K. and Gupta, S.P. (1978): Fundamentals of applied statistics, Sultan Chand & Sons.
- 2.Gupta, R.C.(1974): Statistical Quality Control.
- 3.Montgomery, D.C. (1983): Introduction to Statistical Quality Control, John Waley & Sons.
- 4.Ekambaram, S K. (1963): Statistical basis of Acceptance sampling, Asia Publishing House.

**REFERENCE BOOK:**

Grant, E, L. and Laven Worth, R.S.: Statistical Quality Control, McGraw Hill.

**Course Coordinator****HOD**

<b>U18MCSA4L1</b>	<b>MAJOR PRACTICAL-IV</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30							3	1	0	2
	Prerequisite course –Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department: - MATHEMATICS										
<b>COURSE OBJECTIVES: -</b>											
To introduce the concepts and develop working knowledge on Statistical Quality Control techniques, X Chart, P chart, Control chart for attributes, Double sampling plans, Variable sampling plans.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Understand to Statistical Quality Control techniques in Industry										
CO2	Understand the Control chart for variables -										
CO3	To Know the concept of Control chart for attributes.										
CO4	Understand the usage of Acceptance of sampling plans for attributes										
CO5	To familiarize the ATI curves for single and Double sampling plans										
CO5	Understand the concept of Variable sampling plans										
CO6											
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	1	1	1	2	3			
	CO2	3	3	1	1	1	2	3			
	CO3	3	2	1	1	1	2	3			
	CO4	3	2	1	1	1	2	3			
	CO5	2	2	1	1	1	2	3			
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

### INeed FOR STATISTICAL QUALITY CONTROL TECHNIQUE

12

Need for Statistical Quality Control techniques in Industry - Causes of Quality variation control charts - Use of the Shwhart - control chart - Specification and tolerance limits - 3 sigma limits - warning limits - application of theory of runs in quality control.

**CONTROL CHART FOR VARIABLES** 12

Control chart for variables - X Chart - R chart - purpose of the charts - Basis of subgrouping - plotting X and R results - determining the trial control limits - Interpretation of control charts X and R

**CONTROL CHART FOR ATTRIBUTES** 12

Control chart for attributes - purpose of the chart - P chart - np chart - construction of P and np chart - choice between chart for P and chart for np - construction of c-chart.

**ACCEPTANCE OF SAMPLING PLANS FOR ATTRIBUTES** 12

Acceptance of sampling plans for attributes - Producer's risk and consumer's risk - concepts of AQL, LTPD, AOQ, AOQL, ATI and ASN - single, double and Multiples sampling plans - OC, AOQ, ATI curves for single and Double sampling plans.

**VARIABLE SAMPLING PLANS** 12

Variable sampling plans - Sigma known and sigma unknown determination of n and k for one sided specification - OC curve.

<b>U18MESA011</b>	<b>OPERATIONS RESEARCH</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Dr.P.Sumathi/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Linear Programming Problem (LPP)									
CO2	Understand the Graphical Solution of LPP									
CO3	Understand the concept of Initial Basic Feasible Solution (IBFS)									
CO4	Understand the usage of Balanced Assignment Problem									
CO5	Understand the usage of Unbalanced Assignment Problem									
CO6	Understand Sequencing Problem									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
						✓				
4	Approval	Academic Council Meeting								

## UNIT I OPERATIONS RESEARCH

12

Operations Research – Meaning, Nature, History, Scope and Limitations. Linear Programming Problem(LPP) – General Form, Standard form and Canonical form, Basic Solution, Basic Feasible solution, Optimum solution. Assumption and Mathematical Formulation of LPP

## UNIT II GRAPHICAL SOLUTION OF LPP

12

Graphical Solution of LPP – Unique and special cases – Simplex Method and Big-M Method.

**UNIT III TRANSPORTATION PROBLEM (T.P.)****12**

Transportation Problem (T.P.) – Meaning, Balanced and Unbalanced Transportation Problem. Initial Basic Feasible Solution (IBFS) – North-West Corner Rule(NWC), Least Cost Method(LCM) and Vogel's Approximation Method(VAM) and MODI method to solve an Transportation Problem. Maximization case in Transportation Problem.

**UNIT IV ASSIGNMENT PROBLEM(A.P.)****12**

Assignment Problem (A.P.) – Meaning, Balanced and Unbalanced Assignment Problem – Hungarian method to solve an Assignment Problem. Maximization case in Assignment Problem.

**UNIT V SEQUENCING PROBLEM****12**

Sequencing Problem – Meaning, Procedure for solving sequencing problems - Processing 'n' jobs through two machines, Processing 'n' jobs through 'm' machines and Processing of two jobs through 'm' machines.

**TEXT BOOK:**

Kanti Swarup, Gupta, P.K. & Manmohan, "Operations Research", Sultan Chand & Sons, New Delhi. [2013]

**REFERENCE BOOK:**

1. Taha, H.A., "An Introduction to Operations Research", PHI. [2008]

**Course Coordinator****HOD**

**SEMESTER VI**

<b>U18MCSA601</b>	<b>APPLIED STATISTICS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Dr.P.Sumathi/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Construction of index numbers									
CO2	Understand the Analysis of time series									
CO3	To Know the concept of Statistical Quality Control									
CO4	Understand the usage of Natural tolerance limits and specification limits.									
CO5	Understand the usage of specification limits.									
CO6	Understand Acceptance sampling by attributes									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

**UNIT I INDEX NUMBERS**

**12**

Index numbers: Definition – Construction of index numbers – Problems and limitations - Interpretation of index numbers - Errors in index numbers - Tests of index numbers - Chain index - Cost of living index - Uses of index numbers.

**UNIT II INTRODUCTION TO TIME SERIES**

**12**

Introduction to time series - Analysis of time series - Uses of time series - Measurement of trend using

various methods - Measurement of seasonal fluctuations by different methods - Merits and demerits of each method.

### **UNIT III AUTO-REGRESSION**

**12**

Auto-regression: Definition - First order auto-regression – Second Order Auto-regressive series - Variate difference method and its applications.

### **UNIT IV STATISTICAL QUALITY CONTROL**

**12**

Statistical Quality Control: Introduction to SQC - Uses, Tools, Process and Product Control - Control charts - Control charts for variables and attributes - Natural tolerance limits and specification limits.

### **UNIT V ACCEPTANCE SAMPLING BY ATTRIBUTES**

**12**

Acceptance sampling by attributes: Rectifying inspection plans - Dodge and Romig rectifying sampling inspection plans - Single and double sampling plans for attributes - Single sampling versus Double sampling plans.

#### **TEXT BOOK:**

1. Gupta, S. C and Kapoor, V. K (2001), **Fundamentals of Applied Statistics**, Sultan Chand and Sons, New Delhi (Chapters: 1.0 to 1.8.1, 1.9. to 1.12.4, 2.1. to 2.4.5., 2.5. to 2.6., 2.7 to 2.7.2 and 2.9.1., 3.1. to 3.4, 3.6 to 3.6.3, 3.9 and 3.10.).

#### **REFERENCE BOOK:**

1. Frederick, E. Croxton, Dudley, J. Cowden and Sidney Klein, (1972) **Applied General Statistics**, Prentice Hall of India Pvt. Ltd, New Delhi.

**Course Coordinator**

**HOD**

<b>U18MCSA602</b>	<b>STOCHASTIC PROCESSES</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Ms.L.Radhika/Mathematics									
<b>COURSE OBJECTIVES: -</b>										
To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop Specification of Stochastic processes									
CO2	Understand the Chapman-Kolmogorov equation.									
CO3	To Know the concept of Poisson Process									
CO4	Understand the usage of Pure Birth Process – Yule-Fury process									
CO5	Birth and Death Process – Immigration - Emigration processes.									
CO6	Understand the Basic Elements in a queuing model									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT IELEMENTS OF STOCHASTIC PROCESSES

12

Elements of Stochastic Processes – Notion of a Stochastic Process – Specification of Stochastic processes – Stationary Processes.

## UNIT II MARKOV CHAINS

12

Markov Chains – Definition and examples – Transition probability matrix – Order of a Markov Chain – Higher transition probabilities – Chapman-Kolmogorov equation.

## UNIT III POISSON PROCESS

12

Poisson Process – Postulates – Properties – Related distributions – exponential, uniform, geometric and

negative binomial distributions.

#### **UNIT IV PURE BIRTH PROCESS**

**12**

Pure Birth Process – Yule-Fury process – Birth and Death Process – Immigration - Emigration processes.

#### **UNIT V QUEUING THEORY**

**12**

Queuing Theory: Basic Elements in a queuing model - Classification of queues – Details study of (M/M/1):(∞/FCFS) and (M/M/1): (N/FCFS) queues.

##### **TEXT BOOK:**

1. Medhi, J (1998), **Stochastic Processes**, Wiley Eastern Limited, India (Chapters 2 (2.1 – 2.3), 3 (3.1 – 3.2), 4 (4.1-4.2, 4.3.3, 4.3.4, 4.4)).

##### **REFERENCE BOOK:**

1. Feller, W (1972), **Introduction to Probability Theory and its Applications, Volume I**, Wiley Eastern Ltd, New York.
2. Kapoor, V. K (2001), **Operations Research**, 7<sup>th</sup> edition, Sultan Chand and Sons, New Delhi.

**Course Coordinator**

**HOD**

<b>U18MCSA603</b>	<b>MATRIX ALGEBRA</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60						3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: - Mr.V.Nandakumar/Mathematics									
<b>COURSE OBJECTIVES: -</b> To introduce the concepts and develop working knowledge on class equation, solvability of groups , finite abelian groups, linear transformations, real quadratic forms										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand to develop matrices and their properties									
CO2	Understand the Solutions of simultaneous equations using matrix inverse method									
CO3	To Know the concept of Linear homogeneous equations									
CO4	To Know the concept of non-homogeneous equations									
CO5	Understand the usage of Characteristic Roots and Vectors									
CO6	Understand Reduction of QFs to canonical 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	PS O1	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)
					✓					
4	Approval	Academic Council Meeting								

## UNIT I MATRIX ALGEBRA

12

Matrix Algebra : Definition – Types of Matrices - Rectangular – Square – Null - Identity – Diagonal – Scalar - Triangular matrices - Algebra of Matrices : Addition - Scalar multiplication - Multiplication of matrices - Properties of Matrix addition - Multiplication – Conjugate matrices – Transpose and Transjugate matrices – Trace of a matrix – Symmetric, Skew-symmetric, Hermitian, Skew-Hermitian, Orthogonal, Unitary, Idempotent, Nilpotent matrices and their properties.

## UNIT II ADJOINT AND INVERSE

12

Adjoint and inverse: Adjoint matrices – Properties – Inverse of a matrix – Properties – Elementary transformations – Minor and cofactor of a matrix - Methods of finding inverse : Adjoint and elementary transformation methods - Matrix representation of a set of equations - Solutions of simultaneous equations using matrix inverse method

## UNIT III RANK OF A MATRIX

12

Rank of a matrix: Definition– Normal form – Use of rank concepts – Linear homogeneous and non-homogeneous equations – Consistency of equations - Solutions for linear equations.

## UNIT IV CHARACTERISTIC ROOTS AND VECTORS

12

Characteristic Roots and Vectors : Definition – Characteristic roots of Null, Identity, Scalar, Diagonal, Upper triangular, Lower triangular matrices – Characteristic roots of adjoint and inverse of a matrix – Properties of characteristic roots – Characteristic vectors and their Properties.

## UNIT V QUADRATIC FORMS

12

Quadratic forms : Definition– Reduction of QFs to canonical forms – Congruent and Lagrange reductions – Index and Signature of QFs. Vector spaces : Definition – Examples – Simple algebraic properties of a vector space – Basis and Dimensions - Linear dependence of vectors

### TEXT BOOK:

1. Gupta, S. C (1978), **An Introduction to Matrices**, Sultan Chand and Sons, New Delhi (chapters 1, 2, 4, 5 (upto 5. 3. 6), 6, 7, 8 (omit 8. 3. 1-8. 3. 4, 8. 6)).
2. Venkataraman, M. K (1999), **Linear Algebra**, The National Publishing Company, Chennai (for Vector Spaces only) (Chapters 2 (section 1, 2, 3) and 3 (section 1, 2, 6)).

### REFERENCE BOOK:

1. Shanthi Naryanan (1993), **A Text Book Matrices**, Sultan and Chand and Sons, Delhi.
2. Hohn, F. E (1971), **Elementary Matrix Algebra, Second Edition**, Amerind Publishing Company, New Delhi.

Course Coordinator

HOD

<b>U18MESA023</b>	<b>ELEMENTARY NUMBER THEORY</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 60							3	1	0	4
	Prerequisite course –Mathematics Studied in Higher Secondary studies										
	Course Coordinator Name & Department: - Dr.P.Sumathi/Mathematics										
<b>COURSE OBJECTIVES: -</b>											
To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Understand the divisibility of primes										
CO2	Understand the concept of congruences.										
CO3	To know the concepts of quadratic residues.										
CO4	Understand the concepts of Number theory.										
CO5	Understand the simultaneous Linear equations										
CO6	Understand the simultaneous Pythagorean Triangle.										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	1	1	1	2	3			
	CO2	3	3	1	1	1	2	3			
	CO3	3	2	1	1	1	2	3			
	CO4	3	2	1	1	1	2	3			
	CO5	2	2	1	1	1	2	3			
	CO6	3	3	1	1	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)	Any other	Project/Term Paper/Seminar/ Internship(PR)	
					✓						
4	Approval	Academic Council Meeting									

### UNIT I BINOMIAL THEOREM

12

Introduction – divisibility- primes- The Binomial theorem  
Chapter 1 Sections - 1.1 to 1.4

### UNIT II CONGRUENCES

12

Congruences, Solution of Congruences, Chinese Remainder Theorem- primitive roots and power Residues- Number Theory from an Algebraic view point - Groups, rings and fields.

Chapter – 2 Sections 2.1 to 2.3, 2.8 (cor 2.42, Th 2.43 and cor 2.44 are omitted) - 2.10.- 2.11

**UNIT III QUADRATIC RESIDUES 12**

Quadratic Residues, Quadratic reciprocity, The Jacobi Symbol  
Chapter – 3 Sections 3.1 to 3.3

**UNIT IV NUMBER THEORY 12**

Greatest Integer Function, Arithmetic function, The Mobius Inversion formula  
Combinational Number Theory  
Chapter – 4 Sections 4.1 to 4.3 and 4.5

**UNIT V LINEAR EQUATIONS 12**

The equation  $ax+by=c$ , Simultaneous Linear Equations, Pythagorean Triangle, Assorted examples. Chapter – 5 Sections 5.1 to 5.4 Content and treatment as in  
**TEXT BOOK**An introduction to the Theory of Numbers (Vth edition) by Ivan Niven, Herbert S. Zuckerman and Hugh L. Montgomery John Wiley & Sons, Inc.2001.

**REFERENCE BOOKS:**

1. Elementary theory of numbers, cy. Hsiung, Allied publishers, 1995.
2. Elementary Number Theory, Allyn and Bacon Inc., Boston, 1980.
3. Introduction to Analytic Number Theory, Tom. M. Apostol, Narosa Publishing House, New Delhi, 1989.

**Course Coordinator**

**HOD**

<b>U18EESA6P1</b>	<b>PROJECT (DISSERTATION AND VIVA-VOCE)</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 45						0	0	20	10
	Prerequisite course – Mathematics Studied in Higher Secondary studies									
	Course Coordinator Name & Department: -Mr.V.Nandakumar/Mathematics									
<b>COURSE OBJECTIVES:-</b>										
To make the students understand the importance of experimental and theoretical analysis. Students can develop a Scientific approach in solving a problems related to Mathematics.										
<b>COURSE OUTCOMES (COs)</b>										
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) (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	PS O2
2	CO1	3	3	1	1	1	2	3		
	CO2	3	3	1	1	1	2	3		
	CO3	3	2	1	1	1	2	3		
	CO4	3	2	1	1	1	2	3		
	CO5	2	2	1	1	1	2	3		
	CO6	3	3	1	1	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)	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 problems and issues pertaining to Computer Application. Each candidate should submit three copies of dissertation as per the guidelines to the department concerned.

**Marks**

<b>Dissertation</b>	<b>150</b>
<b>Viva- Voce Examination</b>	<b>50</b>

**Course Coordinator**

**HOD**

<b>U18SEBC001</b>	<b>BUSINESS PROCESS OUTSOURCING - MANAGEMENT</b>							<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30							2	0	0	2
<b>U18MCBC204</b>	Prerequisite course – Higher Secondary Level										
	Course Coordinator Name & Department:- Ms. J. Saranya, Commerce										
<b>COURSE OBJECTIVES:-</b>											
<ul style="list-style-type: none"> <li>To familiarize the students with the basic fundamentals of BPO.</li> <li>To impart knowledge on types of BPO and call centers .</li> <li>To enable the students on the concept Health care BPO &amp; Transaction BPO.</li> <li>To peep into the concept of Human Resource BPO and the career opportunities in BPO</li> </ul>											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Underline the with the basic fundamentals of BPO .										
CO2	Discuss the Can develop awareness about Types of BPOs and Call centres										
CO3	Initiate to be aware of the concept of Health care BPOs										
CO4	Identify the aware of the concept of Transaction BPOs										
CO5	Evaluate Develop 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) (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	PS O2	
2	CO1	3	3	3	1	2	3	1			
	CO2	2	1	3	2	3	3	3			
	CO3	1	3	1	3	3	3	1			
	CO4	3	3	3	1	3	1	3			
	CO5	3	3	3	2	2	1	2			
	CO6	2	1	3	3	3	3	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:** **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 – Career in HR BPO.

**Text Books:**

- John K. Holvey, Borboro Murphy Melby, Business Process Outsourcing – Wiley Publisher- 2007
- Sarika Kulkarni – Business Process Outsourcing – Jaico Publishing house – 2005
- Rick L. Click, Thomas N. Duening, Business Process 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.

**Course Coordinator**

**HOD**

<b>U18SEBC002</b>	<b>CUSTOMER RELATIONSHIP MANAGEMENT</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	Total Contact Hours – 30					2	0	0	2	
<b>U18MCBC204</b>	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Ms. R. Priya, Commerce									
<b>COURSE OBJECTIVES:-</b>										
<ul style="list-style-type: none"> <li>To familiarize the students with the basic fundamentals of CRM.</li> <li>To impart knowledge about process and importance of CRM.</li> <li>To enable the students on the concept of technological solutions to CRM.</li> <li>To expose the student on Trends and challenges in CRM.</li> </ul>										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Recognise the Familiarize with the basic fundamentals of CRM.									
CO2	Demonstrate the Can develop awareness about process and importance of customer retention									
CO3	Practice to be aware of the concept of technological applications in CRM.									
CO4	Correlate to respond to the concept of CRM software solutions for B2C and B2B markets									
CO5	Validate the Develop confidence on trends and challenges									
CO6	Design the Customer Databases and Information 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	PS O2
2	CO1	2	2	3	3	2	2	2		
	CO2	1	3	3	2	2	2	3		
	CO3	3	2	2	3	3	3	1		
	CO4	3	2	3	2	1	2	3		
	CO5	3	2	2	1	2	1	3		
	CO6	3	3	3	3	3	3	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

6

Customer Relationship Management Introduction - Meaning and Definition - Importance - Benefits and difficulties of CRM.

<b>UNIT –II</b>	<b>6</b>
CRM Process and Implementation Introduction - customer Retention - Customer satisfaction - Importance of customer retention - CRM process for B2B markets	
<b>UNIT –III</b>	<b>6</b>
Technological Support in CRM Introduction - Types of Technological Applications in CRM.	
<b>UNIT –IV</b>	<b>6</b>
Customer Databases and Information Systems - CRM Software Solutions for B2C and B2B Markets	
<b>UNIT –V</b>	<b>6</b>
E-CRM – Emerging Trend in CRM Introduction - Challenges involved in formulating and implementing e-CRM strategies.	

**TEXT BOOKS:**

1. Balasubramanian.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

**Course Coordinator**

**HOD**

<b>U18SEBC003</b>	<b>ENTREPRENEURIAL DEVELOPMENT</b>				<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>		
	Total Contact Hours – 30				2	0	0	2		
<b>U18MCBC204</b>	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Ms. S. Jayanthi , Commerce									
<b>COURSE OBJECTIVES:-</b>										
<ul style="list-style-type: none"> <li>To familiarize the students with the basic fundamentals of Entrepreneurship.</li> <li>To impart knowledge on Project identification, selection and formulation.</li> <li>To enable the students on the concept of types of organization.</li> <li>To peep into the concept of commercial banks.</li> <li>To enable the students on the concept of women entrepreneurs</li> </ul>										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Underline the Meaning Of Entrepreneur – Entrepreneur and Intrapreneur									
CO2	Explain the Identification – Selection of the Project									
CO3	Apply Selection of Types of Organization – Sole Proprietorship- Partnership Joint Stock Company									
CO4	Appraise to Institutional finance to entrepreneurs									
CO5	Estimate the Factors Influencing The Choice Of Organization									
CO6	Develop the Role and Problems of Women Entrepreneurs									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	3	1	2	3	1		
	CO2	2	1	3	2	3	3	3		
	CO3	1	3	1	3	3	3	1		
	CO4	3	3	3	1	3	1	3		
	CO5	3	3	3	2	2	1	2		
	CO6	2	1	3	3	3	3	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								

<b>UNIT-I</b>	<b>6</b>
Meaning Of Entrepreneur – Entrepreneur and Intrapreneur – Qualities Of Entrepreneur – Characteristics Of Entrepreneur – Types Of Entrepreneur – Function Of An Entrepreneur	
<b>UNIT-II</b>	<b>6</b>
Project Identification – Selection of the Project – Project Formulation –Preparation Of Project Report	
<b>UNIT-III</b>	<b>6</b>
Selection of Types Of Organization – Sole Proprietorship- Partnership Joint Stock Company – Factors Influencing The Choice Of Organization.	
<b>UNIT – IV</b>	<b>6</b>
Institutional finance to entrepreneurs - commercial banks –IDBI, IFCI, ICICI, IRBI, SFC, DICs, SIDC, SIDBI And EXIM Bank	
<b>UNIT – V</b>	<b>6</b>
Women Entrepreneurs – Role – Problems of Women Entrepreneurs – Suggestions For Development Of Women Entrepreneurs	

**TEXT BOOKS:**

1. C.B. Gupta, Entrepreneurship Development in India – Sultan Chand
2. S.S. Khanka, Entrepreneurship Development, S. Chand & Co., New Delhi.
3. Gupta C. B and Srinivasan N. P Entrepreneurship Development, Sultan Chand & Sons, New Delhi

**REFERENCE BOOKS:**

1. P. Sarvanavel, E Entrepreneurship Development, Ess Pee Kay Publishing House
2. Jaswer Singh Saini, Entrepreneurship Development, Deep and Deep Publication, New Delhi
3. Jayashree Suresh, Entrepreneurship Development- Margham Publication, Chennai

**Course Coordinator**

**HOD**

<b>U18SEBC004</b>	<b>HUMAN RESOURCE MANAGEMENT</b>				<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>		
	Total Contact Hours – 30				2	0	0	2		
<b>U18MCBC204</b>	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Ms. R. Velankanni, Commerce									
<b>COURSE OBJECTIVES:-</b>										
<ul style="list-style-type: none"> <li>To learn the importance of HR.</li> <li>To impart knowledge and important factors in HR.</li> <li>To enable the students on the needs and methods of training.</li> </ul>										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Identify the Importance of Human Resource and objectives.									
CO2	Describe the Human Resource Planning									
CO3	Practice to Sources of Recruitment - Selection – Steps in Selection									
CO4	Analyze Needs of training – Methods of Training									
CO5	Evaluate the Process and Methods of Performance Appraisal									
CO6	Formulate the Qualities of Personnel Manager									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	2	3	1	3	1		
	CO2	2	2	1	3	3	1	3		
	CO3	2	2	3	2	3	3	2		
	CO4	3	1	3	1	1	2	3		
	CO5	1	3	2	2	2	3	3		
	CO6	3	2	2	3	3	3	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:** **6**  
Definition – Importance of Human Resource – Objectives – Qualities of Personnel Manager.

**UNIT- II:** **6**  
Human Resource Planning – Importance factors – Steps in HR Planning.

**UNIT- III:** **6**  
Recruitment – Objectives – Sources of Recruitment - Selection – Steps in Selection.

**UNIT- IV:** **6**  
Training – Definition – Needs of training – Methods of Training – On the job training – Off the job Training.

**UNIT- V:** **6**  
Performance Appraisal - Objectives – Process – Methods of Performance Appraisal.

**TEXT BOOKS:**

5. L.M. Prasad – Human Resource Management – S. Chand & Sons – 2013.
6. C.B. Mamoria, S.V. Gankar – Personnel Management – Himalaya Pub. – 2012.
7. A.M. Sharma, Human Resource Management, Himalaya Publishing House, 2005

**REFERENCE BOOKS**

1. S.S. Khanka – Human Resource Management – S. Chand Ltd. – 2007
2. Gary Dessler – Human Resource Management – Prentice Hall – 8<sup>th</sup> Edition – 2000.

**Course Coordinator**

**HOD**

		<b>MARKETING MANAGEMENT</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>U18SEBC005</b>	Total Contact Hours – 30	2	0	0	2						
	Prerequisite course – Higher Secondary Level										
<b>U18MCBC204</b>	Course Coordinator Name & Department:- Dr. J. Anudevi, Commerce										
<b>COURSE OBJECTIVES:-</b>											
<ul style="list-style-type: none"> <li>To understand the fundamentals of marketing and its role.</li> <li>To examine the factors influencing buying behavior.</li> <li>To enable the students to promote advertising and its sales scope</li> </ul>											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Underline the Fundamentals of Marketing – Role of Marketing .										
CO2	Describe the Factors influencing buying behavior										
CO3	Interpret the Marketing segmentation – Needs - Types of segmentation										
CO4	Analyze to New product development process – Product life cycle										
CO5	Revise the Awareness of consumer rights in the market place										
CO6	Collect the Advertising – Scope of Advertising										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	2	3	2	3	1			
	CO2	2	3	3	2	3	3	3			
	CO3	1	3	1	3	2	3	3			
	CO4	3	2	3	1	3	1	2			
	CO5	3	3	2	3	2	1	2			
	CO6	2	1	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									

<b>UNIT-I:</b>	<b>6</b>
Marketing- Definition – Fundamentals of Marketing – Role of Marketing – Relationship of marketing with other functional areas – Marketing Mix	
<b>Unit – II</b>	<b>6</b>
Buyer Behaviour – Buying motives – Factors influencing buying behavior - Marketing segmentation – Needs - Types of segmentation	
<b>UNIT-III:</b>	<b>6</b>
The Product – Characteristics – Benefits – Classifications – New product development process – Product life cycle – Branding – Packaging	
<b>UNIT-IV:</b>	<b>6</b>
Physical Distribution - Importance - Various kinds of Marketing Channels – Distribution Problems- Awareness of consumer rights in the market place.	
<b>UNIT- V:</b>	<b>6</b>
Advertising – Scope of Advertising – Personal selling – Direct selling and Sales Promotions.	

**TEXT BOOKS:**

1. Berkoviz Kerin Hontley Rudelivs, MARKETING, New York, Mcgraw Hill Publications.
2. Gony Armstrong, Philip Kotler, Marketing an Introduction, Pearson Education Asia.
3. Philip Kotler, Marketing Management (Millennium ed.,) New Delhi, Prentice Hall of India (P) Ltd.

**Reference Books:**

1. Rajan Saxena, Marketing Management, 2<sup>nd</sup> edition, New Delhi, Tata Mcgraw Hill Publishing Co.Ltd.
2. V.S. Ramasamy and S. Namakumari, Marketing Management, Planning, Implementation & control, New Delhi, Macmillan

**Course Coordinator**

**HOD**

<b>U18SEBC006</b>	<b>OFFICE MANAGEMENT</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
<b>U18MCBC204</b>	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Dr. M. Sankar,Commerce									
<b>COURSE OBJECTIVES:-</b>										
<ul style="list-style-type: none"> <li>To peep into the concept, importance of office management.</li> <li>To impart knowledge on features and classification of Communication.</li> <li>To expose handling correspondence and market registers</li> </ul>										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Record the Concept and Importance of Office and Office Management.									
CO2	Report the Arrangement and adjustment : Furniture, allotment of seats									
CO3	Apply to Handling of correspondence and market registers									
CO4	Experiment the preparation and play of manuals and charts									
CO5	Select the Office staff – Selection- training - Supervision									
CO6	Creates Office Accommodation and Environment									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	2	3	3	3	1	2	2		
	CO2	1	2	3	2	2	3	3		
	CO3	3	2	2	3	3	1	3		
	CO4	3	1	3	3	1	3	2		
	CO5	3	2	2	1	2	2	1		
	CO6	3	3	1	3	3	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	Academic Council Meeting								

<b>Unit I</b>	<b>6</b>
Introduction – Concept and Importance of Office and Office Management - Office Accommodation and Environment -Reception : Importance, shape and size, control	
<b>Unit II</b>	<b>6</b>
Communication: Feature, classification, barriers - Arrangement and adjustment : Furniture, allotment of seats, chambers, cabins rooms etc .	
<b>Unit III</b>	<b>6</b>
Handling of correspondence and market registers, filling forms and stationery. Office Machines - Kind of office machines.	
<b>Unit IV</b>	<b>6</b>
Use of machines, installing, handling, maintenance –Manuals and charts- Advantages of office manuals charts - preparation and play of manuals and charts.	
<b>Unit V</b>	<b>6</b>
Office staff – Selection- training - Supervision - span of supervision	

**TEXT BOOK:**

1. Ghosh & Agarwal, Office Management, S.Chand & Company – New Delhi
2. R.S.N. Pillai, Bagavathi, Office Management, S.Chand & Company – New Delhi,2013
3. Dr.R.K. Chopra, Priyanka Gauri Office Management, Himalaya Publishing House, 2017

**REFERENCE BOOKS:**

1. G.S. Sudha, General Management, Pustak Prakashan, New Delhi
2. Rajendra paul, Modern Communication & Techniques , S.Chand & Company – New Delhi

**Course Coordinator**

**HOD**

		<b>RETAIL MARKETING</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>U18SEBC007</b>	Total Contact Hours – 30	2	0	0	2						
	Prerequisite course – Higher Secondary Level										
<b>U18MCBC204</b>	Course Coordinator Name & Department:- Ms. J. Saranya, Commerce										
<b>COURSE OBJECTIVES:-</b>											
<ul style="list-style-type: none"> <li>To familiarize the functions and types of Retailing.</li> <li>To impart knowledge on Retail consumer behavior and its types.</li> <li>To expose the student on promoting sales, public relation and advertising.</li> </ul>											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Underline the Characteristics - Functions of retailing - Types of Retailing										
CO2	Express the - Retail Consumer buying behavior and types										
CO3	Schedule the Retail Organization Structure										
CO4	Categorize to Factors affecting store lay out										
CO5	Assess the Sales promotion - Advertising										
CO6	Creates the Retail Marketing Mix										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	1	2	3	3	2	3	2			
	CO2	2	1	3	2	3	3	3			
	CO3	3	3	1	3	3	3	2			
	CO4	3	3	3	3	1	2	2			
	CO5	2	3	2	3	2	2	1			
	CO6	3	2	3	1	3	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	Academic Council Meeting									

<b>UNIT-I</b>	<b>6</b>
Retailing – Definition – Importance – Characteristics - Functions of retailing - Types of Retailing	
<b>UNIT-II</b>	<b>6</b>
Retail Marketing Mix - Retail Consumer buying behavior and types – Segmentation - Types of segmentation	
<b>UNIT-III</b>	<b>6</b>
Retail Organization Structure-Major Functional Areas-Careers in Retailing	
<b>UNIT-IV</b>	<b>6</b>
Store layout-Types of lay out-Factors affecting store lay out	
<b>UNIT-V</b>	<b>6</b>
Sales promotion - Advertising - Public Relation - Personal selling	

**TEXT BOOKS:**

- 1) George E.Belch and Michael A.Belch, Advertsing and Promotion, McGraw Hill Company
- 2) Ronald, Karen Whitehill king,and J.Thomas Russell, Kleppner’s Advertising Procedure, Pearson Education International, Prentice Hall
- 3) [Prashant Chaudhary](#) ,Retail Marketing in the Modern Age ,First Edition Saga Publication 2019

**REFERENCE BOOKS:**

- 1) Gupta, Advertising and Sales Promotion, EPH Publisher
- 2) Sarangi, Advertising and Sales Promotion, Asian Books

**Course Coordinator**

**HOD**

<b>U18SEBC008</b>	<b>SALESMANSHIP AND ADVERTISING</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	Total Contact Hours – 30					2	0	0	2	
<b>U18MCBC204</b>	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Ms. G. Anandhi Commerce									
<b>COURSE OBJECTIVES:-</b>										
<ul style="list-style-type: none"> <li>To understand the importance, role, objective of advertising.</li> <li>To impart knowledge on importance of salesmanship To analyze the types of advertising and its benefits</li> </ul>										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Repeat the Nature-Objectives and Scope of Advertising.									
CO2	Explain the Types of Advertising-Commercial and Non-Commercial Advertising									
CO3	Interpret to Media selection-measuring advertising effectiveness									
CO4	Correlate the training and compensating sales men									
CO5	Judge the Qualities and Responsibilities of sales managers									
CO6	Design the types of sales organization - Sales management job									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	2	3	1	3	1		
	CO2	2	2	1	3	3	1	3		
	CO3	2	2	3	2	3	3	2		
	CO4	3	1	3	1	1	2	3		
	CO5	1	3	2	2	2	3	3		
	CO6	3	2	2	3	3	3	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								

<b>UNIT-I</b>	<b>6</b>
Definition-Importance-Role of Advertising-Nature-Objectives and Scope of Advertising	
<b>UNIT-II</b>	<b>6</b>
Types of Advertising-Commercial and Non-Commercial Advertising-Primary demand and selective demand advertising	
<b>UNIT-III</b>	<b>6</b>
Advertising-benefits and criticism-Media selection-measuring advertising effectiveness	
<b>UNIT-IV</b>	<b>6</b>
Introduction to the salesmanship-Importance of salesmanship-training and compensating sales men	
<b>UNIT-V</b>	<b>6</b>
Qualities and Responsibilities of sales managers -Types of sales organization - Sales management job	

**TEXT BOOKS:**

1. George E.Belch and Michael A.Belch, Advertsing and Promotion, McGraw Hill Company
2. Ronald, Karen Whitehill king,and J.Thomas Russell, Kleppner’s Advertising Procedure, Pearson Education International, Prentice Hall.
3. P. Saravanavel & S. Sumathi, advertising and salesmanship Margham publications,

**REFERENCE BOOKS**

- 1) Sarangi, Advertising and Sales Promotion, Asian Books
2. Gupta, Advertising and Sales Promotion, EPH Publisher

**Course Coordinator**

**HOD**

<b>Sub. code :</b>	<b>Subject name : SOFT SKILLS</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	Total Contact Hours – 30					2	0	0	2	
<b>U18SEEN001</b>	Prerequisite – Higher Secondary Level									
Course coordinator name : Mrs.B.CAROLINE– Dept of English										
<b>COURSE OBJECTIVES:-</b> To impart students with the efficient knowledge of important events in through soft skills										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Remember the personal as well as professionals goals of the students									
CO2	Understand the manners during professional meetings									
CO3	Apply the right reasons of stress									
CO4	Analyze the importance of communication skills									
CO5	Evaluate the excellence in both personal and professional life									
CO6	Create the Growth & development of soft skills									
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	PS O1	PS O2
2	CO1	3	3	3	3	3	3	3		
	CO2	3	3	3	3	3	3	3		
	CO3	2	3	3	2	3	2	3		
	CO4	2	2	2	2	2	2	2		
	CO5	2	2	2	2	2	2	2		
	CO6	2	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	47 <sup>th</sup> Academic Council Meeting								

### UNIT I Soft Skills

6

Introduction to soft skills

Types of soft skills

Developing positive attitude, forming values and self confidence

### UNIT II Interpersonal skills

6

Developing interpersonal relationship, team building, table manners, organizing meetings, stress and

time management

**UNIT- III      Communication Skills**

**6**

Types of communication

Art of listening

Art of reading

Art of writing

Art of speaking

**UNIT IV      Corporate Skills**

**6**

Presentation skills, developing body language, practicing etiquette, and mannerism, dress for success

**UNIT V      Placement Skills**

**6**

Personal interviews, writing resume/ CV- interviews skills career planning, public speak in motivation skills and personality

**Text books**

1. S.P.Danavel, English and Communication for Students of Science and Engineering.

2.Murali Krishna Moishra, Communication Skills for Engineers.

**Reference**

1. Developing the leader within you john C. Maxwell.

2. Meena. K and V. Ayothi (2013) A Book on development of soft skills (soft skills: A road map to success), P.R. publishers & Distributors, no. B-20&21,v.m.m. complex, Chatiram bus stand, tiruchirappalli.-620002

**Course Coordinator**

**HOD**

<b>U18SESC001</b>	<b>COMPUTER APPLICATION</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department :- N.Mathimagal & BCA									
<b>COURSE OBJECTIVES:-</b>										
Learners will be familiar with basic of computer application. Learners will understand the applications of computer & able to know about the operating systems.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Gain knowledge in fundamental computer applications									
CO2	Understand the concept of input device functions									
CO3	Identify the suitable input devices for application									
CO4	Analyze the input and output devices and its processes									
CO5	Evaluate data and storage devices for application									
CO6	Create an real time application using a system software and application software									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

## UNIT I

6

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 Unit- Memory, Storage Fundamentals - Primary Vs Secondary memory.

## UNIT II

6

Input Devices: Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light

pen, Touch Screen.

**UNIT III**

**6**

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 IV**

**6**

Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks

**UNIT V**

**6**

Computer Software, Need, Types of Software - System software, Application software System Software - Operating System, Compiler, Assemblers, Interpreter.

**TEXT BOOKS:**

1. S.K. Basandra, "Computers Today", Galgotia Publications.
2. Alexis Leon & Mathews Leon, "Fundamentals of Information Technology", Vikas Publishing House, New Delhi.

**REFERENCE BOOKS:**

1. Rajeev Mathur, "Dos Quick Reference", Galgotia Publications.

**Course Coordinator**

**HOD**

<b>U18SESC002</b>	<b>MULTIMEDIA</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department :- N.Mathimagal & BCA									
<b>COURSE OBJECTIVES:-</b> To understand the basic multimedia concepts and designing concepts										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Gain knowledge in basic concepts of multimedia									
CO2	Analyze the multimedia application problems.									
CO3	Understand the Video capturing, Sound capturing, editing concepts.									
CO4	Identify the basic multimedia design principles.									
CO5	Evaluate the multimedia system and Design Process.									
CO6	Create a 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	PS O1	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

## UNIT I

6

Multimedia Fundamentals: Concept of multimedia, Fundamental criteria for the design of a multimedia presentation, Multimedia Application Goals & Objectives, opportunities in multimedia production.

## UNIT II

6

Role of multimedia-development of team members, avoiding problems in planning a multimedia application.

**UNIT III** **6**

Multimedia Building Blocks: Text, Graphics, Video capturing, Sound capturing, editing.

**UNIT IV** **6**

Basic design principle: proximity, visual hierarchy, Symmetry, Asymmetry, Repetition, unity, Contrast, dynamics, Emphasis, Multimedia Authoring tools.

**UNIT V** **6**

Design, Development and evaluation of multimedia a system, Development of user interface design, Design Process.

**TEXT BOOKS:**

1. John Villamil, Casanova, Louis Molina, “An introduction to multimedia”.
2. Mohammad Dastbaz, “Designing Interactive Multimedia Systems”

**REFERENCE BOOKS:**

1. Bohdan O. Szuprowicz, “Multimedia Networking”.
2. Stephen McGloughlin, “Multimedia on the web”.

**Course Coordinator**

**HOD**

<b>U18SESC003</b>	<b>ADVANCED EXCEL</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- V.Ramya & BCA									
<b>COURSE OBJECTIVES: -</b> To identify the various functions in Excel Sheet										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand the advanced Excel formulas.									
CO2	Evaluate IF conditions, AND, OR functions.									
CO3	Analyze the advanced filter options.									
CO4	Execute the multiple windows, splitting windows management.									
CO5	Understand the pivot table methods.									
CO6	Create a real time application by creating, modifying Excel sheet.									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

## UNIT I

6

Uses of Advance Excel Formulas -VLOOKUP, HLOOKUP, SUMIF, SUMIFS, SUMPRODUCT, DSUM, COUNTIF, COUNTIFS, IF, IFERROR, ISERROR, ISNA, ISNUMBER, ISNONTEXT, OR, AND, SEARCH, INDEX, MATCH etc

## UNIT II

6

Various Methods and Uses of IF Conditions , Usage of "IF" Conditions? , Creation of Multiple IF Conditions in One Cell , Use the IF Conditions with the Other Advance Functions, How to use nested IF statements in Excel with AND, OR Functions Sorting, Data Forms, Adding Data Using the Data Form, Finding Records Using Criteria

**UNIT III** **6**  
Filtering Data, AutoFilter, Totals and Subtotals, Row, Various Methods of Filter and Advance Filter options ,  
Creating and Updating Sub totals , Various Method of Sorting Data ,Creating, Formatting and Modifying Chart.

**UNIT IV** **6**  
Customizing the Quick Access Tool Bar , Managing Windows ,Multiple Windows , Splitting Windows.

**UNIT V** **6**  
Various Methods and Options of Pivot Table, Using the Pivot Table Wizard, Changing the Pivot Table Layout,  
Subtotal and Grand total Options, Formatting, and Grouping items

**TEXT BOOKS:**

1. Jordan Goldmeler, “Advanced Excel Essentials” ,APress, 2015 edition.

**REFERENCE BOOKS:**

1. John Walkenbach, “Microsoft Excel 2013 Bible”, Wiley Publications,2013.

**Course Coordinator**

**HOD**

<b>U18SESC004</b>	<b>WEB DESIGNING</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- V.Ramya & BCA									
<b>COURSE OBJECTIVES: -</b> To gain knowledge in basic web designing concepts.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand the web basics and server side scripting.									
CO2	Execute the HTML coding and linking process.									
CO3	Analyze the hyper links and special characters.									
CO4	Evaluate the Embedded Style Sheets & Linking External Style Sheets.									
CO5	Create the backgrounds and user style sheets.									
CO6	Create a 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	PS O1	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

## UNIT I

6

Introduction - The Internet in Industry and Research - Evolution of the Internet and World Wide Web - Web Basics – Client Side Scripting versus Server Side Scripting.

6

## UNIT II

Introduction – First HTML example – Headings – Linking - Images, alt Attribute, Void Elements.

## UNIT III

6

Using Images as Hyperlinks-Special Characters and Horizontal Rules – Lists – Tables.

## UNIT IV

Introduction - Inline Styles - Embedded Style Sheets - Linking External Style Sheets

6

## **UNIT V**

Backgrounds - Element Dimensions - Box Model and Text Flow - Drop-Down Menus - User Style Sheets.

6

### **TEXT BOOKS:**

1. Paul Deitel, Harvey Deitel, Abbey Deitel, "Internet & World Wide Web: How To Program", 5th Edition, Pearson Publication, 2012.

### **REFERENCE BOOKS:**

1. Jennifer Niederst Robbins, "Learning Web Design", Fourth Edition, O'Reilly Media, 2012.
2. Thomas Michaud, "Foundations of Web Design, Introduction to HTML & CSS", Pearson Publication, 2014.
3. Bayross, "Web Enable Commercial Application Development Using HTML, DHTML, JavaScript, Perl CGI", BPB Publications.
4. T. A Powell, "Complete Reference HTML (Third Edition)", TMH, 2002.

**Course Coordinator**

**HOD**

U18SESC005		PHOTOSHOP						L	T	P	C
		Total Contact Hours – 30						2	0	0	2
		Prerequisite course – Higher Secondary Level									
		Course Coordinator Name & Department:- V.Brindha & BCA									
<b>COURSE OBJECTIVES: -</b> Learners can Apply methods to specific 3D Images and to identify various designs appropriate for Animation.											
<b>COURSE OUTCOMES (COs)</b>											
CO1	Gain knowledge to Create and save Images in fundamental computer applications										
CO2	Understand the title bar, menu bar, option bar, image title bar in photo shop program.										
CO3	Execute Zooming & Panning an Image while Working with Images.										
CO4	Analyze Color manipulations & Working with Toolbox										
CO5	Evaluate the Working with layers.										
CO6	Create a real time application using 3D image and Animation.										
Mapping of Course Outcomes with Program outcomes (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	PS O2	
2	CO1	3	3	1	1	1	1	3			
	CO2	3	3	1	2	2	2	3			
	CO3	3	2	3	1	3	3	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)	
									<input type="checkbox"/>		
4	Approval	Academic Council Meeting									

## UNIT I

6

Introduction to Adobe photoshop, Getting started with photoshop, creating and saving a document in photoshop, page layout and background.

## UNIT II

6

Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, palettes, toolbox, screen modes, saving files, reverting files, closing files.

**UNIT III****6**

Images: working with images, image size and resolution, image editing, color modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids-Cropping & Straightening an Image, image backgrounds, making selections.

**UNIT IV****6**

Working with toolbox: working with pen tool, save and load selection-working with erasers- working with text and brushes-Color manipulations: color modes- Levels – Curves - Seeing Color accurately - Patch tool

**UNIT V****6**

Layers: Working with layers- layer styles- opacity-adjustment layers.

**TEXTBOOKS:**

1. Reema Thareja , “Fundamentals of Computers”, Oxford University Press.

**REFERENCE BOOKS:**

1. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color
2. Adobe Creative Team, “Adobe Photoshop Classroom in a Book”.

**Course Coordinator****HOD**

<b>U18SESC006</b>	<b>FLASH</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- V.Brindha & BCA									
<b>COURSE OBJECTIVES: -</b> Learners can identify methods appropriate for Basic Animation. Apply methods to design with flash.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Understand Working with flash, drawing with flash using Animation tools and Mixer.									
CO2	Execute working with multiple objects, importing color palettes									
CO3	Analyze Basic animation and working in the timeline,									
CO4	Create Frames, key frames, deleting, copying and reversing frames									
CO5	Evaluate the Shape tweening and shape hinting in motion									
CO6	Apply methods to design with flash									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

## UNIT I

### 6

Working with flash, drawing with flash, drawing with the pencil, modifying lines, drawing with the pen, the oval and rectangle tools, free transform tool, envelope modifier, the brush tool, using the mixer.

## UNIT II

6

Adding custom colors to color palette, importing color palettes, working with multiple objects, grouping objects.

## UNIT III

6

Basic animation and working in the timeline, the timeline, movie properties.

#### **UNIT IV**

**6**

Frames vs. key frames, deleting, copying, and reversing frames, frame-by-frame vector animation, Animation on an image.

#### **UNIT V**

**6**

Shape tweening , shape hinting , Shape tweening text , edit multiple frames , animating gradients, basic motion tweening.

#### **TEXT BOOKS:**

1. Nick Vandome ,“FLASH 5 in easy steps” ,Dreamtech press,2001

#### **REFERENCE BOOKS:**

1. E A Vander Veer &Chris Graver, “Flash CS3”,Orelly Publications,2009.

**Course Coordinator**

**HOD**

<b>U18SESC007</b>	<b>COMPUTER HARDWARE AND NETWORKING</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	<b>Total Contact Hours – 30</b>					2	0	0	2	
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS									
<b>COURSE OBJECTIVES :-</b>										
Learners familiar with the basic concepts of Microprosser,Controller, Server and to demonstrate the traditional imperative design of CPUs,cards,PCsand BIOS.										
<b>COURSE OUTCOMES (COs)</b>										
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 CPU,Chips,Processor and Controllers									
CO5	Working with Internal Components cards and Higher Level Processor									
CO6	Used to develop the Backups,Switches Routers,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
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

### UNIT I

6

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 II

6

Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7.

### UNIT III

6

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 IV

6

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.

## **UNIT V**

**6**

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.

### **Text Books**

1. Ramesh Gaonkar, "Microprocessor Architecture Programming and Application with the 8085", Penram International Publication.

### **Reference Books**

1. M.L. Gupta, "Electronics and Radio Engineering", Dhanpat rai & Sons, New Delhi.
2. B. Govinda rajalu, "PC AND CLONES Hardware, Troubleshooting and Maintenance", Tata Mc-graw-Hill Publication.
3. Stephen J. Bigelow, "PC Troubleshooting and Repair", Dream tech Press, New Delhi.

**Course Coordinator**

**HOD**

<b>U18SESC008</b>	<b>COMPUTER PROGRAMMING</b>					<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
	Total Contact Hours – 30					2	0	0	2	
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi/ CS									
<b>COURSE OBJECTIVES :-</b>										
Learners will be familiar with the Programming language C, identify the steps, Write the Algorithm, Design the flowchart and Implement the Programs for various Operations Functions, Pointers and Strings.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Apply and Write the clear, structure and Looping of elementary C programs.									
CO2	Understand algorithmic thinking and apply it to programming.									
CO3	Understand 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	create and develop 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	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

### UNIT I

6

Generation and Classification of Computers, Basic organization of a Computer, Number System, Binary, Decimal, Conversion, Problems.

### UNIT II

6

Algorithm, Pseudo code, Flow Chart, Problem formulation, Problem solving, Introduction to “C” programming, Fundamentals, Structure of C Program, compilation and linking processes, Constants, Variables, Data Types.

### UNIT III

6

Expressions using operators in C, Managing input and output operations, Decision making and Branching, Looping Statements.

### UNIT IV

6

Arrays, Initialization, Declaration, One Dimensional and Two Dimensional Arrays, String, String Operations, String Arrays.

**UNIT V**

**6**

Function, Definition of Function, Declaration of Function, Recursion, pointers, pointer and arrays, 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, 2nd 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 Language”, Second Edition, Pearson Education, 2006.

**Course Coordinator**

**HOD**

<b>U18SESC009</b>	<b>Office Automation Tools</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>				
	Total Contact Hours – 30		2	0	0	2				
	Prerequisite – Higher Secondary Level									
	Course Coordinator Name & Department :- Ms.K.HemaLakshmi / CS									
<b>COURSE OBJECTIVES :-</b> Learners will be familiar with the basic Office tools design that Work with Word,Excel,Power Point										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Learn the text manipulations for word documents.									
CO2	Understand the templates and mail merge concepts.									
CO3	Understand cell editing, formulae, built in functions used in the Excel Sheet.									
CO4	Use the power point slide designs and backgrounds.									
CO5	Used to create the graphics and animations using wizards.									
CO6	Used to create the Inserting Clipart frames, Working with the Graphs and Charts									
Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 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	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

## UNIT I

6

Text Manipulations- font size, style, color. Alignment- left, right and justify, paragraph alignment, Usage of Numbering, Bullets, Footer and Headers, Usage of Spell check, and Find & Replace, Text Formatting, Picture insertion and alignment.

## UNIT II

6

Insertion – Table, chart, clip art, shapes, borders. Creation of documents, saving of documents, using templates, Creation templates, Mail Merge Concepts, Copying Text & Pictures from Excel.

## UNIT III

6

Creating of Excel sheet, Cell Editing, Usage of Formulae and Built-in Functions, File Manipulations, Data Sorting, Worksheet Preparation, Drawing Graphs, Usage of Auto Formatting.

## UNIT IV

6

Start power point, Create blank presentation, Selecting slide layout, Insert new slide, Editing presentation, Designing and formatting presentation, Change font, font color, size, style of text, Bullet and numbering, Slide design, layout, change background, preparing slide show presentation.

## UNIT V

6

Inserting Clip arts and Pictures, Frame movements, Insertion of new slides. Preparation of Organization

Charts, Presentation using Wizards, Usage of design templates, working with tables, graphics and animation, working with graphs and organization charts.

**Text Books**

1. Joyce Cox, Joan Lambert and Curtis Fryc, “Step by Step Microsoft Office Professional 2010”, Microsoft press edition.

**Reference Books**

1. Ralph T.Reilly, “The Handbook of Office Automation”, iUniverse Publications,2012.

**Course Coordinator**

**HOD**

<b>U18SEMA001</b>	<b>QUANTITATIVE APTITUDE – 1</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Mr.V.Nandakumar/Mathematics									
<b>COURSE OBJECTIVES:-</b>										
To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Gain knowledge in Number Series with its applications.									
CO2	Understand the concept of Data Interpretation									
CO3	Apply suitable algorithms in Loss & Discount									
CO4	Analyze the Rates, Time and Distance									
CO5	Evaluate problems Simple Interest									
CO6	Create an real time application compounds and mixtures									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	2	1	1	1	1	2		
	CO2	2	3	1	2	2	1	2		
	CO3	3	2	2	3	2	2	3		
	CO4	3	3	3	2	2	2	3		
	CO5	2	3	2	1	3	2	2		
	CO6	3	3	3	1	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

### UNIT I NUMBER SYSTEM

Numbers, Number Series, Number Theory, Arithmetic & Geometric Ratio

6

### UNIT II STATISTICS

Average, Ages, Data Interpretation.

6

### UNIT III PERCENTAGE AND APPLICATIONS

Percentage, Profit, Loss & Discount, Simple Interest, Compound Interest

6

### UNIT IV TIME

Rates, Time and Distance, Train Problems, Boats and Streams, Time and Work.

6

## **UNIT V RATIO AND PROPORTION**

**6**

Allegations of compounds and mixtures.

### **Text Books**

1. Aggarwal.R.S(2018) “Quantitative Aptitude” by, S.Chand Publications.
2. Aggarwal.R.S(2018) “A modern approach to Logical approach” by, S.Chand Publications.

### **Reference Books**

- 1.Abhijit Guha, “Quantitative Aptitude”- Mc Graw Hills Publishers
2. Aggarwal.R.S(2018) “A modern approach to Logical approach” by, S.Chand Publications.

**CourseCoordinator**

**HOD**

<b>U18SEMA002</b>	<b>QUANTITATIVE APTITUDE-II</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Mr.V.Nandakumar/Mathematics									
<b>COURSE OBJECTIVES:-</b>										
To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Gain knowledge in Inverse, Compound equation.									
CO2	Understand the circular arrangement.									
CO3	Apply suitable direction of Permutations and combinations test.									
CO4	Analyze the Heights and Distance									
CO5	Evaluate problems on Simple Interest									
CO6	Create an real time applicationof Date and time.									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

**UNIT I SOLVING ABILITY**

**6**

Simple equations –Variation-Direct, Inverse, Compound

**UNIT II PROBABILITY**

**6**

Problems on Linear and circular arrangement.

**UNIT III REASONING ABILITY**

**6**

Coding and decoding – Direction Permutations and combinations test- Lateral reasoning-Blood relations-Paragraph based puzzles.

**UNIT IV TRIGONOMETRY****6**

Heights and Distance.

**UNIT V CLOCKS AND CALENDERS****6**

Interpretation of Date and time.

**Text Books**

1. Aggarwal.R.S(2018) “Quantitative Aptitude” by, S.Chand Publications.
2. Aggarwal.R.S(2018) “A modern approach to Logical approach” by, S.Chand Publications.

**Reference Books**

- 1.Abhijit Guha, “Quantitative Aptitude”- Mc Graw Hills Publishers
2. Aggarwal.R.S(2018) “A modern approach to Logical approach” by, S.Chand Publications.

**CourseCoordinator****HOD**

<b>U18SEMA003</b>	<b>REGRESSION ANALYSIS WITH SPSS</b>						<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
	Total Contact Hours – 30						2	0	0	2
	Prerequisite course – Higher Secondary Level									
	Course Coordinator Name & Department:- Ms.S.Kavitha /Mathematics									
<b>COURSE OBJECTIVES:-</b> To equip students with adequate knowledge of Mathematics to formulate problems and solve them analytically or numerically.										
<b>COURSE OUTCOMES (COs)</b>										
CO1	Gain knowledge Qualitative Variable on Nominal Scale, Ranked.									
CO2	Understand the Deleting and Rearranging Items from the Viewer									
CO3	Apply suitable direction Permutations and combinations test.									
CO4	Analyze the Pie Chart, Scatter Plot and Dot plots									
CO5	Evaluate data questionnaire Analysis									
CO6	Create an real time application and test of hypotheses									
Mapping of Course Outcomes with Program outcomes (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	PS O2
2	CO1	3	3	1	1	1	1	3		
	CO2	3	3	1	2	2	2	3		
	CO3	3	2	3	1	3	3	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)
									<input type="checkbox"/>	
4	Approval	Academic Council Meeting								

### Unit 1 : Introduction

6

Observations and Variables, Quantitative or Measurement Variable on Interval Scale, Qualitative Variable on Nominal Scale, Ranked Variable on Ordinal Scale.

### Unit 2 : SPSS Data File

6

Opening a Data File in SPSS – Variable View, Data View, Entering Data into the Data Editor, Saving the Data File. Editing and Manipulating Data : Inserting a New Variable, Rearranging the Order of Variable in the Variable View,

Deleting and Rearranging Items from the Viewer. Usage of Data, Transform, Analyse and Graphs menus – Editing and copying and printing SPSS output – Importing Data from Excel File.

### **Unit 3: Descriptive Statistics with SPSS**

**6**

Charts and Graphs: Simple Bar charts, Pie Chart, Scatter Plot and Dot plots, Line graphs, Histogram .

### **Unit 4: Correlation and Regression Analysis with SPSS**

Simple correlation (Karl Pearson's Method) - Rank correlation ( Spearman's method) – Simple linear regression equation, Scatter plot and line of best fit – Questionnaire Analysis ( Uni-variate and Bi- variate tables ) – Chi square test with SPSS for independence of Attributes.

### **Unit 5: correlation and Testing of Hypothesis**

**6**

Partial and multiple correlation coefficients . Simple linear regression model : Description of data model - Estimation and test of hypotheses.

#### **Books for Study :**

1. Ananthi Sheshasayee and Sheshasayee, G, (2003), **Computer Applications in Business and Management**, Margham Publications, Chennai.
2. Rajathi, A. and Chandran, P. (2010), **SPSS for you**, MJP Publishers, Chennai.
3. Chatterjee, S and Price, B (1977), **Regression Analysis by Example**, John Wiley and Sons, New York (Chapter 1,2,3 and relevant portions in chapters 4,5,6,7,8,9).
4. Kapoor, V. K and Gupta, S. C (2002), **Fundamentals of Mathematical Statistics**, Sultan Chand and Sons, New Delhi. (Chapter 10 only)

#### **Books for Reference :**

1. Singh, V. P. and Singh, M. (1998), **MS-Excel**, Megabyte Series, Asian Publishers, New Delhi.
2. Andy Field (2006), **Discovering Statistics Using SPSS**, SAGE Publications , London.
3. Johnston, J (1972), **Econometric Methods**, McGraw-Hill Pvt. Ltd, New York.
4. Draper, N. R and Smith, H (1998), **Applied Regression Analysis**, 3<sup>rd</sup> edition, John Wiley and Sons, USA.

**CourseCoordinator**

**HOD**