CURRICULUM & SYLLABUS – M.Sc Computer Science
(Applicable to the batches admitted from July 2018)
I SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	Total Contact Hrs	L	T	P	C
THEORY								
1.	MC	P18MCSC101	Design and Analysis of Algorithms	5	3	1	0	4
2.	MC	P18MCSC102	Operating Systems	4	3	1	0	4
3.	MC	P18MCSC103	Programming in Java	5	3	1	0	4
4.	MC	P18MCSC104	Object Oriented Analysis and Design	4	3	1	0	4
5.	MC	P18MCSC105	Computer Networks	4	3	1	0	4
	PRACTICAL							
7.	MC	P18MCSC1L1	LAB I : Programming in Java Lab	4	0	0	4	2
8.	MC	P18MCSC1L2	LAB II : Operating Systems Lab	4	0	0	4	2
Total				30	15	5	8	24

II SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	Total Contact Hrs	L	T	P	C
THEORY								
	MC	P18MCSC201	Web Technology	4	3	1	0	4
1.	MC	P18MCSC202	Cloud Computing	4	3	1	0	4
2.	MC	P18MCSC203	Data Mining and Data Warehousing	4	3	1	0	4
3.	MC	P18MCSC204	Cryptography	4	3	1	0	4
4.	ME		Major Elective - I	4	4	0	0	4
5.	EEC	P18PRSC2V1	Internship Program	2	0	0	2	1
	PRACTICAL							
8.	MC	P18MCSC2L1	LAB-III : Web Technology Lab	4	0	0	4	2

9.	MC	P18MCSC2L2	LAB-IV : Data Mining and Data Warehousing Lab	4	0	0	4	2
Total				30	16	4	10	25

III SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	Total Contact Hrs	L	T	P	C
THEORY								
1.	MC	P18MCSC301	ASP.Net in C# Programming	4	3	1	0	4
2.	MC	P18MCSC302	Big Data Analytics	4	3	1	0	4
3.	MC	P18MCSC303	Grid Computing	4	3	1	0	4
4.	ME		Major Elective - II	4	4	0	0	4
5.	ME		Major Elective III :	4	4	0	0	4
	PRACTICAL							
7.	MC	P18MCSC3L1	LAB-V : ASP.Net in C# Programming Lab	4	0	0	4	2
8.	MC	P18MCSC3L2	LAB-VI : Elective II Lab	4	0	0	4	2
Total				28	17	3	8	24

IV SEMESTER

S.No.	CATEGORY	SUB. CODE	SUBJECT	Total Contact Hrs	L	T	P	C
THEORY								
2.	MC	P18MCSC401	Programming in Python	4	3	1	0	4
3.	OE		Open Elective	2	3	0	0	2
4.	EEC	P18PRSC4T1	Term Paper	1	0	0	0	1
`5.	MC	P18MCYO001	Stress Management by Yoga	1	0	0	0	0
6.	EEC	P18PRSC4P1	Project	10	0	0	16	8
	PRACTICAL							

7.	MC	P18MCSC4L1	Programming in Python Lab	4	0	0	4	2
Total				22	6	1	20	17

LIST OF MAJOR ELECTIVE – I
CHOOSE ANY ONE IN SEMESTER II

S.No.	Sub Code	Subjects	Total Contact Hrs	L	T	P	C
1	P18MESC011	Major Elective I : Software Engineering	4	4	0	0	4
2	P18MESC012	Major Elective I : Internet of Things	4	4	0	0	4
3	P18MESC013	Major Elective I : Data Communication	4	4	0	0	4
Total			4	4	0	0	4

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LIST OF MAJOR ELECTIVE – II
CHOOSE ANY ONE IN SEMESTER III

S.No.	Sub Code	Subjects	Total Contact Hrs	L	T	P	C
1	P18MESC021	Major Elective II : Image Processing	4	4	0	0	4
2	P18MESC022	Major Elective II : RDBMS	4	4	0	0	4
3	P18MESC023	Major Elective II : PHP	4	4	0	0	4
Total			4	4	0	0	4

LIST OF MAJOR ELECTIVE – III
CHOOSE ANY ONE IN SEMESTER III

S.No.	Sub Code	Subjects	Total Contact Hrs	L	T	P	C
1	P18MESC031	Major Elective III : Multimedia Systems	4	4	0	0	4
2	P18MESC032	Major Elective III : Software Project	4	4	0	0	4

		Management					
3	P18MESC033	Major Elective III : Network Programming	4	4	0	0	4
Total			4	4	0	0	4

LIST OF OPEN ELECTIVES
CHOOSE IN FOUR SEMESTER IN ANY SUBJECTS (CHOOSE ANY ONE SUBJECT)

S.No.	Sub Code	Subjects	Total Contact Hrs	L	T	P	C
1	P18OEBA001	Advertising and Sales Management	2	2	0	0	2
2	P18OEBA002	BPO Management	2	2	0	0	2
3	P18OEBA003	Call Centre Management – Voice & Non Voice	2	2	0	0	2
4	P18OEBA004	Customer Relationship Management	2	2	0	0	2
5	P18OEBA005	Entrepreneurship Development	2	2	0	0	2
6	P18OEBA006	Advanced Human Resource Management	2	2	0	0	2
7	P18OEBA007	Logistics & Supply Chain Management	2	2	0	0	2
8	P18OEBA008	Office Management	2	2	0	0	2
9	P18OEVC001	Photography & Videography	2	2	0	0	2
10	P18OEEN001	Soft Skills	2	2	0	0	2
11	P18OEEN002	Mass Media and Communication	2	2	0	0	2
12	P18OESC001	Computer Applications	2	2	0	0	2
13	P18OESC002	Multimedia	2	2	0	0	2
14	P18OESC003	Advanced Excel	2	2	0	0	2
15	P18OESC004	Web Designing	2	2	0	0	2
16	P18OESC005	Photoshop	2	2	0	0	2
17	P18OESC006	Flash	2	2	0	0	2
18	P18OESC007	Computer Hardware and Networking	2	2	0	0	2
19	P18OESC008	Computer Programming	2	2	0	0	2

20	P18OESC009	Office Automation Tools	2	2	0	0	2
21	P18OEMI001	Clinical Microbiology	2	2	0	0	2
22	P18OEMI002	Herbal Medicine	2	2	0	0	2
23.	P18OEPH001	Electrical Technician	2	2	0	0	2

LIST OF AUDIT COURSES

CHOOSE ANY THREE SEMESTER IN ANY SUBJECTS (CHOOSE ANY ONE SUBJECT)

S.No.	Sub Code	Subjects	Total Contact Hrs	L	T	P	C
1.	P18ACEN001	English for Research Paper Writing	2	2	0	0	0
2.	P18ACCE002	Disaster Management	2	2	0	0	0
3.	P18ACEN003	Sanskrit for Technical Knowledge	2	2	0	0	0
4.	P18ACBA004	Value Education	2	2	0	0	0
5.	P18ACLW005	Constitution of India	2	2	0	0	0
6.	P18ACBA006	Pedagogy Studies	2	2	0	0	0
7.	P18ACBA007	Personality Development through Life Enlightenment Skills	2	2	0	0	0
8.	P18ACEN001	English for Research Paper Writing	2	2	0	0	0
9.	P18ACCE002	Disaster Management	2	2	0	0	0

SEMESTER - I

P18MCSC101	DESIGN AND ANALYSIS OF ALGORITHMS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.K.Rajakumari /Department of CS				

COURSE OBJECTIVES:-

Ability to understand and design algorithms using greedy strategy, divide and conquer approach, dynamic programming, and max flow - min cut theory.

COURSE OUTCOMES (COs)

CO1	Explain the basic concepts of time and space complexity
CO2	Describe the methodologies of how to analyze an algorithm
CO3	Describe the data structures of graph colouring and back tracking
CO4	Design a better algorithm to solve the problems
CO5	To Evaluate the Divide-and-Conquer Strategy,
CO6	dynamic programming, greedy and approximate algorithms

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

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

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

4	Approval	47th Academic Council Meeting

UNIT I : INTRODUCTION **12**

Fundamentals of algorithmic problem solving – Important problem types – Fundamentals of the analysis of algorithm efficiency – analysis frame work – Asymptotic notations – Mathematical analysis for recursive and non-recursive algorithms.

UNIT II : DIVIDE AND CONQUER METHOD AND GREEDY METHOD **12**

Divide and conquer methodology – Merge sort – Quick sort – Binary search – Binary tree traversal – Strassen's matrix multiplication – Greedy method – Prim's algorithm – Kruskal's algorithm – Dijkstra's algorithm.

UNIT III : DYNAMIC PROGRAMMING **12**

Single source shortest paths – Multi stage graphs – 0/1Knapsack problem – String editing.

UNIT IV : BACKTRACKING **12**

Backtracking – 8-Queens problem – Hamiltonian circuit problem – Subset sum problem – Graph coloring

UNIT V : BRANCH AND BOUND AND NP-HARD ,COMPLETE PROBLEMS **12**

Branch and bound – General method – Traveling salesman problem - P & NP problems – NP-complete problems – Approximation algorithms for NP-hard problems.

TEXT BOOKS:

1. Ellis Horowitz, Sartaj Sahni and S. Rajasekaran "Fundamentals of computer Algorithms" Universities Press 2nd Edition 2007.

REFERENCE BOOKS:

1. Thomas H.Cormen, Charles E.Leiserson, Ronald L.Rivest, "Introduction to algorithms" Prentice Hall 1990.

Course Coordinator **HOD**

P18MCSC102	OPERATING SYSTEMS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms. P.Jennifer/Department of CS				

COURSE OBJECTIVES:-

Learners can know about essential part of any computer system with the help of an operating system. The purpose of this course is providing a clear understanding of the concepts that underlie operating systems

COURSE OUTCOMES (COs)

CO1	Remember the concepts to gain knowledge about an operating system and the role it plays.
CO2	Understand the high-level structure of operating systems, applications, and the relationship between them.
CO3	Applying various knowledge of the services provided by operating systems. Exposure to some details of major OS concepts.
CO4	Analyzing about the behavior of the different scheduling, memory management and file systems.
CO5	Evaluate to understand clearly the concept of Virtual memory and learn about techniques to manage and recovery from the deadlock.
CO6	Used to create different types of I/O system.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Project/Term Paper/ Seminar/ Internship (PR)
					✓				
4	Approval	47th Academic Council Meeting							

UNIT –I INTRODUCTION

Multiprogramming – Time Sharing – Distributed system – Real Time systems – I/O structure – Dual Mode operation – Hardware protection – General System architecture – OS services – system calls – System programs – system design and implementation.

UNIT –II PROCESS MANAGEMENT

Process concept – Concurrent process – Scheduling concept – CPU Scheduling algorithms – Multiple Processor scheduling.

UNIT –III PROCESS SYNCHRONIZATION

Critical section – Synchronization hardware – semaphores Classical Problems of synchronization - Inter –process communication – Deadlock – Characterization, Prevention, Avoidance, and Detection.

UNIT –IV STORAGE MANAGEMENT

Swapping, Single and Multiple Partition allocation – Paging – Segmentation – Paged Segmentation Virtual Memory – Demand Paging – Page replacement algorithm- Thrashing – Secondary storage Management Disk structure – Free Space Management – Allocation methods - Disk scheduling – Performance and reliability improvements – storage hierarchy.

UNIT –V FILES AND PROTECTION

File system organization, File operations – Access Methods – Consistency semantics-Directory structure organization – File Protection – Implementation issues – Security – Encryption – Case Study – UNIX and Windows NT – Introduction to distributed OS design.

TEXT BOOKS:

1. Silberschatz and Galvin , “Operating System Concepts”, 4th Edition Addison Wesley Publishing co, 1995.

2. Milankovic . M “Operating System Concepts and Design”, 2nd Edition, McGraw Hill, 1992.

REFERENCE BOOKS:

1. Deital ,” An Introduction to Operating System”, Addison Wesley Publishing Co.,1985.

2. Gray Nutt, “Operating System”, A. Modern Perspective – 2000

Course Coordinator **HOD**

P18MCSC103	PROGRAMMING IN JAVA	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Department of CS				

COURSE OBJECTIVES:-

Learners will be familiar with the basic programming in JAVA concepts and the ability to write a computer program to solve specified problems using Java structure.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of object-oriented programming
CO2	Understand the classes and objects
CO3	Gain knowledge to create packages
CO4	Used to create Java SDK environment to create, debug and run simple Javaprograms.
CO5	Apply the concept of network programming
CO6	Create a event driven programming using applets

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT-I INTRODUCTION:-

Java features – Benefits – Applications – Data types – Expressions – Conditional and iteration executions – References – Arrays – Garbage Collection - Run time environment.

UNIT-II JAVA OBJECT MODEL:-

Classes – Variables - Methods – Constructors – Access specifies – Inheritance – interface – Packages – Strings – Dynamic binding.

UNIT-III EXCEPTIONS AND THREADS:-

Exceptions and Errors – Exception classes – Run time Exception – Uncompact Exception – Finally Block – User Defined Exception – Creating Threads – Controlling Threads – Multithreading – Thread Properties – Thread groups.

UNIT-IV JAVA I/O:-

Java streams – File class – Serialization – Applets.

UNIT-V AWT:-

AWT controls – Panel – Layout Managers – Event Handling – Event Listener – Dialog box –

Menus –Graphics context.

TEXT BOOKS:-

1. Java 2: "The Complete Reference", 3rd Edition – TMGH – 1999 P.Naughton and H.Schildt.

2. "Java Secrets" IDG Book World.

REFERENCE BOOKS:

1. Joseph. L. Weber- "Using Java 2-EEE "-Prentice Hall of India – 1998.

2. Patrick Henry Winston & Sundar Narsimbhan "Onto Java "- Addison Wesley - 1996.

3. Daniel Groner, K. C. Hoipson-"Java Language API Super Bible" – Waite Grocey Press 1996.

Course Coordinator **HOD**

P18MCSC104	OBJECT ORIENTED ANALYSIS AND DESIGN	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.K.Hemalakshmi/Department of CS				

COURSE OBJECTIVES:-

Learners will gain knowledge in object oriented modelling, class diagram, use case and component diagram.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in design the problem domain using unified object approach.
CO2	Understanding the identification and categorize business, access and view layer objects of the application.
CO3	Apply the knowledge in creating Use case diagram, class diagram.
CO4	Analyze the Component Diagrams and Deployment Diagrams
CO5	Evaluate the construction of software system by applying various modeling techniques
CO6	Create an real time application by applying OOAD concepts

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I INTRODUCTION **12**

System Development - Object Basics - Development life cycle - Methodologies-Patterns – Frameworks- Unified Approach -UML.

UNIT II CLASS AND OBJECT **12**

Use - Case Models - Object Analysis - Object relations - Attributes – Method - Class and object responsibilities - case studies.

UNIT III DESIGN PROCESSING **12**

Design Processes - Design Anxious - class design - Object Storage - Object interoperability - Case Studies.

UNIT IV USER INTERFACE DESIGNING **12**

User interface Design -View layer classes – Micro - level Processes - View layer Interface - Case Studies.

UNIT V TESTING AND DEBUGGING **12**

Quality Assurance Tests - Testing Strategies - Object orientation of testing -Test Cases - Test Plans - Continuous testing – Debugging Principles - System usability -Measuring user satisfaction -Case studies.

TEXT BOOKS:

1. Ali Bahrami, “Object Oriented System Development”, McGraw Hill International Edition - 1999.

2. R. S. Pressman, “Software Engineering”, Fourth Edition, McGraw Hill international Edition - 1997.

REFERENCE BOOKS:

1. Pierre – Alain Miller, “Instant UML”, Work Press-1997.

2. Grady Booch, James Rumbaugh,Ivar Jacobson, “The Unified Modeling Language, User Guide”, Addison-Wesley Longman, 1999.

3. Graig Larman,”Applying UML and Patterns”, Addison Wesley, 2000

Course Coordinator **HOD**

P18MCSC105	COMPUTER NETWORKS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.R.Balamurugan/Department of CS				

COURSE OBJECTIVES:-

Students will gain knowledge in computer networks and concentrates on building a firm foundation for understanding Data Communications and Networks.

COURSE OUTCOMES (COs)

CO1	Understand the layers of OSI and TCP/IP networks.
CO2	Identify the solution for the error control and flow control problems.
CO3	Understand the working principles of IP layer and its routing algorithms.
CO4	Analyze the functionalities of transport layer protocols and its congestion control mechanism.
CO5	Apply the functionalities of application layer protocols.
CO6	Analyze the different types of network devices and their functions

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I INTRODUCTION **12**

Introduction – Network Hardware – Software – Reference Models – OSI and TCP/IP models – Example networks: Internet, ATM, Ethernet and Wireless LANs.

UNIT II WIRELESS TRANSMISSION **12**

Physical layer – Theoretical basis for data communication - guided transmission media - wireless transmission - Communication Satellites – Telephones structure –local loop, trunks and multiplexing, switching-Bluetooth.

UNIT III DATA LINK LAYER **12**

Data link layer: Design issues – error detection and correction- elementary data link protocols sliding window protocols – Data Link Layer in the Internet - Medium Access Layer – Channel Allocation Problem – Multiple Access Protocols.

UNIT IV NETWORK LAYER **12**

Network layer design issues Routing algorithms Congestion control algorithms – IP protocol – IP Address – Internet Control Protocol.

UNIT V TRANSPORT LAYER & APPLICATION LAYER **12**

Transport layer design issues Connection management Addressing– Simple Transport Protocol– Internet Transport Protocol (TCP) – Application Layer: DNS- Email, Network Security: Cryptography.

TEXT BOOKS:-

1. S.Tanenbaum, “Computer Networks”, Fourth Edition, - Pearson Education, Inc, (Prentice hall of India Ltd), 2003, Delhi.

REFERENCE BOOKS:-

1. B. Forouzan, “Introduction to Data Communications in Networking”, Tata McGraw Hill, 1998,New Delhi.

2. F. Halsall, “Data Communications, Computer Networks and Open Systems”, 1995, Addison Wesley.

3. D. Bertsekas and R. Gallagher, “Data Networks”, Prentice hall of India, 1992, New Delhi.

4. Lamarca, “Communication Networks”, Tata McGraw Hill, 2002, New Delhi.

Course Coordinator **HOD**

P18MCSC1L1	LAB-I : PROGRAMMING IN JAVA LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.K.Rajakumari/Department of CS				

COURSE OBJECTIVES:-

Learners will be familiar with the basic programming in JAVA concepts and the ability to write a computer program to solve specified problems using Java structure.

COURSE OUTCOMES (COs)

CO1	Remember the basic concepts of object-oriented programming
CO2	Understand the classes and objects
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CO4	Used to create Java SDK environment to create, debug and run simple Javaprograms.
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Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

S.NO	LIST OF PROGRAMS - APPLICATION
1.	Determining the order of numbers generated randomly using Random Class.
2.	Implementation of Point Class for Image manipulation
3.	Usage of Calendar Class and manipulation
4.	String Manipulation using Char Array
5.	Database Creation for string e-mail address and manipulation
6.	Usage of Vector Classes
7.	Implementing Thread based applications and Exception Handling (Synchronization and a synchronization)
	APPLETS
8.	Working with frames and various controls.
9.	Working with Dialogs and Menus
10.	Working with Panel and Layout

Course Coordinator **HOD**

P18MCSC1L2	LAB-II : OPERATING SYSTEMS LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.P.Jennifer/Department of CS				

COURSE OBJECTIVES:-

Learners can know about essential part of any computer system with the help of an operating system. The purpose of this course is providing a clear understanding of the concepts that underlie operating systems

COURSE OUTCOMES (COs)

CO1	Remember the concepts to gain knowledge about an operating system and the role it plays.
CO2	Understand the high-level structure of operating systems, applications, and the relationship between them.
CO3	Applying various knowledge of the services provided by operating systems. Exposure to some details of major OS concepts.
CO4	Analyzing about the behavior of the different scheduling, memory management and file systems.
CO5	Evaluate to understand clearly the concept of Virtual memory and learn about techniques to manage and recovery from the deadlock.
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Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

S.NO	LIST OF PROGRAMS
1.	Inter Process Communication (IPC) using Message Queues.
2.	IPC Using Pipes
3.	Implementation of wait and Signal using counting Semaphores
4.	Atomic Counter update problem
5.	IPC Using Pipes
6.	Implementation of wait and Signal using counting Semaphores
7.	Atomic Counter update problem
8.	Signaling processes
9.	Deadlock detection (for process passing messages)
10.	Process scheduling FCFS
11.	Process Scheduling: Least Frequency used.
12.	Process Scheduling: Round Robin
13.	Producer – Consumer problem with limited buffers

Course Coordinator **HOD**

SEMESTER - II

P18MCSC201	**WEB TECHNOLOGY**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms. P. Jennifer/ Department of CS				

COURSE OBJECTIVES:-

Learners will be familiar with the basic concepts of web technology and Understand the various steps in designing a creative and dynamic website.

COURSE OUTCOMES (COs)

CO1	Remember the basic internet concepts
CO2	Gain knowledge to design dynamic and interactive web pages
CO3	Ability to create Events and functions in java script
CO4	Apply Dynamic HTML to create website
CO5	Understand the fundamentals of ASP .Net & to use web server controls
CO6	Create website by connecting with data base for real time application .

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I : INTRODUCTION **12**

Basic Web Concepts - How the web server works – static web pages-Dynamic web pages-How scripting languages work – Server side scripting Language – Client Side Scripting – Introduction to Common HTML

UNIT II : HTML **12**

Links and Addressing –Linking in HTML –Images and Anchor –HTML and Images –HTML Image Basics – ALT Attributes – Image Alignment – HSPACE and VSPACE – HEIGHT and WIDTH –Layout with Tables – Introduction Tables – Simple Tables – ROWSPAN and COLSPAN – Tables for Layout– Frames – Simple Frame Example-Forms – Form Controls-Text Controls-Additional <Input> Type- New and Emerging Form Elements – <Button Elements>- Labels.

UNIT III : JAVA SCRIPT **12**

Core Java Script – Variables-Constant – Experssions Conditions- Relational Operators- Data Types – FlowControl – Functions-Objects – Data type Conversion & Equality – Windows and Frames – Forms and data.

UNIT IV : XML **12**

Characteristics of Markup Languages- Examples of Markup Languages-What is XML – The data revolution-Breaking beyond data display-Well Formed Documents - Valid Documents - Writing DTDs - Styling XML – XSL.

UNIT V : VB SCRIPT **12**

VB Script- Operators-Math Functions-Date and Functions-Unsupported array functions and statements-Unsupported string functions, statements and constructs-String Constants-Conversion Functions-Unsupported Conversion Functions.

TEXT BOOKS:-

1. Professional Java Script 2nd Edition – April 2002 (Chapter 2,4,5)

2. Eric Ladd, Jim O"Donnel –"Using HTML 4, XML and JAVA"-Prentice Hall of India - 1999.

REFERENCE BOOKS:-

1. "Web Server Programming "– Nail Grey –Wiley Publications –2004.

2. HTML BLOCK BOOK.

3. Professional IBM Websphere 5.0 – Tim Francis , Eric Harness –SPD Publications –2003

4. "Beginning Java Script " – Paul Wilton – SPD Publications –2001.

Course Coordinator **HOD**

P18MCSC202	CLOUD COMPUTING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.S.KANNAN/Department of CS				

COURSE OBJECTIVES:-

Learners will be familiar with world-leading IT technology with high international standard of service. Learners will understand the expertise of service

COURSE OUTCOMES (COs)

CO1	Gain knowledge in identifying the technical foundations of cloud systems architectures.
CO2	Understand the problems and solutions to cloud application problems.
CO3	Apply principles of best practice in cloud application design and management.
CO4	Analyze and define technical challenges for cloud applications and assess their importance.
CO5	Evaluate the implementation service with a quality control from project imitation to production
CO6	Create an real time application using Cloud Computing by using various services.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I FUNDAMENTALS OF GRID ANDCLOUD COMPUTING 12

Fundamentals – Cloud computing – History of Cloud Computing – Cloud Architecture – Cloud Storage – Why cloud computing Matters – Advantages of Cloud computing – Disadvantages of Cloud Computing – Companies in the Cloud Today – Cloud Services.

UNIT II DEVELOPING CLOUD SERVICES 12

Web-Based Application – Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Software as a Service – Platform as a Service – Web Services – On- Demand computing – Discovering Cloud Services Development Services and Tools – Amazon Ec2- Google App Engine – IBM Clouds.

UNIT III CLOUD COMPUTING FOR EVERY ONE 12

Centralizing Email communications – collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud computing for the Community – Collaborating on Group Projects and Events – Cloud Computing for theCorporation.

UNIT IV USINGCLOUDSERVICES 12

Collaborating on Calendars, Schedules and Task Management – Exploring Online Scheduling Applications – Exploring Online Planning and Task Management – Collaborating on Event Management – Collaborating on Contact Management – Collaborating on Project Management – Collaborating on Word Processing – Collaborating on Databases – Storing and Sharing Files – Evaluating Web Mail Services – Evaluating Web Conference Tools – Collaborating via Social Networks and Groupware – Collaborating via Blogs and Wikis.

UNIT V GRIDCOMPUTING 12

OGSA – Sample Use Cases – OGSA Platform Components – OGSI – OGSA Basic Services. Globus Toolkit – Architecture – Programming Model – High Level Services – OGSI.Net. Middleware Solutions.

TEXT BOOKS:

1. Michael Miller, Cloud Computing : Web-Based Applications That Change the Way You Work and Collaborate Online, Que Publishing, August2008.

REFERENCE BOOKS:

1. Haley Bear, Cloud Computing Best Practices for Managing and Measuring Processesfor On-demand Computing, Applications and Data Centersin the Cloud withSLAs

Course Coordinator HOD

P18MCSC203	DATA MINING AND DATA WAREHOUSING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Department of CS				

COURSE OBJECTIVES:-

Learners will be familiar with the concepts of data ware house and data mining, which gives a complete description about the principles, used, architectures, applications, design and implementation of data mining and data ware housing concepts.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in mathematical foundations of data mining tools
CO2	Understand how to gather and analyze large sets of data to gain useful business
CO3	Understand and implement classical models and algorithms in data warehouses and data mining.
CO4	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.Analyzing and demonstrating basic data miningalgorithms, methods, and tools
CO5	Master data mining techniques in various applications like social, scientific and environmental context.
CO6	Develop skill in selecting the appropriate data mining algorithm for solving practical problems

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I DATAWAREHOUSE 12

Data Warehouse roles and structures – What can a data warehouse do? The Cost of Warehousing data – Data Stores, Warehouses and Marts – The Data Warehouse environment – Data warehouse characteristics – The Data Warehouse architecture – Metadata, Metadata Extraction – Implementing the Data Warehouse – Designing and building the Data Warehouse – The data warehouse project plan – Data warehouse architecture, specification and development- Data Warehouse project successfactors.

UNIT II INTRODUCTION TO DATA MINING 12

Basic Data Mining tasks – Data mining versus knowledge discovery in data bases – Data Mining issues – Data Mining Metrics – Social implications of data mining - Data Mining from a database perspective – Data Mining Techniques – Introduction – A statistical perspective on Data Mining – Similarity measures – Decision trees – Neural networks – Geneticalgorithms.

UNIT III CLASSIFICATION 12

Introduction – Statistical based algorithms – Distance based algorithms – Decision tree based algorithms – Neural networks based algorithms – Rule based algorithms – Combining Techniques.

UNIT IV CLUSTERING 12

Introduction – Similarity and distance measures – Outliers – Hierarchical algorithms – Partitional algorithms – Clustering large data bases – Clustering with categorical attributes – Association Rules – Introduction – Large Item – sets – Basic Algorithms.

UNIT V WEBMINING 12

Web Mining – Introduction – Web Content Mining – Web Structure Mining – Web Usage Mining.

TEXT BOOKS:

1. Margaret H.Dunham. “Data Mining Introductory and Advanced Topics”. Pearson Education –2003.

REFERENCE BOOKS:

1. George M. Maracas’. “Modern Data Warehousing, Mining and Visualization: Core concepts”, Pearson Education – 2003

Course Coordinator HOD

P18MCSC204	CRYPTOGRAPHY	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.K.Rajakumari/Department of CS				

COURSE OBJECTIVES:-

Learners will be functioning of various cryptography algorithms used for authentication and encryption.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in mathematical foundations of cryptography using fuzzy logic methods.
CO2	Ability to use encryption algorithm using Number Theory
CO3	To understand the Public key Cryptography
CO4	Ability to use Message Authorization and Hash functions
CO5	To understand the Digital Signature and Authentication Protocols
CO6	To understand the Conventional Encryption

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

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PSO2	PSO3
2	CO1	H	L						H	M	M
	CO2	H	L						H	M	M
	CO3	H	L						H	M	M
	CO4	H	L						H	M	M
	CO5	H	L						H	M	M
	CO6	H	L						H	M	M

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT 1: CONVENTIONAL ENCRYPTION: **12**

Conventional encryption model – DES –RC 5 – Introduction to AES - Random number generation.

UNIT-2: NUMBER THEORY: **12**

Modular arithmetic – Euler‟s theorem – Euclid‟s algorithm – Chinese remainder theorem – Primarily and factorization –Discrete logarithms – RSA algorithm

UNIT 3: PUBLIC KEY CRYPTOGRAPHY: **12**

Principles – RSA algorithm – key management- Diff – Hellman key exchange

UNIT 4: MESSAGE AUTHORIZATION AND HASH FUNCTIONS: **12**

Hash functions- Authentication requirements – Authentication function- Message authentication codes –Secure Hash algorithms

UNIT 5: DIGITAL SIGNATURE AND AUTHENTICATION PROTOCOLS : **12**

Digital Signature- Authentication Protocols – Digital signature standard.

TEXT BOOKS:-

1) Stallings, W., 2005 , Cryptography and Network Security Principles and Practice, Pearson Education, Delhi.

REFERENCE BOOKS:

1.Charlie Kaufman, Radia Perlman, Mike specimen, Network Security- Private Communication in a public world.

2. Michael Welsehenbach, 2005, Cryptography in C & C++", John Wiley.

3. Bruce sehneier , 2001 Applied Cryptography , John Wiley and sons.

4. Kailash N.Gupta , Kamlesh N. Agarwala, Pratek A. Agarwala, 2005, Digital signature Network security practices , PHI, New Delhi.

Course Coordinator **HOD**

P18MCSC2L1	LAB-III : WEB TECHNOLOGY LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.P.Jennifer/Department of CS				

COURSE OBJECTIVES:-

Learners will be familiar with the basic concepts of web technology and Understand the various steps in designing a creative and dynamic website.

COURSE OUTCOMES (COs)

CO1	Remember the basic internet concepts
CO2	Gain knowledge to design dynamic and interactive web pages
CO3	Ability to create Events and functions in java script
CO4	Apply Dynamic HTML to create website
CO5	Understand the fundamentals of ASP .Net & to use web server controls
CO6	Create website by connecting with data base for real time application .

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

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

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

4	Approval	47th Academic Council Meeting

1.	Create a simple page introducing your-self, how old you are, what you do, what you like and dislike. Modify the introduction to include a bullet list of what you do and put a list on the 5 things you like most and dislike is numbered lists. Create another page about your favorite hobby, and link it to (and from) your main page. Center something, and put a quote on one of your pages.
2.	Put an existing image on a web page. Create a table, use a heading and at least one use of row span / col span. Colour a page and some text within the page. Link to another site.
3.	Create a new file called index.html.
	a. Put the normal HTML document structure tags in the file.
	b. Give a title.
	c. At the bottom of the page (i.e. the last thing between the body tags) put the following:
4.	A horizontal rule.
5.	A link to your email-address (with your name between the tag); remember to put the link to your email address within address tags.
6.	A line break.
7.	The Date (I have this same structure at the bottom of this page)
8.	Above this Block (which is called the footer), put a title in heading tags.
9.	Add some text describing you. (You can split this into multiple headings and paragraphs if you want).
10.	Write a script to create an array of 10 elements and display its contents.

Course Coordinator **HOD**

P18MCSC2L2	LAB-IV : DATA MINING AND DATA WAREHOUSING LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Dept. of.CS				

COURSE OBJECTIVES:-

Learners will be familiar with the concepts of data ware house and data mining, which gives a complete description about the principles, used, architectures, applications, design and implementation of data mining and data ware housing concepts.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in mathematical foundations of data mining tools
CO2	Understand how to gather and analyze large sets of data to gain useful business
CO3	Understand and implement classical models and algorithms in data warehouses and data mining.
CO4	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.Analyzing and demonstrating basic data miningalgorithms, methods, and tools
CO5	Master data mining techniques in various applications like social, scientific and environmental context.
CO6	Develop skill in selecting the appropriate data mining algorithm for solving practical problems

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

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

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

4	Approval	47th Academic Council Meeting

1.	Create an Employee Table with the help of Data Mining Tool WEKA.
2.	Create a Weather Table with the help of Data Mining Tool WEKA.
3.	Apply Pre-Processing techniques to the training data set of Weather Table
4.	Apply Pre-Processing techniques to the training data set of Employee Table
5.	Normalize Weather Table data using Knowledge Flow.
6.	Normalize Employee Table data using Knowledge Flow.
7.	Finding Association Rules for Buying data.
8.	Finding Association Rules for Banking data
9.	Finding Association Rules for Employee data.
10.	To Construct Decision Tree for Weather data and classify it.
11.	To Construct Decision Tree for Customer data and classify it.
12.	To Construct Decision Tree for Location data and classify it.
13.	Write a procedure for Visualization for Weather Table.
14.	Write a procedure for Visualization of Banking Table.
15.	Write a procedure for Clustering Weather data using EM Algorithm.

Course Coordinator **HOD**

SEMESTER - III

P18MCSC301	ASP.NET IN C# PROGRAMMING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Dept.of.CS				

COURSE OBJECTIVES:-

Learners will be familiar with basics of the ASP .NET. Learners will understand the design and implementation of the complete applications over the web

COURSE OUTCOMES (COs)

CO1	Gain knowledge in developing and creating ASP .Net Applications
CO2	Understand the usage of web controls and forms
CO3	Apply development products of Microsoft Visual Studio.Net® products
CO4	Analyze the implementation and connect the automated system to a database stored on a web server.
CO5	Evaluate how to link and publish Visual Studio.Net® applications to reflect a web application.
CO6	Create an real time application using ASP .NET

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

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

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

4	Approval	47th Academic Council Meeting

UNIT I INTRODUCTIONTO .NET FRAMEWORK 12

Genesis of .Net – Features of .Net - .Net binaries – Microsoft Intermediate Language – Meta Data - .Net types and .net name spaces – Common Language Runtime – Common Type System - Common Language Specification - .Net Applications using command line compiler and visual studio .net IDE.

UNIT II BASICS OF ASP. NET 12

Introducing ASP .NET – Creating and deploying ASP .NET applications – Web forms – Web controls – working with events – Rich web controls – Custom web controls – Validation controls - Debugging ASP .NET pages.

UNIT III ADVANCED ASP .NET 12

ASP .NET configuration – Business objects – HTTP Handlers – Caching in ASP .NET – ASP .NET security – Localizing ASP .NET applications – Deployment projects.

UNIT IV BUILDING WEB SERVICES 12

Introduction to web services – Web services Infrastructure – SOAP – Building a web service – Deploying and publishing web services – Finding web services – Consuming web services.

UNIT V ADO .NET 12

Basics of ADO .NET – Changes from ADO – Data Table – Data Views – Data Set – Data Relation Type – ADO .NET Managed Providers – OlEDB and SQL Managed Providers – OlEDB Data Adapter Type.

TEXT BOOKS:

1. Andrew Troelsen – **"C# and the .Net Platform"** – Apress – 2001.(Unit I and II).
2. Mridula Parihar, et. al. – **"ASP .NET Bible"** – Wiley-dreamtech India Pvt. Ltd. – 2002.

REFERENCE BOOKS:

1. David S. Platt – **"Introducing .Net"** – Microsoft Press – 2002.
2. Alex Homer et. al. – **"Professional ASP .NET 1.1"** – Wiley-dreamtech India Pvt. Ltd. – 2004.
3. Rebecaa M. Riordan – **"ADO .Net step by step" -** Microsoft Press.

Course Coordinator **HOD**

P18MCSC302	BIG DATA ANALYTICS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.E.Srimathi/Department of CS				

COURSE OBJECTIVES:-

Learners to the basics of Analytics – Concepts, Data preparation – merging, managing missing numbers sampling, Data visualization, Basic statistics.

COURSE OUTCOMES (COs)

CO1	Be able to analyze a problem for NN solution in terms of these Methods.
CO2	Have an awareness of the computational theory underlying NN.
CO3	Have a working knowledge of a typical neural network simulation
CO4	Experience in programming NN applications from scratch.
CO5	Have knowledge of sufficient theoretical background to be able to reason about the behaviour of neural networks.
CO6	Be able to analyze a problem for NN solution in terms of these 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	PSO1	PSO2	PS03
2	CO1	H	L						H	M	
	CO2	H	L						H	M	
	CO3	H	L		L	L			H	M	
	CO4	H	L		L	L			H	M	
	CO5	H	L		L	L			H	M	
	CO6	H	L		L	L			H	M	

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT- I INTRODUCTION TO BIG DATA **12**

Analytics – Nuances of big data – Value – Issues – Case for Big data – Big data options Team challenge – Big data sources – Acquisition – Nuts and Bolts of Big data. Features of Big Data -Security, Compliance, auditing and protection - Evolution of Big data – Best Practices for Big Data Analytics - Big data characteristics - Volume, Veracity, Velocity, Variety – Data Appliance and Integration tools – Green plum – Informatics.

UNIT- II DATA ANALYSIS **12**

Evolution of analytic scalability – Convergence – parallel processing systems – Cloud computing –grid computing – map reduce – enterprise analytic sand box – analytic data sets – Analytic Methods –analytic tools – Cognos – Micro strategy - Pentaho. Analysis approaches – Statistical significance –business approaches – Analytic innovation – Traditional approaches – Iterative.

UNIT- III STREAM COMPUTING **12**

Introduction to Streams Concepts – Stream data model and architecture - Stream Computing, Sampling data in a stream – Filtering streams – Counting distinct elements in a stream – Estimating moments – Counting oneness in a window – Decaying window – Real time Analytics Platform(RTAP)applications IBM Infosphere – Big data at rest – Infosphere streams – Data stage – Statistical analysis– Intelligent scheduler – Infosphere Streams.

UNIT- IV PREDICTIVE ANALYTICS AND VISUALIZATION **12**

Predictive Analytics – Supervised – Unsupervised learning – Neural networks – Kohonen models –Normal – Deviations from normal patterns – Normal behaviours – Expert options – Variable entry -Mining Frequent item sets - Market based model – Apriori Algorithm – Handling large data sets in Main memory – Limited Pass algorithm – Counting frequent item sets in a stream – Clustering Techniques –Hierarchical – K- Means – Clustering high dimensional data Visualizations - Visual data analysis techniques, interaction techniques; Systems and applications.

UNIT- V FRAMEWORKS AND APPLICATIONS **12**

IBM for Big Data – Map Reduce Framework - Hadoop – Hive - – Sharding – NoSQL Databases - S3 - Hadoop Distributed file systems – Hbase – Impala – Analyzing big data with twitter – Big data for Ecommerce– Big data for blogs.

TEXT BOOKS:

1. Frank J Ohlhorst, “Big Data Analytics: Turning Big Data into Big Money”, Wiley and SAS BusinessSeries, 2012.
2. Colleen Mccue, “Data Mining and Predictive Analysis: Intelligence Gathering and Crime Analysis”,Elsevier, 2007
3. Michael Berthold, David J. Hand,” Intelligent Data Analysis”, Springer, 2007.

REFERENCES:

1. AnandRajaraman and Jeffrey David Ullman, Mining of Massive Datasets, Cambridge UniversityPress, 2012.
2. **http://www.mosaic.geo-strategies.com/wp-content/uploads/2013/10/Big-Data-for-Dummies.pdf**

Course Coordinator **HOD**

P18MCSC303	**GRID COMPUTING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr. K.Rajakumari/Dept.of.CS				

COURSE OBJECTIVES:-

Identify the technical foundations of cloud systems architectures. Analyze the problems and solutions to cloud application and grid computing problems.

COURSE OUTCOMES (COs)

CO1	Understand the fundamental principles of distributed computing.
CO2	Understand how the distributed computing environments known as Grids can be built from lower level services.
CO3	Understand the importance of virtualization in distributed computing and how this has enabled the development of Grid with Cloud Computing.
CO4	Analyze the performance of Grid Computing.
CO5	Understand the concept of Cloud Security.
CO6	Apply principles of best practice in Grid application design and management.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT- I : GRID COMPUTING **12**

Introduction - Definition and Scope of grid computing, Computational and Data Grids, Current Grid Activities – Overview of Grid Business Areas, Grid Applications, Grid Computing Anatomy- Concept of Virtual Organization, Grid Architecture- Fabric layer, Connectivity layer, Resource Layer, Collective Layer, Application Layer, Layered Grid Architecture.

UNIT-II : CLOUD ARCHITECTURE AND MODEL **12**

Technologies for Network Based system-System Models for Distributed and Cloud Computing-NIST Cloud Computing Reference ArchitectureCloud models: Characteristics-Cloud Services-Cloud Models (IaaS, PaaS, SaaS)-Public vs. Private Cloud-Cloud Solutions-Cloud ecosystem-Service Management-Computing on demand.

UNIT-III : CLOUD INFRASTRUCTURE **12**

Architectural Design of compute and Storage Clouds-Layered Cloud Architecture Development-Design Challenges-Inter Cloud Resource Management-Resource Provisioning and Platform Deployment-Global Exchange of Cloud Resources.

UNIT-IV : PROGRAMMING MODEL **12**

Parallel and Distributed Programming Paradigms-Map Reduce-Twister and Iterative Map Reduce-Hadoop Library from Apache-Mapping Applications-Programming Support-Google App Engine, Amazon AWS-Cloud Software Environments-Eucalyptus, Open Nebula, Open Stack, Aneka, CloudSim.

UNIT-V : SECURITY IN THE CLOUD **12**

Security Overview-Cloud Security Challenges and Risks-Software-as-a-Service-Security Security Governance-Risk Management-Security Monitoring-Security Architecture Design-Data Security-Application Security-Virtual Machine Security-Identity Management and Access Control-Autonomic Security.

TEXTBOOKS:

1. Joshy Joseph & Craig Fellenstein, “Grid Computing”, PHI, PTR-2003(UNIT I)

2.Kai Hwang, Geoffrey C Fox,Jack G Dongarra “Distributed and Cloud Computing ,From parallel processing to the Internet of Things” Morgan Kaufmann Publishers,2012(Unit-II to Unit-V)

REFERENCE BOOKS:

1. John W.Rittinghouse and James F.Ransome, “Cloud Computing Implementation, Management and Security”, CRC Press, 2010
2. Toby Velte, Anthony Velte, Robert Elsenpeter,”Cloud Computing, A Practical Approach”, TMH, 2009.
3. Kumar Saurabh,”Cloud Computing –Insights into New-Era Infrastructure “, Wiley India, 2011
4. George Reese, “Cloud Applications Architectures: Building Applications and Infrastructure in the Cloud” O’Reilly.
5. https://benzology.files.wordpress.com/2013/05/grid-computing-joshy-joseph-ebook.pdf
6.http://cloudipedia.com/files/2009/11/cloud_computing_made_easy.pdf

Course Coordinator **HOD**

P18MCSC3L1	LAB-V : ASP.NET IN C# PROGRAMMING LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Dept. of. CS				

COURSE OBJECTIVES:-

Learners will gain ability to design and implement the complete applications over the web.

COURSE OUTCOMES (COs)

CO1	Implement the basic concept of console applications like string manipulation, exception handling.
CO2	Understand the technical code to implement windows applications
CO3	Develop the programs using predefined functions
CO4	Create Web Applications
CO5	Develop applications that connect database
CO6	Create web pages using ASP .NET

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

S.NO	ASP.NETPROGRAMS
	CONSOLE APPLICATIONS
1.	STRING MANIPULATION
2.	AREA OF RECTANGLE, SQUARE, CIRCLE
3.	SWAPPING OF TWO NUMBERS(USING FUNCTION)
4.	CONVERSION OF CELSIUS TO FAHRENHEIT & FAHRENHEIT TO CELSIUS
5.	EXCEPTION HANDLING
	WINDOWS APPLICATIONS
6.	CONVERT CASE & DISPLAY DAY,MONTH,& YEAR
7.	MENUS USING TEXT EDITOR
8.	QUIZ PROGRAM
9.	STUDENT PROGRESS DETAILS
	WEB APPLICATIONS
10.	CREATION OF CUSTOMER DETAILS(USING STANDARD WEB CONTROLS)
11.	CREATION OF BIODATA(USING HTML SERVER CONTROLS)
12.	CREATION OF MASTER PAGE(USING RICH WEB CONTROLS)
13.	DISPLAY DATABASE(USING DATA CONTROLS)
14.	CREATION OF DATABASE(MANIPULATE WITH REPORT)

Course Coordinator **HOD**

P18MCSC3L2	LAB-VI : ELECTIVE II LAB : NETWORK PROGRAMMING LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.K.Hemalakshmi/ Dept.of.CS				

COURSE OBJECTIVES:-

Learners will understand the use of client/server architecture in application development and use elementary and advanced socket system calls.

COURSE OUTCOMES (COs)

CO1	Implement simple networking concepts
CO2	Understand to develop application using Client Server Communication
CO3	Implement programs using TCP and UDP based sockets.
CO4	Develop interaction between Echo Server and Echo Client
CO5	Develop and implement protocols
CO6	Create application to retrieve Remote Data File & RPC

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

S.NO.	LIST OF PROGRAMS
1.	IP Address of Local Machine
2.	Ping Server
3.	Echo Server and Echo Client
4.	Client Server Communication Using Object
5.	Time and Date Server
6.	TCP Server
7.	UDP Server
8.	Chat Server
9.	Address Resolution Protocol
10.	Multiple Client Handling
11.	Retrieving Remote Data File
12.	Remote Procedure Call

Course Coordinator **HOD**

P18MCSC3L2	LAB-VI : ELECTIVE II LAB : PHP LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.K.Rajakumari/Dept.of.CS				

COURSE OBJECTIVES:-

Learners will gain practical experience in the overall view of web technologies and its programming with PHP.

COURSE OUTCOMES (COs)

CO1	Create PHP scripts to handle HTML forms
CO2	Create PHP programs that use various PHP library functions, and that manipulate files and directories
CO3	Develop programs for downloading files from servers
CO4	Develop program to store the cookie and session status
CO5	Analyse and solve various database tasks using the PHP language
CO6	Develop web based applications with database connection

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

S.NO.	LIST OF PROGRAMS
1	A program to find the factorial of a number.
2	A program using Conditional Statements.
3	A program to find the maximum value in a given multidimensional array.
4	A program to find the GCD of two numbers using user-defined functions.
5	Design a simple web page to generate multiplication table for a given number.
6	Design a web page that should compute one‟s age on a given date.
7	A program to download a file from the server.
8	A program to store the current date and time in a COOKIE and display the„Last Visited‟ date and time on the web page.
9	A program to store page views count in SESSION, to increment the count on each refresh and to show the count on web page.
10	A program to draw the human face.
11	A program to design a simple calculator.
12	Design an authentication web page in PHP with MySQL to check username and password.

Course Coordinator **HOD**

SEMESTER - IV

P18MCSC401	PROGRAMMING IN PYTHON	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Dept.of.CS				

COURSE OBJECTIVES:-

To understand about python basics and how to use concept in Python programs.

COURSE OUTCOMES (COs)

CO1	Use if-else statements and switch-case statements to write programs in Python to tackle any decision-making scenario
CO2	Master Object-oriented programming to create an entire Python project using objects and classes
CO3	Store and retrieve information using variables
CO4	Develop cost-effective robust applications using the latest Python trends and technologies
CO5	Proficient in Debugging and Version Control
CO6	Build systems entire web development process using various tools

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I : INTRODUCTION **12**

Introduction: The Context of Software Development- Development Tools, Learning Programming with Python, Writing a Python Program, the Python Interactive Shell. Values and Variables - Integer and String Values, Variables and Assignment, Identifiers, Floating-point Numbers, Control Codes within Strings, User Input, Controlling the print Function, String Formatting, Multi-line Strings.

UNIT II : EXPRESSIONS AND LOOPS **12**

Expressions and Arithmetic- Expressions,Mixed Type Expressions, Operator Precedence and Associativity, Formatting Expressions, Comments, Errors. Conditional Execution- Boolean Expressions, Simple if, if/else, Compound Boolean, pass, Nested Conditionals, Conditional Expressions.Iteration- while,for, Definite Loops vs. Indefinite Loop,Nested loops, Abnormal Loop Termination, while/else and for/else.

UNIT III : FUNCTION, CLASS AND OBJECT **12**

Function-Introduction, Functions and Modules, Built-in Functions, Random Numbers, eval and exec, Turtle Graphics. Basics- Parameter Passing- Documenting- Custom Functions vs. Standard Functions. Introduction to Recursion, Generator, Local Function.Objects: String Objects, File Objects, Fraction, Turtle Graphics, Graphics with tkinter.

UNIT IV : LIST , TUPLES AND DICTIONARIES **12**

Lists, Traversal, Building, List Membership, Assignment and Equivalence, List Bounds, Slicing, Element Removal, List Functions, List Methods. Command-line Arguments, Multidimensional Lists, Lists vs. Generators, Tuples, Dictionaries, and Sets.

UNIT V : EXCEPTION HANLING AND FILES **12**

Handling Exceptions - Standard Exceptions, Handling Exceptions, Catch-all Handler, Catching Exception Objects, The try Statement's Optional else Block, finally block. Custom Types, Inheritance,Files.

TEXT BOOKS:

1. Fundamentals of Programming Python Richard L. Halterman Southern Adventist University, 2019.

REFERENCE BOOKS:-

1. Robert Sedgewick, Kevin Wayne, Robert Dondero, ―Introduction to Programming in Python: An Inter-disciplinary Approach, Pearson India Education Services Pvt. Ltd., 2016.
2. Timothy A. Budd, ―Exploring Python‖, Mc-Graw Hill Education (India) Private Ltd.,, 2015.
3. Kenneth A. Lambert, ―Fundamentals of Python: First Programs‖, CENGAGE Learning, 2012.
4. Charles Dierbach, ―Introduction to Computer Science using Python: A Computational Problem- Solving Focus, Wiley India Edition, 2013.
5. Paul Gries, Jennifer Campbell and Jason Montojo, ―Practical Programming: An Introduction to Computer Science using Python 3‖, Second edition, Pragmatic Programmers, LLC, 2013.

Course Coordinator **HOD**

P18MCSC4L1	PROGRAMMING IN PYTHON LAB	L	T	P	C
	Total Contact Hours – 30	0	0	6	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Dept.of.CS				

COURSE OBJECTIVES:-

To understand about python basics and how to use concept in Python programs.

COURSE OUTCOMES (COs)

CO1	Use if-else statements and switch-case statements to write programs in Python to tackle any decision-making scenario
CO2	Master Object-oriented programming to create an entire Python project using objects and classes
CO3	Store and retrieve information using variables
CO4	Develop cost-effective robust applications using the latest Python trends and technologies
CO5	Proficient in Debugging and Version Control
CO6	Build systems entire web development process using various tools

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

LIST OF PROGRAMS	
1.	Compute the GCD of two numbers
2.	Find the maximum of a list of numbers
3.	Linear search
4.	Insertion sort
5.	Convert decimal number into binary numbers.
6.	Calculate addition of two number using methods.
7.	Calculate average of numbers using function.
8.	Find the Area of a Rectangle Using Classes.
9.	Find the sum of all the primes.
10.	Program that takes two numbers as command line arguments and prints its sum.
11.	To Append, Delete and Display Elements of a List Using Classes.
12.	To count frequency of characters in a given file.
13.	Reads a Text File and Counts the Number of Times a Certain Letter Appears in the Text File.
14.	Read a Text File and Print all the Numbers Present in the Text File.
15.	Generation of pyramid.

Course Coordinator **HOD**

MAJOR ELECTIVE – I

P18MESC011	MAJOR ELECTIVE- I : SOFTWARE ENGINEERING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr. R. BalaMurugan/ Dept.of.CS				

COURSE OBJECTIVES:-

Helps the learners to understand theories, methods, and technologies applied for professional software development.

COURSE OUTCOMES (COs)

CO1	Gain knowledge about the fundamentals of Software Engineering.
CO2	Understand the Planning of a software Project
CO3	Applying various Software Cost Estimation Techniques
CO4	Analyze the various software design techniques
CO5	Evaluate the Coding and testing part of the project.
CO6	Understand the Software Quality Assurance and software maintenance tools

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I **12**

Introduction to Software Engineering : Definitions – Size Factors- Quality and Productivity Factors – Managerial Issues- Planning a software Project: Defining the Problem – Developing a Solution – Strategy – Planning the Development Process – Planning an Organization Structure – Other Planning Activities.

UNIT II **12**

Software Cost Estimation : Software cost factors – Software Cost Estimation Techniques – Staffing – Level Estimation – Estimating Software Maintenance Costs – The Software Requirements Specification – Formal Specification Techniques – Languages and Processors for Requirements Specification.

UNIT III **12**

Software design: Fundamental Design Concepts – Modules and Modularization Criteria – Design Notations – Design Techniques – Detailed Design Considerations – Real-Time and Distributed System Design – Test Plans – Milestones, Walkthroughs, andInspections.

UNIT IV **12**

Implementation issues : Structured Coding Techniques – Coding Style – Standards and Guidelines – Documentation guidelines – Type checking – Scooping Rules – Concurrency Mechanism.

UNIT V **12**

Quality Assurance – Walkthroughs and Inspections – Static Analysis – Symbolic Execution – Unit Testing and Debugging – System Testing – Formal Verification: Enhancing Maintainability during Development – Managerial aspects of Software Maintenance – Source Code Metrics – Other Maintenance Tools and Techniques.

TEXT BOOKS:

1.Richard Fairley,Software Engineering Concepts,McGrawHill, 2002.

REFERENCE BOOKS:

1.R.S.Pressman,Software Engineering , Fourth Ed , McGraw Hill,1997.

Course Coordinator **HOD**

P18MESC012	**MAJOR ELECTIVE- I : INTERNET OF THINGS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms. P.Jennifer/Dept.of.CS				

COURSE OBJECTIVES:-

Learners to understand the concepts of Internet of Things and Analyze basic protocols in wireless sensor network.

COURSE OUTCOMES (COs)

CO1	Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.
CO2	Surprise tests/Quizzes/Seminar/tutorial will be conducted having a share of five mark
CO3	the overall internal evaluation. The course includes a laboratory, where students have an opportunity to build
CO4	an appreciation for the concepts being taught in lectures
CO5	Experiments shall be performed in the laboratory related to course contents
CO6	Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

1	COs/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PSO2	PSO3
2	CO1	H	L						H	M	
	CO2	H	L						H	M	
	CO3	H	L						H	M	
	CO4	H	L		H	L	H		H	M	
	CO5	H	L		H	L	H		H	M	
	CO6	H	L		H	L	H		H	M	

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT - 1 :Introduction to IoT **12**

Defining IoT, Characteristics of IoT, Physical design of IoT, Logical design of IoT, Functional blocks of IoT, Communication models & APIs

UNIT-2: IoT & M2M **12**

Machine to Machine, Difference between IoT and M2M, Software define Network

UNIT-3: Network & Communication aspects **12**

Wireless medium access issues, MAC protocol survey, Survey routing protocols, Sensor deployment & Node discovery, Data aggregation & dissemination

UNIT-4: Challenges in IoT **12**

Design challenges, Development challenges, Security challenges, Other challenges

UNIT-5: Domain specific applications of IoT **12**

Home automation, Industry applications, Surveillance applications, Other IoT applications, Introduction to Python, Introduction to different IoT tools, Developing applications through IoT tools,

Reference Books:

1. Vijay Madisetti, Arshdeep Bahga, “Internet of Things: A Hands-On Approach”.

2. Waltenegus Dargie,Christian Poellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice".

Course Coordinator **HOD**

P18MESC013	MAJOR ELECTIVE- I : DATA COMMUNICATION	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.E.Srimathi/Dept of CS				

COURSE OBJECTIVES:-

This course aims to give students a good overview of the ideas techniques which are behind data communications

COURSE OUTCOMES (COs)

CO1	Communicate effectively with networking professionals.
CO2	Explain the process of data communication.
CO3	Prepare elementary internetworking designs, including cost evaluations.
CO4	Select appropriate data communications solutions to business problems and needs.
CO5	Use data communication vocabulary appropriately.
CO6	when discussing issues with other networking professionals.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

Unit I: INTRODUCTION **12**

Introducing TCP/IP – IP addressing – Subnetting – Supernetting – IP packets – Delivery – Routing – Routing model – Routing table – Structure of a Router– ARP – RARP.

Unit II: INTERNET PROTOCOL **12**

Datagram – Fragmentation – Checksum – IP Package Design– Internet control - message protocol – message format – Error Reporting – Query – Checksum – Debugging Tools -Internet group management protocol – IGMP Messages –IGMP - Operation – Encapsulation – IGMP Package .

Unit III: TRANSMISSION CONTROL PROTOCOL **12**

User Datagram protocol – UDP operation – Application Of UDP – UDP design – TCP services – Flow control – Error control – TCP operation and design – TCP Connection – Transition diagram – Congestion control

Unit IV: STREAM CONTROL TRANSMISSION PROTOCOL **12**

SCTP Services – SCTP Features - Packet Format - An SCTP Association – State Transition Diagram – Flow Control – Error Control – Congestion Control.

Unit V: APPLICATION PROTOCOLS **12**

File Transfer Protocol – Trivial File Transfer Protocol – Simple Mail Transfer Protocol – Simple Network Management Protocol – Hyper Text Transfer Protocol.

TEXT BOOKS: -

1. Behrouz A. Forouzan, "TCP/IP Protocol Suite", Tata McGraw Hill, Third Edition, Eleventh reprint 2008.

REFERENCES

1. Douglas E. Comer, David L. Stevens, "Internetworking with TCP/IP – Volume I, II and III", Prentice-Hall of India Pvt. Ltd., 2nd Edition 1994.

2. K.Washburn, J.T.Evans, “TCP/IP – Running a successful Network “, Addison – Wesley Publishing Company, First Edition 1995.

Course Coordinator **HOD**

MAJOR ELECTIVE – II

P18MESC021	MAJOR ELECTIVE- II : IMAGE PROCESSING	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.K.Rajakumari/Dept of CS				

COURSE OBJECTIVES:-

Understand the basics of the human visual system as they relate to image processing; including spatial frequency resolution and brightness adaption.

COURSE OUTCOMES (COs)

CO1	Understand image formation and the role human visual system plays in perception of gray and color image data.
CO2	Get broad exposure to and understanding of various applications of image processing in industry, medicine, and defense.
CO3	Learn the signal processing algorithms and techniques in image enhancement and image restoration.
CO4	Acquire an appreciation for the image processing issues and techniques and be able to apply these techniques to real world problems.
CO5	Be able to conduct independent study and analysis . image processing problems and techniques
CO6	Image processing problems and techniques.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I : FUNDAMENTALS OF IMAGE PROCESSING : **12**

Image Acquisition, Image Model, Sampling, Quantization, Relationship between pixels, distance measures, connectivity , Image Geometry, Photographic film. Histogram: Definition, decision of contrast basing on histogram, operatio ns basing on histograms like image stretching, image sliding, Image classification. Definition and Algorithm of Histogram equalization.

UNIT II : IMAGE TRANSFORMS : **12**

A detail discussion on Fourier Transform, DFT,FFT, properties A brief discussion on WALSH Transform , WFT, HADAMARD Transform, DCT. **IMAGE ENHANCEMENT** : (by SPATIAL Domain Methods) Arithmetic and logical operations, pixel or point operations, size operations - Smoothing filters-Mean, Median, Mode filters – Comparative study - Edge enhancement filters – Directorial filters, Sobel, Laplacian, Robert, KIRSCH Homogeneity & DIFF Filters, prewitt filter, Contrast Based edge enhancement techniques. – Comparative study - Low Pass filters, High Pass filters, sharpening filters. – Comparative Study - Comparative study of all filters - Color image processing.

UNIT III : IMAGE ENHANCEMENT : **12**

(By FREQUENCY Domain Methods) -esign of Low pass, High pass, EDGE Enhancement, smoothening filters in Frequency Domain. Butter worth filter, Homomorphic filters in Frequency Domain Advantages of filters in frequency domain, comparative study of filters in frequency domain and spatial domain. **IMAGE COMPRESSION: DEFINITION**: A brief discussion on – Run length encoding, contour coding, Huffman code, compression due to change in domain, compression due to quantization Compression at the time of image transmission. Brief discussion on:- Image Compression standards.

UNIT IV : IMAGE SEGMENTATION: **12**

Definition, characteristics of segmentation. Detection of Discontinuities, Thresholding Pixel based segmentation method. Region based segmentation methods – segmentation by pixel aggregation, segmentation by sub region aggregation, histogram based segmentation, spilt and merge technique. Use of motion in segmentation (spatial domain technique only)

UNIT V: MORPHOLOGY: - **12**

Dilation, Erosion, Opening, closing, Hit-and-Miss transform, Boundary extraction, Region filling, connected components, thinning, Thickening, skeletons , Pruning Extensions to Gray – Scale Images Application of Morphology in I.P

Text Book:

1. Digital Image Processing, Rafael C. Gonzalez and Richard E. Woods Addision Wesley

Reference books:

1. Fundamentals of Electronic Image Processing by Arthyr – R – Weeks, Jr. (PHI).

2. Image processing, Analysis, and Machine vision by Milan Sonka vaclan Halavac Roger Boyle, Vikas Publishing House.

COURSE COORDINATOR **HOD**

P18MESC022	MAJOR ELECTIVE- II : RDBMS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms. K. Hemalakshmi/Dept of CS				

COURSE OBJECTIVES:-

The aim of this module is to build on the previous background of database systems by Deepening the understanding of the theoretical and practical aspects of the database technologies.

COURSE OUTCOMES (COs)

CO1	Understand distributed database
CO2	To understand the transformation of queries
CO3	To learn about concurrency control
CO4	To understand Distributed object database management systems
CO5	To understand Parallel Database Systems and its architecture
CO6	To create the distributed database including principles, architectures, design, implementation and major domain of application.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

Unit 1: INTRODUCTION:- **12**

Features of Distributed versus Centralized Databases – Why Distributed Databases – Distributed Database Management Systems (DDBMSs)- Review of Databases – Review of Computer Networks-Levels of Distribution Transparency- Reference Architecture for Distributed Databases – Types of Data Fragmentation – Distribution Transparency for read- only Applications – Distribution transparency for Update Applications – Distributed Database Access Primitives – Integrity Constraints in Distributed Databases - A Framework for Distributed Database Design – The Design of Database Fragmentation – The Allocation of Fragments.

Unit-2: EQUIVALENCE TRANSFORMATIONS:- **12**

Equivalence Transformations for Queries – Transforming Global Queries into Fragment Queries - Distributed Grouping and Aggregate Function Evaluation – Parametric Queries - Optimization of Access Strategies - A Framework for Query Optimization – Join Queries – General Queries. A Framework for Transaction Management – Supporting Atomicity of Distributed Transactions – Concurrency Control for Distributed Transactions – Architectural Aspects of Distributed Transactions.

Unit 3: CONCURRENCY CONTROL:- **12**

Foundations of Distributed Concurrency Control – Distributed Deadlocks – Concurrency Control Based on Timestamps – Optimistic Methods for Distributed Concurrency Control - Reliability – Basic Concepts Nonblocking Commitment Protocols – Reliability and Concurrency Control – Determining a Consistent View of the Network – Detection and Resolution of Inconsistency – Checkpoints and Cold Restart - Distributed Database Administration – Catalog Management in Distributed Databases – Authorization and Protection.

Unit-4: DISTRIBUTED DATABASE SYSTEMS:- **12**

Distributed object database management systems – Fundamental object concepts and Models – Object – Abstract Data Types – Composition (Aggregation) – Class – Collection – Subtyping and Inheritance. – Object Distribution Design – Horizontal Class Partitioning – Vertical Class Partitioning – Path Partitioning – Class Partitioning Algorithms – Allocation – Replication – Alternative Client / Server Architectures – Cache Consistency – Object Identifier Management – Pointer Switching Object Migration Distributed Object Storage – Object Query Processor Architectures – Query Processing Issues – Query Execution – Correctness Criteria – Transaction Models and Object Structures – Transactions Management in Object DBMSs – Transactions as Objects – Conclusion – Bibliographic Notes – Exercises.

Unit-5 : PARALLEL DATABASE SYSTEMS:- **12**

Parallel Database Systems – Database Server Approach – Database Servers and Distributed Databases – Parallel System Architectures – Objectives – Functional Aspects – Parallel Data Processing – Parallel Query Optimization – Data Placement – Query Parallelism – Parallel Execution Problems – Initialization – Interferences and Convoy Effect – Load Balancing – Parallel Execution for Hierarchical Architecture – Problem Formulation – Basic Concepts – Load Balancing Strategy – Performance Evaluation – Conclusion – Bibliographic Notes – Exercises.

Recommended Text:

1. Stefano Ceri, Giuseppe Pelagatti, Distributed Databases Principles & Systems, McGraw-Hill.
2. M.Tamer Ozsu, Patrick Valduriez, Distributed database systems, 2nd Edition, Prentice Hall of India, New Delhi.

Course Coordinator **HOD**

P18MESC023	MAJOR ELECTIVE- II : PHP	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.S.Brintha Rajakumari/Dept.Of.CS				

COURSE OBJECTIVES:-

Learners will gain practical experience in the overall view of web technologies and its programming with PHP.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in basic concepts of **PHP** and its advantages over other languages.
CO2	Understand HTML form elements that work with any server-side language.
CO3	Understand the concept of functions, arrays , strings and databases in PHP
CO4	Ability to validate user input.
CO5	Evaluate to perform various MySQL database queries
CO6	Create software using MYSQL database.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I – BASICSOF PHP **12**

Introduction to PHP – what does PHP Do? – a brief history of PHP – language basics lexical structure – data types – variables – expressions and operators – flow control statements – including code – embedding PHP in web pages.

UNIT II – FUNCTIONS&STRINGS **12**

Functions : Calling a function – defining a function – variable scope – function parameters – return values – variable functions – anonymous functions. Strings: Accessing individual characters – cleaning strings – encoding and escaping – comparing strings – manipulating and searching strings – regular expression.

UNIT III -ARRAYS **12**

Arrays: Indexed Vs associative arrays – identifying elements of an array – storing data in arrays - multidimensional arrays – extracting multiple values – converting between arrays and variables traversing arrays – sorting.

UNIT IV – OOPs Concept and PHPForms **12**

Object-Oriented Programming in php: Class, Objects, Inheritance, Interface, Abstraction, Constructor,Destructor,Magic Methods – php Form: Create a form, POST method, GET method, GET vs POST Methods, Processing the registration form data – form validation

UNIT V - MYSQL DATABASESIN PHP **12**

Working with MYSQL Databases: connecting to and disconnecting from the server – Entering queries – Creating and using a database – Creating and selecting a database – working with tables – loading data into a table – Retrieving information from a table – selecting all data – selecting particular rows – selecting particular columns – sorting rows – date calculations – working with NULL values – pattern matching – counting rows – using more than one tables - Sessions,CookieS

TEXT BOOKS :

1.Rasmus Lerdorf, Kevin Tatroe, Bob Kaehms, Ric McGredy (2002),Programming PHP, O'REILLY(SPD). (Unit I,II&III)

2. Lee Babin, Nathan A. Good, Frank M. Kromann, Jon Stephens (2005), "PHP 5 Recipes, A problem solution approach", après.(Unit IV &V)

3. The PHP Complete Reference, Steven Holzner, McGrawHillEducation,2007

REFERENCE BOOKS:

1. Vikram Vaswani (2008), PHP: A BEGINNER'S GUIDE,McGraw-Hill

2. https://www.guru99.com/php-tutorials.html

Course Coordinator **HOD**

MAJOR ELECTIVE – III

P18MESC031	MAJOR ELECTIVE- III : MULTIMEDIA SYSTEMS	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.P.Jennifer/Dept.of CS				

COURSE OBJECTIVES:-

To give an overall view of multimedia tools. To understand and differentiate text, image, video & audio

COURSE OUTCOMES (COs)

CO1	Design and implement an animation for various themes.
CO2	Prepare multimedia advertisement
CO3	differentiate text, image, video & audio & Edit image
CO4	Concepts using difference multimedia presentation
CO5	Different concepts using multimedia preparation
CO6	Using multimedia components in various activities

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

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

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

4	Approval	47th Academic Council Meeting

UNIT-1 INTRODUCTION **12**

Definitions - CD - Rom and the multimedia highway - where to use multimedia - Introduction - to making multimedia : The stages of a project - What you need - Multimedia skills and Training : The team - Macintosh and windows production platforms: Macintosh versus PC - The Macintosh platform - The windows Multimedia PC Platform - Networking Macintosh and windows computers - Hardware peripherals - Connection - Memory and stage Devices - Input Devices-Output Hardware - Communication Devices.

UNIT-II FUNDAMENTAL TOOLS OF MULTIMEDIA **12**

Basic Tools - Text editing and word processing Tools- OCR Software - Painting and Drawing Tools - 3-D Modeling and Animation Tools - Image - Editing Tools - Sound Editing Tools - Animation, Video and Digital Movie Tools - Helpful Accessories- Making Instant Multimedia - Linking Multimedia Objects - Office - Suites - Word Processors - Spreadsheets - Databases - Presentation Tools - Multimedia Authoring Tools: Types of Authoring Tools - cards -and- Page - Based Authoring Tools - Icon - Based Authoring Tools - Time Based Authoring Tools-Object - Oriented Authoring Tools - Cross Platform Authoring Notes.

UNIT-III COMPONENTS OF MULTIMEDIA **12**

Text: The Power of meaning: About fonts and Faces - Using Text in Multimedia - Computers and text - Font Editing and Design Tools - Hypermedia and Hypertext -Sound: The Power of Sound- Multimedia System Sounds - MIDI Versus Digital Audio -Digital Audio -Making MIDI Audio - Audio File formats - Working with sound on the Macintosh - Notation Interchange file Format (NIFF) - Adding sound to your multimedia Project - Toward Professional sound : The Red Book standard - Production Tips.

UNIT-IV IMAGES- AND ANIMATION **12**

Images: Making still Images - colours - Image File formats - Animation: The Power of Motion - Principles of Animation - Making Animations that work - Video: Using Video - How Video works Broadcast Video standards - Integrating Computers and Television - shooting and Editing video - Video Tips - Recording formats -Digital Video.

UNIT-V PROJECT PLANNING AND MAINTENANCE **12**

Planning and Costing: Project Planning - Estimating - REPs and Bit Proposals - Designing and producing - Designing - Producing - Content and Talent: Acquiring content - Using content created by others - Using Talent - Delivering : Testing - Preparing for Delivery - Delivering on CD-Rom - Compact Disc Technology - Wrapping It up - Delivering on the World wide web.

TEXT BOOKS:

1. Tay Vaughan - "Multimedia Making it Work" - Fourth Edition Tata McGraw Hill Edition -1999.
2. Walterworth John A - "Multimedia Technologies and Application"-Ellies Horwod Ltd - London - 1991.

REFERENCE BOOKS:

1. John F Korgel Buford -"Multimedia Systems"-ACM press, 2001
2. Rajneesh Agarwal, Bharath Bhushan Tiwari – Excel books,2000
3. Erik Holsinger-“How Multimedia works”, Ziff davis Press 1994.

Course Coordinator **HOD**

P18MESC032	MAJOR ELECTIVE- III : SOFTWARE PROJECT MANAGEMENT	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.R.Balamurugan/Dept.of.CS				

COURSE OBJECTIVES:-

To provide basic project management skills with a strong emphasis on issues and problems.

COURSE OUTCOMES (COs)

CO1	It Enables the students understand what is a product, project and process is.
CO2	It enables students understand the lifecycle for a software product is calculated.project
CO3	It enables students understand how the quality of a software
CO4	It uses the project development process.
CO5	It can able to create a new process.
CO6	To create a software project management is associated with delivering successful IT projects

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT I : INTRODUCTION **12**

Introduction to Competencies - Product Development Techniques - Management Skills - Product Development Life Cycle - Software Development Process and models - The SEI CMM - International Organization for Standardization.

UNIT II : DOMAIN PROCESSES **12**

Managing Domain Processes - Project Selection Models - Project Portfolio Management - Financial Processes - Selecting a Project Team - Goal and Scope of the Software Project - Project Planning - Creating the Work Breakdown Structure - Approaches to Building a WBS - Project Milestones - Work Packages - Building a WBS for Software.

UNIT III : SOFTWARE DEVELOPMENT **12**

Tasks and Activities - Software Size and Reuse Estimating - The SEI CMM - Problems and Risks - Cost Estimation - Effort Measures - COCOMO: A Regression Model - COCOMO II - SLIM: A Mathematical Model - Organizational Planning - Project Roles and Skills Needed.

UNIT IV : SCHEDULING ACTIVITIES **12**

Project Management Resource Activities - Organizational Form and Structure - Software Development Dependencies - Brainstorming - Scheduling Fundamentals - PERT and CPM - Leveling Resource Assignments - Map the Schedule to a Real Calendar - Critical Chain Scheduling.

UNIT V : QUALITY ASSURANCE **12**

Quality: Requirements – The SEI CMM - Guidelines - Challenges - Quality Function Deployment - Building the Software Quality Assurance - Plan - Software Configuration Management: Principles - Requirements - Planning and Organizing - Tools - Benefits - Legal Issues in Software - Case Study.

TEXT BOOK:

1. Robert T. Futrell, Donald F. Shafer, Linda I. Safer, “Quality Software Project Management”, Pearson Education, Asia, 2002.

REFERENCE BOOKS:

1. Pankaj Jalote, “Software Project Management in Practice”, Addison Wesley, 2002.

2. Hughes, “Software Project Management, 3/E”, Tata McGraw-Hill, 2004.

Course Coordinator **HOD**

P18MESC033	MAJOR ELECTIVE- III : NETWORK PROGRAMMNG	L	T	P	C
	Total Contact Hours – 60	3	1	0	4
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.K.Hemalakshmi/Dept.of.CS				

COURSE OBJECTIVES:-

Learners will understand the use of client/server architecture in application development and use elementary and advanced socket system calls.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in networking.
CO2	Understand the network protocols
CO3	Be familiar with several common programming interfaces for network communication.
CO4	Apply advanced knowledge of programming for network communications.
CO5	Understand and evaluate knowledge of the TCP/UDP Sockets.
CO6	Ability to create an application using sockets and network programming

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

UNIT-I : Introduction to Network Programming: **12**

OSI model, Unix standards, TCP and UDP & TCP connection establishment and termination, Buffer sizes and limitation, standard internet services, Protocol usage by common internet application.

UNIT-II:Sockets : **12**

Address structures, value – result arguments, Byte ordering and manipulation function and related functions Elementary TCP sockets – Socket, connect, bind, listen, accept, fork and exec function, concurrent servers. Close function and relatedfunction.

UNIT-III : TCP clientserver: **12**

Introduction, TCP Echo server functions, Normal startup, terminate and signal handling server process termination, Crashing and Rebooting of server host shutdown of server host.

UNIT – IV: I/O Multiplexing andsocketoptions: **12**

I/O Models, select function, Batch input, shutdown function, poll function, TCP Echo server, getsockopt and setsockopt functions. Socket states, Generic socket option.

UNIT- V :ElementaryUDPsockets: **12**

Introduction UDP Echo server function, lost datagram, summary of UDP example, Lack of flow control with UDP, determining outgoing interface with UDP. Elementary name and Address conversions: DNS, gethost by Name function, Resolver option.

TEXT BOOKS:

1. W.Richard Stevens, UNIX Network Programming, Sockets API, Volume I, 3rd Edition, PHI , 2010.
2. W.Richard Stevens, UNIX Network Programming, Volume II, 1st Edition, PHI,2009.

REFERENCE BOOKS:

1. T Chan, "UNIX Systems Programming using C++", 1st Edition, PHI,2010.
2. Graham Glass, King abls, "UNIX for Programmers and Users", 3rd Edition,PearsonEducation,2010.
3. M.J. Rochkind, "Advanced UNIX Programming", 2nd Edition, Pearson Education,2008

Course Coordinator **HOD**

P18PRSC4T1	TERM PAPER	L	T	P	C
	Total Contact Hours –				
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.S.KANNAN/Dept.Of.CS				

COURSE OBJECTIVES:-

to develop activities for teaching transformations with two different interactive dynamic educational resources to elementary school students.

COURSE OUTCOMES (COs)

CO1	Provide students with an opportunity to develop in-depth expertise in an aspect of solid waste management that is of particular interest.
CO2	Provide an opportunity for some individual interaction between the student and instructor.
CO3	Guide students through the process of planning and executing a substantial project.
CO4	Allow students the opportunity to teach themselves
CO5	To investigate the effect that two different types of interactive dynamic educational resources for teaching transformational geometry have on different types of students
CO6	To design tests for measuring students' ability on transformational geometry and spatial abilities, and a self-report questionnaire for assessing their cognitive styles.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

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

4	Approval	47th Academic Council Meeting

TERM PAPER

Now that you have written an argumentative paper on the topic of your choice, you should be well prepared to make a 10 minute presentation to the class on your topic and claim. Create an 8-12 slide PowerPoint presentation in PPT format (do not use pptx format!). Use the provided class PowerPoint template unless you have one of your own that you would prefer to use.

Practice your presentation so that your delivery is smooth and polished. We will assign students to presentation slots starting on Monday of dead week. If you would prefer to present during the final period (or earlier) please let us know.

Grading Criteria:-

1. Are the key points of your paper captured by your presentation slides? - 35%
2. Is length of presentation limited to under 13 slides and 10 minutes? - 15%
3. Is appearance of the presentation neat and professional? - 25%
4. Is the presentation smooth and convincing? - 25%

Your presentation should be submitted to T-Square under the assignment Term Paper Presentation.

Course Coordinator **HOD**

P18MCYO001	STRESS MANAGEMENT BY YOGA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.K.Rajakumari/Dept.of.CS				

COURSE OBJECTIVES:-

After undergoing the course the participants will be able to Perform yogic exercises, asanas, breathing exercises (pranayam) & meditation techniques for keeping good health.

COURSE OUTCOMES (COs)

CO1	Introduction to Yoga as Science of living. Usefulness of Yoga. Principles of Yoga. Introduction to Patanjali's (a scientist of inner science), Yoga Sutra (Classic book on Yoga) and eight steps & limbs of Yoga. Importance of discipline in life.
CO2	Importance and description of abstentions (yam) Rules (niyam), the first two steps of Yoga. Description and importance of five virtues to be followed in daily life. Brief introduction to six cleaning processes (shatkarma) & its usefulness in yoga.
CO3	Yogic exercises – an introduction. Influence and benefits of asans on one's outlook. Principles, rules & important aspects to be followed.
CO4	Energy (Prana) and Energy Body (Pranic body) – an introduction. Modern Science and Prana. Important rules of yogic breathing (pranayam). Necessity of Pranayam. Introduction of simple paranayams.
CO5	Art & Science of relaxation. Physical manifestation of mental tension. Mechanics of relaxation techniques. The root cause of tension. Mysteries of mind. Functions of mind. Mind as mental computer.
CO6	What is inward looking (Pratayahar). Importance of Pratyahar. Concentration (Dharan), Meditation (Dhyaan) and total solution (samadhi). Importance of meditation for development of higher mental power.

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

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

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

4	Approval	47th Academic Council Meeting

UNIT I:- 6

Meaning and definition of Yoga – aims & objectives of yoga – misconception about yoga. Historical perceptive on yoga – yoga before the time of Patanjali (Indus valley civilization, Vedas, Brahmnas, Upanishads, Epics, Puranas). Contributions of Patanjali and Thirumular to yoga. Yoga practices and other systems of exercises.

UNIT II:- 6

Schools of Yoga: Bhakthi Yoga, Jnana Yoga, Karma Yoga, Kundalini Yoga, Mantra Yoga, Hatha Yoga, Raja Yoga. Eight Limbs of Yoga: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana & Samathi. General principles of practicing Asana, Pranayama, Meditation, Kriyas Bandhas and Mudra.

UNIT III:- 6

Classification of Asanas - Meditative Asanas – Relaxative Asanas – Cultural Asanas. - safety measure and precautions while performing asanas. Pranayama – different phases in Pranayama practices: Puraka (Inhalation), Kumbhaka (Retention) and Recaka (Exhalation), - safety measures and precautions while performing pranayama. Meditation - Its techniques & benefits. Practicing methods and benefits of Kriyas, Bandha and Mudra.

UNIT IV:- 6

Impact of Yoga on Muscular system, Respiratory System, Circulatory system, Nervous system, Digestive system and Endocrine system

UNIT V:- 6

Yoga and development of Social qualities of personality – Co-operation – Simplicity – Tolerance – Social adjustments – Yoga and personal efficiency. Improvement of personal efficiency through yoga.

REFERENCE BOOKS:-

1. Author’s guide, (2003). Yoga – The Science of Holistic living. Chennai: Vivekananda Kendra Prakashana trust
2. Chandrasekaran, K., (1999) Sound Health through Yoga. Sedapatti: Prem Kalyan Publications.
3. Maguire, Imelda., (2005) Yoga for a Healthy Body. London: Greenwich Editions.

4. Mariayyah, P., (2000). Suriyanamaskar. Perunthurai: Jaya Publishing House.
5. Tummers, Nanette. E., (2009) Teaching Yoga for Life. Champaign: Human Kinetics.

Course Coordinator **HOD**

P18PRSC4P1	**PROJECT (DISSERTATION AND VIVA-VOCE)**	**L**	**T**	**P**	**C**
	Total Contact Hours –	0	0	16	8
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.S.KANNAN/Dept.of.CS				

COURSE OBJECTIVES:-

To facilitate the students to understand the current scenario in computing technology and present the research report on their findings as per the acceptable format.

COURSE OUTCOMES (COs)

CO1	List out the concept and objectives, nature, types and methods of project.
CO2	Choose the process and steps involved in preparation of project work, research gap
CO3	Practice the research design, and methodology , sampling techniques & sampling design
CO4	Calculate the statistical tools in the project for data analysis
CO5	Measure the major findings, suggestions and conclusion
CO6	Design the model for project report.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
					✓					
4	Approval	47th Academic Council Meeting								

PROJECT (DISSERTATION AND VIVA-VOCE)

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

Dissertation	**150**
Viva- Voce Examination	**50**

Course Coordinator **HOD**

OPEN ELECTIVES

P18OEBA001	ADVERTISING AND SALES MANAGEMENT	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course –UG Level				
	Course Coordinator Name & Department:- T Manjiniprakash/BBA				

COURSE OBJECTIVES: -

- Identify the terms and concepts that are commonly used in promotion and advertising.
- Demonstrate preparation to comprehend the basic advertising.
- Give the relationship which underlines these terms and conceptsTo familiarize the students with the basic fundamentals of accounting.
- To impart knowledge on final accounts of sole trading concern.
- To enable the students on the concept of income & expenditure and receipts and payments.

COURSE OUTCOMES (COs)

CO1	Students gain basic knowledge of Advertising its functions, roles and development of advertising.
CO2	Know about Advertising design and its strategies.
CO3	Expose on Advertising, media and about its types.
CO4	To forecast sales and its techniques used in management.
CO5	Students were enriched about salesmanship, sales planning, budgeting.
CO6	Develop an advertising plan and present and defend it persuasively.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
								✓		
4	Approval	47th Academic Council Meeting								

Unit - I **6**

Introduction to Advertising- Definition -Roles of Advertising- Functions of Advertising-Steps in Development of Advertisement

Unit – II **6**

Advertising Design- Appeals- Structure of an Advertisement - Message Strategies - Cognitive strategy- Executional Strategies-Creating Advertising- Advertising Effectiveness.

Unit – III **6**

Advertising Media - Merit and demerits- Kinds of Advertising - Advertising Media- print media - Broadcasting media- Non-media advertising- online advertising.

Unit - IV **6**

Sales Management - Defining - Objectives -Strategies- Sales Executives – Functions -Qualities - Sales Presentation Techniques - Emerging Trends in Sales Management.

Unit - V **6**

Selling Concept - Objectives- scope and techniques of Salesmanship- Sales Planning- Importance – process- Sales Budget- Objectives-uses of sales Budget.

Text book

1. Advertising & promotion: George E.Belch, THM
2. Advertising Management, Dr. Varma&Aggarwal, kingBooks

References:

1. Sales promotion and advertising management by M .N.Mishra. Himalaya Publication.
2. Advertising and sales management by SanjeevChauhan (Astha publication)
3. Anderson, Hair, Bush: Professional Sales Management, McGraw Hill, Singapore.

T Manjiniprakash

Course Coordinator **HOD**

P18OEBA002	**BPO MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- .P.Srinivasan/ Business Administration				

COURSE OBJECTIVES: -

- To familiarize the students with the basic fundamentals of BPO industry
- To impart knowledge on BPO industry
- To enable the students on the concept of various decisions in Business Process Outsourcing

COURSE OUTCOMES (COs)

CO1	Develop a strategic understanding of the concepts of BPO's and its benefits
CO2	Explaining various models used in functioning of BPO's and Trends.
CO3	Describe the opportunities and challenges in Human Resources BPO
CO4	Analyzes about call centers its functions, processes and classifications
CO5	Developing efficiency in understanding the customers and capabilities in handling calls.
CO6	To understand the future trends in BPO industry

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Enngsciences (ES)	Professional Core (PC)	Professional Core (PC)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT-I **6**

Business Process Outsourcing – Meaning – definition - Basics - Benefits - BPO Models - - BPO Companies in India.

UNIT-II **6**

Healthcare BPO – Structure of the American Healthcare Sector – Activity Profile –Future Trends and Threats – Case Study – Cbay Systems.

UNIT - III **6**

Human Resource BPO – Reasons for outsourcing HR – Activities involved in HR BPO – HR Outsourcing Trends – Career in HR BPO – Emerging BPO Domains – Media and Entertainment BPO – Publishing BPO.

UNIT – IV **6**

Call Centres – Functions – Processes – classifications – Telemarketing – Tele selling – Preparing for a Job – Approach – Training – Selection Process.

UNIT – V **6**

Improving Efficiency – Handling Calls – Team Player – Pleasing the Customers – Converse efficiently – Reducing stress.

TEXT BOOKS:

1.BPO Industry in India by S K Awasthi by Jain Book

2.Business Process Outsourcing: Its Prospects and Challenges by Barua.

REFERENCE BOOKS

i) SudhindraMokhasi(2009) ,BPO – Sutra : True stories from India's BPO and call centres, -Rupa& Co.

ii) Kulkarni, Sarika.(2005), Business process outsourcing – Delhi, Jaico Publishing House.

iii) Shikapur, Deepak(2004), BPO Digest. Ameya Inspiring Books.

Mr.P.Srinivasan

CourseCoordinator **HOD**

P18OEBA003	CALL CENTER MANAGEMENT-VOICE AND NON VOICE	L	T	P	C
	Total Contact Hours –30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:-A.Jhoncy / BBA				

COURSE OBJECTIVES:-

- Develop and motivate a call centre team.
- Get the most out of call monitoring technology and prepare effective management reports.
- React to and plan for operational bottlenecks.
- Give meaningful feedback to call-centre agents and set achievable goals and targets.
- Students will learn about the roles and methods of different kinds of call centers. They will apply this by designing their own call center and trying to anticipate customer needs.

COURSE OUTCOMES (COs)

CO1	Gaining a basic knowledge about call centers its functioning and classifications.
CO2	To know about handling the Issues and problems related to calls in a efficient manner.
CO3	Gives knowledge of technical communications, speech process and educate conversation of oral skills.
CO4	Students acquire knowledge towards pre-interview about Interview questions and answering techniques
CO5	Analyses fully about the medias of communications.
CO6	Demonstrate awareness of the pragmatics of call center planning and operation

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

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

	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core	Core Elective (PE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
		□□□				□□		□		
4	Approval	47th Academic Council Meeting								

UNIT – I **6**

Call centers – Meaning – Functions – Processes - Classifications – Tele selling – Types of call centers.

UNIT – II **6**

Improving Efficiency – Handling calls – Team Players – Components and working of call center – Issues and problems.

UNIT – III **6**

Nature of Technical communication: Stages of communication – Nature of Technical Communication - The speech process – Conversation and Oral skills.

UNIT – IV **6**

Job Interview: Pre – Interview preparation techniques – Interview questions – Answering Strategies – Frequently asked Interview questions.

UNIT – V **6**

Communication media – Telephone – Fax – Internet – Email – Video conferencing.

TEXT BOOKS

1. Brad Cleveland - Call Center Management on Fast Forward: Succeeding in the New Era of Customer Relationships (3rd Edition) Third Edition,
2. Mr. Thomas Anthony Laird - Advice from a Call Center Geek: Rethinking Call Center Operations,

REFERENCE BOOKS

1. W. Stallings “Data and Computer Communication” Pearson Education, 5 Edition, 2001.
2. M. AshrajRizvi,” Effective Technical Communication”, Tata McGraw – Hill Education, 2005.
3. R.S.N.Pillai&Bagavathi – Modern commercial correspondence.

A.Jhoncy

Course Coordinator **HOD**

P18OEBA004	CUSTOMER RELATIONSHIP MANAGEMENT	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.DArun Kumar /BBA				

COURSE OBJECTIVES: -

- To Popularize the students with the basic fundamentals of CRM.
- To improve knowledge & skills on Customer relationship of Marketing strategy.
- To develop the students on the concept of Customer service.

COURSE OUTCOMES (COs)

CO1	To popularize with the basicsof CRM.
CO2	Can increase awareness about Customer relationship.
CO3	Able to be aware of the concept of Customer service.
CO4	Can respond to the concept of Customer needs.
CO5	Develop confidence in the practical aspects of Customer Satisfaction
CO6	Identify the main Customer Expectations.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT – I **6**

CRM – Introduction – Definition – Need for CRM – Customer satisfaction – Customer loyalty – Product Marketing – Direct Marketing-

UNIT – II **6**

Customer learning relationship – Key stages of CRM - Force driving CRM – Benefits of CRM – Growth of CRM Market in India – Key principles of CRM.

UNIT - III **6**

CRM – Program – Ground work for effective use of CRM – Components of CRM – Types of CRM.

UNIT - IV **6**

CRM Process - Frame work – Governance process- Performance evaluation process.

UNIT – V **6**

Use of Technology in CRM – Call center process – CRM Technology tools – Implementation – Requirements analysis – selection of CRM Package – reasons and failure of CRM.

TEXT BOOK

1. Kristin Anderson & Carol Kerr – Customer Relationship Management – McGrawHill 2002

2.Sheth – Customer Relationship Management – McGraw Hill Edition 1st Edition 2000

REFERENCE BOOK

1. Dr. P .Sheela Rani – Customer Relationship Management – Margham Publication.
2. K. Balasubramaniyam – Customer Relationship Management – GIGO Publication, 2005.
3. Dr. Ravi Kalakota E – business – Road map for success, Pearson education Asia, 2000.

Dr.D.ArunKumar

CourseCoordinator **HOD**

P18OEBA005	**ENTREPRENEUR DEVELOPMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.DArun Kumar /BBA				

COURSE OBJECTIVES: -

- To make publicity on the students with the basic fundamentals of Entrepreneur Development
- To improve knowledge & skills on Entrepreneurship.
- To develop the students on the concept of Entrepreneurial skills.

COURSE OUTCOMES (COs)	
CO1	To popularize with the basicsof Entrepreneur development.
CO2	Can increase awareness about Entrepreneurship.
CO3	Able to be aware of the concept of Entrepreneurial skills.
CO4	Can respond to the concept of Entrepreneurial knowledge.
CO5	Develop confidence in the practical aspects of Business Opportunity.
CO6	Identify the main Innovations in Entrepreneurial Development.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT – I **6**

Introduction to Entrepreneurship: Meaning and concept of entrepreneurship - the history of entrepreneurship development - role of entrepreneurship in economic development

UNIT – II 6

The Entrepreneur: Meaning of entrepreneur - the skills required to be an entrepreneur, and role models, mentors and support system.

UNIT – III 6

Business Opportunity Identification: Business ideas, methods of generating ideas - legal form of new venture, protection of intellectual property -marketing the new venture.

UNIT – IV 6

Preparing a Business Plan: Meaning - significance of a business plan - components -feasibility study.

UNIT – V **6**

Financing the New Venture: Importance - types of ownership securities - venture capital - types of debt securities -determining ideal debt-equity mix - financial institutions and banks.

TEXT BOOK

1. Robert D. Hisrich, Mathew J Manimala, Michael P Peters, Dean A Shepherd, “Entrepreneurship”, 9e,McGraw Hill Education, 2014.
2. Peter F. Drucker, “Innovation and Entrepreneurship”,Harper Collins, 2009.

REFERENCE BOOK

1. John Bessant, Joe Tidd, “Innovation and Entrepreneurship”,2e,Wiley India Private Limited, 2012.

2. Robin Lowe, Sue Marriott,"Enterprise: Entrepreneurship and Innovation: Concepts,Contexts and Commercialization"1e,Routledge, 2012.

3. VeeraBhadrappaHavinal – Management Entrepreneurship – New Age International Publishers.

Dr.D.ArunKumar

CourseCoordinator **HOD**

P18OEBA006	ADVANCE HUMAN RESOURCE MANAGEMENT	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- P.Srinivasan / BBA				

COURSE OBJECTIVES:-

- Today's competitive business environment owes its success to effective management of its human resource.
- The quality of the organization's employees, their attitude, behavior and satisfaction with their jobs, and their behavior towards ethics and values and a sense of fair treatment all impact the firm's productivity, level of customer service, reputation, and survival.
- The students of human resources management must aware of basic aspects of human resource management to understand the functioning of human resource management in an organizational setting.
- Students gained knowledge in the present day human resources development practice by incorporate themselves in the changing environment of HRM.

COURSE OUTCOMES (COs)

CO1	Identify how firms gain a sustainable competitive advantages through people
CO2	To be aware of the responsibility managers of have concerning human resource management
CO3	Identify the importance of change management.
CO4	To implement basics compensation and performance appraisal
CO5	Importance of labour welfare and grievance handling for employment
CO6	Understand the importance of Employee participation and Relations.

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

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

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

4	Approval	47th Academic Council Meeting

UNIT – I **6**

Human Resource Function- Human Resource Philosophy – Changing environments of HRM – Strategic human resource management – Role of HR Managers.

UNIT – II **6**

Recruitment & Placement: Sources, Developing and using application forms - IT and online recruitment - Selection process, basic testing concepts - types of test - work samples & simulation - selection techniques – interview - Designing & conducting the effective interview - computer aided interview.

UNIT – III **6**

Training & Development: Employee Orientation- Training process- Need analysis- Training techniques- special purpose training- Performance appraisal: Methods - Problem and solutions - MBO approach - Performance appraisal in practice.

UNIT – IV **6**

Basic Compensation & Pay plans - factors determining pay rate - Current trends in compensation - Computerized job evaluation - financial incentives - benefits - Insurance benefits - retirement benefits – welfare measure

UNIT – V **6**

Trade unions - Discipline administration - grievances handling - Labour Welfare: Importance & Implications of labour legislations - Employee health.

TEXT BOOKS

1. Dr. R.Venkatapathy&AssissiMenacheri, Industrial Relations &Labour Welfare, Adithya Publications, CBE, 2001.
2. Robert L.Gibson and Marianne H.Mitchell, Introduction to Counseling and Guidance, VI edition, PHI, 2005
3. L.M. Prasad – Human Resource Management – S. Chand & Sons – 2007.

REFERENCE BOOKS

1. Gary Dessler, " zo& Stephen P.Robbins, Personnel/Human Resource Management, Third edition, PHI/Pearson.
2. VSP Rao, Human Resource Management: Text and cases, First edition, Excel Books, New Delhi - 2000.
3. P.SrinivasanHuman Resource Management", Seventh edition, Prentice-Hall of India P.Ltd., Pearson. David A. DeCen

D.K.SOWMIYALAKSHMI

Course Coordinator **HOD**

P18OEBA007	**LOGISTICS & SUPPLY CHAIN MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course: UG Level				
	Course Coordinator Name & Department:- T.Manjiniprakash / BBA				

COURSE OBJECTIVES:-

- To make the students to understand the usefulness of logistics and supply chain.
- This document lists the course's major subject areas and the knowledge, comprehension, application, analysis, synthesis and evaluation skills that they are designed to impart.
- Identify the sources of cost in a supply chain.
- Define inventory and types of inventory in a supply chain.
- Define transportation cost and identify the factors that contribute to this cost.
- Calculate inventory cost and transportation cost for a logistics problem.
- Define fixed and variable cost.
- Understand the economies of scale in transportation and inventory cost

COURSE OUTCOMES (COs)

CO1	Identify and Analyze Business Models, Business Strategies and corresponding Competitive Advantage.
CO2	Formulate and implement Warehouse Best Practices and Strategies.
CO3	Plan Warehouse and Logistics operations for optimum utilization of resources
CO4	Apply logistics and purchasing concepts to improve supply chain operations
CO5	Apply quality management tools for process improvement
CO6	Create an ideas about logistics and supply chain management

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professiona l Core	Core Elective	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT –I **6**

Logistics management and Supply Chain management - Definition, Evolution, Importance.The concepts of logistics.Logistics relationships -Functional applications - Logistics Organization - Logistics in different industries.

UNIT –II **6**

Logistics Activities: – objectives, solution. Customer Service, Warehousing and Material Storage, Material Handling, information handling and procurement Transportation and Packaging - Reverse Logistics - Global Logistics

UNIT-III **6**

Fundamentals of Supply Chain - Development of SCM - Strategic Supply Chain Management and Key components -Drivers of Supply Chain Performance – key decision areas – External Drivers of Change.

UNIT-IV **6**

Supply Chain Drivers and Design Drivers of supply chain performance: Framework for structuring Facilities warehouse – Inventory – Transportation – Information - Sourcing, and Pricing – Revenue management.

UNIT-V **6**

Demand and Inventory Aggregate Planning in a Supply Chain: role - strategies Implementation Responding to predictable variability in supply chain – Types of supply chains - creating responsive supply chains lean

TEXT BOOKS

1. Supply Chain Management: Ronald H. Ballou, Samir K. Srivastava, Pearson Education Ltd, Jan 2007.
2. Supply Chain Management**:** Anil Sinha, McGraw Hill Education, August 2011.

REFERENCE BOOKS

1. Logistics And Supply Chain Management: Martin Christopher, Pearson Education Ltd, 2016.
2. Supply Chain Management: Sunil Chopra, Peter Meindl, Dharma Virus Kalra, Pearson Education Ltd, 2016.

3. Supply Chain And Logistics Management: V. Anandaraj, S. Kumaran, IshankaSaikira, Airwalk Publication, Jan 2018.

T.Manjiniprakash.

Course Coordinator **HOD**

P18OEBA008	**OFFICE MANAGEMENT**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- D.K.Sowmiyalakshmi /BBA				

COURSE OBJECTIVES: -

- To familiarize the students with the basic fundamentals of accounting.
- To impart knowledge on final accounts of sole trading concern.
- To enable the students on the concept of income & expenditure and receipts and payments.

COURSE OUTCOMES (COs)	
CO1	To make them understand office management and duties of an office manager
CO2	To give an idea about proper filing and indexing of office documents
CO3	To understand the principles of record management and different types of records in business organization.
CO4	To enable them to aware about safety hazardous and steps to improve office safety.
CO5	To introduce different measures of office work
CO6	Create an ideas about office management

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

1	COs/Pos	PO1	PO 2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO2	PSO 3
2	CO1	H	L						H		H
	CO2	H	L						H		H
	CO3	H	L	M	M	L	L	H	H	M	H
	CO4	H	L	M	M	L	L	H	H	M	H
	CO5	H	L	M	M	L	L	H	H	M	H
	CO6	H	L	M	M	L	L	H	H	M	H

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship(PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT -I **6**

Introduction: Meaning, functions and importance of office management; office management and organization. Principles of office management and organization.Principal departments of modern office.

UNIT-II **6**

Office Manager: qualities of office manager. The authorities and responsibilities of an office manager. Office accommodation: Selection of site. Office layout.Environment and working conditions.

UNIT-III **6**

Office equipment's - Reproduction equipment - Typewriter - Duplicators - Photo Copier - Communication Equipment - Intercom - Telephone - Use of Computers in Office Management Office System - Procedure - Routine - And methods - Paper work in office Filling functions.

UNIT-IV **6**

Office Communication: Various means of communication- Their use, Correspondence through Internet - Office Correspondence -Central vs. Departmental Correspondence - Handling Mail - Postal Services - Oral written - Internal and external communication - Records Management Types - Forms Controls - Principles - Foremost -Continuous stationery

UNIT-V **6**

Office Supervisor - Meaning and characteristics of Supervisor - Status - Place and Role of Supervisor - Effective Supervisor - Qualification - skill of Supervisor.

TEXT BOOKS

1. Modern Office Management: N. D Sharma, And Publishers, Jan 2006.
2. Office Management: Prashansa K. Ghosh, S. Chand & Sons, Jan 2010

REFERENCE BOOKS

1. Office Management: R.S.N Pillai&Bhagavathi, S. Chandler & Come, Dec 2010.
2. Office Management: R. Nangia, G. K Gupta, Crescent Publishing House.
3. Office Management: Dr. R. K Chopra, PriyankaGauri, Himalaya Publishing House, Jan 2017.
4. Of Non-Trading Organization-Receipts And Payment Account- Income And Expenditure Account

D.K.Sowmiyalakshmi

CourseCoordinator **HOD**

P18OEVC001	**PHOTOGRAPHY AND VIDEOGRAPHY**	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite – UG Level				
	Course Coordinator Name & Department:- L.Rakesh – Dept of Visual Communication				

COURSE OBJECTIVES

- To understand the fundamentals of Photography and Videography
- To examine the technical factors of indoor and outdoor photography and Videography
- To enable the students to equip themselves to become a photography and Videography professionals.

COURSE OUTCOMES (COs)

CO1	Can analyze the fundamentals of Photography and Videography
CO2	Understanding of the camera operations
CO3	Evaluating the lighting
CO4	Can be aware of the wrong exposures
CO5	Can promote various types of photography and Videography
CO6	Understanding the concept of photo-journalism

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

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

	CO6	H	L	M	M	L	L	H	H	M	H
3	Category	Humanities & Social	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)		Core Elective	Non-Major Elective	Open Elective (OE)		Any other
					✓						
4	**Approval**	47th Academic Council Meeting									

UNIT-I: **6**

Human Eye and Camera. Basics of Camera (aperture, shutter speed, focal length, f-stop, depth of field etc.,) Camera operations, Introduction to Television Production,Types of telecasting, Television Crew, an overview of direction.

UNIT-II: **6**

Types of Still and video cameras. Types of Lenses. Visual Perception, Art direction, floor management-indoor & outdoor, production management, budget preparation. Locations: In-door, set, on-sights sets, -Outdoor on-sight sets, blue matte. Etc.,

UNIT-III: **6**

Understanding lighting-indoor and outdoor, Exposing and Focusing, Types of lighting, Natural and Artificial Lights, Controlling lights, Exposure Meters. Camera techniques & operation, Framing, shots & movements (wide, medium, close ups, shadow, zoom, pan, tilt, aerial etc.,),

UNIT-IV: **6**

Photography for advertising-Consumer and industrial. Usage of various types of camera lenses (Normal, Tele, Zoom etc.,), usages of various filters (day ,night, colour correcting filter, diffusion filter), objectives TV lighting, various types of Lights (baby, Junior, Senior, etc.,)

UNIT- V: **6**

Basics of photo-journalism, Photo-features, Photo - essays, Writing captions, Visual story telling. Planning a shoot-studio, location, set props and casting.Colour temperature, lighting for different situations (interviews, indoor, out-door), types of lighting(Back, Front, full, semi, etc.,)

TEXT BOOKS:

1.The Art of Photography: A Personal Approach to Artistic Expression, Barnbaum, Bruce, Rocky Nook

2. Photography Demystified: Your Guide to Gaining Creative Control, David McKay, Photography Inc.

3. Television Productions: A History of All Series and Pilots, by Jon Abbott, Publisher: McFarland & Company (May 13, 2009.

4. Production Management for TV and Film: The Professional's Guide, Methuen Drama (August 1, 2010).

REFERENCE BOOKS:

1.The Photographer's Eye,Szarkowski, John, The Museum of Modern Art, New York (Publisher)
2.Creative Composition: Digital Photography Tips and Techniques, Davis, Harold, Wiley
3.From Concept to Screen: An Overview of Film and Television Production, Robert Benedetti, Pearson; 1 edition (June 11, 2001)
4.The Television Handbook, Routledge, Holland, P (1998)

Course Coordinator **HOD**

P18OEEN001	**SOFT SKILLS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite – UG Level				
	Course coordinator name : Mrs.B.CAROLINE– Dept of English				

COURSE OBJECTIVES:-
To impart students with the efficient knowledge of important events in through soft skills.

COURSE OUTCOMES (COs)

CO1	Remember the personal as well as professionals goals of the students
CO2	Understand the manners during professional meetings
CO3	Apply the confidence and fluency in speaking English.
CO4	Analyze the learners to fine-tune their linguistic skill with communication globally
CO5	Evaluate the excellence in both personal and professional life
CO6	Create the performance of learners at placement interviews and other recruitment procedures.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT I- LISTENING / VIEWING **6**

Listening and note-taking – Listening to telephonic conversations – Ted talks – Inspiring Speeches – Watching documentaries on personalities, places, socio-cultural events, TV news programmes and discussions to answer different kinds questions, viz., identifying key idea and comprehension questions… so on.

UNIT II- SPEAKING **6**

Elements of presentation skills-Structure of presentation-presentation tools- mock interviews – group discussion – introducing one self and others – welcome address and proposing a vote of thanks- role play – debating.

UNIT III - READING **6**

Different genres of text (literature, media, technical) for comprehension – Reading strategies like note-making – reading graphs, charts and graphic organizer – Sequencing sentences – reading online sources like e-books, e-journals and e-newspapers.

UNIT IV - WRITING **6**

Resume/Report preparation/Letter Writing-Structuring the resume-comprehension- Describing charts and tables – writing for media on current events.

UNIT V- PROJECT **6**

Gender injustice: Dowry-Violence against women -Sexual Harassment -Eve teasing-Female infanticide-Prostitution. **Social problem**: Poverty-unemployment-Child Labour-Terrorism-Drug abuse-Alcoholism-Corruption. **Industrial problem:** Work and Labour organization-Elements-Principles-Staff and Functional Activities. **Industrial Conflict:** Strikes-Disputes-Grievances-Industrial development in India-Steps in Automation process-Industrial policy-Liberation.

TEXT BOOKS:-

1. Rizvi ashraf ,Effective Technical Communication , Tata amcgraw Hill Education Private Ltd,New Delhi,2011.

2. Townsend Roz , Presentation skills for the upwardly mobile , Emerald Publishers .

REFERENCE BOOKS:-

1. T.M.Farhathullah, communication skills for Technical students, Orient Longman Ltd,2002.

2. Andree J Rutherford, Basic communication skills for Technology, Pearson Education,Asia (Singapore) Pte.Ltd, Banglore , 2001.

Course Coordinator **HOD**

P18OEEN002	**MASS MEDIA AND COMMUNICATION**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite – UG Level				
	Course coordinator :– Dr.P.AROCKIA NATHAN Dept of English				

COURSE OBJECTIVES :
To impart students with the efficient knowledge of important events in through literature

COURSE OUTCOMES (COs)

CO1	Remember the art of writing, report and editing
CO2	Understand the skills of writing
CO3	Apply the Role & importance in social change
CO4	Analyze the social structure of Indian society
CO5	Evaluate the growth & development of communication and media
CO6	Create the interpreting the meaning from the text

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/ Internship (PR)
								✓		
4	Approval	47th Academic Council Meeting								

UNIT I -Communication and Media **6**

Communication & Media: Definition, meaning and concept.

Different types of communication: verbal and written

Scope and Process of Mass Media & Communication

UNIT II -History of Mass media **6**

History of the development of electric media in India: Radio & TV

Role of media in society, Impact of media on audience,

Media effects, limitations and different form of media.

UNIT- III- Role & Responsibilities **6**

Role and responsibilities of journalist, ethics, careers,

Media management, Media laws in India, and freedom of press

Qualities and Responsibilities of a reporter

UNIT IV -Theories & Principles **6**

Theories and Principles of Editing

Communication and theories of social change,

Role of media in social change, Development communication

UNIT V-Technology & Development **6**

Changing trends of mass communication under the process of globalization

Technology in the development of media.

Text Books:-

1. Vivian, John, Mass Media &communication Boston, Massachusetts : Pearson Allyn and Bacon, c.2008.
2. Stovall, James Glen, Writing for the mass media, New Jersey : Pearson Education, Inc., c.2012

Reference Books:-

1. Parthasarathy, Rangaswami, journalism in India, sterling Publisher pvt. Ltd. New Delhi.
2. D.S. Mehta. Mass communication and Journalism in India New Delhi, Allied Publishers, 2011

Course Coordinator **HOD**

P18OESC001	**COMPUTER APPLICATIONS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr. S.Thiru Nirai Senthil / BCA				

COURSE OBJECTIVES:-

Learners will be familiar with basic of computer application. Learners will understand the applications of computer & able to know about the operating systems.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in fundamental computer applications
CO2	Understand the concept of input device functions
CO3	Indentify 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	PSO1	PSO 2	PSO 3
2	CO1	H	L							H	
	CO2	H	L								
	CO3	H	L								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
								✓		
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,2010.
2. Alexis Leon & Mathews Leon, "Fundamentals of Information Technology", Vikas Publishing House, New Delhi,2009.

REFERENCE BOOKS:

1. Rajeev Mathur, “Dos Quick Reference”, Galgotia Publications.

Course Coordinator **HOD**

P18OESC002	MULTIMEDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr. S.Thiru Nirai Senthil / BCA				

COURSE OBJECTIVES:-

To Understand the basic multimedia concepts and designing concepts.

COURSE OUTCOMES (COs)

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	PSO1	PSO 2	PSO 3
2	CO1	H	L								H
	CO2	H	-								
	CO3	H	-								
	CO4	H	L								
	CO5	H	L								
	CO6	H	L								

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
								✓		
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",1998.
2. Mohammad Dastbaz, "Designing Interactive Multimedia Systems",2002.

Reference Books

1. Bohdan O. Szuprowicz, "Multimedia Networking",1995.
2. Stephen McGloughlin, "Multimedia on the web",1997.

Course Coordinator **HOD**

	ADVANCED EXCEL	L	T	P	C
	Total Contact Hours – 30	2	0	0	2

P18OESC003	Prerequisite course – UG Level
	Course Coordinator Name & Department:- S.Anupriya / BCA

COURSE OBJECTIVES:-

To identify the various functions in Excel Sheet

COURSE OUTCOMES (COs)

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	PSO1	PSO 2	PSO 3
2	CO1	H	L								H
	CO2	H	L								
	CO3	H	L	M	M						
	CO4	H	L	M	M						
	CO5	H	L	M	M						
	CO6	H	L	M	M						

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
								✓		
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 Subtotals , 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” ,A Press, 2015 edition.

Reference Books

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

Course Coordinator **HOD**

P18OESC004	WEB DESIGNING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- V.Ramya/BCA				

COURSE OBJECTIVES:-

To Understand the basic web designing concepts.

COURSE OUTCOMES (COs)

CO1	Gain knowledge in web basics and server side scripting.
CO2	Execute the HTML coding.
CO3	Apply hyper links between webpages
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	PSO1	PSO 2	PSO 3
2	CO1	H	L								H
	CO2	H									
	CO3	H									
	CO4	H									
	CO5	H	L								
	CO6	H	L								

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

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.

UNIT II **6**

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 **6**

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

UNIT V **6**

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

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,2010.
4. T. A Powell, "Complete Reference HTML (Third Edition)", TMH, 2002.

Course Coordinator HOD

P18OESC005	PHOTOSHOP	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- V.Brindha/BCA				

COURSE OBJECTIVES:-

Learners can Apply methods to specific 3D Images and to identify various designs appropriate for Animation

COURSE OUTCOMES (COs)

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	Gain knowledge in 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	PSO1	PSO 2	PSO 3
2	CO1	H	L								H
	CO2	H	-								
	CO3	H	-								
	CO4	H	-								
	CO5	H	L								
	CO6	H	L								

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

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 back ground.

UNIT II **6**

Photoshop program window-titlebar, menu bar, option bar, image window, image title bar, status bar, ruler, palettes ,tool box, 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 tool box: 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.

Text Books

1. Reema Thareja ,"Fundamentals of Computers",Oxford University Press,2014.

Reference Books

1. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color
2. Adobe Creative Team ,"Adobe Photoshop Class Room in a Book",2014.

Course Coordinator **HOD**

	FLASH	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
P18OESC006	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- N.Mathimagal/ BCA				

COURSE OBJECTIVES:-

Learners can identify methods appropriate for Basic Animation. Apply methods to design with flash.

COURSE OUTCOMES (COs)

CO1	Understand inWorking 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	PSO1	PSO 2	PSO 3
2	CO1	H	L								H
	CO2	H	-								
	CO3	H	-								
	CO4	H									
	CO5	H	L								
	CO6	H	L								

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

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 twining , 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**

P18OESC007	**COMPUTER HARDWARE AND NETWORKING**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- V.Ramya/BCA				

COURSE OBJECTIVES:-

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

COURSE OUTCOMES (COs)

CO1	Design the structure of Micro Processor and PCs and CPUs
CO2	Understand the structure of PC architecture and the study of various PCs
CO3	Understand the Basics of Processor
CO4	Study the 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	PSO 2	PSO 3
2	CO1	3	3	1	1	1	1	3	H		
	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/
								✓		
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,October 2013.

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**

	COMPUTER PROGRAMMING	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
P18OESC008	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- S.Anupriya/ BCA				

COURSE OBJECTIVES:-

Learners understand the basic concepts of C programming. Practice the use of conditional and looping statements. Implement arrays, functions and pointers. Gain skills to handle strings and files.

COURSE OUTCOMES (COs)

CO1	Understand the concept of data types, loops, functions, array, pointers, string, structures and files.
CO2	Design flow-chart, algorithm and program logic.
CO3	Analyze problems, errors and exceptions.
CO4	Apply programming concepts to compile and debug c programs to find solutions.
CO5	Gain knowledge to use Function, Pointers, Structures, Unions & preprocessor directives
CO6	Construct programs that demonstrate effective use of C.

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

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

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

UNIT I **6**

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. Pradip Dey, Manas Ghosh, "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'sOutlines,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**

P18OESC009	**OFFICE AUTOMATION TOOLS**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- V.Brindha/BCA				

COURSE OBJECTIVES:-

Learners understand the basic concepts of word, Excel, Power Point.

COURSE OUTCOMES (COs)

CO1	Understand the text manipulations for word documents.
CO2	Analyze the templates and mail merge concepts.
CO3	Apply the cell editing, formulae, built in functions used in the Excel Sheet.
CO4	Develop the power point slide designs and backgrounds.
CO5	Develop the graphics and animations using wizards.
CO6	Create a document and apply various formatting techniques

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

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

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

UNIT I **6**

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”, Universe Publications,2012.

Course Coordinator **HOD**

U18OEMI001	CLINICAL MICROBIOLOGY	L	T	P	C
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Under graduate degree in any discipline				
	Course Coordinator Name & Department:- Dr. J. Senthil & Microbiology				

COURSE OBJECTIVES:-

Learners will be familiar with microbiological related diagnostic techniques. Learners will understand the microbial morphology, structure, characters, classification, diseases and diagnostic tests.

COURSE OUTCOMES (COs)

CO1	Recall the general classification of microbes.
CO2	Recognize the different specimen collection methods and staining methods.
CO3	Apply different diagnostic tests to identify the diseases.
CO4	Analyze the role of human pathogens in causing diseases.
CO5	Evaluate the importance of antimicrobial compounds.
CO6	Create and develop new antimicrobial drugs and antibiotics against wide range of pathogens.

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

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

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

4	Approval	47th Academic Council Meeting

UNIT I **6**

General introduction about clinical microbiology, Sterilization and Disinfection., Culture Media preparation, Staining Methods, Collection and Transportation of Specimen - General Principles, Containers, Rejection, Samples - Urine, Faeces, Sputum, Pus, Body fluids, Swab, Blood, Disposal of Laboratory/Hospital Waste.

UNIT II **6**

General characters and classification of bacteria, Characteristics - Growth and maintenance of Bacteria, Pathogenicity and diagnosis of bacterial pathogens, antimicrobial compounds against clinical pathogens.

UNIT III **6**

Morphology and structure of fungi - Classification of fungi - Nutrition and cultivation of fungus - Cutaneous & Sub cutaneous and Systemic Mycosis - Lab diagnosis of fungal Infections - Opportunistic fungal infections.

UNIT IV **6**

General characters of viruses. - Classification of viruses. - Lab diagnosis of viral infections. - Cultivation of viruses. - Bacteriophages - Retro viruses - HIV, Hepatitis virus, Pox virus . - Picrona virus - Polio. - Orthomyxo virus - Influenza. - Arbo virus - Chikungunya, Dengue. - Herpes and Adeno virus.

UNIT V **6**

Definition - parasitism, host, vectors etc. Classification of Parasites, Phylum Protozoa- general Pathogenic and non pathogenic protozoa, Phylum Nemathelminthes/Round words (Nematoda), Phylum Platyhelminthes - class - Cestoda, class - Trematoda, Lab diagnosis of parasitic infections.

TEXT BOOKS:

1. Monica Chees Brough. Medical laboratory manual for tropical countries, Elsevier Health Sciences, Butter worths, 1987.
2. Bailey and Scott. Diagnostic Microbiology, Eighth edition, The Mosby Company, 1990.

REFERENCE BOOKS:

1. Keith Struthers K. Clinical Microbiology, 2nd Edition, CRC Press, 2017.
2. Jennie Wilson. Clinical Microbiology -An Introduction for Healthcare Professional, 8th Edition, Bailièrre Tindall, 2000.

Course Coordinator **HOD**

U18OEMI002	**HERBAL MEDICINE**	**L**	**T**	**P**	**C**
	Total Contact Hours – 30	2	0	0	2
	Prerequisite course – Under graduate degree in any discipline				
	Course Coordinator Name & Department:- Dr. J. Senthil & Microbiology				

COURSE OBJECTIVES:-

Learners will be familiar with medicinal herbs. Learners will understand the importance of herbal drugs and herbal therapies.

COURSE OUTCOMES (COs)

CO1	Recall the herbal medicines used in daily life.
CO2	Recognize the different methods of herbal extraction and its types.
CO3	Apply various herbal medicines in curing the diseases.
CO4	Analyze the role of herbs in drug discovery.
CO5	Evaluate the importance and toxicity studies of herbal extracts.
CO6	Create and develop new drugs from wide range of medicinal plants available worldwide.

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

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other		Project/Term Paper/ Seminar/ Internship (PR)
								✓			
4	Approval	47th Academic Council Meeting									

UNIT I **6**

Definition of Herbal drug, Importance of Herbal therapies, Herbs used as nutraceuticals and healing agents. Making and using herbal medicines for common ailments like cold, skin infections and Diarrhea; Analytical Profiles of selected herbs.

UNIT II **6**

General methods of extraction, types and principles of extractions - merits and demerits, selection of suitable extraction methods, purification and recovery of solvents

UNIT III **6**

Different methods for isolation and estimation of phyto-constituents from medicinal herbs like *Mucuna pruriens*, *Garcinia combogia*, Green tea, *Hypericum species* etc.

UNIT IV **6**

Qualitative and Quantitative estimation of standardized extracts by HPTLC, Biological standardization -Pharmacological screening of herbal extracts and Microbiological evaluation of herbal extracts, Toxicity studies of herbal extracts.

UNIT V **6**

Herbal drugs acting on brain and nervous system – Rheumatoid arthritis – Psychoactive drugs – Depressants, Stimulants, hallucinogens – sources, effects, basic mechanism of action.

TEXT BOOKS:

1. Indian Herbal Pharmacopoeia, Vol.1 & 2, RRL, 1 DMA, 1998, 2000.
2. Kokate CK, Purohit and Gokhlae. Text book of Pharmacognosy, 4th edition, Nirali Prakashan, 1996.

REFERENCE BOOKS:

1. Toxicology and Clinical Pharmacology of Herbal Products, Melanie Johns Cupp.
2. Choudhary RD. Herbal drug industry, 1st edition, Eastern publisher, New Delhi, 1996.

Course Coordinator **HOD**

P18OEPH001	ELECTRICAL TECHNICIAN	L	T	P	C
	Total Contact Hours - 30	2	0	0	2
	Prerequisite – B.Sc Physics				
	Course Coordinator Name & Department:- – Dr. S.Anandhi / Physics				

OBJECTIVES: Students will have an appreciation on the electrical systems and electrical equipment typically used in the Oil and Gas production plant.

COURSE OUTCOMES (COs)

CO1	Analyze and solve routine technical problems related to electrical systems by applying mathematics and science principles.
CO2	Explain how to used electrical tools, operate and maintain specific equipment in the Oil and Gas production plant
CO3	Explain how to perform corrective and preventive maintenance in electrical tasks.
CO4	Understand the work on electrical systems safely and efficiently.
CO5	Understand the electrical system and electrical equipment used in the Oil and Gas production plant.
CO6	To execute the principle and how to working process of the transformer and classification of transformer

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
								✓		
4	Approval	47th Academic Council Meeting								

UNIT-I **6**

Basic Principle Of Petroleum - Overview of Oil and Gas Processing -Wellhead Platform and Equipment

UNIT –II **6**

Introduction to Instrumentation -P & ID Drawing -Introduction to Distributed Control System (DCS)

UNIT –III **6**

Safety in Electrical Maintenance - Batteries and Chargers -Reading Electrical Diagrams -Cables and Conductors - Terminations and Splices - Motor Branch Circuit Protections

UNIT –IV **6**

Three Phase AC Induction Motors - AC Generator Maintenance -Fire & Gas Detection and Safety Systems and SIS -DC Generator -Construction& Principle- Types-Series,- Shunt & Compound Generator- EMF equation, Characteristics - (OCC & LCC). Armature reactions,- commutation Efficiency, Regulation & Applications. DC Motor- Construction& Principle. Types- Series, Shunt & Compound Motors. Characteristics curve-Applications. Necessity of starter- Construction and Working of- starters (3 point& 4 point). Speed control of DC Shunt-motor (armature & Field control. Traction System.- Trouble shooting –Care and maintenance.

UNIT-V **6**

Transformer –Principle -Construction- Classification of Transformers - EMF equation ,rating - Loading, Losses & Efficiency Regulation. Parallel Operation- Cooling methods, Transformer- oil testing. Care and maintenance,- Protective devices. Tap Changer – ON load and OFF- load. Auto transformer, Instrument- Transformer- CT & PT. Welding Transformer.

TEXT BOOKS

1. Fundamental Electrical circuits by Charles K.Alexandeer and Matthew NO Sadiku(2003)
2. Fundamental of Digital circuits 3rd edition by Kumar A Anandh

Course Coordinator **HOD**

AUDIT COURSES

P18ACEN001	AUDIT COURSE : ENGLISH FOR RESEARCH PAPER WRITING	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.V.C.Jain/Department of English				

COURSE OBJECTIVES:-

Understand the skills needed when writing a Title Ensure the good quality of paper at very first-time submission.

COURSE OUTCOMES (COs)

CO1	Recognize to prepare and Plan the word order, breaking of long sentences, structural formation of paragraph and being concise without any ambiguities.
CO2	Describe how to write abstract and introduction to any topic or project.
CO3	Relate the skills require for the discussions and conclusions.
CO4	Express the quality of paper and time management in writing skills.
CO5	Categorize the useful phrase and how to ensure the paper is as good.
CO6	Prepare the oral presentation in class using effective delivery strategies.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - 1: PLANNING AND PREPARATION : 6

Planning and Preparation - word order - breaking up long sentences, structuring, paragraphs and sentences, being concise and removing redundancy, avoiding ambiguity and vagueness.

UNIT-2 : ABSTRACT 6

Clarifying who did what - highlighting your findings - hedging and criticizing - paraphrasing and plagiarism - sections of a paper - abstracts - introduction.

UNIT -3 : DISCUSSION AND CONCLUSION 6

Review of the literature - methods - results - discussion - conclusions, the final check - key skills are needed when writing a title - key skills are needed when writing an abstract - key skills are needed when writing an introduction - skills needed when a review of the literature.

UNIT -4 : WRITING SKILLS 6

Skills are needed when writing the methods - skills needed when writing the results - skills are needed when writing the discussion - skills are needed when writing the conclusions.

UNIT -5: QUALITY AND TIME MAINTAINANCE 6

Useful phrases - how to ensure paper is as good as it could possibly be the first -time submission.

TEXT BOOKS :

1. Goldbort R (2006) Writing for Science, Yale University Press (Available on Google Books).
2. Day R(2006), How to Write and Publish a Scientific Paper, Cambridge University Press.

REFERENCE BOOKS :

1. HighmanN, Handbook of Writing for the Mathematical Sciences, SIAM, Highman's Book, 1st, Edition, 1998.
2.Adrian Wallwork, English for Writing Research Papers, Springer New York Dordrecht Heidelberg London, 2nd Edition, 2011.

Course Coordinator HOD

P18ACCE002	AUDIT COURSE : DISASTER MANAGEMENT	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.Jhoncy/ Dept. of Business Administration				

COURSE OBJECTIVES:

Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.

COURSE OUTCOMES (COs)

CO1	Identify the key concepts in disaster risk reduction and humanitarian response.
CO2	Determine the disaster risk reduction and humanitarian response policy from multiple perspectives.
CO3	Illustrate the standards of humanitarian response.
CO4	Criticize the practical relevance in specific types of disasters and conflict situations.
CO5	Evaluate the strengths and weakness of disaster management approaches.
CO6	Predict the planning and programming in different countries, particularly their home country or the countries they work .

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - : INTRODUCTION: **6**

Disaster : Definition - Factors and Significance - Difference between Hazard and Disaster - Natural and Manmade Disasters - Difference - Nature - Types and Magnitude.

UNIT - 2 : REPERCUSSIONS OF DISASTERS AND HAZARDS: **6**

Economic Damage - Loss Of Human And Animal Life - Destruction Of Ecosystem - Natural Disasters: Earthquakes - Volcanisms - Cyclones - Tsunamis - Floods - Droughts And Famines - Landslides And Avalanches - Man-made disaster.

UNIT -3 : DISASTER PRONE AREAS IN INDIA: **6**

Study Of Seismic Zones - Areas Prone To Floods And Droughts - Landslides And Avalanches - Areas Prone To Cyclonic And Coastal Hazards With Special Reference To Tsunami - Post-Disaster Diseases And Epidemics.

UNIT -4 : DISASTER PREPAREDNESS AND MANAGEMENT **6**

Preparedness: Monitoring Of Phenomena Triggering A Disaster Or Hazard - Evaluation Of Risk: Application Of Remote Sensing, Data From Meteorological And Other Agencies - Media Reports: Governmental And Community Preparedness.

UNIT -5 : RISK ASSESSMENT **6**

Disaster Risk: Concept And Elements - Disaster Risk Reduction, Global And National Disaster Risk Situation - Techniques Of Risk Assessment - Global Co- Operation In Risk Assessment And Warning, People's Participation In Risk Assessment - Strategies for Survival.

TEXT BOOKS:

1. R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies "'New Royal book Company.

REFERENCE BOOKS:

1. Sahni, PardeepEt.Al. (Eds.)," Disaster Mitigation Experiences And Reflections", Prentice Hall Of India, New Delhi.
2. Goel S. L. , Disaster Administration And Management Text And Case Studies" ,Deep &Deep Publication Pvt. Ltd., New Delhi.

Course Coordinator **HOD**

P18ACEN003	AUDIT COURSE : SANSKRIT FOR TECHNICAL KNOWLEDGE	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Ms.Subathra / Dept. of English				

COURSE OBJECTIVES:

Learners will get a working knowledge in illustrious Sanskrit, the scientific language in the world.

COURSE OUTCOMES (COs)

CO1	Define the learning of Sanskrit to improve brain functioning
CO2	Review the Learning of Sanskrit to develop the logic in mathematics, science & other subjects enhancing the memory power
CO3	Practice the engineering scholars equipped with Sanskrit will be able to explore the huge knowledge from ancient literature
CO4	Identify the uses of basic Sanskrit language
CO5	Estimate Ancient Sanskrit literature about science & technology can be understood
CO6	Develop the projects either individual or group on presentations.

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT -1 : INTRODUCTION: **6**

Alphabets, Consonants, Nouns Declensions; Nominative, Accusative(singular, dual and plural)

UNIT - 2 : BASIC OF SANSKRIT LIERATURE: **6**

Instrumental case, Dative, Ablative, and Indeclinables, verbal conjugation: first person, second person, third person: Present Tense.

UNIT - 3 : FUNDAMENTALS OF SANSKRIT ARCHITECTURE: **6**

Genitive, locative and Vocative Absolute, Masculine Gender, Feminine Gender and Neuter Gender.

UNIT -4 : VERBAL CONJUGATION: **6**

Verbal Conjugation: Past Tense and Future Tense Declensions ending in Rāmaḥ, Kaviḥ, Bhānuḥ, Mātṛ , Mālā

UNIT - 5 : TRANSLATION: **6**

Translation of simple sentences, Stories & selected Subhashitas

TEXT BOOKS:

1. "Abhyaspustakam" – Dr.Vishwas, Samskrita-Bharti Publication, New Delhi.
2. Sanskrit for Beginners by Dr. M. Narasimhacharyand Dr.S. Ramaratnam, N&R Publications, Chennai & New Delhi.

REFERENCE BOOKS :

1. "Teach Yourself Sanskrit" Prathama Deeksha-VempatiKutumbshastri, Rashtriya Sanskrit Sansthanam, New Delhi Publication.
2. "India's Glorious Scientific Tradition" Suresh Soni, Ocean books (P) Ltd., New Delhi.

Course Coordinator **HOD**

P18ACBA004	AUDIT COURSE : VALUE EDUCATION	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.Srinivasan/ Dept. of Business Administration				

COURSE OBJECTIVES:

Our objectives are to promote a new understanding and framework help learners to achieve positive and purposeful lives for themselves and their communities through engaging with values to guide and inform their behaviour.

COURSE OUTCOMES (COs)

CO1	Identify and describe feelings of self-worth that arise through striving for personal success in physical activity and sport
CO2	Demonstrate the tolerance of other people's abilities during physical activity and sport
CO3	Generalize the Values,attitudes that they need to develop in their class programmes
CO4	Choose the essential steps to become good leaders.
CO5	Select their role and contribution to the nation building.
CO6	Prepare to understand value of education and self- development

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT-I: **6**

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

UNIT-II: **6**

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

UNIT-III: **6**

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

UNIT-IV: **6**

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

UNIT-V: **6**

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

TEXT BOOKS:

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995).
2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.

REFERENCE BOOKS:

1. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.
2. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)
3. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.
4. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

Course Coordinator **HOD**

P18ACLW005	AUDIT COURSE : CONSTITUTION OF INDIA	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.Prakash/Dept. of Law				

COURSE OBJECTIVES:

To Understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.

COURSE OUTCOMES (COs)

CO1	Underline to address the growth of Indian opinion regarding modern Indian intellectuals
CO2	Express the constitutional role and entitlement to civil and economic rights
CO3	Utilize the emergence of nationhood in the early years of Indian nationalism.
CO4	Distinguish the role of socialism in India
CO5	Judge the commencement of the Bolshevik Revolution
CO6	Predict its impact on the initial drafting of the Indian Constitution

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT -1 : HISTORY OF MAKING OF THE INDIAN CONSTITUTION: 6

History - Drafting Committee, (Composition & Working)

UNIT -2 : PHILOSOPHY OF THE INDIAN CONSTITUTION: 6

Preamble - Salient Features - Directive Principles of State Policy - Fundamental Duties.

UNIT - 3 : CONTOURS OF CONSTITUTIONAL RIGHTS & DUTIES: 6

Fundamental Rights - Right to Equality - Right to Freedom - Right against Exploitation - Right to Freedom of Religion - Cultural and Educational Rights - Right to Constitutional Remedies.

UNIT -4 : ORGANS OF GOVERNANCE: 6

Parliament - Composition - Qualifications and Disqualifications - Powers and Functions - Executive President - Governor - Council of Ministers - Judiciary, Appointment and Transfer of Judges, Qualifications - Powers and Functions.

UNIT - 5 : LOCAL ADMINISTRATION & ELECTION COMMISSION : 6

District's Administration head: Role and Importance - Introduction, Mayor and role of Elected Representative CEO of Municipal Corporation - Pachayati raj: Introduction, PRI: Zila Pachayat - Elected officials and their roles - Introduction of Election Commission - Election Commission: Role and Functioning - Chief Election Commissioner and Election Commissioners - State Election Commission: Role and Functioning - Institute and Bodies for the welfare of SC/ST/OBC and women.

TEXT BOOKS:

1. The Constitution of India, 1950 (Bare Act), Government Publication.
2. Dr. S. N. Busi, Dr. B. R. Ambedkar framing of Indian Constitution, 1st Edition, 2015.

REFERENCE BOOKS:

1. M. P. Jain, Indian Constitution Law, 7th Edn., Lexis Nexis, 2014.
2. D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015.

Course Coordinator **HOD**

P18ACBA006	AUDIT COURSE : PEDAGOGY STUDIES	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Dr.Arunkumar / Dept. of Business Administration				

COURSE OBJECTIVES:

To inform programme design and policy making undertaken by the DfID, other agencies and researchers.

COURSE OUTCOMES (COs)

CO1	List common training so everyone teaches from the same curriculum
CO2	Describe to learners what is expected of them
CO3	Illustrate the teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy.
CO4	Inspect the review existing evidence on the review topic to inform programme design.
CO5	Assess how the outcomes of a single course align with larger outcomes for an entire program
CO6	Plan appropriate teaching strategies, materials and assessments

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - 1 : INTRODUCTION AND METHODOLOGY: 6

Aims and rationale, Policy background, Conceptual framework and terminology - Theories of learning - Curriculum - Teacher education - Conceptual framework, Research questions -Overview of methodology and Searching.

UNIT - 2 : THEMATIC OVERVIEW: 6

Pedagogical practices are being used by teachers in formal and informal classrooms in developing countries - Curriculum, Teacher education.

UNIT - 3 : EVIDENCE ON THE EFFECTIVENESS OF PEDAGOGICAL PRACTICES :-6

Methodology for the in depth stage: quality assessment of included studies - How can teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy? Theory of change - Strength and nature of the body of evidence for effective pedagogical practices.

UNIT - 4 : PROFESSIONAL DEVELOPMENT: 6

Alignment with classroom practices and follow up support - Peer support - Support from the head teacher and the community - Curriculum and assessment - Barriers to learning: limited resources and large class sizes

UNIT - 5 : Research gaps and future directions:- 6

Research design - Contexts - Pedagogy - Teacher education - Curriculum and assessment - Dissemination and research impact.

TEXT BOOKS:

1. Ackers J, Hardman F (2001) Classroom interaction in Kenyan primary schools, Compare, 31 (2): 245-261.
2. Agrawal M (2004) Curricular reform in schools: The importance of evaluation, Journal o Curriculum Studies, 36 (3): 361-379.
3. Akyeampong K (2003) Teacher training in Ghana - does it count? Multi-site teacher education research project (MUSTER) country report 1. London: DFID.

REFERENCE BOOKS:-

1. Akyeampong K, Lussier K, Pryor J, Westbrook J (2013) Improving teaching and learning of basic maths and reading in Africa: Does teacher preparation count? International Journal Educational Development, 33 (3): 272–282.
2. Alexander RJ (2001) Culture and pedagogy: International comparisons in primary education. Oxford and Boston: Blackwell.
3. Chavan M (2003) Read India: A mass scale, rapid, ‘learning to read’ campaign.

Course Coordinator **HOD**

P18ACBA007	AUDIT COURSE : PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTENMENT SKILLS	L	T	P	C
	Total Contact Hours – 30	2	0	0	0
	Prerequisite course – UG Level				
	Course Coordinator Name & Department:- Mr.Srinivasan/Dept.of Business Administration				

COURSE OBJECTIVES:-

To become a person with stable mind, pleasing personality and determination

COURSE OUTCOMES (COs)

CO1	Identify the way to achieve the highest goal happily
CO2	Review to awaken wisdom for learners
CO3	Schedule to study of Shrimad-Bhagwad-Geeta will help the student
CO4	Developing his personality and achieve the highest goal in life
CO5	Evaluate the person who has studied Geeta will lead the nation and mankind to peace and prosperity
CO6	Propose to study of Neetishatakam will help in developing versatile personality of students

Mapping of Course Outcomes with Program outcomes (POs)

(1/2/3 indicates strength of correlation) 3-High, 2-Medium, 1-Low

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

3	Category	Humanities & Social Studies (HS)	Basic Sciences (BS)	Engg Sciences (ES)	Professional Core (PC)	Core Elective (CE)	Non-Major Elective (NE)	Open Elective (OE)	Any other	Project/Term Paper/ Seminar/
									✓	
4	Approval	47th Academic Council Meeting								

UNIT - 1 : HOLISTIC DEVELOPMENT OF PERSONALITY- I **6**

Neetisatakam-Holistic development of personality : Verses- 19,20,21,22 (wisdom) - Verses- 29,31,32 (pride & heroism) - Verses- 26,28,63,65 (virtue) - Verses- 52,53,59 (dont's) - Verses- 71,73,75,78 (do's).

UNIT - 2 : BHAGWADGEETA: **6**

Approach to day to day work and duties. ShrimadBhagwadGeeta: Chapter 2-Verses 41, 47,48. Chapter 3-Verses 13, 21, 27, 35.

UNIT - 3: BHAGWAD GEETA:- **6**

ShrimadBhagwadGeeta: Chapter 6-Verses 5, 13, 17, 23, 35, Chapter 18-Verses 45, 46, 48.

UNIT - 4: BASIC KNOWLEDGE: **6**

Statements of basic knowledge. ShrimadBhagwadGeeta: Chapter2-Verses 56, 62, 68. Chapter 12 - Verses 13,14, 15, 16,17, 18.

UNIT - 5: ROLE MODEL : - **6**

Personality of Role model. Shrimad BhagwadGeeta: Chapter2-Verses 17, Chapter 3-Verses 36,37,42, - Chapter 4-Verses 18, 38,39 - Chapter18 – Verses 37,38,63.

TEXT BOOK:

1. P.Gopinath, "Bhartrihari's Three Satakam (Niti-sringar-vairagya)", Rashtriya Sanskrit Sansthanam, New Delhi.

REFERENCE BOOK:

1. "Srimad Bhagavad Gita" by Swami SwarupanandaAdvaita Ashram (Publication Department), Kolkata.

2. http://openlearningworld.com/section_personality_development.html

Course Coordinator **HOD**