DEPARTMENT OF COMPUTER SCIENCE

POOMPUHAR COLLEGE(AUTONOMOUS)
MELAIYUR

COURSE STRUCTURE FOR UG(B.C.A)COURSE

(Applicable to the candidates admitted from the academic year(2019-2020)onwards)

SEMESTER	PART	SUBJECT	HRS	CREDIT	EXAM	MARKS
I	I	Tamil-I	6	3	3	100
	II	English-I	6	3	3	100
	III	First Allied I-	5	3	3	100
		First Allied II-	3	----	----	----
		CC- I PROGRAMMING IN C	5	4	3	100
		CP-1 C Programming Lab	3	2	3	100
	IV	Value Education	2	2	3	100
		Total	30	17`		600
II	I	Tamil-II	6	3	3	100
	II	English-II	6	3	3	100
	III	First Allied II	2	3	3	100
		First Allied III	5	4	3	100
		CC-2 Data Structure and algorithms	5	5	3	100
		CP2- Data Structure using c Lab	4	3	3	100
	IV	Environmental studies	2	2	3	100
		Total	30	23		700

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SEMESTER	PART	SUBJECT	HRS	CREDIT	EXAM	MARKS
III	I	Tamil-III	6	3	3	100
	II	English-II	6	3	3	100
	III	Second Allied I- Financial accounting	5	3	3	100
		Second Allied II- DIGITAL COMPUTER FUNDAMENTAL	2	----	----	----
		CC3 Computer Networks	6	4	3	100
		CP-3 Tally Lab	3	2	3	100
	IV	NME-I	2	2	3	100
		Total	30	17		600
IV	I	Tamil-IV	6	3	3	100
	II	English-IV	6	3	3	100
	III	Second Allied II DIGITAL COMPUTER FUNDAMENTAL	3	3	3	100
		Second Allied III Computer organization and architecture	5	4	3	100
		CC-4 Programming in Java	4	4	3	100
		CP4- programming in java lab	4	3	3	100
	IV	SBE-1 OFFICE AUTOMATION	2	2	3	100
		NME-II	2	2	3	100
		Total	30	24		700

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(Applicable to the candidates admitted from the academic year(2019-2020)onwards)

SEMESTER	PART	SUBJECT	HRS	CREDIT	EXAM	MARKS
V	III	CC-V RDBMS	5	5	3	100
		CC-VI Operating system	5	5	3	100
		CC-VII Web Technology	6	6	3	100
		CP-V SQL PL/SQL Lab	5	5	3	100
		MBE-I Data mining and warehousing	5	5	3	100
	IV	SBE-II **QUANTITATIVE APTITUDE**	2	2	3	100
		SBE-III web technology Lab	2	2	3	100
		Total	30	30		600
VI	III	CC-VIII Mobile computing	6	5	3	100
		CC-IX software engineering	5	5	3	100
		CP-VI C ++ Lab	5	5	3	100
		MBE-II Object oriented programming with C++	5	5	3	100
		MBE-III E- Commerce technology	6	5	3	100
	IV	Soft skill development	2	2	3	100
		Gender studies	2	2	3	100
		Extension activity	1	1	--	---
		Total	30	30		700

OUTCOME BASED EDUCATION

Under Graduate – Science

Programme Outcomes:

PO1: Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.

PO2: Critical Thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.

PO3: Problem Solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's earning to real life situations.

PO4: Analytical & Scientific Reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints. Ability to analyse, interpret and draw conclusions from quantitative / qualitative data; and critically evaluate ideas, evidence, and experiences from an open minded and reasoned perspective.

PO5: Self-directed & Lifelong Learning: Ability to work independently, identify and manage a project. Ability to acquire knowledge and skills, including "learning how to learn", through self-placed and self-directed learning aimed at personal development, meeting economic, social and cultural objectives.

Program specific Outcomes for BCA

PO1: Apply knowledge of computing fundamentals, mathematics and domain knowledge appropriate for the conceptualization of computing models

PO2: Identify, analyze, formulate, design and develop the real world requirements by critical thinking for complex problems in IT enabled services.

PO3: Recognize the need and adopt appropriate tools and techniques for modern computing practices.

PO4: make use of ethical practices and cyber regulations in the computing field for managing software projects.

PO5: Understand the societal environmental and moral values and its impact with respect to computing, communication, literary and professional practice.

COURSE STRUCTURE FOR B.C.A 2019-20

CC- I PROGRAMMING IN C

COURSE OBJECTIVES

 To develop programming skills using the fundamentals and basics of C language

 To develop programs using the basic elements like control statements, Arrays and Strings

UNIT - I

C fundamentals Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical, Assignment and Conditional Operators - Library functions.

UNIT - II

Data input output functions - Simple C programs - Flow of control - if, if-else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.

UNIT - III

Functions -Definition - proto-types - Passing arguments - Recursions. Storage Classes - Automatic, External, Static, Register Variables - Multi-file programs.

UNIT - IV

Arrays - Defining and Processing - Passing arrays to functions - Multi-dimension arrays - Arrays and String. Structures - User defined data types - Passing structures to functions - Self-referential structures - Unions - Bit wise operations.

UNIT - V

Pointers - Declarations - Passing pointers to Functions - Operation in Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers - Files: Creating Processing, Opening and Closing a data file.

TEXT BOOK

1. E.Balagurusamy, “Programming in ANSI C”, Fifth Edition, Tata McGraw Hill.

REFERENCE BOOKS

1. B.W. Kernighan and D M.Ritchie, “The C Programming Language”, 2nd Edition, PHI, 1988.

2. H. Schildt, “C: The Complete Reference”, 4th Edition. TMH Edition, 2000.

3. Gottfried B.S, “Programming with C”, Second Edition, TMH Pub. Co. Ltd., New Delhi 1996.

4. Kanetkar Y., “Let us C”, BPB Pub., New Delhi, 1999.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1.Read, understand data types ,constant and variable in C language.

2.define data input and output function.

3.Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

4.Write programs arrays and function.

5.Know concepts in problem solving

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	2	2	2	3	2
CO3	3	3	3	3	2
CO4	2	3	2	2	2
CO5	2	3	3	3	2

CP I- C PROGRAMMING LAB

COURSE OBJECTIVES

 It aims to train the student to the basic concepts of the C-programming language

 To improve the programming skills through C language

I Summation of Series

1. Sin(x), 2. Cos(x), 3. Exp(x) (Comparison with built in functions)

II String Manipulation

1. Counting the number of vowels, consonants, words, white spaces in a line of text and array of lines.
2. Reverse a string and check for palindrome.
3. Sub string detection, count and removal.
4. Finding and replacing substrings.

III Recursion

1. ${}_nP_r$, ${}_nC_r$ 2. GCD of two numbers 3. Fibonacci sequence 4. Maximum & Minimum

IV Matrix Manipulation

1. Addition and Subtraction 2. Multiplication 3. Transpose, and trace of a matrix
4. Determinant of a Matrix

V Sorting and Searching

1. Insertion Sort 2. Bubble Sort 3. Linear Search 4. Binary Search

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1.Read, understand and trace the execution of programs written in C language.

2.Write the C code for a given algorithm.

3.Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

4.Write programs that perform operations using derived data types.

5.Know concepts in problem solving

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	2	2
CO2	2	2	2	3	3
CO3	2	3	3	3	2
CO4	2	3	2	2	2
CO5	3	2	3	3	2

1) 1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC-II. DATA STRUCTURES AND ALGORITHMS

COURSE OBJECTIVES

- To introduce the various data structures and their implementations
- Study various sorting algorithms

UNIT I

Introduction of algorithms, analyzing algorithms, Arrays : Representation of Arrays, Implementation of Stacks and queues, Application of Stack: Evaluation of Expression - Infix to postfix Conversion - Multiple stacks and Queues, Sparse Matrices.

UNIT II

Linked list : Singly Linked list - Linked stacks and queues - polynomial addition - More on linked Lists - Doubly linked List and Dynamic Storage Management - Garbage collection and compaction.

UNIT III

Trees: Basic Terminology - Binary Trees - Binary Tree representations - Binary trees - Traversal - More on Binary Trees - Threaded Binary trees - counting Binary trees. Graphs: Terminology and Representations - Traversals, connected components and spanning Trees, Single Source Shortest path problem.

UNIT IV

Symbol Tables : Static Tree Tables - Dynamic Tree Tables - Hash Tables : Hashing Functions - overflow Handling. External sorting : Storage Devices - sorting with Disks : K-way merging - sorting with tapes.

UNIT V

Internal sorting : Insertion sort - Quick sort - 2 way Merge sort - Heap sort - shell sort - sorting on keys. Files: Files, Queries and sequential organizations - Index Techniques - File organization.

TEXT BOOKS

1. Ellis Horowitz, Sartaj Shani, Data Structures, Galgotia publication.

REFERENCE BOOKS

1. Data structures Using C Aaron M. Tenenbaum, Yedidyah Langsam, Moshe J.Augenstein, Kindersley (India) Pvt. Ltd.,
2. Data structure and Algorithms, Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, Pearson Education Pvt. Ltd.,

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Read, understand analysis of algorithms.
2. Define linked list and arrays.
3. Binary tree representation.
4. define Dynamic Tree Tables, K-way merging - sorting with tapes
5. Know concepts Files: Files, Queries and sequential organizations

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	**2**	**3**	**3**	**2**	**2**
CO2	**2**	**2**	**2**	**3**	**3**
CO3	**2**	**3**	**3**	**3**	**2**
CO4	**2**	**3**	**2**	**2**	**2**
CO5	**3**	**2**	**3**	**3**	**2**

1) 1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CP II DATA STRUCTURES USING C

1. Write a C program to create two array list of integers. Sort and store the elements of both of them in third list.
2. Write a C program to multiply two matrices A and B and store the resultant matrix in C using arrays.
3. Write a C program to experiment the operation of STACK using array.
4. Write a C program to create menu driven options to implement QUEUE to perform the following
(i) Insertion (ii) Deletion (iii) Modification (iv) Listing of elements
5. Write a C program to create Linked list representations of employee records and do the following operations using pointers.
(i) To add a new record.
(ii) To delete an existing record.
(iii) To print the details about an employee.
(iv) To find the number of employees in the structure.
6. Write a C Program to count the total nodes of the linked list.
7. Write a C program to insert an element at the end of the linked list.
8. Write a C program to insert an element at the beginning of a doubly linked list.
9. Write a C program to display the hash table, using the mid square method.
10. Write a program to demonstrate Binary Search.
11. Write a C program to insert nodes into a Binary tree and to traverse in pre order.
12. Write a C program to traverse the given binary tree using all traversal methods.
13. Write a C program to arrange a set of numbers in ascending order using QUICK SORT.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1.Read, understand and trace the execution of programs written in C language.
2.Write the C code for a given algorithm.
3.Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
4.Write programs that perform operations using derived data types.
5.Know concepts in problem solving

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	2	2
CO2	2	2	2	3	3
CO3	2	3	3	3	2
CO4	2	3	2	2	2
CO5	3	2	3	3	2

1) 1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

SBE-I System assembling Lab

1.Front panel indicators & switches and Front side & rear side Connectors.

2 Familiarize the computer system Layout: Marking positions of SMPS, Motherboard, FDD, HDD, CD, DVD and add on cards.

3 Configure BIOS setup program and troubleshoot the typical problems using BIOS utility.

4 Install Hard Disk and configure to the Pc's
5 Install and Configure a DVD Writer and a Blu-ray Disc writer and recording DVD and Blu-ray disk.
6 Printer Installation and Servicing and troubleshoot
7 Install and configure Scanner, Web c*am*, Cell phone and bio-metric device with system and troubleshoot the problems
8 Assemble a system with add on cards and check the working condition of the system and install OS.
9 Install and Configure Dual OS Installation
10 Assembling and Disassembling of Laptop to identify the parts and to install OS and configure it.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1.Explain basic principles of hardware and trouble shooting
2.Define and demonstrate fit in motherboard and Ram
3.Design and implement input and output device.
4Design and implement video subsystem and audio sub system.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	2
CO2	3	2	0	3	0
CO3	3	2	0	3	3
CO4	3	0	3	2	2

CO5	3	3	2	2	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC-III. COMPUTER NETWORKS

COURSE OBJECTIVES

- To understand the concept of Computer network
- To impart knowledge about networking and inter networking devices

UNIT – I

Introduction – Network Hardware – Software – Reference Models – OSI and TCP/IP Models – Example Networks: Internet, ATM, Ethernet and Wireless LANs - Physical Layer – Theoretical Basis for Data Communication - Guided Transmission Media

UNIT - II

Wireless Transmission - Communication Satellites – Telephone System: Structure, Local Loop, Trunks and Multiplexing and Switching. Data Link Layer: Design Issues – Error Detection and Correction.

UNIT - III

Elementary Data Link Protocols - Sliding Window Protocols – Data Link Layer in the Internet - Medium Access Layer – Channel Allocation Problem – Multiple Access Protocols – Bluetooth.

UNIT - IV

Network Layer - Design Issues - Routing Algorithms - Congestion Control Algorithms – IP Protocol – IP Addresses – Internet Control Protocols.

UNIT - V

Transport Layer - Services - Connection Management - Addressing, Establishing and Releasing a Connection – Simple Transport Protocol – Internet Transport Protocols (ITP) - Network Security: Cryptography.

TEXT BOOK

1. A. S. Tanenbaum, “Computer Networks”, 4th Edition, Prentice-Hall of India, 2008.

REFERENCE BOOKS

1. B. A. Forouzan, “Data Communications and Networking”, Tata McGraw Hill, 4th Edition, 2007.
2. F. Halsall, “Data Communications, Computer Networks and Open Systems”, Pearson Education, 2008.
3. D. Bertsekas and R. Gallagher, “Data Networks”, 2nd Edition, PHI, 2008.
4. Lamarca, “Communication Networks”, Tata McGraw- Hill, 2002

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of communication networks
2. Define and demonstrate the use OSI reference model”.
3. Design and implement a TCP IP protocol.

4. Design and implement of routers and switching
5. Define https and www.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	2
CO2	3	3	2	3	2
CO3	3	3	2	3	3
CO4	3	2	3	2	2
CO5	2	3	3	2	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

SECOND ALLIED –II . DIGITAL COMPUTER FUNDAMENTALS

COURSE OBJECTIVES

 It aims to train the student to the basic concepts of Digital Computer Fundamentals

 To impart the in-depth knowledge of logic gates, Boolean algebra, combinational circuits and sequential circuits.

UNIT – I

Number Systems and Codes: Number System – Base Conversion – Binary Codes – Code Conversion. Digital Logic: Logic Gates – Truth Tables – Universal Gates.

UNIT – II

Boolean Algebra: Laws and Theorems – SOP, POS Methods – Simplification of Boolean Functions – Using Theorems, K-Map, Prime – Implicant Method – Binary Arithmetic: Binary Addition – Subtraction – Various Representations of Binary Numbers – Arithmetic Building Blocks – Adder – Subtractor.

UNIT – III

Combinational Logic: Multiplexers – Demultiplexers – Decoders – Encoders – Code Converters – Parity Generators and Checkers.

UNIT – IV

Sequential Logic: RS, JK, D, and T Flip-Flops – Master-Slave Flip-Flops. Registers: Shift Registers – Types of Shift Registers.

UNIT – V

Counters: Asynchronous and Synchronous Counters - Ripple, Mod, Up-Down Counters– Ring Counters. Memory: Basic Terms and Ideas –Types of ROMs – Types of RAMs.

TEXT BOOK

1. V.Rajaraman and T.Radhakrishnan, *Digital Computer Design*, Prentice Hall of India, 2001

2. D.P.Leach and A.P.Malvino, *Digital Principles and Applications* – TMH – Fifth Edition – 2002.

3. M. Moris Mano, *Digital Logic and Computer Design*, PHI, 2001.

4. T.C.Bartee, *Digital Computer Fundamentals*, 6th Edition, Tata McGraw Hill, 1991.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

2) Identify the logic gates and their functionality.

3) Perform number conversions from one system to another system.
4) Design basic electronic circuits (combinational circuits).
5) Perform a comparative analysis of the components of different memory UNITs.
6) Perform number conversions.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	**2**	**3**	**3**	**2**	**3**
CO2	**2**	**2**	**2**	**2**	**2**
CO3	**3**	**2**	**3**	**3**	**2**
CO4	**2**	**3**	**2**	**2**	**3**
CO5	**3**	**3**	**2**	**3**	**2**

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC –IV PROGRAMMING IN JAVA

COURSE OBJECTIVES

- To understand the basic programming constructs of Java Language.
- To explore the features of Java by coding.

UNIT I

Genesis of Java: Creation of Java – why java is important to internet – The Java Buzz words – An overview of Java Object Oriented Programming. Data types – Variables – Type conversion and casting – Automatic type promotion in Expressions – Strings. Arrays: One Dimensional Array – Multi Dimensional Array – Operators – Control statements.

UNIT II

Class Fundamentals – Declaring objects – Assigning object Reference variables – Introducing Methods – Constructors – Garbage collection – Finalize () Method – Stack class. A Closer Look at Methods and classes: Overloading Methods – Argument passing – Nested and Inner classes – String class – Using command line arguments. Inheritance Basics & Types - Method overriding – Dynamic Method Dispatch – Using Abstract class – Using final with inheritance.

UNIT III

Packages & Interface - Exception Handling - Creating your own Exception subclasses. Multithreaded Programming: Java Thread Model – Main Thread – Creating a Thread - Creating Multiple Threads–Using is Alive () and join () – Thread priorities – Synchronization – Inter thread Communication.

UNIT IV

I/O & Applets : I/O Basics Reading console Input – writing console output – The Print Writer class – Reading and Writing Files. The Applet class: - Applet Architecture – Applet Skeleton – Applet Display method – Requesting Repainting – HTML APPLET tag- Passing Parameters to Applet – Audio Clip Interface. Event Handling Mechanisms – Delegation Event Model – Event classes – Sources of Events – Event Listener Interfaces – Adapter Classes.

UNIT V

AWT Classes – Window fundamentals – working with Frame Windows - working with Graphic Using AWT controls: Controls fundamentals – Labels – using Buttons – Applying check Boxes – Check Box group – Choice controls – Using a Text field – Using a Text Area – Understanding Layout Managers (Flow Layout only) – Menu Bars and Menus.

TEXT BOOK

1. Herbert Schildt, “Java - The Complete Reference”, Ninth Edition, McGraw-Hill Education, 2014

REFERENCE BOOKS

1. E. Balagurusamy, “Programming with Java”, Tata McGraw-Hill Education India, 2014
2. Sachin Malhotra & Saurabh Choudhary, “Programming in JAVA”, 2nd Ed, Oxford Press

3. Sagayaraj, Denis, Karthik and Gajalakshmi, “JAVA Programming for Core and Advanced Learners”, 2018

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of Java programming language
2. Define and demonstrate the use of built-in data structures “lists” and
3. “dictionary”.
4. Design and implement a program to solve a real world problem.
5. Design and implement GUI application and how to handle exceptions and files.

Make database connectivity in Java programming language.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	3	2	2	2	3
CO3	2	3	3	2	3
CO4	2	3	2	3	3
CO5	3	2	3	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CP4 -PRACTICAL: JAVA PROGRAMMING
COURSE OBJECTIVES

 To be knowledgeable enough about basic Java language syntax and semantics to be able to successfully read and write Java computer programs;

 To implement interfaces, inheritance, and polymorphism as programming techniques and apply exceptions handling.

1. Define a class called Student with the attributes name, reg_number and marks obtained in four subjects(m1,m2,m3,m4).Write a suitable constructor and methods to find the total mark obtained by the student and display the details of the student.

2. Write a Java program to find the area of a square, rectangle and triangle by (i) Overloading Constructor (ii) Overloading Method.

3. Write a java program to add two complex numbers. [Use passing object as argument and return object].

4. Define a class called Student_super with data members name, roll number and age. Write a suitable constructor and a method output () to display the details.

5. Derive another class Student from Student_super with data members height and weight. Write a constructor and a method output () to display the details which overrides the super class method output().[Apply method Overriding concept].

6. Write a java program to create an interface called Demo, which contains a double type constant, and a method called area () with one double type argument. Implement the interface to find the area of a circle.

7. Write a java program to create a thread using Thread class.

8. Demonstrate Java inheritance using extends keyword.

9. Create an applet with four Checkboxes with labels MARUTI-800, ZEN, ALTO and ESTEEM and a Text area object. The program must display the details of the car while clicking a particular Checkbox.

10. Write a Java program to throw the following exception,

1) Negative Array Size 2) Array Index out of Bounds

11 Write a java program to create a file menu with option New, Save and Close, Edit menu with option cut, copy, and paste.

12. Write a java programming to illustrate Mouse Event Handling

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of Java programming language
2. Define and demonstrate the use of built-in data structures "lists" and
3. Design and implement a program to solve a real world problem.
4. Design and implement GUI application and how to handle exceptions and files.

Make database connectivity in Java programming language.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	2	2	2	2	2
CO3	2	3	3	2	3
CO4	2	3	2	3	2
CO5	2	3	3	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

Second Allied -COMPUTER ORGANIZATION AND ARCHITECTURE

COURSE OBJECTIVES

 To understand the concept of computer architecture

 To understand the working of a central processing unit & architecture of a computer.

UNIT I

Basic of Computer, Von Neumann Architecture, Generation of Computer, Classification of Computers, Instruction Execution. Register Transfer and Micro operations: Register Transfer, Bus and Memory Transfers, Three-State Bus Buffers, Memory Transfer, Micro-Operations, Register Transfer Micro-Operations, Arithmetic Micro-Operations, Logic Micro-Operations, Shift Micro-Operations.

UNIT II

Stack Organization, Register Stack, Memory Stack, Reverse Polish Notation. Instruction Formats, Three- Address Instructions, Two – Address Instructions, One - Address Instructions, Zero - Address Instructions, RISC Instructions, Addressing Modes. RISC & CISC and their characteristics.

UNIT III

Addition And Subtraction With Signed-Magnitude, Multiplication Algorithm, Booth Multiplication Algorithm, Array Multiplier, Division Algorithm, Hardware Algorithm, Divide Overflow, Floating-Point Arithmetic Operations, Decimal Arithmetic Operations, BCD Adder, BCD Subtraction.

UNIT IV

Modes Of Transfer, Priority Interrupt, DMA, Input-Output Processor (IOP), CPU-IOP Communication. Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory, Associative Memory.

UNIT V

Control memory – Address sequencing – Design of Control unit. Pipelining: Parallel Processing, Pipelining - Arithmetic Pipeline, Instruction Pipeline. Multiprocessors: Characteristics of Multiprocessors, Interconnection Structure: Time-Shared Common Bus, Multi-Port Memory, Crossbar Switch, Multistage Switching Network, Hypercube Interconnection.

BOOKS FOR STUDY AND REFERENCE

1. “Computer System Architecture”, M.Morris Mano.
2. “Computer System Architecture”, John. P. Hayes.
3. “Computer Organization, C. Hamacher, Z. Vranesic, S.Zaky.
4. “Computer Architecture and parallel Processing “, Hwang K. Briggs.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of computer organization architecture
2. Define stack organization policy notation
3. Design Addition And Subtraction With Signed-Magnitude,

4.Explain memory management system.

Make database connectivity in Java programming language.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	2	2	2	2	2
CO3	3	2	3	2	3
CO4	2	3	2	3	2
CO5	3	3	2	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

SBE1- OFFICE AUTOMATION

I. MS-WORD

1. Text Manipulation: Write a paragraph about your institution and Change the font size and type, Spell check, Aligning and justification of Text
2. Bio data: Prepare a Bio-data.
3. Find and Replace: Write a paragraph about yourself and do the following. Find and Replace - Use Numbering Bullets, Footer and Headers.
4. Tables and manipulation: Creation, Insertion, Deletion (Columns and Rows). Create a mark sheet.
5. Mail Merge: Prepare an invitation to invite your friends to your birthday party. Prepare at least five letters.

II. MS-EXCEL

1. Data sorting-Ascending and Descending (both numbers and alphabets)
2. Mark list preparation for a student
3. Individual Pay Bill preparation.
4. Invoice Report preparation.
5. Drawing Graphs. Take your own table.

III. MS-POWERPOINT

1. Create a slide show presentation for a seminar.
2. Preparation of Organization Charts
3. Create a slide show presentation to display percentage of marks in each semester for all students

1. Use bar chart (X-axis: Semester, Y-axis: % marks).
2. Use different presentation template different transition effect for each slide.

E-REFERENCES

1.https://ptgmedia.pearsoncmg.com/images/9780735623026/samplepages/9780735623026.pdf
2. https://www.dit.ie/media/ittraining/msoffice/MOAC_Excel_2016_Core.pdf
3.https://ptgmedia.pearsoncmg.com/images/9780735697799/samplepages/9780735697799.pdf

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of text manipulation
2. Define find and replace, and bullets and numbering
3. Define table management.
4. Design slide show presentation for seminar

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	0	2	3	2	0
CO3	0	2	3	0	3
CO4	0	3	2	3	0
CO5	0	3	2	3	0

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC V -RELATIONAL DATABASE MANAGEMENT SYSTEMS

COURSE OBJECTIVES

 To describe a sound introduction to the discipline of database management systems.

 To give a good formal foundation on the relational model of data and study the SQL in detail.

UNIT - I

Introduction: Database System Applications-DBMS Vs. File System - View of Data- Data Model Database Languages - Database users and Administrators - Transaction Management - Database System Structure - Application Architecture. Data Models: Basic Concepts - Constraint- Keys- ER Diagram - Weak Entity - Extended ER Features - UML; Relational Model: Structure of Relational Databases - Relational Algebra - Views.

UNIT – II

SQL: Background-Basic Structure-Set Operation-Aggregate Function-Null Values-Nested Sub Queries - Views - Modification of the Database - Data Definition Language - Embedded SQL - Dynamic SQL.

UNIT-III

Advance SQL : Integrity and Security: Domain - Constraint - Referential Integrity - assertions - Triggers - Security and Authorization - Authorization in SQL - Encryption and Authentication.

UNIT - IV

Relational Database Design: First Normal Form - Pitfalls in Relational Database Design-Functional Dependencies (Second Normal Form) - Boyce-Codd Normal Form - Third Normal Form - Fourth Normal Form - Overall Database Design Process.

UNIT-V

Transaction Management: Transaction concepts - States - Serializability. Lock based concurrency control: Locks - Granting - Two-Phase Locking protocol. Time stamp based protocol: Timestamps - Timestamp ordering protocol - Dead lock handling.

TEXT BOOK

1. A Silberschatz, H Korth, S Sudarshan, "Database System and Concepts", 5th Edition McGraw-Hill, 2005. Tamilnadu State Council for Higher Education

REFERENCE BOOKS

1. Alexix Leon & Mathews Leon, "Essential of DBMS", 2nd reprint, Vijay Nicole Publications, 2009.

2. Alexix Leon & Mathews Leon, "Fundamentals of DBMS", 2nd Edition, Vijay Nicole Publications, 2014.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. 1.Describe the database architecture and the ER diagram for real world applications.
2. Knowledge about the relational algebra and calculus.
3. Knowledge about the normalization forms.
4. Explain the storage and accessing of data.
5. Programming skills in SQL and PL/SQL.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	3	3
CO2	3	3	1	3	3
CO3	3	1	3	1	3
CO4	2	2	1	2	2
CO5	2	1	3	1	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC-VI OPERATING SYSTEMS

COURSE OBJECTIVES

- To introduce basic concepts and functions of operating systems and understand the concept of process, thread and resource management
- To understand various Memory, I/O and File management techniques.

UNIT - I

Introduction - History of operating system- Different kinds of operating system – Operating system concepts - System calls-Operating system structure.

UNIT - II

Processes and Threads: Processes - threads - thread model and usage - inter process communication.

UNIT - III

Scheduling - Memory Management: Memory Abstraction - Virtual Memory - Page replacement algorithms.

UNIT - IV

Deadlocks: Resources- introduction to deadlocks - deadlock detection and recovery - deadlocks avoidance - deadlock prevention. Multiple processor system: multiprocessors - multi computers.

UNIT - V

Input / Output: principles of I/O hardware - principles of I/O software. Files systems: Files - directories - files systems implementation - File System Management and Optimization.

TEXT BOOK

1. Andrew S. Tanenbaum, "Modern Operating Systems", 2nd Edition, PHI private Limited, New Delhi, 2008.

REFERENCE BOOKS

1. William Stallings, "Operating Systems - Internals & Design Principles",5thEdition, Prentice - Hall of India private Ltd, New Delhi, 2004.
2. Sridhar Vaidyanathan, "Operating System", 1st Edition,Vijay Nicole Publications, 2014.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Knowledge in basics of OS.
2. Knowledge pertaining about scheduling algorithms and deadlock.
3. Knowledge in memory management.
4. Explore in file concepts.
5. Knowledge in UNIX OS.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	2	3	3	3	3
CO3	2	3	3	3	2
CO4	3	3	2	2	2
CO5	2	3	3	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC VII -WEB TECHNOLOGY

COURSE OBJECTIVES

- Study the various HTML tags and design simple web pages
- To study the scripting language Java Script

UNIT – I

Structuring Documents for the Web: Introducing HTML and XHTML, Basic Text Formatting, Presentational Elements, Phrase Elements, Lists, Editing Text, Core Elements and Attributes, Attribute Groups. Links and Navigation: Basic Links, Creating Links with the <a> Element, Advanced E- mail Links. Images, Audio, and Video: Adding Images Using the <img> Element, Using Images as Links Image Maps, Choosing the Right Image Format, Adding Flash, Video and Audio to your web pages.

UNIT – II

Tables: Introducing Tables, Grouping Section of a Table, Nested Tables, Accessing Tables. Forms: Introducing Forms, Form Controls, Sending Form Data to the Server. Frames: Introducing Frameset, <frame> Element, Creating Links Between Frames, Setting a Default Target Frame Using <base> Element, Nested Framesets, Inline or Floating Frames with <iframe>.

UNIT – III

Cascading Style Sheets: Introducing CSS, Where you can Add CSS Rules. CSS Properties: Controlling Text, Text Formatting, Text Pseudo Classes, Selectors, Lengths, Introducing the Box Model. More Cascading Style Sheets: Links, Lists, Tables, Outlines, The :focus and :activate Pseudo classes Generated Content, Miscellaneous Properties, Additional Rules, Positioning and Layout wit, Page Layout CSS , Design Issues.

UNIT - IV

Java Script: How to Add Script to Your Pages, Variables and Data Types – Statements and Operators, Control Structures, Conditional Statements, Loop Statements – Functions - Message box, Dialog Boxes, Alert Boxes, Confirm Boxes, Prompt Boxes.

UNIT – V

Working with JavaScript: Practical Tips for Writing Scripts, JavaScript Objects: Window Object - Document object - Browser Object - Form Object - Navigator object Screen object - Events, Event Handlers, Forms – Validations, Form Enhancements, JavaScript Libraries.

TEXT BOOKS

1. Jon Duckett, Beginning HTML, XTML, CSS and Java script **,** Wiley Publishing

REFERENCES BOOKS

1.Chris Bates, “Web Programming”, Wiley Publishing 3d Edition.

2. M. Srinivasan, “Web Technology: Theory and Practice”, Pearson Publication

Outcomes

On the successful completion of this course, Students will be able to:

- Design a web page with Web form fundamentals and web control classes
- Recognize the importance of tables and frames
- Explain CSS Addition rules and design issues

Define java script, data types loop statement, function and validation .

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	3	2
CO2	3	3	2	3	2
CO3	2	3	2	2	3
CO4	2	2	2	3	3
CO5	3	3	2	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

MBE –I DATA MINING AND WAREHOUSING

COURSE OBJECTIVES

- To introduce the basic concepts and techniques of Data Mining
- To study the basic concepts of cluster analysis
- To study a set of typical clustering methodologies, algorithms, and applications

UNIT – I

Introduction: Data mining – Functionalities – Classification – Introduction to Data Warehousing – Data Preprocessing : Preprocessing the Data – Data cleaning – Data Integration and Transformation – Data Reduction

UNIT - II

Data Mining, Primitives, Languages and System Architecture: Data Mining – Primitives – Data Mining Query Language, Architecture of Data mining Systems. Concept Description, Characterization and Comparison: Concept Description, Data Generalization and Summarization, Analytical Characterization, Mining Class Comparison – Statistical Measures.

UNIT - III

Mining Association Rules: Basic Concepts – Single Dimensional Boolean Association Rules From Transaction Databases, Multilevel Association Rules from transaction databases – Multi dimension Association Rules from Relational Database and Data Warehouses.

UNIT - IV

Classification and Prediction: Introduction – Issues – Decision Tree Induction – Bayesian Classification – Classification of Back Propagation. Classification based on Concepts from Association Rule Mining – Other Methods. Prediction – Introduction – Classifier Accuracy.

UNIT - V

Cluster Analysis: Introduction – Types of Data in Cluster Analysis, Petitioning Methods – Hierarchical Methods-Density Based Methods – GRID Based Method – Model based Clustering Method

1. **REFERENCE BOOK** K.P. Soman , Shyam Diwakar, V.Ajay "Insight into Data Mining Theory Practice ", Prentice Hall of India Pvt. Ltd, New Delhi

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of data mining and warehouse
2. Define data clearing and data reduction
3. Design and implement a classification and back propogation.

4.Design and implement multimedia data mining and text mining

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	3	2
CO2	3	3	0	2	3
CO3	3	3	2	3	3
CO4	3	0	3	2	2
CO5	2	3	3	3	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CP –V PRACTICAL – SQL AND PL/SQL

COURSE OBJECTIVES

- Study the various DDL, DML commands.
- Write queries in SQL to retrieve any type of information from a data base.

Demonstrate the following SQL commands and can take any back end RDBMS system for implementation purpose.

1. Data Definition of Base Tables.

2. DDL with Primary key constraints

3. DDL with constraints and verification by insert command

4. Data Manipulation of Base Tables and Views

5. Demonstrate the Query commands

6. Write a PL/SQL code block that will accept an account number from the user and debit an amount of Rs. 2000 from the account if the account has a minimum balance of 500after the amount is debited. The Process is to fired on the Accounts table.

7. Write a PL/SQL code block to calculate the area of the circle for a value of radius varying from 3 to 7. Store the radius and the corresponding values of calculated area in a table Areas. Areas – radius, area.

8. Write a PL/SQL block of code for reversing a number. (Example : 1234 as 4321).

9. Create a transparent audit system for a table Client_master (client_no, name, address, Bal_due). The system must keep track of the records that are being deleted or updated. The functionality being when a record is deleted or modified the original record details and the date of operation are stored in the auditclient(client_no, name, bal_due, operation, userid, opdate) table, then the delete or update is allowed to go through.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. 1.Describe the database architecture and the ER diagram for real world applications.
2. Knowledge about the relational algebra and calculus.
3. Knowledge about the normalization forms.
4. Explain the storage and accessing of data.

5. Programming skills in SQL and PL/SQL.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	3	3
CO2	3	3	2	3	3
CO3	3	0	3	0	3
CO4	2	3	0	2	2
CO5	2	0	3	0	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

SBE II QUANTITATIVE APTITUDE

COURSE OBJECTIVES

- To improve the quantitative skills of the students
- To prepare the students for various competitive exams

UNIT I

Numbers - HCF and LCM of numbers - Decimal fractions - Simplification - Square roots and cube roots - Average - problems on Numbers.

UNIT II

Problems on Ages - Surds and Indices - percentage - profits and loss - ratio and proportion - partnership - Chain rule.

UNIT III

Time and work - pipes and cisterns - Time and Distance - problems on trains - Boats and streams - simple interest - compound interest - Logarithms - Area - Volume and surface area - races and Games of skill.

UNIT IV

Permutation and combination - probability - True Discount - Bankers Discount - Height and Distances - Odd man out & Series.

UNIT V

Calendar - Clocks - stocks and shares - Data representation - Tabulation

TEXT BOOK

1. “Quantitative Aptitude”, R.S. AGGARWAL., S. Chand & Company Ltd.,

SBE3 . PRACTICAL: WEB TECHNOLOGY LAB

COURSE OBJECTIVES

- Design web pages using various HTML tags
- Write simple programs in Java Script

1. Create a form having number of elements (Textboxes, Radio buttons, Checkboxes, and so on). Write JavaScript code to count the number of elements in a form.
2. Create a HTML form that has number of Textboxes. When the form runs in the Browser fill the textboxes with data. Write JavaScript code that verifies that all textboxes has been filled. If a textboxes has been left empty, popup an alert indicating which textbox has been left empty.
3. Develop a HTML Form, which accepts any Mathematical expression. Write JavaScript code to Evaluates the expression and Displays the result.
4. Create a page with dynamic effects. Write the code to include layers and basic animation.
5. Write a JavaScript code to find the sum of N natural Numbers. (Use user-defined function)
6. Write a JavaScript code block using arrays and generate the current date in words, this should include the day, month and year.
7. Create a form for Student information. Write JavaScript code to find Total, Average, Result and Grade.
8. Create a form for Employee information. Write JavaScript code to find DA, HRA, PF, TAX, Gross pay, Deduction and Net pay.
9. Create a form consists of a two Multiple choice lists and one single choice list (a)The first multiple choice list, displays the Major dishes available (b)The second multiple choice list, displays the Starters available. (c)The single choice list, displays the Soft drinks available.
10. Create a web page using two image files, which switch between one another as the mouse pointer moves over the image. Use the on Mouse Over and on Mouse Out event handler

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of html and java script programming language
2. Define and demonstrate the use of built-in data structures “lists” and
3. Design and implement a mathematical function
4. Design and implement the web page and event handler

.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	0	2	2	2	0
CO3	0	2	3	0	3
CO4	0	3	2	3	0
CO5	0	3	3	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

CC –VIII MOBILE COMPUTING

COURSE OBJECTIVES

 To understand of mobile computer systems particularly in the context of wireless network systems

 To emphasises how to interface hardware to mobile computing devices

UNIT-I

Mobile Communications, Mobile Computing – Paradigm, Promises/Novel Applications and Impediments and Architecture; Mobile and Handheld Devices, Limitations of Mobile and Handheld Devices.GSM – Services, System Architecture, Radio Interfaces, Protocols, Localization, Calling, Handover, Security, New Data Services, GPRS.

UNIT - II

Motivation for a specialized MAC (Hidden and exposed terminals, Near and far terminals), SDMA, FDMA, TDMA, CDMA, Wireless LAN/(IEEE 802.11)-Mobile Network Layer IP and Mobile IP Network Layers, Packet Delivery and Handover Management, Location Management, Registration, Tunneling and Encapsulation, Route Optimization, DHCP.

UNIT –III

Conventional TCP/IP Protocols, Indirect TCP, Snooping TCP, Mobile TCP, Other Transport Layer Protocols for Mobile Networks. Database Issues: Database Hoarding and Caching Techniques, Client-Server Computing & Adaptation, Transactional Models, Query processing, Data Recovery Process & QoS Issues.

UNIT IV

Communications Asymmetry, Classification of Data Delivery Mechanisms, Data Dissemination, Broadcast Models, Selective Tuning and Indexing Methods, Data Synchronization.

UNIT V

Introduction, Applications & Challenges of a MANET, Routing, Classification of Routing Algorithms, Algorithms such as DSR, AODV, DSDV, Mobile Agents, Service Discovery. Protocols and Platforms for Mobile Computing: WAP, Bluetooth, J2ME, iOS/Windows CE, Android-Security.

TEXT BOOKS

1. Jochen Schiller, “Mobile Communications”, Addison-Wesley, Second Edition, 2009.

2. Raj Kamal, “Mobile Computing”, Oxford University Press, 2007, ISBN: 0195686772

E-REFERENCES

http://www.nettech.in/e-books/Wireless-networks-and-mobile-computing.pdf
http://ebooks.cambridge.org/ebook.jsf?bid=CBO9780511546969

Outcomes

- Able to explain the basics of mobile system
- Able to develop mobile application
- Understand the Mobile Ad hoc networks and its routing
- Understand the different types of security features

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	3	2
CO2	3	3	1	2	1
CO3	3	3	1	3	3
CO4	3	2	3	2	2
CO5	2	3	3	2	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

SOFTWARE ENGINEERING

COURSE OBJECTIVES

- To understand the software engineering concepts.
- Understand the coding, testing and user interface design
- Design, develop the software projects and software reliability and quality management

UNIT - I

Introduction - Software Engineering Discipline - Evolution and Impact - Programs Vs Software Products. Software Life Cycle Models: Use of a Life Cycle Models - Classical Waterfall Model -Iterative Waterfall Model - Prototyping Model - Evolutionary Model - Spiral Model. Software Project Management: Responsibilities of a Software Project Manager - Project Planning - Metrics for Project Size Estimation - Project Estimation Techniques -Risk Management.

UNIT - II

Requirements Analysis and Specification: Requirements Gathering and Analysis - Software Requirements Specification (SRS) - Formal System Development Techniques. Software Design: Characteristics of a Good Software Design - Cohesion and Coupling -Neat Arrangement - Software Design Approaches.

UNIT - III

Function-Oriented Software Design: Overview of SA/SD Methodology - Structured Analysis - Data Flow Diagrams (DFDs).Object Modeling Using UML: Overview of Object-Oriented Concepts - UML Diagrams - Use Case Model - Class Diagrams - Interaction Diagrams - Activity Diagrams - State Chart Diagram.

UNIT - IV

User Interface Design: Characteristics of a Good User Interface - Basic Concepts - Types of User Interfaces - Component-Based GUI Development; Coding and Testing: Coding - Testing - UNIT Testing - Black-Box Testing - White-Box Testing - Debugging -Integration Testing - System Testing.

UNIT - V

Software Reliability and Quality Management: Software Reliability - Statistical Testing -Software Quality - Software Quality Management System - ISO 9000.Computer Aided Software Engineering: CASE Environment - CASE support in Software Life Cycle - Characteristics of CASE Tools - Architecture of a CASE Environment. Software Maintenance: Characteristics of Software Maintenance - Software Reverse Engineering - Software Maintenance Process Models - Estimation of Maintenance Cost. Software Reuse: Issues in any Reuse Program - Reuse Approach.

TEXT BOOK

1. Rajib Mall, "Fundamentals of Software Engineering",3rd Edition, Prentice Hall of India Private Limited, 2008.

REFERENCE BOOKS

1. Rajib Mall, "Fundamentals of Software Engineering", 4thEdition, Prentice Hall of India Private Limited, 2014.
2. Richard Fairley, "Software Engineering Concepts", TMGH Publications, 2004.
State Integrated Board of Studies

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Knowledge pertaining about process models.
2. Knowledge in requirements functionalities.
3. Knowledge pertaining in various analysis models.
4. Knowledge to test software.
5. Knowledge pertaining in quality and maintenance in project development.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	3	3	2
CO2	2	3	3	3	3
CO3	2	3	3	3	2
CO4	3	1	2	2	2
CO5	2	3	3	3	2

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

MBE –II OBJECT ORIENTED PROGRAMMING USING C++

COURSE OBJECTIVES

- To study the OOP concepts
- To impart basic knowledge of Programming Skills in C++ language.

UNIT I

Principles of Object- Oriented Programming – Beginning with C++ - Tokens, Expressions and Control Structures – Functions in C++

UNIT II

Classes and Objects – Constructors and Destructors – New Operator – Operator Overloading and Type Conversions

UNIT III

Inheritance: Extending Classes – Pointers- Virtual Functions and Polymorphism

UNIT IV

Managing Console I/O Operations – Working with Files – Templates – Exception Handling

UNIT V

Standard Template Library – Manipulating Strings – Object Oriented Systems Development

TEXT BOOK

1. Balagursamy E, Object Oriented Programming with C++, Tata McGraw Hill Publications, Sixth Edition, 2013

REFERENCE BOOK

1. Ashok Kamthane, Programming in C++, Pearson Education, 2013. State Integrated

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. To learn the basic concepts Object oriented programming.
2. To learn the control structures and arrays.
3. To implementing the constructors & File opening and closing.
4. To learn the fundamentals of stack & Queue operations.
5. To learn the concepts of graphs, sorting & searching methods.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	1	2
CO2	3	2	2	3	3
CO3	2	1	2	3	2

CO4	**3**	**2**	**2**	**2**	**3**
CO5	**2**	**3**	**3**	**3**	**2**

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)

MBE-III E-COMMERCE TECHNOLOGIES

COURSE OBJECTIVES :

- Understand concept of Ecommerce and its types
- Study the various online payment and marketing on Web
- Understand various E-business Strategies.

UNIT- I

History of E-commerce and Indian Business Context: E-Commerce -Emergence of the Internet - Emergence of the WWW - Advantages of E-Commerce - Transition to E-Commerce in India - The Internet and India - E-transition Challenges for Indian Corporate.

UNIT- II

Business Models for E-commerce: Business Model - E-business Models Based on the Relationship of Transaction Parties - E-business Models Based on the Relationship of Transaction Types.

UNIT- III

Enabling Technologies of the World Wide Web: World Wide Web - Internet Client-Server Applications - Networks and Internets - Software Agents - Internet Standards and Specifications - ISP.E-Marketing : Traditional Marketing - Identifying Web Presence Goals - Online Marketing - E-advertising - Ebranding.

UNIT- IV

E-Payment Systems: Main Concerns in Internet Banking - Digital Payment Requirements - Digital Token-based e-payment Systems - Classification of New Payment Systems - Properties of Electronic Cash - Cheque Payment Systems on the Internet.

UNIT- V

Information systems for Mobile Commerce: Introduction - Wireless Applications - Cellular Network - Wireless Spectrum - Technologies for Mobile Commerce - Wireless Technologies.

TEXT BOOKS

1. P.T.Joseph, "E-Commerce - An Indian Perspective", 4th Edition, PHI Learning, 2012.
2. C Xavier, "World Wide Web Design with HTML", 13th Reprint, Tata McGraw

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

1. Explain basic principles of E commerce and Indian business
2. Define advantage of E-commerge".
3. Enabling technology of www.
4. Design and implement E- payment system
5. Define wireless application and cellular networks.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	3	2
CO2	3	3	3	2	2
CO3	3	3	2	3	3
CO4	3	2	3	2	2
CO5	2	3	3	3	3

1 – Low, 2 – Moderate, 3 – High (Preferably use 2 or 3 levels)