

# **POOMPUHAR COLLEGE (AUTONOMOUS)**

OF THE TAMIL NADU HR & CE DEPARTMENT MELAIYUR - 609 107

# DEPARTMENT OF COMPUTER SCIENCE

# **COURSE STRUCTURE FOR B.C.A**

(Applicable to the candidates admitted from the academic year 2022 – 2023 onwards)

SEMESTER	PART	SUBJECT	HRS	CREDIT	EXAM	MARKS
	Ι	Tamil – I	5	3	3	100
-	II	English – I	5	3	3	100
		First Allied – I NUMERICAL ANALYSIS	5	3	3	100
		First Allied – II Digital computer fundamental	3	*	*	*
Ι	III	Core Course – I PROGRAMMING IN C	5	5	3	100
		Core Course Practical – I	3			
		PROGRAMMING IN C LAB		2	3	100
	<b>TX</b> 7	Value Education	2	1	3	100
	1 V	Gender Studies	2	1	3	100
		TOTAL		18	-	700
	Ι	Tamil – II	5	3	3	100
	II	English – II	5	3	3	100
	III	First Allied – II Digital computer fundamental	2	3	3	100
		First Allied – III OPERATION RESEARCH	5	4	3	100
		Core Course Practical– II C++ Lab	3	3	3	100
П		Core Course – II OBJECT ORIENTED PROGRAMMING USING C++	6	3	3	100
	IV	Skill Based Elective – I MULTIMEDIA AND ITS APPLICATION	2	2	3	100
		Environmental Studies	2	1	3	100
	TOTAL		30	22	-	800

SEMESTER	PART	SUBJECT	HRS	CREDIT	EXAM	MARKS
	Ι	Tamil – III	5	3	3	100
	II	English – III	5	3	3	100
		Second Allied – I	4	3	3	100
		FINANCIAL ACCOUNTING-1		_	_	
		Second Allied– II	2			
		Linux and Shell Programming	_	*	*	*
		Core Course – III	5	3	3	100
		PROGRAMMING IN JAVA		_	-	
		Core Course Practical– III	3			
		JAVA PROGRAMMING LAB				
TTT	111			2	3	100
111		Major Based Elective – I	4	4	3	100
		1.Computer organization and				
		architecture.				
		2.Computer Graphics.				
		3.Management Information				
		System.				
	IV	Non Major Elective – I	2	2	3	100
		<b>OFFICE AUTOMATION</b>				
		TOTAL	30	20	-	700
	Ι	Tamil – IV	5	3	3	100
	II	English – IV	5	3	3	100
			ð	5	0	100
		Second Allied – II	3	3	3	100
		Linux and Shell Programming	J	5	0	100
		Second Allied – III	5	4	3	100
		FINANCIAL ACCOUNTING-2	U	•	0	100
	III				-	10.0
		Core Course Practical – IV	3	3	3	100
		RDBMS LAB			-	100
		Core Course – IV	5	4	3	100
137		RELATIONAL DATABASE				
1 V		MANAGEMENT SYSTEMS			2	100
		Non Major Elective – II	2	2	3	100
	IV	WEB DESIGNING LAB	•		2	100
		SKIII Based Elective – II	2	2	3	100
		PC PACKAGE LAB				
			•	•		0.00
		TOTAL	30	24	-	800

SEMESTER	PART	SUBJECT	HRS	CREDIT	EXAM	MARKS
SEWIESTER		Core Course – V OPERATING SYSTEMS	5	4	3	100
		Core Course – VI PROGRAMMING IN PYTHON	5	4	3	100
		Core Course – VII E-COMMERCE	5	4	3	100
		Core Course Practical– V PYTHON PROGRAMMING LAB	3	2	3	100
	ш					
V	m	Major Based Elective – II 1.Data communication networks 2.OOAD 3.Digital image processing	4	4	3	100
		Major Based Elective – III 1.Design& analysis of algorithm- 2.System Administration & Maintenance 3.IOT	4	4	3	100
	IV	Skill Based Elective – III PHOTOSHOP LAB	2	2	3	100
		Skill Based Elective – IV Hardware and Trouble Shooting	2	2	3	100
		TOTAL	30	26	-	800
		Core Course Practical – VI PHP LAB	5	5	3	100
	III	Core Course – VIII PHP PROGRAMMING	6	6	3	100
		Core Course – IX Data Mining and Data Warehousing	6	6	3	100
VI		Core Course – X SOFTWARE ENGINEERING	6	6	3	100
		Major Based Elective – IV ARTIFICIAL INTELLIGENCE	5	5	3	100
	IV	Soft Skills Development	2	1	3	100
	V	Extension Activities	-	1	-	100
		TOTAL	30	30	-	700
		GRAND TOTAL	-	140		4500

Head of the Department

Principal



# **POOMPUHAR COLLEGE (AUTONOMOUS)** OF THE TAMIL NADU HR & CE DEPARTMENT MELAIYUR - 609 107

## **COURSE STRUCTURE FOR ALL UG DEGREE COURSES**

(Applicable to the candidates admitted from the academic year 2022 – 2023 onwards)

PART	NAME OF THE PAPERS	NUMBER OF PAPERS	CREDITS
Ι	TAMIL	04	12
II	ENGLISH	04	12
	CORE (INCLUDING OPTIONAL)	19	79
III	FIRST ALLIED	03	10
	SECOND ALLIED	03	10
	NON-MAJOR ELECTIVE	02	04
	SKILLBASED ELECTIVE	04	08
IV	VALUE EDUCATION	01	01
	ENVIRONMENTAL STUDIES	01	01
	SOFT SKILLS DEVELOPMENT	01	01
	GENDER STUDIES	01	01
V	EXTENSION ACTIVITIES	01	01
	TOTAL	44	140

Head of the Department

Principal

# Question Paper Pattern (for Part I, II, III)

Part A		
Ten questions		$10 \ge 2 = 20 \text{ marks}$
(Two questions from each unit – No	choice)	
Part B		
Five questions (either or type)		5 x 5 = 25 marks
(One question from each unit)		
Part C		
Three questions out of five		$3 \ge 10 = 30 \text{ marks}$
(One question from each unit)		
	Total	 75 marks
Question Paper Pattern (for Part I	V only)	
Part A	• *	
Three questions (either or type)		$3 \ge 10 = 30$ marks
(One question from each unit)		
Part B		
Three questions out of five		$3 \ge 15 = 45 $ marks
(Atleast one question from each unit,	,	
Not more than two questions from ea	ach unit,	
No unit shall be omitted)		
	Total	 75 marks

Head of the Department

Principal

#### **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**

PSO1: Apply knowledge of computing fundamentals, mathematics and domain knowledge appropriate for the conceptualization of computing models

PSO2: Identify, analyze, formulate, design and develop the real world requirements by critical thinking for complex problems in IT enabled services.

PSO3: Recognize the need and adopt appropriate tools and techniques for modern computing practices.

PSO4: make use of ethical practices and cyber regulations in the computing field for managing software projects.

PSO5: 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**

#### FIRST ALLIED –II- DIGITAL COMPUTER FUNDAMENTALS COURSE OBJECTIVES

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

 $\hfill\square$  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.

#### $\mathbf{UNIT} - \mathbf{V}$

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

- 1) Identify the logic gates and their functionality.
- 2) Perform number conversions from one system to another system.

- 3) Design basic electronic circuits (combinational circuits).
- 4) Perform a comparative analysis of the components of different memory UNITs.
- 5) Perform number conversions.

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

#### CORE COURSE 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

# **MAJOR PAPER – I : PROGRAMMING IN C**

#### UNIT – I

Evolution and Applications of C - structure of a C program – Data types – Declarations – operators – Expressions – Type conversions – Built-in functions.

#### ÚNIT – II

Data Input and Output – Control statements: IF, ELSE-IF, GOTO, SWITCH, WHILEDO, DO-WHILE, FOR, BREAK and CONTINUE.

#### UNIT – III

Functions: Defining and Accessing Arguments – recursive functions – storage classes – Arrays: Defining and processing Arrays – Multidimensional arrays – passing arrays to functions – Arrays and strings – String functions – String Manipulation.

#### UNIT – IV

Pointers – Pointer Declarations – Operations on pointers – pointers to functions – Pointer and strings – pointers and arrays – array of pointers – structures – structures and pointers – unions.

#### UNIT – V

Data files – Opening, closing and processing files – files with structures and unions – register variables – Bitwise Operations – Macros – Preprocessing.

#### **Text Book:**

"Programming in C" – E.Balagurusamy – Tata McGraw Hill Publications.

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

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.

CO/PO	PO1	PO2	PO3	PO4	PO5	
C01	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	

#### OUTCOME MAPPING

#### **CORE COURSE PRACTICAL -I**

#### **PROGRAMMING IN C LAB**

#### **COURSE OBJECTIVES**

 $\hfill\square$  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.
- 2. Reverse a string and check for palindrome.
- 3. Finding and replacing substrings.

#### **III Recursion**

- 1. GCD of two numbers
- 2. Fibonacci sequence
- 3. Maximum & Minimum

#### **IV Matrix Manipulation**

- 1. Addition and Subtraction
- 2. Multiplication

#### 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

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

#### **OUTCOME MAPPING**

#### CORE COURSE -II. OBJECT ORIENTED PROGRAMMING C++

#### **COURSE OBJECTIVES**

 $\hfill\square$  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.

#### **COURSE OUTCOMES**

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

- 7) To learn the basic concepts Object oriented programming.
- 8) To learn the control structures and arrays.
- 9) To implementing the constructors & File opening and closing.
- 10) To learn the fundamentals of stack & Queue operations.
- 11) 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

#### CORE COURSE PRACTICAL –II C++ Lab

#### **COURSE OBJECTIVES**

1. To Impart Practical Training in C++ Programming Language

1. Write a C++ Program to display Names, Roll No., and grades of 3 students who have appeared in the examination. Declare the class of name, Roll No. and grade. Create an array of class objects. Read and display the contents of the array.

2. Write a C++ program to declare Struct. Initialize and display contents of member variables.

3. Write a C++ program to declare a class. Declare pointer to class. Initialize and display the contents of the class member.

4. Given that an EMPLOYEE class contains following members: data members: Employee number, Employee name, Basic, DA, IT, Net Salary and print data members.

5. Write a C++ program to read the data of N employee and compute Net salary of each employee (DA=52% of Basic and Income Tax (IT) =30% of the gross salary).

6. Write a C++ to illustrate the concepts of console I/O operations.

7. Write a C++ program to use scope resolution operator. Display the various values of the same variables declared at different scope levels.

8. Write a C++ program to allocate memory using new operator.

9. Write a C++ program to create multilevel inheritance. (Hint: Classes A1, A2, A3)

10. Write a C++ program to create an array of pointers. Invoke functions using array objects.

11. Write a C++ program to use pointer for both base and derived classes and call the member function. Use Virtual keyword

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

# SBE-I- MULTIMEDIA AND ITS APPLICATIONS COURSE OBJECTIVES

• To understand the standards available for different audio, video and text applications

 $\bullet$  To learn various multimedia authoring systems in multimedia production team UNIT~I

Multimedia Definition - Use Of Multimedia - Delivering Multimedia - Text: About Fonts and Faces - Using Text in Multimedia - Computers and Text - Font Editing and Design Tools - Hypermedia and Hypertext.

#### UNIT II

Images: Plan Approach - Organize Tools - Configure Computer Workspace -Making Still Images - Color - Image File Formats. Sound: The Power of Sound -Digital Audio - Midi Audio - Midi vs. Digital Audio - Multimedia System Sounds -Audio File Formats -Vaughan's Law of Multimedia Minimums - Adding Sound to Multimedia Project.

#### UNIT III

Animation: The Power of Motion - Principles of Animation - Animation by Computer - Making Animations that Work. Video: Using Video - Working with Video and Displays - Digital Video Containers - Obtaining Video Clips - Shooting and Editing Video.

#### UNIT IV

Making Multimedia: The Stage of Multimedia Project - The Intangible Needs - The Hardware Needs - The Software Needs - An Authoring Systems Needs- Multimedia Production Team.

#### UNIT V

Planning and Costing: The Process of Making Multimedia - Scheduling -Estimating - RFPs and Bid Proposals. Designing and Producing - Content and Talent: Acquiring Content - Ownership of Content Created for Project - Acquiring Talent.

#### TEXT BOOK.

Tay Vaughan, "Multimedia: Making It Work", 8th Edition, Osborne/McGraw-Hill, 2001. State Integrated Board of Studies – Computer Science UG

#### **REFERENCE BOOK**

Ralf Steinmetz & Klara Nahrstedt "Multimedia Computing, Communication & Applications", Pearson

Education, 2012.

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

#### **OUTCOME MAPPING**

#### **Core Course-III-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– 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.

#### 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.

#### 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.

#### 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	1	2	2	2	1
CO3	1	3	3	1	3
CO4	1	3	2	3	1
CO5	1	3	3	3	1

### Core Course -III- PRACTICAL

#### JAVA PROGRAMMING LAB

#### **COURSE OBJECTIVES**

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

 $\square$  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,

#### **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.

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

# SECOND ALLIED III-MANAGEMENT INFORMATION SYSTEMS

Management Information: Meaning of Information - Attributes of information -Information needs of managers – Web databases – Data warehousing – Knowledge management - Information system for decision making.

Types of information systems: Transaction processing systems - Office automation systems - Decision support systems - Executive support systems - Management information systems: Evolution of MIS - Computers and MIS.

System analysis - System planning and the mutual investigation - System design -The process and stages of system design - Input/Output forms design - File organization -System implementation. UNIT IV:

Management information needs and communication links for marketing system, Production system, Accounting system, Manufacturing system, Inventory control system and budgetary control system - IS organization - Top managements responsibility -Data processing group's responsibility.

# UNIT V:

Development, maintenances of MIS - Operation of manual information system, Role of computer in MIS - Database concepts, Expert systems - System audit. **Text** books:

1. Effy oz, "Management Information Systems", Second edition, Thomson Learning

Course Technology, 2002.

2. Jawadekar W.S, "Management Information Systems", Tata McGraw Hill Publishing

Company Limited, 2002.

3. Kenneth.C Laudon and Jane P.Laudon, "Management Information Systems", Prentice Hall of India Ltd., 2002.

4. P.t Joseph & Sanjay mohapatra, "Management Information Systems", Prentice Hall of India Ltd., 2009.

#### **Reference Books:**

1. David Knoenke(1989), "management information systems", Tata McGraw Hill, Delhi.

2. landon K.C. and Landon J.P(2001), "Management Information systems", MaxWell Macmillan publishing company.

#### **COURSE OUTCOMES**

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

To learn the basic concepts of types of management information system.

2.To learn the system analysis.

3.To implementing the communication links.

4.To learn the fundamentals database concept.

5.To learn the concepts of system audit.

#### **OUTCOME MAPPING**

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	2	3	3	3	2
CO2	0	2	3	2	0
CO3	0	2	3	0	3
C04	0	3	2	3	0
CO5	0	3	2	3	0

#### NME-1 OFFICE AUTOMATION COURSE OBJECTIVES

□ To acquire knowledge on editor, spread sheet, slide preparation

□ To improve creative thinking in presentation software

#### 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/97807 35623026.pdf

2. https://www.dit.ie/media/ittraining/msoffice/MOAC\_Excel\_2016\_Core.pdf 3.

https://ptgmedia.pearsoncmg.com/images/9780735697799/samplepages/97807 35697799.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

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	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

#### Second Allied -II : LINUX AND SHELL PROGRAMMING COURSE OBJECTIVES

□ To understand the Linux OS

□ Study the shell programming and text formatting

#### UNIT I

Introduction to Linux : operating system and Linux - History of Linux and Unix - Linux overview - Linux Distributions - Vi editors.

#### UNIT II

Shell - comparison of Shells - working in the shell - Learning Basic Commands -Compiler and interpreter differences - various directories - Drilling deep into process management, job control and Automation.

#### UNIT III

Text processing - Text filtering Tools - working with commands. - Logical operators. - local variables and its scope - working with arrays.

#### UNIT IV

Tricks with shell scripting - interactive shell scripts - The here document and << operator - sort command - WC command - file handling - Debugging –

#### UNIT V

Automating Decision - Making in scripts - Automating repetitive tasks - working with Functions.

#### TEXT BOOK

1. The Complete Reference LINUX - Richard L. Petersen, McGraw Hill,

2. LINUX shell scripting by Ganesh Naik, Packt Publishing Ltd.,

#### **COURSE OUTCOMES**

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

- 12) To learn the basic concepts of Linux and shell programming.
- 13) To learn Shell scripting.
- 14) To implementing interactive shell scripts.
- 15) To learn the fundamentals Automating repetitive tasks

To learn the concepts of working with Functions.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	2	3	3	3	2
CO2	0	2	3	2	0
CO3	0	2	3	0	3
CO4	0	3	2	3	0
C05	0	3	2	3	0

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

#### **CORE COURSE PRACTICAL-IV – RDBMS LAB 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.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	3	3	2	3	3
CO2	3	3	2	3	3
CO3	3	0	3	0	3
CO4	2	3	0	2	2
C05	2	0	3	0	3

#### **OUTCOME MAPPING**

#### Core Course -IV-RELATIONAL DATABASE MANAGEMENT SYSTEMS COURSE OBJECTIVES

 $\hfill\square$  To describe a sound introduction to the discipline of database management systems.

 $\hfill\square$  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 -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 .

#### 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.

#### **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.

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
C04	2	2	1	2	2
CO5	2	1	3	1	3

#### NME-II – WEB DESIGN LAB

1. Write a XML program for job listing in HTML

2. Write a JavaScript code block, which checks the contents entered in a form's text element. If the text entered is in the lower case, convert to upper case.

3.Write a JavaScript code block, which validates a username and password.

a) If either the name or password field is not entered display an error message.

b) The fields are entered do not match with default values display an error message.

c) If the fields entered match, display the welcome message.

4. Write a JavaScript code to browser

5. Write a JSP Program for user authentication.

6. Write a JSP Program for a simple shopping cart.

7. Write a JSP Program to prepare a bio data and store it in database.

8. Write an ASP Program using Response and Request Object.

9. Write an ASP Program using Ad Rotator Component.

10. Write an ASP program using database connectivity for student's record.

#### **COURSE OUTCOMES**

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

- 1. Explain basic principles of asp 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 the jsp and how to handle exceptions and files.

Make database connectivity in Java programming language.

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

#### SBE II- PC PACKAGE LAB

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.

6. Data sorting-Ascending and Descending (both numbers and alphabets)

7. Mark list preparation for a student

8. Individual Pay Bill preparation.

- 9. Invoice Report preparation.
- 10. Drawing Graphs. Take your own table.
- 11. Create a slide show presentation for a seminar.
- 12. Preparation of Organization Charts.

#### **COURSE OUTCOMES**

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

- 1. Explain basic principles of ms office
- 2. Define and demonstrate the use ms word
- 3. Built in function using ms excel.
- 4. Design and implement of slide show using power point.

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

#### **CORE COURSE -V-OPERATING SYSTEMS**

#### **COURSE OBJECTIVES**

 $\square$  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**

 William Stallings, "Operating Systems - Internals & Design Principles", 5thEdition, Prentice - Hall of India private Ltd, New Delhi, 2004.
 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.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	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

#### **Core Course-VI-PROGRAMMING IN PYTHON**

#### **COURSE OBJECTIVES**

□ To understand the basic components of computer programming using the Python language

 $\hfill\square$  To demonstrate significant experience with the Python program development environment

#### UNIT-I

Introduction to Python - Why Python - Installing in various Operating Systems - Executing Python Programs - Basic Programming concepts - Variables, expressions and statements - Input/ Output – Operators.

#### UNIT-II

Conditions - Functions –Math functions, Parameter and Arguments- Fruitful functions-return value- composition-boolean function- conditionals and recursion - Iteration - Loops . Strings –string is a sequence –len-traversal with a for loop – string slices –strings are immutable-Looping and counting-string methods- the in operator –string comparison.

#### **UNIT-III**

Class and objects: Programmer defined types-attributes-Instances as return values-objects are Mutable –copying.Classes and Functions: Time- pure functions – modifiers-prototyping vs planning .Classes and methods: Printing objects –the Init method- the \_str\_method –operator overloading –polymorphism-Interface and implementation- Inheritance-data encapsulation.

#### UNIT IV

Data Structures - Lists – List is a sequence- List are mutable-List operation-List slice –List methods –Map ,filter and reduce-deleting elements –List and strings- Objects and values-aliasing-List arguments. Dictionaries –Dictionary is a mapping –dictionary as a collection of counters-looping and dictionaries-Dictionary and list-Memos-Global variables.

#### UNIT V

Tuples – Tuples are immutable- Tuple assignment- Tuples as return valuesvariable length argument tuples-List and Tuples –Dictionary and tuples. Sequences – FILES- Reading and writing-format operator- filenames and pathcatching and exceptions –Databases-Pickling-pipes writing modules .

#### TEXT BOOK

1. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 1st Edition 2012, O'Reilly.

#### **REFERENCE BOOKS**

1. Jeff McNeil ,"Python 2.6 Text Processing: Beginners Guide", 2010 ,Packet Publications

#### **COURSE OUTCOMES**

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

- 1. Explain basic principles of Python programming language
- 2. Define and demonstrate the use of built-in data structures "lists" and "dictionary".
- 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.
- 5. Make database connectivity in python programming language.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	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

#### CORE COURSE VII-E-COMMERCE COURSE OBJECTIVES :

 $\hfill\square$  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.

#### 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.

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
C05	2	3	3	3	3

#### CORE COURSE PRACTICAL -V : PYTHON PROGRAMMING LAB

#### **COURSE OBJECTIVES**

□ To understand the programming basics in Python Programming

 $\hfill\square$  To understand the object-oriented program design and development in Python Programming

- 1. Create a simple calculator to do all the arithmetic operations
- 2. Write a program to use control flow tools like if.
- 3. Write a program to use for loop
- 4. Data structures

use list as stack use list as queue tuple, sequence

- 5. Create new module for mathematical operations and use in your program
- 6. Write a program to read and write files, create and delete directories
- 7. Write a program with exception handling
- 8. Write a program using classes
- 9. Connect with MySQL and create address book
- 10. Write a program using string handling and regular expressions
- 11. Program to parse apache log file
- 12. Create a GUI program using pygtk

#### **COURSE OUTCOMES**

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

- 1. Explain basic principles of Python programming language
- 2. Define and demonstrate the use of built-in data structures "lists" and "dictionary".
- 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.
- 5. Make database connectivity in python programming language.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	2	2	2	3	2
CO2	3	3	2	2	2
CO3	3	3	2	3	3
CO4	3	2	3	2	2
C05	2	3	3	3	3

#### **OUTCOME MAPPING**

#### **MBE-II-CHOICE-1**

# Data Communications and Networks

#### Unit I

Data Communication – Networks – Protocols and Standard – Line configuration – Topology – Transmission Mode – Categories of networks – Internet works.

#### Unit II

The OSI Model – Functions of the layers – TCP/IP Protocols suite – Signals – Analog and Digital Signal – Data Transmission – Data Terminal Equipment – Data Circuit Terminals equipment – Modems.

#### Unit III

Transmission of Media – Guided Media – Unguided Media – Transmission Impairments– Media Comparision – Multiplexing – FDM – TDM – WDM. Error Detection and Correction – Types of errors – Detection – Vertical Redundancy Check (VRC) –Longitudinal Redundancy Check (LRC) – Cyclic Redundancy Check (CRC). Check Sum– Error Correction.

#### Unit IV

Switching – Circuit Switching – Packet Switching – Message Switching Networking and Internetworking Devices – Repeaters – Bridges – Routers – Gateways. Routing Algorithm – Distance Vector Routing – Link State Routing – Data Link Control –Discipline – Flow Control. **Unit V** 

### Internet working : TCP/IP Protocol Suite – Client Server Model – Domain Name System– File Transfer Protocol (FTP) – Simple Mail Transfer Protocol (SMTP) – World Wide Web (WWW) – Hyper Text Transfer Protocol (HTTP).

## **Text Book :**

"Data Communications and Networks" – Behrouz A.Forouzan Second Edition, Tata McGraw Hill Edition.

#### **Reference Book :**

1. "Introduction to Networking" – Barry Nance, Fourth Indian Eastern Economy Edition.

2. "Computer Networks" – Andrew S. Tanenbaum 4th Edition Eastern Economy Edition, 2003.

#### **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.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	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

# MBE-III- CHOICE-3. INTERNET OF THINGS Objectives

- ✓ To learn about the basics of IOT protocols
- ✓ To build a small low cost embedded system using Raspberry Pi.
- ✓ To apply the concept of Internet of Things in the real world scenario.
- ✓ To understand the real world application concepts.

# **UNIT I: INTRODUCTION TO IOT**

Internet of Things - Physical Design- Logical Design- IoT Enabling Technologies -IoT Levels & Deployment Templates - Domain Specific IoTs - IoT and M2M - IoT System Management with NETCONF-YANG- IoT Platforms Design Methodology.

# UNIT II:IoT ARCHITECTURE

M2M high-level ETSI architecture - IETF architecture for IoT - OGC architecture -IoT reference model - Domain model - information model - functional model communication model - IoT reference architecture

# UNITIII: IOT PROTOCOLS

Protocol Standardization for IoT – Efforts – M2M and WSN Protocols – SCADA and RFID Protocols – Unified Data Standards – Protocols – IEEE 802.15.4 – BACNet Protocol – Modbus– Network layer – 6LowPAN - CoAP– Security.

# **UNIT IV: BUILDING IOT WITH RASPBERRY PI & ARDUINO**

Building IOT with RASPERRY PI- IoT Systems - Logical Design using Python – IoT Physical Devices & Endpoints - IoT Device -Building blocks -Raspberry Pi - - Linux on Raspberry Pi -.

# UNIT V: CASE STUDIES AND REAL-WORLD APPLICATIONS

Real world design constraints - Applications - Asset management, Industrial automation, smart grid, Commercial building automation, Smart cities participatory sensing - Data Analytics for IoT – Software & Management Tools for IoT Cloud Storage Models & Communication APIs - Cloud for IoT - Amazon Web Services for IoT.

**TEXT /REFERENCES BOOKS:** 1. ArshdeepBahga, Vijay Madisetti, —Internet of Things – A hands-on approach ||, Universities Press, 2015

2. Dieter Uckelmann, Mark Harrison, Michahelles, Florian (Eds), —Architecting the Internet of Things||, Springer, 2011.

3. Honbo Zhou, —The Internet of Things in the Cloud: A Middleware Perspective , CRC Press, 2012.

4. Jan Ho<sup>°</sup> Iler, VlasiosTsiatsis, Catherine Mulligan, Stamatis, Karnouskos, Stefan Avesand. David Boyle, "From Machine-to-Machine to the Internet of Things -Introduction to a New Age of Intelligence", Elsevier, 2014.

5. Olivier Hersent, David Boswarthick, Omar Elloumi , —The Internet of Things – Key applications and Protocols , Wiley, 2012

#### COURSE OUTCOMES

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

- 1. Analyze various protocols for IoT
- 2. Develop web services to access/control IoT devices.
- 3. Design a portable IoT using Rasperry Pi
- 4. Deploy an IoT application and connect to the cloud.
- 5. Analyze applications of IoT in real time scenario.

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	2
CO2	3	2	2	3	2
CO3	3	3	2	3	3
CO4	3	2	3	2	2
C05	2	3	3	2	3

#### **OUTCOME MAPPING**

# SKILL BASED ELECTIVE-III-PHOTOSHOP LAB

1. To design a visiting card containing at least one Graphic and text information.

2. To take a photographic image. Give a title for the Image. Put the border. Write your names. Write the name of Institution and place.

3. To prepare a cover page for the book in your Subject area. Plan your own design.

4. To extract the flower only from given Photographic image and organize it on a background.Selecting your own background for organization

5. To adjust the brightness and contrast of the Picture so that it gives an elegant look.

6. To position the picture preferably on a plain Background of a colour of your choice - positioning includes Rotation and scaling.

7. To remove the arrows and text from the Given photographic image.

8. To type a word and apply the effects shadow Emboss.

9. To use appropriate tool(s) from the toolbox, cut The objects from 3 files (f1.jpg, f2.jpg & f3.jpg); organize them in A single file and apply feather effects.

10. To display the background given (filename: Garden.jpg) through your name using mask.

1. maintenance second edition, ta-Mcgraw Hill.

#### **COURSE OUTCOMES**

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

- 1. Explain basic principles photoshop tools
- 2. Define and demonstrate images
- 3. Design and implement the background color and size.
- 4. Design and implement shadow.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	3	3	2	3	2
CO2	3	2	0	3	0
CO3	2	3	0	3	3
CO4	3	0	3	2	2
CO5	2	3	2	2	3

#### OUTCOME MAPPING

# SBE IV- Hardware and Troubleshooting

**Objective**: To teach students about the internal architecture of IBM personal computer and various parts of it and give some knowledge in pc troubleshooting and maintenance.

# Unit I:

Fundamentals of PC technology – Signaling – CPU family and operation – CPU trouble shooting – details of RAM.

# Unit II:

Motherboards – power supply, cooling and protection.

# Unit III:

Data storage interfaces: Mass storage, magnetic storage, optical storage.

# Unit IV:

I/O ports and devices – keyboards and pointing devices – video sub-system – Audio subsystem.

# Unit V:

Modem and communication – Networking – Printers – Troubleshooting tools and techniques – Basic data recovery and disaster recovery.

# **Text book:**

1.craig zacker, john rourke, pc hardware- The complete Reference, Tata McGrawHill, 2001.

# **Reference book:**

2. Govindarajulu .B.IBM PC and clones: Hardware, trouble shooting and maintenance second edition, ta-Mcgraw Hill.

## **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.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	2	3	2	3	2
CO2	3	2	0	3	0
CO3	3	2	0	3	3
CO4	3	0	3	2	2
C05	3	3	2	2	3

#### CC-VIII-PHP PROGRAMMING LAB

1.Write a program to find the factorial of a number.

2. Write a program using Conditional Statements.

3. Write a program to find the maximum value in a given multi dimensional array

4. Write 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. Write a program to download a file from the server.

8. Write 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. Write 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. Write a program to draw the human face.

11. Write a program to design a simple calculator.

12. Design an authentication web page in PHP with MySQL to check username

1. The PHP Complete Reference – Steven Holzner – Tata McGraw-Hill Edition.

#### **COURSE OUTCOMES**

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

- 1.Explain basic principles of php programming language
- 2.Define and demonstrate the use of built-in function in php
- 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.

5.Make database connectivity in php programming language.

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	2
CO2	3	3	0	2	0
CO3	3	2	0	3	3
CO4	3	0	3	2	2
C05	2	3	2	3	3

#### **CC-VIII-PHP PROGRAMMING**

#### **COURSE OBJECTIVES**

- To learn and use open source database management system MySQL
- To create dynamic web pages and websites.
- To connect web pages with database.

#### UNIT I

Basic development Concepts – Creating first PHP Scripts – Using Variable and Operators – Storing Data in variable – Understanding Data types – Setting and Checking variables Data types – Using Constants – Manipulating Variables with Operators.

#### UNIT II

Writing Simple Conditional Statements - Writing More Complex Conditional Statements – Repeating Action with Loops – Working with String and Numeric Functions.

#### UNIT III

Storing Data in Arrays – Processing Arrays with Loops and Iterations – Using Arrays with Forms - Working with Array Functions – Working with Dates and Times.

#### UNIT IV

Creating User-Defined Functions - Creating Classes – Using Advanced OOP Concepts. Working with Files and Directories: Reading Files- Writing Files-Processing Directories.

#### UNIT V

Introducing Database and SQL- Using MySQL-Adding and modifying Data-Handling Errors – sing SQLite Extension and PDO Extension. Introduction XML - Simple XML and DOM Extension.

#### TEXT BOOK

1. VIKRAM VASWANI- PHP A Beginner's Guide, Tata McGraw-Hill

#### **REFERENCE BOOKS**

2. The PHP Complete Reference – Steven Holzner – Tata McGraw-Hill Edition.

#### **COURSE OUTCOMES**

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

- 1.Explain basic principles of Python programming language
- 2.Define and demonstrate the use of built-in data structures "lists" and "dictionary".
- 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.
- 5.Make database connectivity in python programming language.

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	2	2	2	3	2
CO2	3	3	1	2	1
CO3	3	3	1	3	3
CO4	3	1	3	2	2
C05	2	3	3	3	3

### **CC-IX-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

Data Mining And Data Preprocessing: Data Mining – Motivation – Definition –

Data Mining on Kind of Data -Functionalities - Classification - Data Mining Task Primitives - Major Issues in Data Mining - Data Preprocessing -

Definition - Data Clearing - Integration and Transformation - Data Reduction. Unit II

Data Warehousing: Multidimensional Data Model – Data Warehouse Architecture - Data Warehouse Implementation -From data Warehousing to Data Mining - On Line Analytical Processing - On Line Analytical Mining. Unit III

Frequent Patterns, Associations And Classification: The Apriori Algorithm – Definition of Classification and Prediction - Classification by Decision Tree Induction - Bayesian Classification - Rule Based Classification - Classification by Back Propagation - Lazy Learners - K-Nearest Neighbor - Other Classification Methods.

#### **Unit IV**

Cluster Analysis: Definition – Types of data in Cluster Analysis – Categorization of major Clustering Techniques - Partitioning Methods -Hierarchical Clustering - BIRCH - ROCK - Grid Based Methods - Model Based Clustering Methods - Outlier Analysis.

#### Unit V

Spatial, Multimedia, Text And Web Data: Spatial Data Mining – Multimedia Data Mining - Text Mining - Mining the World Wide Web - Data Mining Applications – Trends in Data Mining.

#### **Text Books**

1. Jiawei Han and Micheline Kamber, "Data Mining: Concepts and Techniques (The Morgan Kaufmann Series in Data Management Systems) 3rd Edition, July 6, 2011.

2. Ian H. Witten, Eibe Frank, Mark A. Hall, "Data Mining: Practical Machine Learning Tools and Techniques", Elsevier; Third edition, 2014. Tamilnadu State Council for Higher Education

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

CO/PO	PO1	PO2	PO3	PO4	PO5
C01	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

#### OUTCOME MAPPING

#### **CC-X-SOFTWARE ENGINEERING**

#### **COURSE OBJECTIVES**

□ To understand the software engineering concepts.

□ Understand the coding, testing and user interface design

 $\hfill\square$  Design, develop the software projects and software reliability and quality management

#### UNIT - I

Introduction - Evolution pattern for engineering discipline –Software development projects-Software Life Cycle Models: Classical Waterfall Model -Iterative Waterfall Model –V-Model- Prototyping Model – Incremental development model-Evolutionary Model. Rapid application development(RAD)-Agile Development model-Spiral Model.

#### UNIT-II

Software Project Management: Responsibilities of a Software Project Manager -Project Planning - Metrics for Project Size Estimation - Project Estimation Techniques-Empirical estimation techniques-COCOMO-Heuristics estimation techniques-Scheduling-Risk Management.

#### UNIT - III

Requirements Analysis and Specification: Requirements Gathering and Analysis -Software Requirements Specification (SRS) - Formal System Specification-Software Design: Characteristics of a Good Software Design - Cohesion and Coupling – Layered arrangement of modules - Software Design Approaches.

#### UNIT - IV

Function-Oriented Software Design: Overview of SA/SD Methodology - Structured Analysis - Data Flow Diagrams (DFDs)-Developing the DFD model of a system-Structured design-Detailed Design-Design review-Object modeling using UML -UML Diagrams - Class Diagrams - Interaction Diagrams - Activity Diagrams - State Chart Diagram.

#### UNIT - V

Coding and Testing: Coding - Testing - UNIT Testing - Black-Box Testing - White-Box Testing - Debugging -Integration Testing - System Testing. Software Reliability and Quality Management: Software Reliability - Statistical Testing -Software Quality - Software Quality Management System - ISO 9000.

#### TEXT BOOK

1. Rajib Mall, "Fundamentals of Software Engineering",4th Edition, Prentice Hall of India Private Limited, 2014.

#### **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.

#### 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
C01	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

# **MBE-IV-Artificial Intelligence**

### **COURSE OBJECTIVES**

- 1. To impart knowledge about Artificial Intelligence.
- 2. Understood the system Artificial intelligence, Knowledge acquisition and representation, Reasoning, Uncertainty, Search techniques
- 3. Understood the AI Technologies, Expert systems, Natural networks.
- 4. To give understanding of the main abstractions and reasoning for intelligent systems.
- 5. To understand the basic principles of AI in Various applications.

# Unit1:

Artificial Intelligence definitions- AI Techniques – AI applications – Problems – Problem space and search – Defining the problem as a state space search – production systems- problem characteristics.

# Unit II:

Heuristic search – Generate and test – Hill climbing – breadth first search – Best first search – Problem reduction – constraint satisfaction – Means ends analysis.

# Unit III:

Game playing – minimax search – Adding alpha – beta cutoffs-Predicate logic-representing simple facts and logic computable functions and predicates-Resolution-Natural deduction.

# Unit IV:

Representing knowledge using rules – procedural versus declarative knowledge – forward versus backward reasoning – Non-monotonic reasoning.

# Unit V:

Expert Systems – Structure – components – Expert system development process – Expert system development tools.

# **Text Books:**

1.Artificial Intelligence by Elain Rich and Kevin knight, Tata MCGraw Hill, second Edition.

2. Principles of Artificial Intelligence and Expert systems development by David rolston,McGraw Hill.

# **3.** Artificial Intelligence and Expert System by K.Meena and R.Dhanapal, International books,2000.

### **COURSE OUTCOMES**

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

- 1. Solve basic AI based problems.
- 2. Define the concept of Artificial Intelligence.
- 3. Apply AI techniques to real-world problems to develop intelligent systems.
- 4. Select appropriately from a range of techniques when implementing intelligent systems.
- 5. Understand concept of neural Networks.

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

#### **OUTCOME MAPPING**