YADAVA COLLEGE

(* An Autonomous Co-Educational Institution*

****Re-Accredited with "A" Grade by NAAC****

*****Affiliated to Madurai Kamaraj University*****)**

Govindarajan Campus, Thiruppalai, Madurai – 625014.

DEPARTMENT OF INFORMATION TECHNOLOGY

UNDERGRADUATE

CBCS (2018-2021)

COURSE CONTENT

B.SC (IT)

BLUE PRINT OF THE QUESTION PAPER

B.Sc. Information Technology

Section	Type of Questions	No. of Questions	No. of Questions to be answered	Marks of each Questions	Total
A	Short answer Questions (Open Choice)	15	10	2	20
B	Paragraph type Questions (either or type)	5	5	5	25
C	Essay Type Questions (Open Choice)	5	3	10	30
Total					75

Evaluation Techniques

Title	Evaluation		Exam Duration	Total
	Internal	External		
Theory	25	75	3	100
Practical	40	60	3	100
Project	40	60	-	100

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2018-2021)

UNDERGRADUATE PROGRAMME

B.Sc INFORMATION TECHNOLOGY

Semester	Part Code	Subject Code	Title of the Paper	Teaching	
				Hours	Credits
I	I		Tamil	5	3
	II		English	5	3
	III Core Paper		Principles of Information Technology	3	3
			Programming in C	3	3
	Allied Paper		Digital Principles	4	3
	Core Lab I		Office Application Lab	3	2
			Programming in C Lab	3	2
	IV ENS		Environmental Studies	2	2
	IV SBE		Skill Based Elective	2	2
II	I		Tamil	5	3
	II		English	5	3
	III Core Paper		Programming in C++	3	3
			Unix	3	3
	Allied Paper		Statistics	4	3
	Core Lab II		Unix Lab	3	2
			Programming in C++ Lab	3	2
	IV VAE		Value Education	2	2
	IV SBE		Skill Based Elective	2	2
	I		Tamil	5	3

III	II		English	5	3
	III Core Papers		Data Base Management System	3	3
			Computer Organization	3	3
	Allied Paper		Financial and Management Accounting	4	3
	Core Lab III		Data Base Lab	3	2
			Accounting Software Lab	3	2
	IV TAB		TAB/TAA/NME -Office Application -I	2	2
	IV SBE		Skill Based Elective	2	2
	SS		Self Study – Security in Computing	-	3
IV	I		Tamil	5	3
	II		English	5	3
	III Core Paper		Web Technology	3	3
			Java Programming	3	3
	Allied Paper		Operational Research	4	3
	Core Lab IV		Web Technology Lab	3	2
			Java Programming Lab	3	2
	IV TAB		TAB/TAA/NME - Office Application-II	2	2
	IV SBE		Skill Based Elective	2	2
	SS		Self Study-PC Hardware & Interfacing	-	3
V	III Core Papers		Computer Graphics	4	3
			Software Engineering	4	3
			Data Structure	4	3

V			Vb.Net	4	3
	Elective I		1. Object Oriented Analysis and Design 2. Mini Project 3. Multimedia	4	2
	Core Lab V		Data Structure lab	4	2
			Vb.Net Lab	4	2
	IV SBE		Skill Based Elective	2	2
VI	III Core Papers		Computer Network	3	3
			Operating System	3	3
			PHP Programming	4	3
	Elective II		1. PYTHON Programming 2. Artificial Intelligence 3. Software Testing	3	2
	Core Lab VI		Programming in PHP LAB	4	2
			Programming in PYTHON LAB	3	2
	Elective III		Project	6	4
	IV SBE		Skill Based Elective	2	2
	V PE/NCC		PE/NCC/NSS/EXT	2	1
Total				180	140

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2018-2021)

UNDERGRADUATE PROGRAMME

B.Sc INFORMATION TECHNOLOGY

Nature of Subject		Title	Hours	Credit
Part I		Tamil	20	12
Part II		English	20	12
Part III	1	Principles of Information Technology	3	3
Core Theory	2	Programming in C	3	3
	3	Programming in C++	3	3
	4	Unix	3	3
	5	Data Base Management System	3	3
	6	Computer Organization	3	3
	7	Web Technology	3	3
	8	Java Programming	3	3
	9	Computer Graphics	4	3
	10	Software Engineering	4	3
	11	Data Structure	4	3
	12	Vb.net	4	3
	13	Computer Networks	3	3
	14	Operating System	3	3
	15	PHP Programming	4	3
Core Practical	1	Office Application Lab	3	2
	2	Programming in C Lab	3	2
	3	Unix Lab	3	2

	4	Programming in C++ Lab	3	2
	5	Data Base Lab	3	2
	6	Accounting Software Lab	3	2
	7	Web technology lab	3	2
	8	Java Programming lab	3	2
	9	Data Structure lab	4	2
	10	Vb.Net lab	4	2
	11	Programming in PHP Lab	4	2
	12	Programming in PYTHON Lab	3	2
Allied	1	Digital Principles	4	5
	2	Statistics	4	5
	3	Financial and Management Accounting	4	5
	4	Operational Research	4	5
Elective	I	a) Object Oriented Analysis and Design b) Mini Project c) Multimedia	4	2
	II	a) PYTHON Programming b) Artificial Intelligence c) Software Testing	3	2
	III	Project	6	4
Part IV	1	EVS	2	2
	2	VAE	2	2
	3	TAB/TAA/NME	4	4
	4	SBE	12	12
	5	PE/NCC/NSS/EXT	2	1
Total			180	140

SEMESTER: I

PRINCIPLES OF INFORMATION TECHNOLOGY

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To provide basic conceptual knowledge about the computer systems and information technology.

UNIT I:

Introduction to computers – Basic Components of Computer Systems – I/O Devices – Characteristics of computer- classification of computer system – Types of Memory-Bits Bytes Words.

UNIT II:

Loaders and Linkers-Translators-Compilers and Interpreters-Application software- Programming Languages-Algorithm-Programs-Steps in program development.

UNIT III:

Introduction to MS Word-Create, Open, Save, Close, Print document-Page setup-Editing and Selecting text-Find and Replace-Header and Footer-Inserting text-Break, Page number-Inserting picture using Clip art, From file, Word art-Formatting a text-Bullets and Numbering-Spelling and Grammar-Mail merge-Create, Insert, Delete table.

UNIT IV:

Introduction to MS Excel-Create, Enter the Data, Numbers, Data and Times-Saving and Editing Worksheets-Copy and Moving data-Insert and Delete Rows and Columns and Cell ranges.

Formatting Worksheets- Alignment-Changing Row Height-Changing column width-Auto formatting-Conditional formatting-Creating a Chart-Save and Print a Chart-Save and Printing Worksheet.

UNIT V:

Introduction to MS Power Point- Creating a presentation using Auto content wizard-Creating a design template-Saving and closing presentations-Viewing a presentations-Inserting clipart pictures.

Introduction to MS Access-Creating table by using table wizard-Creating a blank Database-Opening and Closing Database-Creating a Query using the Query wizard-Create, Select and Running a query-Appending Updating a query-Delete, Save and Printing a query-Creating a Report.

TEXT BOOK:

1. "Fundamentals of information technology" by Alex leon, Mathews leon
2. MS-Office by c. Nellai Kannan

UNITS COVERED:

- **UNIT I**: Ch 1,3,7,9,10
- **UNIT II**: Ch 11,13
- **UNIT III**: MS-OFFICE---Ch 1,2,3,4,5,6,7.
- **UNIT IV**: EXCEL-Ch 1,2,3
- **UNIT V**: MS-POWERPOINT--- Ch 1,2,4

  ACCESS---Ch 1,2,3,5

REFERENCE BOOKS:

1. " Introduction to Information Technology" - ITL Solution Pearson publication

SEMESTER: I

PROGRAMMING IN C

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To learn the basic components and structure of a C program, learn to define variables, and use operators and operands to create C expressions and statements.

UNIT I:

Fundamentals of C: Overview of C - History of C - Importance of C-Basic structure of C programs - Character set- C tokens - Keywords & Identifiers - Constants, Variables, Data types - Storage class - Symbolic constants - Operators – Arithmetic expressions -Evaluation of expressions.

UNIT II:

Managing Input, Output & Decision making: Reading a character - Writing a character - Formatted Input - Formatted Output – Decision making with if statement – Switch statement – goto statement – While statement – Do-while statement - for statement– Nested control structures – Jumps in loops.

UNIT III:

Arrays and strings: One dimensional array – Defining, Declaring, Initializing One dimensional array – Two dimensional array – Defining, Declaring, Initializing two dimensional array – Multidimensional Arrays – Character arrays and Strings – Declaring and initializing String variable – Reading & writing strings – String handling functions

UNIT IV:

Functions and Structures and Unions: User defined function – Need for function – Elements of user defined function – Category of function – Recursion - Storage Classes in function – Structure – Defining, Declaring, Accessing Initializing structure and members –Array and Structure – Structure within structure – Unions – size of structure.

UNIT V:

Pointers and files: Understanding pointers – accessing – declaring – initialization – accessing a variable through its pointer - file management – defining – opening – closing – I/O operations of files - error handling

TEXT BOOK:

1. "Programming in ANSI C", Tata McGraw Hill, New Delhi, 2002 by Balagurusamy E.

UNITS COVERED:

Unit I – Chapter 1 (1.1, 1.2, 1.8), Chapter 2 (2.2-2.7), Chapter 3 (3.1-3.11)

Unit II– Chapter 4 (4.2-4.5), Chapter 5 (5.1-5.9), Chapter 6 (6.1-6.5)

Unit III – Chapter 7 (7.1-7.7), Chapter 8 (8.1-8.4, 8.8)

Unit IV–Chapter 9 (9.1-9.13, 9.16, 9.19),

Chapter 10 (10.1-10.5, 10.8-10.13)

Unit V – Chapter 11 (11.1- 11.6), Chapter 12 (12.1 – 12.5)

REFERENCE BOOK:

1. "Programming with C", Tata McGraw Hill, New Delhi, 2002by Byron.S.Gottfried.
2. The C Programming Language, 2nd Edition, PHI, 1988 by B.W. Kernighan and D.M.Ritehie.

SEMESTER: I

DIGITAL PRINCIPLES

Total hours: 60hrs **Hrs / week: 4**
Sub. Code : **Credit : 3**

AIM:

This subject deals with fundamentals of digital computers, Microprocessors and system architecture.

UNIT I:

Number Systems**:** conversions-Binary, Decimal, Octal, and Hexadecimal-Binary Arithmetic**:** Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division, 1's and 2's complement -Subtraction using complements.

UNIT II:

Binary Codes**:** Excess 3 code - Gray Code-ASCII Code. Logic gates and Logic Circuits**:** Basic Logic Gate-OR gate – AND gate – NOT gate- NAND gate- NOR gate-Ex-or Gate.

UNIT III:

Boolean Algebra**:-** Laws of Boolean Algebra – Boolean simplifications-Karnaugh Map**:** –Minterms(sop) and Maxterms(pos) - K-Map simplifications-2variable k-map,3variable K-map,4variablek-map -Overlapping-Rolling the map-Eliminating the Redundant groups - Don't Care conditions.

UNIT IV:

Arithmetic circuits - Half adder, Full adder- Half subtractor, Full subtractor-Four bit Adder Subtractor circuit. Combinational Circuit Applications-:

Multiplexers-Demultiplexer- Decoders-BCD to Decimal Decoders-BCD to Seven segment Decoders- Encoders-Decimal to BCD encoder-.

UNIT V:

Flip flops**:** SR Flip flop-D Flip flop-JK Flip flop- JK Master Slave Flip flop-Schmitt Trigger. Registers and counters**:** Registers-shift register- serial in serial out- serial in parallel out-parallel in parallel out-parallel in serial out.

TEXT BOOK:

1. "Digital Fundamentals" by V. Vijayendran.

UNITS COVERED:

- **UNIT I**: Ch 1,2
- **UNIT II**: Ch 3,4
- **UNIT III**: Ch 5,6
- **UNIT IV**: Ch 8,9
- **UNIT V**: Ch 10,11

REFERENCE BOOK:

1. Digital Circuits and Design", S. Salivahanan, S. Arivazhagan, Second Edition
2. "Digital Principles and Applications", Dr. Vasu.

SEMESTER: I

OFFICE APPLICATION LAB

Total hours : 60hrs **Hrs / week: 3**
Sub. Code : **Credit : 2**

MS WORD

1.Preparing a neat aligned, error free document, add header and footer, also perform find replace operation and define bookmarks.

2. Preparing documents with special effects and adding new Symbols and frames.

3. Preparing documents with inserts pictures objects and database.

4. Preparing lables.

5. Preparing the documents in newspaper column layout.

6. Perform mail merger operation and preparing labels.

7. Type the text, change the font size at 20. Align the text to left, right and justify & centre and underline the text.

8. Prepare a job application letter enclosing your bio-data.

9. Demonstrate OLE concept by linking an excel worksheet into a work document.

10. Type the text, check spelling and grammar, bullets and numbering list items.

MS EXCEL

11. Entering and printing worksheet
12. Worksheet Using formulas
13. Worksheet Manipulation for electricity bill preparation
14. Drawing graphs to illustrate class performance
15. An excel worksheet contains monthly Sales Details of five companies.

MS POWER POINT

16. Prepare a power point presentation with at least three slides for department Inaugural function.
17. Draw an organization chart with minimum three hierarchical levels.
18. Design an advertisement campaign with minimum three slides.
19. Insert an excel chart into a power point slide.
20. Prepare a Power point presentation for any shop.

MS ACCESS

21. Create a query using the Query Wizard to sort the records based on a key in descending order.

22. Create a report named ”Books” and the books issued to date serial number of the book id.

23. Design and create a database for Birthday list for family and friends.

SEMESTER: I

PROGRAMMING IN C LAB

Total hours : 60hrs **Hrs / week: 3**
Sub. Code : **Credit : 2**

1. Standard Deviation
2. Prime Number
3. Adam Number
4. Armstrong Number
5. Perfect Number
6. Pascal Number
7. Multiplying Two matrices & Transpose Of The Matrix
8. Sum Of The Digit
9. Reverse The Digit
10. Sin Series, Cos Series
11. Quadratic Equation Using Switch
12. Magic Square
13. Program for factorial
14. Perfect number checking

SEMESTER: II

PROGRAMMING IN C++

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To learn the concepts of object-oriented programming techniques, streams and using Files.

UNIT I:

Principles of Object Oriented Programming (OOP)**:** Software Evolution - OOP Paradigm - Basic Concepts of OOP - Benefits of OOP - Object Oriented Languages - Applications of OOP.

Tokens, Expressions and control structures**:** Tokens, Keywords, Identifiers and constants, Data types- Variables, Operators, Manipulators, Expressions and Control Structures.

UNIT II:

Functions in C++**:** Main Function - Function Prototyping – Call by reference – Return by reference - Inline Functions – Function Overloading.

Classes and Objects**:** Specifying a Class- Defining member function – A C++ program with class – Making an Outside Function inline – Nesting of member function – Private Member functions – Array within a class – Memory Allocation for objects – Static member data and functions- Array of objects – Object as function argument – Friendly function – Returning objects.

UNIT III:

Constructors and Destructors**:** Constructors – Parameterized constructors – Multiple constructors in a class Constructor with default argument-Dynamic initialization of objects – copy constructor – Dynamic constructor.

Operator Overloading and Type Conversions : Introduction – Defining Operator Overloading – Overloading Unary operator – Overloading Binary operator- Overloading Binary operator using friends- Manipulation of string using operator- Rules for overloading operators - Type of Constructors.

UNIT IV:

Inheritance**:** Introduction - Single Inheritance - Multilevel inheritance - Multiple inheritances - Hierarchical Inheritance - Hybrid Inheritance – Virtual base class. Pointers, Virtual Functions and Polymorphism: Introduction – Pointer to object – this pointer – Pointer to derived class – virtual function – Pure virtual function.

UNIT V:

Managing Console I/O operations**:** Introduction – Unformatted I/O operations – Formatted console I/O operations – Managing Output with manipulators. Working with Files: Classes for File Stream Operations - Opening and Closing a File - End-of-File Detection - File Pointers - Updating a File - Error Handling during File Operations - Command-line Arguments.

TEXT BOOK:

1. “Object Oriented Programming with C++” by E. Balagurusamy,

UNITS COVERED:

- **UNIT I:** Ch :1,3.
- **UNIT II:** Ch 4, 5.
- **UNIT III:** Ch 6,7.
- **UNIT IV:** Ch 8,9.
- **UNIT V:** Ch 10, 11.

REFERENCE BOOKS:

1. Object Oriented Programming in Microsoft C++, Galgotia publication by Robert Lafore.
2. C++: The Complete Reference, TMH Edition, 1998 by H.Schil

SEMESTER: II

UNIX

Total hours: 60hrs **Hrs / week: 3**
Sub. Code : **Credit : 3**

AIM:

To help the students understanding the basic concepts of UNIX.

UNIT I:

Getting started: The UNIX Operating system – Unix Architecture – Features of Unix – man. General purpose utilities: The Calendar , Date , echo, bc, who

The file system: The file – The Parent Child Relationship – Directory COmmads – Path names – listing directory contents – The Unix File system

UNIT II:

Handling Ordinary files : Displaying and creating files – copying a file – deleting files – Renaming file – Counting Lines, Words and Characters – Comparing two files – comm.

Basic file attributes : File ownership – file permissions – changing file permissions – changing file ownership.

UNIT III:

The vi Editor : vi Basics – Input mode – saving text and quitting – navigation – editing text**.**

The shell: The Shell's Interpretive cycle – Pattern matching – Redirection – tee – Shell variables.

UNIT IV:

The process : Process Basics – Process Status. Simple filters : head, tail, cut, paste, sort. Filters using Regular Expression : grep , egrep.

UNIT V:

Essential Shell Programming**:** Shell scripts – Making scripts interactive – Exit status of command – The if conditional – The case conditional – expr –while looping – for looping – Interrupting a program.

TEXT BOOK:

1. "UNIX CONCEPTS AND APPLICATIONS" by SUMITABHA DAS Third Edition – Tata McGraw – Hill Publishing Company Ltd.

UNITS COVERED:

- **UNIT I** : Chapters 1,2,3,4,5
- **UNIT II** : Chapters 6,7
- **UNIT III** : Chapters 8,9
- **UNIT IV** : Chapters 10,14,15
- **UNIT V** : Chapters 16

REFERENCE BOOKS:

1. "Unix Programming" second edition RPB Publications by P.sudharson.

2. "Unix Network Programming" by W. Stevens, Bill Fenner, Andrew Rudoff.

SEMESTER: II

STATISTICS

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

To enable the students to learn the Statistical methods and their applications in Commerce.

UNIT I:

Meaning and Definition of Statistics – Functions of Statistics- Limitations of Statistics- Classification- Objectives of Classification- Types of Classification - Measures of Central tendency – Mean Median, Mode, Geometric Mean and Harmonic Mean –simple problems.

UNIT II:

Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation and Co-efficient of Variation.

UNIT III:

Correlation –Meaning and Definition –Scatter diagram, Karl Pearson's co-efficient of Correlation, Spearman's Rank Correlation, Co-efficient of Concurrent deviation.

UNIT IV:

Regression Analysis – Meaning of regression – Uses of Regression Analysis -Regression in two variables: X on Y and Y on X.

UNIT V:

Index Numbers – Meaning and Uses of Index Numbers - Methods of Index Numbers: Un-weighted(Simple aggregate and Simple Average Price relative)-Weighted Aggregate index numbers(Laspeyre's, Paache's, Bowley, Fisher's and Marshall-Edgeworth Method) – Tests of an Index number: Time Reversal Test and Factor Reversal Test – Cost of living index Number (Aggregate expenditure method and Family Budget Method) Simple Problems only.

TEXT BOOK:

1. " Business Statistics" by Dr.K.Alagar, The McGraw.Hill Companies.

UNITS COVERED:

- **UNIT I:** Chapter 1, 3,6
- **UNIT II:** Chapter 7
- **UNIT III:** Chapter 9
- **UNIT IV:** Chapter 10
- **UNIT V:** Chapter 11

REFERENCE BOOKS:

1. "Statistics" by R.S.N.Pillai, Bagavathi
2. "Statistical Methods" by S.P. Gupta

SEMESTER: II

UNIX LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code : **Credit : 2**

1. Unix basic commands and functions
2. Unix Directory commands
3. Unix file manipulation commands
4. Unix filter commands
5. Unix Pattern searching commands
6. Program to reverse the given string
7. Program to find sum of digits
8. Program to find factorial of given number
9. Program to Generate Fibonacci series
10. Program to generate multiplication table
11. Program to print even numbers
12. Program to check Armstrong number or not
13. Program to Prepare Mark list
14. Program to compare strings
15. Program to calculate Power of given value

SEMESTER: II

PROGRAMMING IN C++ LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

1. Inline function
2. Swapping two values
3. Program for manipulators
4. Function overloading
5. Data conversion
6. Single inheritance
7. Multiple inheritance
8. Multi level inheritance
9. Multi path inheritance
10. Hybrid inheritance

SEMESTER: III

DATABASE MANAGEMENT SYSTEM

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To enable the students to learn the architectural Concept, Structural Embedded SQL and web databases.

UNIT I:

Introduction to Database Management Systems - Types of Database Management Systems-SDLC-DDLC-Introduction to RDBMS-Codd's Rule-Conceptual,Physical and Logical Database Models.

UNIT II:

E-R-Model–Components–ERDiagram-Relaionship-Data Normalization:First normal form(1NF)-Second normal form(2NF)-Third normal form(3NF)-Fourth normal form(4NF) - Relational Algebra and Relational Calculus.

UNIT III:

Introduction to SQL- Tables, Views and Indexes-Queries and Sub Queries-Aggregate functions.

UNIT IV:

Cursors- Joins and Unions-Triggers-Transaction Properties and states-Transaction Management in SQL-Transaction and Recovery-User Defined Transaction-Commit command-Rollback Command-Save point command.

UNIT V:

Backup & Recovery – Database Backup- Transaction logs-importance of backup-database recovery-causes of failures-recovery facilities-introduction to web databases-Internet and world wide web-KDD-KDD features-phases of KDD-advantages of KDD.

TEXT BOOK:

1. Database Management Systems – Alexis Leon Mathews Leon

UNITS COVERED:

UNIT I - Chapters-5,6,7,8.

UNIT II - Chapter-9,11,12.

UNIT III - Chapters-14,15,17,18

UNIT IV - Chapters-20,21,25,29

UNIT V - Chapters-30,38,39.

REFERENCE BOOKS:

1. Raghu Ram Krishnan, "database Management Systems", McGraw-Hill, publishing company, 1998.

2. Database System Concepts-Abraham silberschatz

SEMESTER: III

COMPUTER ORGANIZATION

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To enable the students to learn the basic functions of computer organization and architecture.

UNIT I:

The elements of computers– Logic gates- Flip flops- Register transfer – Register transfer language - Arithmetic micro operations-logic Micro operations.

UNIT II:

Basic Computer Organizations: Instructions codes- Computer registers- Computer Instructions -Timing & Control- Instruction cycle-Memory reference Instructions.

UNIT III:

Central Processing Unit: General register organization-Stack organization Pipelining and Vector Processing: Parallel processing – Pipelining - Arithmetic pipeline- Instruction pipeline- Array processors.

UNIT IV:

Computer Arithmetic-Addition, Subtraction, Multiplication, Division Algorithms- Direct memory access.

UNIT V:

Memory Organization**:** Memory hierarchy-Main memory-auxiliary memory-Associative memory-Cache memory.

Multiprocessors: Characteristics of multiprocessors – Interconnection Structures.

TEXT BOOK:

1. "Computer System Architecture"- M. Morris Mano, Prentice hall of India.

UNITS COVERED:

- **UNIT I** - Chapters-1, 4
- **UNIT II** - Chapter-5
- **UNIT III** - Chapters-8, 9
- **UNIT IV** - Chapters-10, 11
- **UNIT V** - Chapters-12, 13

REFERENCE BOOK:

1. John P. Hayes, "Computer Architrave and Organization", McGraw hill.
2. "Structured computer Organization"- Andrew s. Athenaeum Prentice hall of India.

SEMESTER: III

FINANCIAL AND MANAGEMENT ACCOUNTING

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

To prepare prospective managers with a skill to understand the basic principles of Financial and Management Accounting

UNIT I:

Accounting Principles, Concepts and conventions-Double entry book keeping-Journal, Ledger, Trial balance and Financial accounts of Sole trader concern (simple adjustments only)

UNIT II:

Ratio Analysis –Meaning, Advantages and Limitations-Solvency Ratios-Profitability Ratios-Activity Ratios only (simple problems)

UNIT III:

Fund flow and Cash flow analysis-Meaning and need-Preparation of fund flow and Cash flow statements-Uses and Limitations- Preparation of Cash flow Statements (simple problems)

UNIT IV:

Meaning of Cost accounting - Objectives - Elements of Cost - Cost sheet-Inventory management: Purchase Procedures – EOQ - Stock Levels (Simple problems only)

UNIT V:

Budgetary control-Meaning-Merits and Demerits- Types of Budget and its Utility – Preparation of cash and Flexible Budget (Simple problems only)

TEXTBOOK:

1. "Management Accounting" – P.S.Boopathi Manickam (Unit I)
2. "Management Accounting" - Dr.Peer Mohamed, Dr.Shazuli Ibrahim (Unit II -V)

REFERENCE BOOK:

1. Maheswari, S.N Principles of Financial Managements, Sultan Chandand sons, NewDelhi, 1996.

SEMESTER: III

DATABASE LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

1. Data Definition Language (DDL) commands in RDBMS.
2. Data Manipulation Language (DML) commands in RDBMS.
3. Data Control Language (DCL) commands in RDBMS.
4. High level language extension with Cursors.
5. High level language extension with Triggers.
6. Creating Tables for Different Applications using DDL.
7. Create a Table and solving the queries using Date Functions.
8. Create a Table and solving the queries using Numeric Functions.
9. Create a Table and solving the queries using Group Functions.
10. Set Operators – Union, Union All, Intersect, Minus
11. Join Concept – Simple Join, Table Aliases, Self Join, Outer Join
12. Sub Queries
13. Multiple Queries
14. Creating PL/SQL block using all the control statements
15. Creating PL/SQL block using EXPLICIT & IMPLICIT CURSOR

SEMESTER: III

ACCOUNTING SOFTWARE LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

1. COMPANY CREATION& ALTERATION
2. CREATION & MAINTENANCE OF COMPANY LEDGER
3. PREPARATION OF DAY BOOK
4. PREPARATION OF FINAL ACCOUNTS
5. PREPARATION OF TRIAL BALANCE
6. PREPARATION OF PROFIT& LOSS A/C
7. PREPARATIOOF DEBIT & CREDIT NOTE
8. PREPARATION OF CHEQUE PRINTING
9. PREPARATION OF FUND FLOW STATEMENT
10. PREPARATION OF CASH FLOW STATEMENT
11. PREPARATION OF RATIO ANALYSIS STATEMENT
12. CHANGING CURRENCY SYMBOL
13. PREPARATION OF COST CATEGORY SUMMARY
14. PREPARATION & MAINTENANCE OF STOCK DETAILS
15. PREPARATION & COMPARISON OF BUDGET WITH ACTUALS
16. PROCESS OF BANK RECONCILATION STATEMENT

Non Major Elective (1): Office Application-I

Semester: III **Hrs/Week: 2**

Sub code: **Credit : 2**

UNIT I:

Introduction to computers-history of computers-anatomy of computer.

UNIT II:

Introduction to MS-Office-starting word-creating documents-parts of word windows-MS word menus- formatting toolbar.MS-word exercise-I,II,III, Mail Merge-Macros.

UNIT III:

Excel Basics-Introduction- Menus-ToolBars-Excel Excersise-I,II,III-Data Sort-Functions.

TEXT BOOK:

1. MS Office 2000 for everyone – Sanjay Saxena.

REFERENCE BOOKS:

1. Introduction to Information Technology – ITL Education Solution
2. Fundamentals of Information Technology – Alexis Leon, Mathews Leon

SELF STUDY PAPER

SECURITY IN COMPUTING

Semester : III **Hrs/Week: -**

Subject Code: **Credit :3**

UNIT I:

Elementary Cryptography: Terminology and Background – Substitution Ciphers – Transcription (Permutations)- Making "Good" Encryption Algorithms – The Data Encryption Standard (DES)- The AES Encryption Algorithm – Public Key Encryption-The Uses of Encryption

UNIT II:

Program Security: Secure programs – Non malicious program errors- Viruses and other malicious code- Targeted Malicious code- Controls against Program Threats.

UNIT III:

Protection in General – Purpose Operating System: Protected objects and methods of protection – Memory and Address Protection – Control of Access to General objects – File Protection Mechanisms – User Authentication.

Designing Trusted Operating Systems: What is trusted system? – Security policies – Models of security – Trusted Operating System Design.

UNIT IV:

Database Security: Introduction to Database – Security Requirements – Reliability and Integrity – Sensitivity Data- Inference – Multilevel Databases – Proposals for Multilevel Security.

UNIT V:

Security in networks: Network Concepts – Threats in networks – network security controls – Firewalls – Intrusion reduction systems – Secure E-Mail.

TEXT BOOK

1. Security in computing – Third Edition , Charles P.Fleeger, Shari Lawrence P.Fleeger , PHI 2005

REFERENCE BOOKS:

1.Cryptography and Network Security – Behrouz A.Forouzan, The Mc Graw Hill, 2008

2. Cryptography and Network Security – William Stallings, PHI, 2008

SEMESTER: IV

WEB TECHNOLOGY

Total hours: 60hrs **Hrs / week: 3**

Sub. Code: **Credit : 3**

AIM:

To highlight the features of different technologies involved in Web Technology and various Scripting Languages.

UNIT I

Web Essentials: Clients, Servers, and Communication. The Internet-Basic Internet Protocols-The WorldWideWeb-HTTP request message-response message-Web Clients Web Servers- Markup Languages: XHTML.An Introduction to HTML History-Versions-Basic XHTML Syntax and Semantics-Some Fundamental HTML Elements-Relative URLs-Lists-tables-Frames-Forms-XML Creating HTMLDocuments

UNIT II

Style Sheets: CSS-Introduction to Cascading Style SheetsFeatures-Core Syntax-Style Sheets and HTML-Style Rule Cascading and Inheritance-Text Properties-CSS Box Model Normal Flow Box Layout-Beyond theNormal Flow-Other Properties-Case Study. Client- Side Programming: The JavaScript Language-Historyand Versions Introduction JavaScript in Perspective-Syntax Variables and Data Types-Statements-Operators- Literals-Functions-Objects-Arrays-Built-in Objects-JavaScript Debuggers.

UNIT III

Host Objects : Browsers and the DOM-Introduction to the Document Object Model DOM History and Levels-Intrinsic Event Handling-Modifying Element Style-The Document Tree-DOM Event Handling-Accommodating Noncompliant Browsers Properties of window-Server-Side Programming:Java Servlets-Architecture Overview-A Servelet Generating Dynamic Content-Life Cycle-ParameterData-Sessions-Cookies- URL Rewriting-Other Capabilities-Data Storage Servelets and Concurrency

UNIT IV

Representing Web Data: XML Documents and Vocabularies-Versions and Declaration –Namespaces JavaScript and XML: Ajax-DOM based XML processing- Event oriented Parsing: SAX-Transforming XML Documents-Selecting XML Data:XPATH-Template based Transformations: XSLT-Displaying XML Documents in Browsers- Related Technologies. Separating Programming and Presentation: JSP Technology Introduction-JSP and Servlets-Running JSP Applications-Basic JSP-JavaBeans Classes and JSP-Tag Libraries and Files-Support for the Model-View-Controller Paradigm

.

UNIT V

Web Services: JAX-RPC-Concepts-Writing a Java Web Service-Writing a Java Web Service Client-Describing Web Services: WSDL- Representing Data Types: XML Schema-Communicating Object Data: SOAP Related Technologies-Software Installation-Storing Java Objects as Files-Databases and Java Servlets.

TEXT BOOK:

1. Jeffrey C.Jackson, "Web Technologies--A Computer Science Perspective", Pearson Education 2006.

UNITS COVERED:

- **UNIT I** - Chap 1, 2
- **UNIT II** - Chap 3,4
- **UNIT III**-Chap 5,6
- **UNIT IV**-Chap 7,8
- **UNIT V**-Chap 9,Appendix A,B,C

REFERENCE BOOKS:

1. Robert. W. Sebesta, "Programming the World Wide Web", Fourth Edition, Pearson Education.

2. Deitel, Deitel, Goldberg, "Internet & World Wide Web How To Program", Third Edition, Pearson Education, 2006

SEMESTER: IV

JAVA PROGRAMMING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To learn about the Oops concept and to understand the basics of Java programming.

UNIT I

Fundamentals of OOP **:** Object oriented paradigm – basic concepts – benefits and application, Java Evolution **:** Java history – java features - java environment, Overview of Java Language**:** Simple Java program and structure – Java Tokens, Constants - Variable - Data types – Operators and expressions- Decision Making and Branching **:** if statement- if..else – else if – switch- conditional operator, Decision making and looping **:** while - do-while - for loop.

UNIT II

Class, Objects and Methods**:** Defining a class – Methods declaration - creating objects - constructors -Method overloading – Inheritance - overriding methods, Array **:** creating an array - types - Strings – Wrapper classes, Interfaces- Packages**:** Java API packages – creating packages – using a package, Multi Threaded Programming**:** Introduction- Creating threads- Extending the thread class – Life cycle of a thread- Thread priority.

UNIT III

Managing errors and exceptions**:** Types of errors – Exceptions – Syntax of exception handling code - Multiple catch statement - using finally statements- throwing our own exception, Applet programming**:** How applet differ from applications – Applet Life Cycle - Applet Tag – More about applet tag.

UNIT IV

Graphics **:** Drawing Lines - Rectangles – Ovals -Arcs and Polygons. Swing**:** Introduction to JFC – JApplet- JLabel and ImageIcon – JButton – JList – JComboBox – Jcheckbox and JTextArea. File Handling**:** The file class – Byte stream classes – Character stream classes – Random access file – More about stream.

UNIT V

Networking**:** Introduction – TCP/IP – UDP/IP – Difference between TCP and UDP – IPAddress – DNS –Port – URL, JDBC**:** Introduction – Database Connectivity – ODBC API - JDBC API – JDBC Application Architecture – Obtaining a connection – Steps for creating the ODBC DSN – The Statement Object – Working with ResultSet.

TEXT BOOKS:

1. E. Balagurusamy, "Programming with Java" Fourth edition, McGraw Hill

2. R.Krishnamoorthy & S.Prabhu, "Internet & JAVA Programming", New Age International Publishers.

UNITS COVERED:

BOOK1

- **UNIT I** - Chap 1,2-(2.1,2.2,2.9),3-(3.2,3.5,3.6), 4-(4.2-4.4),5,6
- **UNIT II** - Chap 8-(8.1-8.8,8.11,8.12),9-(9.1-9.5,9.7),10,11,12
- **UNIT III**-Chap 13,14-14.1,14.214.514.8,14.14

BOOK 2

- **UNIT IV & UNIT V**

REFERENCE BOOKS:

1. Naughton. P and Schildt. H," Java 2: The Complete Reference", TATA McGraw Hill Publishing Company Ltd., New Delhi.

2. Bernard Van Jaecke, "JDBC: Java Data Base Connectivity"s, IDG Books India (PLtd) – NewDelhi.

SEMESTER: IV

OPERATIONAL RESEARCH

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

- Improving management skills by applying management theories in real life
- Preparing a basic Marketing Plan
- Understanding and Interpreting Financial Statements

UNIT I :

Introduction of O.R-Definition, Characteristics, Methodology, Application of O.R, uses and limitation of O.R

L.P.P. – Formulation of L.P.P. – Graphical Method –Basic Solution – BFS – Simplex method.

UNIT II:

Transportation Model – Mathematical Formulation of Transportation Problem – Methods for Finding IBFS – NWC – LCM – VAM – MODI Method – Degeneracy – Unbalanced – Maximization Case in Transportation Problem.

UNIT III:

Assignment Problem – Mathematical Formulation of Assignment Problem – Comparison with Transportation Model – Difference between the Transportation and Assignment Problem – Hungarian Method

Unbalanced Assignment – Maximization Case in Assignment – Restriction in Assignment – Traveling Salesman Problem.

UNIT IV:

Game Theory – 2X2 Game – Maximin – Minimax Principle – Saddle Point and Value of Game – Game without Saddle Point – Arithmetic Method – 2Xn – mX2 – Graphical Method – Dominance Property.

UNIT V:

Scheduling by PERT and CPM – Planning – Scheduling – Control – Basic Terminologies – Rules for Constructing a Project Network – Network Computation – Compute the Latest Finish and Latest Start – Float – Program Evaluation Review Technique – Difference Between PERT & CPM.

TEXT BOOK:

1. "Resource Management Techniques" by Prof.V.Sundaresan, K.S.Ganapathy Subramanian and K.Ganesan

UNITS COVERED:

- **UNIT I** - Chapters-1, 2, 3
- **UNIT II** - Chapter- 7
- **UNIT III** - Chapters-8
- **UNIT IV** - Chapters-16
- **UNIT V** - Chapters-15

REFERENCE BOOKS:

1. "Operation Research: An Introduction", Hamdy. A, Taha, Macmillan International Student's Edition, Delhi.
2. "Operation Research", Kanti Swarup, R.K. Gupta and Manmohan, Sultan Chand and Sons, Delhi.

SEMESTER: IV

WEB TECHNOLOGY LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

1. Create Yadava College website using HTML tags.
2. Create Mark sheet preparation using HTML.
3. Creation of webpage using marquee tag
4. Link the webpage using Hyper Link Tag
5. Creation of Bio Data Form using Form Tag
6. Creation of Railway Reservation form using Form tag
7. Display the images in webpage using image tag
8. Create two division frame web page
9. Create three division frame web page using Frame tag
10. Create a web page using Audio and Video Tags
11. Reverse the word using vbscript
12. Employee details using vbscript
13. Student details using vbscript
14. Check the number is prime or not using java script
15. Convert the decimal number into binary using java script

SEMESTER: IV

JAVA PROGRAMMING LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

1. Program for Printing series using loop
2. Implementing Command Line Argument
3. Program for Multiplication table
4. Program for calculating Adam number
5. Program for calculating Arithmetic operations using switch case
6. Program for Sorting a list of numbers using array
7. Program for Method Overloading
8. Program for Constructor Overloading
9. Program using String buffer
10. Implementing Single Inheritance
11. Implementing Interface
12. Importing user-defined package
13. Program for Multithreading
14. Program for Exception handling
15. Program for Throwing our own exception
16. Displaying text using Applet
17. Program for Fill-circle using Applet
18. Applet program for key event
19. Program to display Human face using graphics programming
20. Program Using File Reader and Writer class

Non Major Elective (2): Office Application-II

Semester:III **Hrs/Week: 2**

Sub code: **Credit : 2**

UNIT I:

PowerPoint-Introduction-Menus-Toolbar-Navigating in powerpoint-working with power point.

UNIT II:

MS Access-Introduction –Parts of the Access window-query-form-reports.

UNIT III:

MS-Outlook-Introduction-Menus-Toolbars-Working with outlook.

TEXT BOOK:

1. MS Office 2000 for everyone – Sanjay Saxena.

REFERENCE BOOKS:

1.Introduction to Information Technology – ITL Education Solution
2. Fundamentals of Information Technology – Alexis Leon, Mathews Leon

SELF STUDY PAPER

PC HARDWARE AND INTERFACING

Semester : IV **Credit: 3**

Subject Code:

UNIT I:

8086 family – 8086 based system design : System components – bus controller , clock generator, address decoding , bus buffering and demultiplexing.

UNIT II:

Hardware organization of IBM PC: Motherboard components – Chipset Super I/O , System timer and RTC.

UNIT III:

Memory : Memory organization , memory map- Memory Techniques – Pipelining, Cache, interleave, shadow RAM, Memory types, Memory expansion.

UNIT IV:

I/O Buses: 8 bit ISA, 16 bit ISA, EISA, PCI , buses – PCI buses – pins and signals , Interfacing examples, PCMCIA and AGP.

UNIT V :

Parallel port – Register organization, pins and signals , handshaking and programming of SPP, EPP and ECP modes – Serial port – Register , Pins and signals, Programming.

REFERENCE BOOKS:

1. N.Mathivanan ‘Microprocessors PC Hardware and Interfacing ‘ PHI 2005
2. Bary B.Brey The INTEL Microprocessors 8086/8088, 80186/80188, 80286,80386, 80486, Pentium and Pentium pre processor, PHI 1997
3. D.V.Hall Microprocessors and Interfacing: Programming and Hardware, McGraw Hill,199

SEMESTER: V

COMPUTER GRAPHICS

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit : 3**

AIM:

To enable the students to develop their creativity in computer graphics.

UNIT I:

Introduction to Computer Graphics – Video display devices- input devices- Graphics Software- GKS – PHIGS - Points & Lines- Line drawing algorithms- DDA algorithm and Bresenham's line algorithm.

UNIT II:

Character generations - Attributes of Output Primitives – Line - Curve- Area-fill – Character – Text - Marker - bundled attributes.

UNIT III:

2D Transformations-Translation – Rotation – Reflection – Scaling – Shearing – clipping-Cohen Sutherland line clipping – Sutherland Hodgeman polygon clipping- point- text- Exterior-Interior clipping operations.

UNIT IV:

Color Models- Properties of Light – RGB Color Model – YIQ Color Model – CMY Color Model – HSV Color Model – Color selection and Applications.

UNIT-V:

Design of animation sequences-General Computer Animation Functions-Raster Animations -Computer Animation Languages-Key Frame Systems-Motion Specifications.

TEXT BOOK: "Computer Graphics" - Donald Hearn & Pauline Baker, Publication of Prentice Hall of India.

UNITS COVERED:

- **UNIT I** - Chapters-1, 2, 3
- **UNIT II** - Chapters-3, 4
- **UNIT III** - Chapters-5, 6
- **UNIT IV** - Chapters-15
- **UNIT V** - Chapters-16

SEMESTER: V

SOFTWARE ENGINEERING

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit :3**

AIM:

This subject deals with Software Engineering concepts like Analysis, Design, Implementation, Testing and Maintenance.

UNIT I:

Introduction to Software Engineering**:** Definitions – Size Factors – Quality and Productivity Factors. Planning a Software Project**:** Planning the Development Process –Planning an Organizational Structure.

UNIT II:

Software Cost Estimation**:** Software cost Factors – Software Cost Estimation Techniques-Expert Judgement method-delphi cost estimation-work breakdown structure-COCOMO Method.

UNIT III :

Software Requirements Definition**:** The Software Requirements specification –Formal Specification Techniques. Software Design**:** Fundamental Design Concepts –Modules and Modularization Criteria.

UNIT IV:

Design Notations – Verification and Validation Techniques**:** Quality Assurance – Walkthroughs and Inspections.

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UNIT V:

Unit Testing and Debugging – System Testing. Software Maintenance**:** Enhancing Maintainability during Development – Managerial Aspects of Software Maintenance – Configuration Management.

TEXTBOOK:

1.“Software engineering concepts” – Richard Fairley, 1997, TMH.

REFERENCE BOOK*:*

1. “Software engineering” – Pressman IV edition

UNITS COVERED:

- **UNIT I** - Chapters-1, 2
- **UNIT II** - Chapters-3
- **UNIT III** - Chapters-4,5
- **UNIT IV** - Chapters-5,8
- **UNIT V** - Chapters-8

SEMESTER: V

DATA STRUCTURE

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

1. To learn about the Algorithm.
2. To understand the different methods of organizing large amounts of data.
3. To gain knowledge about the implementation of the different data structures.

UNIT I

Introduction**:** Data structure –Data structure operation, Preliminaries**:** Mathematical notation and function - Algorithmic Notation – control structures- Complexity of Algorithms - sub algorithms - variables, Data types.

UNIT II

String processing**:** Introduction – Basic terminology - storing string-character Datatype - string operations. Arrays**:** Introduction-linear arrays - Traversing linear arrays - inserting and deleting - multidimensional arrays – pointer array - matrices.

UNIT III

Linked lists**:** Introduction – representation of linked lists in memory - traversing a linked list – searching a linked list – Memory allocation - garbage collection-insertion into a linked list- deletion from a linked list-header linked lists.

UNIT IV

Stacks**:** Introduction-array representation of stacks- linked representation of stacks- insertion and deletion in stack - quick sort, an application of stacks -

recursion – Queues**:** Introduction – linked representation of queues – deques – priority queues.

UNIT V

Trees**:** Introduction – Binary Tree - Traversing binary tree - Binary trees – Binary search trees – searching in a binary search tree - inserting and deleting in a binary search tree – AVL search trees – insertion and deletion in an AVL search tree - B Trees.

TEXT BOOKS:

1**.** Seymour lipschutz, "Data structures", The Mc-GrawHill Companies

2. Alfred V.Aho, JohnE.Hopcroft, and Jeffery D.Ullman, "Data Structures & algorithms", Adison Wesley.

UNITS COVERED:

- **UNIT I** - Chapters-1, 2
- **UNIT II** - Chapters-3,4
- **UNIT III** - Chapters-5-5.1-5.9
- **UNIT IV** - Chapters-6-(6.1-6.6),(6.9-6.11)
- **UNIT V** - Chapters-7-(7.1-7.4),(7.7-7.9)

REFERENCE BOOKS:

1. Robert L.kruse, "Data structures and program design", prentice hall of India, 3rd edition.

2. Jean-paul trembley and Paul G.Sorenson, "An introduction to data structures with applications", Data MC Grawhill.

SEMESTER: V

VB.NET

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit : 3**

AIM:

To make the students expertise in .Net environment

UNIT I:

Introducing .Net - .Net Framework Overview , Common Type System, Common Language Specification , Common Intermediate Language, Just in Time Compiler , Virtual Execution System, .Net Framework Class Library , Namespace, Languages in .Net, Visual Studio .Net, Data types and Operators – Literal, Variables, Data types, Declaration of Variables, Constant, Statements, Operators: Arithmetic Operators, Concatenation Operators, Relational Operators, Compound Assignment Operator, Logical Operator, Bit wise Operators, Keywords, Comments, Scope of Variables, Console Applications in VB.NET.

UNIT II:

Control Statements – IF Statement, Block – if, Nested if, Looping, Select-case statement, Goto Statement, Early exit from control statements, Intrinsic Control list, Form Control, Events, Label, Text Box, Group box Control, Check Box Control, Radio Button Control, VB code for Radio Button and Text Box Control, Scroll Bar Control, Ctype, Track Bar, Timer, Picture Box, Working with Mouse Input, Link Label, Date Time Picker, Month Calendar. Arrays – One dimensional Array, Array Initialization, Printing array elements using For each …

Next Loop, Redim statement, Multidimensional array, Initialization of 2 dimensional Array, Arrays of array, List Box Control, Combo box control.

UNIT III:

Procedures and Structures – subroutine Procedure, Function Procedure, Property procedure, Functions, Value returned by its function name, The return statement, Calling a functions, Call by reference, Functions with Arrays, Functions with Param Arrays, Function Overloading, Sub-Procedure, Invoking a sub Procedure, Structure, Giving values to structure elements, Functions inside the structure, Nested structures Message Box function, Input Box function.

UNIT IV:

Creating menus and using Dialog boxes – Menu, MDI Forms, Context Menu, Rich Textbox, Color Dialog Control and Font Dialog Control. Object Oriented Concepts in VB.NET – Boxing and Un boxing, Read-only and Write – only properties, Adding methods to classes, Classes with constructor. Namespaces, Inheritance, Overriding properties and Methods, Shadows statement, Polymorphism.

Events, Delegates and Exception Handling- Events in class, Delegates, single cast Delegate, Multicast delegates, Exceptions, Try, Catch, Finally, End try, Try – catch Multiple catch, Nested try statements try-finally.

UNIT V:

Data Access with ADO.NET - Database, Relational Database, Table Creation, Record Insertion, Displaying Data, Deleting Data, Modifying Data, Drop Table, Special Features of ADO.NET, Differences between ADO and ADO.NET, Connection, Commands, Data Reader, Data set, Using a Data Grid.

TEXTBOOK:

1. VB.NET – P.Radhaganesan SCITECH Publications(INDIA) Pvt .Ltd.

UNITS COVERED:

- **UNIT I** - Chapters-1, 3
- **UNIT II** - Chapters-4,5
- **UNIT III** - Chapters-6
- **UNIT IV** - Chapters-7,8,9
- **UNIT V** - Chapters-10

REFERNCE BOOK:

1. Visual Basic.NET- Shirish Chavan

SEMESTER: V

DATA STRUCTURE LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Program to sort numbers in ascending order.
2. Program for three dimensional array.
3. Program to insert and delete elements in a linear array.
4. Program to illustrate joining of strings.
5. Program to find a letter in a string.
6. Program to find a word in a string using string function.
7. Implement PUSH, POP operations of stack using Arrays.
8. Implement insertion, deletion operations using linked list.
9. Program for linear array operations.
10. Implement add, delete operations of a queue using Pointers.
11. Program for circular queue.
12. Program for single linked list.
13. Creation, insertion, and deletion in doubly linked list.
14. Binary tree traversals (in-order, pre-order, and post-order) using linked list.
15. Program to demonstrate binary search tree.
16. Program to find number of nodes, depth and leaves in a tree.
17. Program to demonstrate depth first search.
18. Program to demonstrate breadth first search.

SEMESTER: V

VB.NET LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Program using structure and enum
2. Program using classes, methods, properties and read only property
3. Program for calculator program
4. Program using constructors, overload constructors and class events
5. Program using exception handling
6. Functions to perform various string operations
7. Program using .net built-in collection classes namely array list, bit array, hash tables, queue, sorted list, stack, collection, dictionary base.
8. Program using inheritance, constructors in inheritance
9. Program using overriding, abstract base classes, shared members and interface
10. Program using winForm controls
11. Program using streams and serialization
12. Program using database
13. Program to make a puzzle
14. Program for new component
15. Program for web application

SEMESTER: V

ELECTIVE I :(1) OBJECT ORIENTED ANALYSIS AND DESIGN

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

AIM:

To understand the concepts of Object Oriented Analysis and Design.

UNIT I:

An Overview of Object Oriented Systems Development – Object Basics – Object Oriented Systems Development Life Cycle.

UNIT II:

Rumbaugh Methodology – Booch Methodology – Jacobson ethodology – patterns – Framework s – Unified Approach – Unified Modeling Language – Use case – Class Diagram – Interactive Diagram – Package Diagram – Collaboration Diagram – State Diagram – Activity Diagram.

UNIT III:

Identifying use cases – Object Analysis – Classification – Identifying Object relationships – Attributes and Methods.

UNIT IV:

Design axioms – Designing Classes – Access Layer – Object Storage – Object Interoperability.

UNIT V:

Designing Interface Objects – Software Quality Assurance – System Usability – Measuring User Satisfaction.

TEXT BOOK:

1. Object Oriented Systems Development - Ali Bahrami
   (Unit I, III , IV , V).
2. UML Distilled - Martin Fowler (Unit II).

REFERENCE BOOK:

1. Introduction to Object Oriented Analysis and Design – Stephen R.Schach.
2. The Unified Modeling Language Reference Manual – James Rumbaugh, Ivar Jacobson, Grady Booch.

SEMESTER: V

ELECTIVE I :(2) MINIPROJECT

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

SEMESTER: V

ELECTIVE I :(3) MULTIMEDIA

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

AIM:

To inculcate knowledge on Media, Text, Image, Audio, Video, animation

UNIT I:

Introduction: Objectives – What is Multimedia – Resources for multimedia developers – Types of products – Computer Architecture –Multimedia Computer Architecture – Digital Audio and video-Audio Hardware-Video Hardware.

UNIT II:

Text and Graphics : Elements of Text – Text Technology – Types of Fonts-Text data files-Using text in Multimedia Application – Hypertext – Elements of Graphics – Pictures and Images-Raster Images-Vector Images-Color Dithering – Color Flashing-Graphics files and Application formats – Creating images for multimedia use –Using graphics in Application.

UNIT III:

Digital Audio and Video : Digital Audio systems – Diigtal Audio software support-Editing Digital Audio- Audio file formats – Using Audio in Multimedia Applications – Digital Video-sources of Digital video-Video compression- Video capture and playback systems –Digital video software-computer animation.

UNIT IV:

Product design and Authoring tools: Building blocks –Content organizational strategies – story boarding – Multimedia tool selection – Tool feature .

UNIT V:

Multimedia - Internet and Development: Internet – HTML and web authoring – Overview of HTML-Webpage browsers-Web page Development-Team approach.

TEXT BOOK:

1. "Multimedia Technology and Applications" – David Hillman-Galgotia Publications pvt. Ltd, 1998.

UNITS COVERED:

- **UNIT I** -Chapters-1, 2, 3
- **UNIT II** -Chapters-4, 5
- **UNIT III** -Chapters-6, 7
- **UNIT IV** -Chapters-8,9
- **UNIT V** - Chapters-10, 11, 12

SEMESTER: VI

COMPUTER NETWORK

Total hours: 60hrs **Hrs / week:3**
Sub. Code: **Credit : 3**

AIM:

To inculcate knowledge on Networking concepts and technologies like wireless, broadband and Bluetooth.

UNIT I:

Introduction**:** Building a network – Requirements – Network Architecture – OSI – Internet – Direct Link Networks – Hardware building blocks – Framing – Error detection – Reliable transmission.

UNIT II:

Network fundamentals**:** LAN Technology – LAN Architecture – BUS/Tree – Ring – Star – Ethernet – Token Rings – Wireless.

UNIT III:

Network layer: Packet Switching – Switching and Forwarding – Bridges and LAN switches – Internetworking – Simple Internetworking – Routing.

UNIT IV:

Transport layer: Reliable Byte Stream (TCP) – Simple Demultiplexer (UDP) - TCP Congestion Control – Congestion Avoidance Mechanisms.

UNIT V:

Presentation layer and applications Presentation formatting – Data compression – Cryptographic Algorithms: RSA - DES — Applications – Domain Name Service – Email - SMTP – MIME – HTTP – SNMP.

TEXTBOOK:

1."Computer Networks", Tata McGraw Hill, 3rd Edition, 2001 by Andrew S. Tanenbaum.

UNITS COVERED:

- **UNIT I** - Chap 1, 2,3
- **UNIT II**-Chap 1.2
- **UNIT III**-Chap 5
- **UNIT IV**-Chap 6
- **UNIT V**-Chap 7

REFERENCE BOOKS:

1. "Data and Computer Communications", 5th Edition, PHI, 1997 by William Stalings.

SEMESTER: VI

OPERATING SYSTEM

Total hours: 60hrs **Hrs / week:3**
Sub. Code: **Credit : 3**

AIM:

To enable the students to learn the operating systems concept.

UNIT I

Introduction**:** Operating system – Mainframe systems – desktop systems – multiprocessor systems – distributed systems – clustered systems - real time systems, Computer system structures**:** Computer system operation – I/O structure – storage structure – Network structure.

UNIT II

Operating System Structures**:** System components – Operating system services - system calls - system programs, Processes**:** Process concept - Process Scheduling - Inter Process communication, CPU Scheduling**:** Basic concepts – scheduling criteria – scheduling algorithms.

UNIT III

Process synchronization**:** Semaphores - Classical Problems of Synchronization - Critical Regions – OS Synchronization, Deadlocks: Characterization - Methods for Handling Deadlocks - Deadlock Prevention – Deadlock Avoidance – Deadlock Detection - Recovery.

UNIT IV

Memory Management**:** Background – swapping - Contiguous memory Allocation - Paging and Segmentation, Virtual Memory**:** background - Demand Paging – thrashing, File System interface**:** File concept – Access method - Directory Structures - Protection.

UNIT V

I/O Systems**:** I/O Hardware – application of I/O Interface – kernel I/O subsystem - Transforming I/O to hardware operations, Mass-storage structure**:** Disk structure - disk scheduling - disk management - swap space management.

TEXT BOOK:

1.A. Silberschatz, P.B.Galvin, Gagne, "Operating System Concepts", 6th Edn., John Wiley & Sons.

UNITS COVERED:

- **UNIT I** - Chap 1, 2
- **UNIT II-**Chap 3,4,6
- **UNIT III**-Chap 7,8
- **UNIT IV**-Chap 9,10,11
- **UNIT V**-Chap 13,14

REFERENCE BOOK:

1. H.M. Deitel, “An Introduction to Operating System”, Second Edition, Addison Wesley.

SEMESTER: VI

PHP PROGRAMMING

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

To enhance the knowledge on Php & Mysql concepts

UNIT I:

Introduction to PHP: Common uses of PHP-characteristics of PHP-"hello world " script in PHP –PHP syntax overview- Data types-Operators- PHP variables-Constants.

UNIT II:

Control Structures: Condition statements- If…Else- Switch- Loops- While- Do…While- For- Arrays in PHP- Numeric array-Associative array-Multi dimensional array-PHP Strings.

UNIT III :

PHP-web concept-identifying browser & platforms-display images randomly-Using HTML Forms-Browser redirection - PHP-GET and POST methods.

PHP –File inclusion-include( ) and require( ) function-PHP File & I/O Opening and closing files,reading a file,writing a file- PHP-Functions.

UNIT IV:

PHP Cookies-The Anatomy of a Cookie-setting cookies with PHP-accessing cookies with PHP-deleting cookie with PHP.PHP-Sessions-Starting a PHP session, destroying a PHP session-turning on auto session-session without cookies.

UNIT V:

Introduction of MySQL: PHP and MYSQL - connecting to MYSQL, creating MYSQL database using PHP-delete MYSQL database using PHP-inserting data into MYSQL database-retrieving data from MYSQL-updating data into MYSQL database-deleting data from MYSQL database.

TEXT REFERENCE:

"PHP TUTORIALSPOINT" - LECTURER NOTES

UNITS COVERED:

- **UNIT I** -Chap 1, 3,4,5,6
- **UNIT II**-Chap 7,8,9,10
- **UNIT III**-Chap 11,12,13,14,15
- **UNIT IV**-Chap 16,17
- **UNIT V**-Chap 26

REFERENCE BOOKS:

1. "The Complete Reference PHP"- Stever Holzner McGraw Hill

2. "Beginning PHP 5.0 Database Christopher Scollo",- Harish Rawat, Deepak Thomas Wrox Press

SEMESTER: VI

ELECTIVE II: (1) PYTHON PROGRAMMING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

AIM:

The objective of this paper is to provide an introduction to basic concepts of PYTHON programming.

UNIT 1

Why should you learn to write programs Creativity and motivation, Computer hardware architecture, Understanding programming, Words and sentences, Conversing with Python, Terminology: interpreter and compiler, Writing a program, What is a program? The building blocks of programs, What could possibly go wrong? The learning journey. **Variables, expressions and statements,** Values and types, Variables, Variable names and keywords, Statements, Operators and operands, Expressions, Order of operations, Modulus operator, String operations, Asking the user for input, Comments, Choosing mnemonic variable names, **Conditional execution**, Boolean expressions, Logical operators, Conditional execution, Alternative execution, Chained conditionals, Nested conditionals, Catching exceptions using try and except, Short circuit evaluation of logical expressions,

UNIT 2

Functions, Function calls, Built-in functions, Type conversion functions, Random numbers, Math functions, Adding new functions, Definitions and uses, Flow of execution, Parameters and arguments, Fruitful functions and void functions, Why functions? **Iteration**, Updating variables, The while statement, Infinite loops, “Infinite loops” and break, Finishing iterations with continue, Definite loops using for, Loop patterns, **Strings**, A string is a sequence, Getting the length of a string using len, Traversal through a string with a loop, String slices,

Strings are immutable, Looping and counting, The in operator, String comparison, string methods, Parsing strings, Format operator,

UNIT 3

Files, Persistence, Opening files, Text files and lines, Reading files, Searching through a file, Letting the user choose the file name, Using try, except, and open, Writing files, **Lists**, A list is a sequence, Lists are mutable, Traversing a list, List operations, List slices, List methods, Deleting elements, Lists and functions, Lists and strings, Parsing lines, Objects and values, Aliasing, List arguments, **Dictionaries**, Dictionary as a set of counters, Dictionaries and files, Looping and dictionaries, Advanced text parsing.

UNIT 4

Tuples, Tuples are immutable, Comparing tuples, Tuple assignment, Dictionaries and tuples, Multiple assignment with dictionaries, The most common words, Using tuples as keys in dictionaries, Sequences: strings, lists, and tuples, **Regular expressions**, Character matching in regular expressions, Extracting data using regular expressions, Combining searching and extracting, Escape character. **Networked programs,** Hypertext Transport Protocol – HTTP, The World's Simplest Web Browser, Retrieving an image over HTTP, Retrieving web pages with urllib, Parsing HTML and scraping the web, Parsing HTML using Regular Expressions, Parsing HTML using BeautifulSoup, Reading binary files using urllib,

UNIT 5

Using Web Services,eXtensible Markup Language – XML, Parsing XML, Looping through nodes, JavaScript Object Notation – JSON, Parsing JSON, Application Programming Interfaces (API), **Using databases and Structured Query Language (SQL)**- What is a database-Database concepts SQLite manager Firefox add-on Creating a database table -Structured Query Language (SQL) summary -Spidering Twitter using a database -Basic data modeling -Programming with multiple tables -Three kinds of keys -Using JOIN to retrieve data-**Automating common tasks on your computer,** File names and paths, Example: Cleaning up a photo directory, Command line arguments, Pipes

TEXTBOOK:

1. Charles Severance, **"Python for Informatics",** 1st Edition, CreateSpace Independent Publishing Platform, 2013.
2. Peter Wentworth, Jeffrey Elkner, Allen B. Downey, and Chris Meyers, **"How to Think Like a Computer Scientist: Learning with Python",** 2nd Edition, Open Book Project, 2012

UNITS COVERED:

- **UNIT I** - Chapters-1,2,3
- **UNIT II** - Chapter-4,5,6
- **UNIT III** - Chapters7,8,9
- **UNIT IV** – Chapters 10,11,12
- **UNIT V** – Chapters 13,14,15

REFERENCE BOOKS:

1. Mark Lutz, **"Learning Python",** 5th Edition, O'Reilly Media, 2013.
2. Wesley Chun, **"Core Python Applications Programming",** Prentice Hall, 3rd Edition, 2012
3. Alex Martelli, **"Python in a Nutshell",** 2nd Edition, O'Reilly Media, 2006

SEMESTER: VI

ELECTIVE II: (2) ARTIFICIAL INTELLIGENCE

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

. **AIM:**

This concept explains in detail about Artificial Intelligence.

UNIT I:

Introduction to AI-Foundation and history of AI-AI Problems and Techniques-Introduction to Intelligent agents-Problem spaces and searches-Blind search strategies: Breadth first, Depth first, Heuristic search Techniques-Hill climbing-Best first-A* algorithm-AO* algorithm-Bi-directional search-Comparing search strategies.

UNIT II:

Logic based system - Review of Prepositional and First order logic-Logical inferences-Forward and Backward chaining-Introduction to Prolog-Unification and Resolution-Game playing-Minimax algorithm-Alpha beta pruning-Resolution.

UNIT III:

Programming in Prolog - Introduction-Syntax-Basic data structures-Lists-Structures and Trees-Recursion-Built-in-predicates-Example programs-Debugging prolog programs-Introduction to Uncertain Knowledge-Review of probability-Prior and Conditional Probability, Axioms of Probability-Baye's rule and its Applications-Belief network: Syntax and Semantics.

UNIT IV:

Planning-Introduction-Planning in situational calculus-Representation for planning-Partial order planning algorithm-Learning from examples-Discovery as Learning-Learning by analogy-explanation based learning-Neural nets.

UNIT V:

Principles of Natural Language Processing-Rule based system architecture-Expert systems-Knowledge acquisition concepts-AI application to robotics-current trends in intelligent systems.

TEXT BOOK:

1. Elian rich and Kevin Knight," Artificial Intelligence", Tata McGraw-Hill Publishing Limited, NewDelhi, 1995.

REFERENCE BOOKS:

1. "Artificial Intelligence", Addison Wesley, Third edition, 2000 by P.H.Winston

2. "Introduction to Artificial Intelligence and Expert System", Prentice Hall, 1992 by Dan W.Patterson

SEMESTER: VI

ELECTIVE II: (3) SOFTWARE TESTING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

AIM:

To enable the students to learn various software testing techniques

UNIT I:

Assessing Testing Capabilities and Competencies: Roles of Testing, Defect, Building a Software Testing Strategy: Computer System Strategic Risks, Economics of System Development Life Cycle, Establishing a testing Policy Structured Approach to testing, Test Strategy, Testing Methodology.

UNIT II:

Testing Strategies: White-box testing techniques - Statement Coverage – Branch Coverage – Condition coverage – Multiple condition coverage – Data flow coverage – Black box testing techniques – Boundary value Analysis – robustness tests – Equivalence partitioning – Levels of testing – Unit, Integration and System testing.

UNIT III:

Establishing a Software testing methodology : Verification & Validation – Functional and Structural Testing – Eight Considerations in developing Testing Methodologies- Testing software Installation – Testing Security

UNIT IV:

Determining Software Testing Techniques: Testing Techniques/tool selection process – Structural System testing techniques – Functional System Testing Techniques – Unit Testing Technique – Functional testing and analysis.

UNIT V:

Testing Client Server Systems – Testing rapid Application Development – Testing Web – Based Systems – Testing Off – the – Shelf Software –Testing a data Warehouse – Creating Test Documentation.

TEXT BOOK:

1. William E.Perry, "Effective Methods for Software Testing, Second Edition", John Wiley & sons, 2000

REFERENCE BOOKS:

1. "Software Engineering", Sixth Edition, McGraw Hill by Roger S.Pressman

2. "Software Testing in the Real World" by Edward Kit, Pearson.

SEMESTER: VI

PROGRAMMING IN PHP LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Creating simple webpage using PHP
2. Use of conditional statements in PHP
3. Use of looping statements in PHP
4. Creating different types of arrays
5. Usage of array functions
6. Creating user defined functions
7. Creation of files
8. File manipulation using PHP
9. Creation of sessions
10. Creation of cookies
11. Creating simple applications using PHP
12. Creating simple table with constraints
13. Insertion, Updating and Deletion of rows in MYSQL tables
14. Searching of data by different criteria
15. Sorting of data
16. Usage of sub queries
17. Usage of aggregate functions
18. Working with set operators
19. Working with string, numeric and date functions
20. Database connectivity in PHP with MySQL

SEMESTER: VI

PROGRAMMING IN PYTHON LAB

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 2**

1. Compute the GCD of two numbers.
2. Find the square root of a number
3. Exponentiation of given number.
4. Find the maximum of a list of numbers
5. Linear search and binary search
6. Selection sort and insertion sort
7. Multiply matrices
8. Find the most frequent words in a text read from a file
9. Program that take command line arguments word count
10. First N prime numbers

SEMESTER: VI

ELECTIVE III: PROJECT

Total hours: 60hrs **Hrs / week : 6**

Sub. Code: **Credit :4**

YADAVA COLLEGE

(* An Autonomous Co-Educational Institution*

****Re-Accredited with "A" Grade by NAAC****

*****Affiliated to Madurai Kamaraj University*****)**

Govindarajan Campus, Thiruppalai, Madurai – 625014.

DEPARTMENT OF INFORMATION TECHNOLOGY

POSTGRADUATE

CBCS (2018-2020)

COURSE CONTENT

M.SC (IT)

BLUE PRINT OF THE QUESTION PAPER

M.Sc. Information Technology

Section	Type of Questions	No. of Questions	No. of Questions to be answered	Marks of each Questions	Total
A	Short answer Questions	8	5	2	10
B	Paragraph type Questions (Open Choice)	8	5	4	20
C	Essay Type Questions (Open Choice)	5	3	15	45
Total					75

Evaluation Techniques

Title	Evaluation		Exam Duration	Total
	Internal	External		
Theory	25	75	3	100
Practical	40	60	3	100
Project	80	120	-	200

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2018-2020)

POST GRADUATE PROGRAMME

M.Sc. INFORMATION TECHNOLOGY

Semester	Part Code	Subject Code	Title of the Paper	Teaching	
				Hours	Credits
I	Core Paper		Programming in C	3	3
			Internet Programming	4	3
			Relational Data Base Management System	3	3
			Operating System	4	3
			Quantitative Methods	4	3
	Core Lab I		Programming in C lab	4	2
	Core Lab II		Internet Programming Lab	4	2
	Core Lab III		RDBMS Lab	4	2
II	Core Papers		Programming in C++	4	4
			Digital Image Processing	3	4
			Resource Management Technique	3	3
			Advanced Java	4	3
	Core Lab IV		Programming in C++ Lab	4	2

II	Core Lab V		Image Processing Lab	4	2
	Core Lab VI		Java Networking Lab	4	2
	Elective I		1. Object Oriented Software Engineering 2. System Software 3. Artificial Intelligence	4	3
III	Core Papers		Open Source Web Programming	4	3
			Data Structures and Algorithms	3	3
			Data Communication and Networking	4	3
			Programming in ASP.NET	4	3
	Core Lab VII		PHP Lab	4	2
	Core Lab VIII		Data Structures Lab	4	2
	Core Lab IX		ASP.NET Lab	4	2
	Elective II		1. Mini Project 2.MultiMedia 3. Wireless & Mobile Computing	3	4
	SS		Self study – Linux Programming		1
IV	Core Papers		Cloud Computing	6	4
			Organizational behaviour	6	4
			Cryptography & Network Security	6	4
IV	Research		Project	12	10

	SS		Self Study- Big Data Analytics	--	1
Total				120	90

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2018-2020)

POST GRADUATE PROGRAMME

M.Sc. INFORMATION TECHNOLOGY

Nature Of Subject		Title	Hours	Credit
Core Theory	1	Programming in C	3	3
	2	Internet Programming	4	3
	3	Relational Database Management System	3	3
	4	Operating System	4	3
	5	Quantitative methods	4	3
	6	Programming in C++	4	4
	7	Digital Image Processing	3	4
	8	Resource Management Technique	3	3
	9	Advanced Java	4	3
	10	Open Source Web Programming	4	3
	11	Data Structures and Algorithms	3	3
	12	Data Communication and Networking	4	3
	13	Programming in ASP.NET	4	3
	14	Cloud Computing	6	4
	15	Organizational Behaviour	6	4
	16	Cryptography & Network security	6	4

Core Practical	1	Programming in C Lab	4	2
	2	Internet Programming Lab	4	2
	3	RDBMS Lab	4	2
	4	Programming in C++ Lab	4	2
	5	Image Processing Lab	4	2
	6	Java Networking Lab	4	2
	7	PHP Lab	4	2
	8	Data Structures Lab	4	2
	9	ASP.NET Lab	4	2
Elective	I	a) Object Oriented Software Engineering b) System Software c) Artificial Intelligence	4	3
	II	a) Mini Project b) Multi Media c) Wireless & Mobile Computing	3	4
Research		Project Viva-Voce	12	10
Total			120	90

SEMESTER: I

PROGRAMMING IN C

Total hours: 60hrs **Hrs / week: 3**
Sub. Code : **Credit : 3**

AIM:

To overview the basic concepts and learn about advanced concepts of c program.

UNIT I:

Basics: Introduction – Tokens – Data types – Operators – Decision making statement

Functions and Pointers: What is function? – Need for function – Passing values between functions – Scope rules of functions – Calling convention – Function declaration & Prototyping – Call by value & call by reference – Introduction to pointers – Pointer notation – Back to function call – Recursion – Recursion & stack – Adding function to library – Storage classes – auto, register, static, extern.

UNIT II:

C preprocessor: Feature of C preprocessor – Macro expansion – File Inclusion – Conditional compilation - #if and #eif directive – Miscellaneous Directive

Array: Array initialization – Bounds checking - Passing array elements to a function – Pointers & Arrays – Two Dimensional array – Initializing 2D array –

Memory map of 2D array – Pointer and 2D array – Pointer to an array – Passing 2D array to a function – Array of pointer – Three dimensional array

String: What are strings? – More about strings – Pointers & Strings – String library functions – strlen(), strcpy(), strcat(), strcmp() – Two dimensional array of characters – Array of pointers to strings.

UNIT III:

Structure: Declaring a structure – Accessing Structure elements – Storage of structure elements – Array of structure – Additional features of structure – uses of structure.

Operation on bits: Bitwise operators – showbits() function.

Miscellaneous Features: Enumerated data types – typedef – Type casting – Bit fields – Pointer to function - Function returning pointers – Function with variable number of arguments – Unions – Command line argument – Dynamic memory allocation

UNIT IV:

Console Input/output: Types of I/O – Console I/O functions – Formatted console I/O functions – sprintf() & sscanf() functions – Unformatted console I/O functions

File Input/output: Data organization – File operators – Counting characters, tabs, spaces – File copy – File opening modes – String I/O in files – Record I/O in files – Text files & Binary files – Database management – Using argc & argv – Detecting errors in Reading/Writing – I/O redirection

UNIT V:

Graphics Programming: Lines – Stylish lines – Drawing and filling images – Patterns with a Difference – Bar() – Filling shapes – Palettes & colors – Outputting text – Justifying text – A bit of animation.

Mouse programming: Drawing with mouse – Building mouse cursors – More mouse cursors – Freehand drawing using mouse – Menus using mouse

TEXT BOOK

1. "LET US C" 5th edition by Yashavanth P. Kanetkar.
2. "LET US C" 3rd edition by Yashavanth P. Kanetkar.

UNITS COVERED

TEXT BOOK1

UNIT 1 – Chap 5, 6 (Page no 223 to 234)

UNIT 2 – Chap 7 , 8 (Page no 275 to 304), 9 (Page no 328 to 350)

UNIT 3 – Chap 10 ,14,15

UNIT 4 – Chap 11, 12 (Page no 416 to 446), 13 .

TEXT BOOK 2

UNIT 5 – Chapter 20,21

SEMESTER: I

INTERNET PROGRAMMING

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

To highlight the features of different technologies involved in Web Technology and various Scripting Languages.

UNIT I:

Internet Basic - Introduction to HTML - List - Graphics to HTML Doc - Table - Linking document - Frames – Dynamic HTML- Cascading Style sheet – Class – Using span tag- External Style Sheet – Using DIV tag.

UNIT II:

Introduction to Javascript - Advantage of Javascript – Basic programming Techniques- Operator and Expression - Looping Constructor - Function - Dialog box.

UNIT III:

Javascript document object model - Introduction - Object in HTML - Browser Object - Event Handling -Form Object - Other Built in Object - User defined object - Cookies.

UNIT IV:

BOOTSTRAP: Bootstrap Overview- Environment Setup – Grid System – Css Overview – Typography – Code – Tables – Forms – Buttons – Images.

UNIT V:

Bootsrap Helper Classes – Responsive Utilities – Glyphicons – Dropdowns – Button Groups – Button Dropdowns – Input Groups – Navigation Elements – Navbar – Breadcrumb.

TEXT BOOKS:

1. I. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Perl CGI, BPB Publications, 2000
2. J. Jaworski, Mastering Javascript, BPB Publications, 1999
3. Bootstrap Tutorialspoint – Lecture Notes.

UNITS COVERED

BOOK 1

UNIT 1 – Chap 1,2,3,4,5,6,7,12

BOOK 2

UNIT 2 – Chap 8

UNIT 3 – Chap 9,10

BOOK 3

UNIT 4 – Chap 1,2,3,4,5,6,7,8,9,10

UNIT 5 – Chap 11,12,13,14,15,16,17,18,19,20

REFERENCE BOOK:

1. T. A. Powell, Complete Reference HTML (Third Edition), TMH, 2002.
2. G.Buczek, ASP.NET Developers Guide, TMH, 2002.

SEMESTER: I

RELATIONAL DATABASE MANAGEMENT SYSTEM

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To inculcate knowledge on RDBMS concepts and Programming with Oracle

UNIT I:

Database Concepts: A Relational approach: Database – Relationships – DBMS –Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams - Denormalization – Another Example of Normalization.

UNIT II:

Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

Working with Table: Data Management and Retrieval**:** DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records –retrieving Data from Table.

UNIT III:

Operations**:** Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure.

Functions and Grouping**:** Built-in functions –Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations- Sub Queries: Nested Queries

UNIT IV:

PL/SQL**:** A Programming Language**:** History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQ+L in PL/SQL – Data Manipulation – Transaction Control statements.

PL/SQL Cursors and Exceptions**:** Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT…FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables –Exceptions – Types of Exceptions.

UNIT V

PL/SQL Composite Data Types**:** Records – Tables – Varrays.

Named Blocks: Procedures – Functions – Packages –Triggers –Data Dictionary Views.

TEXTBOOK:

1. Database Systems Using Oracle – Nilesh Shah, 2nd edition, PHI.

UNITS COVERED:

- **UNIT I:** Chapters-1,2
- **UNIT II:** Chapters-3,4
- **UNIT III:** Chapters-5,6,7,8
- **UNIT IV:** Chapters-10,11,12
- **UNIT V:** Chapters-13,14

REFERENCE BOOK:

1. Database Management Systems – Gerald V. Post, 3rd edition, TMH.

2. Database Management Systems – Arun Majumdar & Pritimoy Bhattacharya, 2007, TMH.

SEMESTER: I

OPERATING SYSTEM

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM

To enhance the knowledge on Advanced Operating System

UNIT I:

Introduction: The operating system as an extended machine – The operating system as a Resource Manager . Operating system concept: Processes – Address space – Files – Input/output – Protection – The Shell . Operating System Structure: Monolithic systems – Layered system – Microkernels – Client –Server model – Virtual Machines.

UNIT II:

Processes and Threads: Process Model – Processes Creation – Process Termination – Process Hierarchies – Process States. Scheduling: Scheduling in Batch Systems - Scheduling in Interactive Systems-Scheduling in Real – Time Systems-Classical IPC Problems:-The Dinning Philosophers problem-The Readers and Writers problem.

UNIT III:

Memory management **:** Swapping – Managing free memory – Virtual memory – Paging. Deadlocks: Resources – Introduction to Deadlocks – Deadlock Detection and Recovery – Deadlock Avoidance – Deadlock Prevention.

UNIT IV:

Multimedia Operating Systems **:** Introduction to multimedia – Multimedia process scheduling – Caching – Disk scheduling for multimedia.

UNIT V:

Multiple processor systems**:** Multiprocessor operating system types – Multiprocessor Synchronization –Multiprocessor scheduling.

Distributed systems: Network Services and protocols – Document based middleware – File system based middleware – Object based middleware – Grids.

TEXT BOOK:

1. "MODERN OPERATING SYSTEMS" , Third Edition, Andrew S. Tanenbaum

UNITS COVERED:

- **UNIT I:** Chapter-1
- **UNIT II:** Chapter-2
- **UNIT III:** Chapters-3,6
- **UNIT IV:** Chapter- 7
- **UNIT V:** Chapter-8

REFERENCE BOOKS:

1. "Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, "Operating System concepts", Sixth Edition, John Wiley and sons (ASIA) pvt limited, 2012.
2. Harvey M.Deitel,"Operating system", II Edition, Pearson Education Pvt Ltd.

SEMESTER: I

QUANTITATIVE METHODS

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

To enable the students to learn the Statistical methods and its applications

UNIT I:

Introduction to statistics – Functions of statistics- Limitations – Classification – Objectives – Types of classification – Tabulation – Role of Tabulation – Parts of table.

UNIT II:

Measures of central tendency: Mean median, mode, quartiles, deciles, percentiles. Measures of dispersion: Range, quartile deviation, Mean deviation, standard deviation, coefficient of variation.

UNIT III:

Testing of Hypothesis I - Procedure for testing of hypothesis-Hypothesis testing for large sample and small samples (using z-test,'t' test)- F-test.

UNIT IV:

Testing of Hypothesis II- Non-parametric tests: chi-square tests, Sign test, Mann Whitney UTest, Kruskal-Wallis Test, Spearman's Rank correlation Test.

UNIT V:

Correlation & Regression - Concepts of correlation-Types of correlation-Karl Pearson's coefficient of correlation**.** Simple Regression-Regression Coefficients- Method of least squares.

TEXT BOOKS:

1. Statistical Method - S.P.Guptha

UNITS COVERED:

- **UNIT I: volume I-** Chapter-1,5
- **UNIT II: volume I** -Chapter-7,8
- **UNIT III: volume II-** Chapters-3,5
- **UNIT IV: volume II**-Chapter-4,11
- **UNIT V: volume I** -Chapter-10,11

REFERENCE BOOK:

1. Statistics -R.S.N.Pillai & V.Bagavathi

SEMESTER I

PROGRAMMING IN C Lab

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Multiplying Two matrices & Transpose Of The Matrix
2. Sum Of The Digit
3. Reverse The Digit
4. Sin Series, Cos Series
5. Quadratic Equation Using Switch
6. Magic Square
7. Program for factorial
8. EB bill generation using structure
9. File management
10. Error detection in file
11. Draw a car using graphics programming
12. Enabling mouse cursor

SEMESTER I

INTERNET PROGRAMMING LAB

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit : 2**

1. Create Yadava College website using HTML tags.
2. Create Mark sheet preparation using HTML.
3. Creation of webpage using marquee tag
4. Link the webpage using Hyper Link Tag
5. Creation of Bio Data Form using Form Tag
6. Creation of Railway Reservation form using Form tag
7. Display the images in webpage using image tag
8. Create two division frame web page
9. Create three division frame web page using Frame tag
10. Create a web page using Audio and Video Tags
11. Reverse the word using vbscript
12. Employee details using vbscript
13. Student details using vbscript
14. Check the number is prime or not using java script
15. Convert the decimal number into binary using java script

SEMESTER: I

RDBMS LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Payroll
2. Mark Sheet Processing
3. Savings bank account for banking
4. Inventory System
5. Invoice System
6. Library information System
7. Student information System
8. Income tax processing System

SEMESTER: II

PROGRAMMING IN C++

Total hours: 60hrs **Hrs / week: 4**
Sub. Code : **Credit : 4**

AIM:

To overview the basic concepts and learn about in-depth paradigms of oops concepts.

UNIT I:

Overview: What is OOPS? – C++ Fundamentals – Introduction to C++ classes – Function overloading – Operator overloading – Inheritance – Constructor & Destructor.

Classes & Objects: Classes – Structure & Classes – Unions & Classes – Friend function – Friend classes – Inline function – Parameterized Constructors – Static class member – Scope Resolution operator – Nested classes – Local classes – Passing objects to functions – Returning objects – Object Assignment

UNIT II:

Array & Pointer References: Array of object – pointer to object – Type checking C++ pointers – this pointers – Pointers to derived types – Pointers to class members – References – Dynamic Allocation operators.

Function overloading: Function overloading – Overloading constructors-Copy Constructor – Finding address of an overloaded function – Overload anachronism – Default function argument.

UNIT III:

Operator overloading: Creating member operator function – operator overloading using friend function – overloading new & delete – overloading some special operator and comma operator.

Inheritance: Base class Access control – Inheritance & protected members – Inheriting multiple base classes – Constructor, Destructor & Inheritance – Granting access – Virtual base class

Virtual function: Virtual function - Virtual attributes – pure virtual function – Early vs. late binding

UNIT IV:

Templates: Generic functions – Applying generic function – generic classes.

Exception handling: Fundamentals – Derived class exception – Understanding terminate () & unexpected () – uncaught_exception () function – exception & bad_exception classes – Applying exception handling.

UNIT V:

System I/O basics: C++ streams – C++ stream classes – Formatted I/O – Overloading << & >>.

File I/O: File classes – opening & closing the file classes – reading & writing text files – Unformatted & Binary I/O – More get() functions – getline() – Detecting EOF – ignore() – peek() & putback() – flush() – Random access – I/O status – Customize I/O & files

Text book:

1. “THE COMPLETE REFERENCE C++”,Fourth edition, Tata McGraw Hill, by Herbert Schildt.

UNITS COVERED

UNIT 1 – Chapter 11 (Page no 255 to 266, 270 to 287), 12.

UNIT 2 – Chapter 13,14.

UNIT 3 – Chapter 15 ,16 ,17.

UNIT 4 – Chapter 18 , 19.

UNIT 5 – Chapter 20,21.

SEMESTER: II

DIGITAL IMAGE PROCESSING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 4**

AIM:

To enable the students to learn the basic concepts and methodologies of digital image processing.

UNIT I:

Digital Image Processing: Background and Applications – Elements of Digital Image Processing – Elements of Visual Perception .

Brightness Adaption and Discrimination: Light, Luminance, Brightness and Contrast – Match Band effect – Monochrome Vision model – Color vision model.

UNIT II:

Image Enhancement : Introduction – Spatial Domain method – Frequency domain method.

Point operations: Contrast stretching – Clipping and Thresholding – Digital Negative – Intensity level slicing – Bit extraction – Range compression. Algebraic operations on an image.

UNIT III:

Applications of Image Processing: Face Recognition - Methods used for computerized face recognition – Application of face recognition – Iris Recognition – Speaker Recognition – Fingerpring classification – Digital watermarking for

images – Medical image processing – Industrial machine vision applications – Applications of Image Processing in Remote sensing.

UNIT IV:

Image Compression: Introduction – The Source encoder and decoder – Methods of putting data on a diet – Multispectral image compression – Bit plane encoding – Picture quality and its measurement.

UNIT V:

Computer Tomography: Background – Transmission Tomography – Reflection tomography – Emission tomography – Three dimensional Tomography.

TEXT BOOK:

"Digital Image Processing" An Application approach – Madhuri A. Joshi

UNITS COVERED:

UNIT I - Chapter-1

UNIT II - Chapter-3

UNIT III - Chapter-6

UNIT IV - Chapter-7

UNIT V - Chapter-8.

SEMESTER: II

RESOURCE MANAGEMENT TECHNIQUE

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

• Improving management skills by applying management theories in real life

• Preparing a basic Marketing Plan

• Understanding and Interpreting Financial Statements

UNIT I:

Introduction of O.R. – Definition, Characteristics features of O.R. – Scope, Methodology, Application of O.R. uses and limitation of O.R.

Linear Programming – Mathematical formulation, Graphical method, simplex method.

UNIT II:

Transportation model – Finding initial basic feasible solution – North-West corner method, Least cost method, Vogel's Approximation Method – Finding optimal, solution, MODI method. (Excluding degeneracy)

Assignment models – Definition, formulation, solution of Assignment models by Hungarian method – Minimization and Maximization problem – (excluding Airline crew problem)

UNIT III:

Game Theory – Introduction, Two person Zero – sum Games, Solution of 2*2 Rectangular Games, Graphical method. (2*n Games, m*2 Games) Decision Theory – Decision making under risk and uncertainty.

UNIT IV:

Queuing Theory – General Structure of a queuing System, characteristics of a queuing system, Poisson – Exponential single server model – Infinite – Population , Poisson – Exponential single server model – Finite population.

UNIT V:

Replacement Theory – Replacement of items that deteriorates with Time(without change in money value). Group replacement.

TEXT BOOK:

1. Resource Management Technique- Prof.V.Sundaresan, K.S.Ganapathy Subramanian,K.Ganesan.

UNITS COVERED:

UNIT I - Chapter-1,2,3.

UNIT II - Chapter-7,8.

UNIT III - Chapter-16

UNIT IV - Chapter- 13

UNIT V - Chapter-11.

REFERENCE BOOKS:

1. “Operation Research “, V.K. Kapoor, Sultan Chand & Sons Publishers, Delhi.
2. “Operation Research”, Kanti Swarup, R.K. Gupta and Manmohan, Sultan Chand and Sons, Delhi.

SEMESTER: II

ADVANCED JAVA

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM

1. To understand the basics of Java programming.
2. To study the importance of networking in java.
3. To gain knowledge about JFC, JSP and Servlets.

UNIT I

Java Evolution**:** Java history – Java features – How java differs from c and c++ **-** Java environment – Java program structure – Java tokens – constants, variables and data types – Type casting – operators and its types – Expressions, Decision making and branching**: -** simple if – if…else – nested of if..else statements – switch statement –conditional operator – Decision making and looping: While and do..while statement – for statement

UNIT II

Classes, Object and methods**:** Defining a class – Fields and methods declaration – creating objects – accessing class members – constructors – method overloading – Inheritance and its types – overriding methods, Array**:** Definition - Types of array – strings – wrapper classes, Interface**:** Defining interfaces – extending and implementing interfaces, Packages**:** Java API packages – creating packages – accessing and using a package.

UNIT III

Thread**:** creating threads – extending the thread class - Life cycle of thread – thread priority, Managing errors and exceptions**:** Types of errors – exceptions – exception handling code - multiple catch statements, Applet**:** Introduction – how differ from applications - applet Life cycle – Applet tag and attributes, Managing I/O Files**:** Concept of streams – stream classes – Byte stream and character stream classes – creation of files.

UNIT IV

JavaDatabase Connectivity:JDBC Drivers-statements-catching database result,swing:summary of swing,classes,buttons,labels,checkbox,Text components and Menu components in swing.Networking:Networking Basics,java.net package overview-socket classes.

UNIT V

Remote Method Invocation**:** Introduction – define the functions of the remote class as an interface-implement a remote interface-define the constructor for the remote objects,register the remote object,java servlet:servlet environment ad role-Installing servlets-servlet API-The servlet life cycle-HTML to servlet communication

TEXT BOOKS:

1. E. Balagurusamy, “Programming with Java” Fourth edition, McGraw Hill
2. C.Xavier,Java Progarmming a Practiacal Approach,McGraw Hill

UNITS COVERED:

TEXT BOOK1

UNIT I - Chapter-2,3,4,5,6,7

UNIT II - Chapter-8,9,10,11.

UNIT III - Chapter-12,13,14,16

TEXT BOOK 2

UNIT IV - Chapter-13,17,19

UNIT V - Chapter-.16,18

REFERENCE BOOKS:

1. Ivan Bayross, "Java 2.0 (Web enabled commercial application development)", BPB Publications

2. MCGovern, "J2EE Bible", Wiley Dreamtech India PVT, Ltd.

SEMESTER: II

PROGRAMMING IN C++ Lab

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Inline function
2. Swapping two values
3. Program for manipulators
4. Function overloading
5. Operator overloading
6. Data conversion
7. Single inheritance
8. Multiple inheritance
9. Multi level inheritance
10. Multi path inheritance
11. Hybrid inheritance
12. Virtual function
13. Exception handling
14. File operations

SEMESTER: II

IMAGE PROCESSING LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Image import, export and enhancement.
2. Point – to – point transformation.
3. Geometric transformations.
4. Morphological operations.
5. Histogram equalization.
6. 2-D Fourier transform.
7. Highly selective filters.
8. Frequency domain processing.
9. Entrophy as a compression measure.
10. Edge Detection.

SEMESTER: II

JAVA NETWORKING LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Program for print the adam numbers.
2. Program using with string function .
3. Program for multilevel inheritance.
4. Program for using interface.
5. Program to invoke the user defined package
6. Applet program that calculate the employee salary details.
7. Applet program to change the font style and size.
8. Program to print the URL and local port.
9. Program to send the message from one system to another using networking concept.
10. Create the students details using Swing.
11. Program to retrieve the data from the combobox using JDBC.
12. Program using RMI to sort the given numbers.
13. Program using RMI to generate ticket ID for the ticket issued by the client.
14. Program using RMI to add the numbers.
15. Program using frame which display time and date in client from the server.
16. Create a webpage using JSP.
17. Create a bio-data using JSP.

SEMESTER: II

ELECTIVE I (1): OBJECT ORIENTED SOFTWARE ENGINEERING

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit : 3**

UNIT 1

Introduction to Software Engineering: Software Engineering Concepts – Software Engineering Development – Activities – Managing Software development. Modeling with UML: Introduction – Overview of UML – Modeling concepts – Deeper view into UML. Project organization and Communication: Overview of projects – Project organization concepts – Project Communication concepts – Organizational activities

UNIT 2

Requirement Elicitation: Introduction – Overview – Concepts – Activities – Managing requirement elicitation. Analysis: Introduction – Overview – Concepts – Activities – Managing Analysis.

UNIT 3

System design: Decomposing the System – Introduction – Overview – Concepts – Activities. Addressing design goals: Introduction – Overview – Concepts: UML Deployment Diagrams – Managing System design

UNIT 4

Object design: Reusing pattern Solutions – Introduction – Overview – Reuse Concepts – Reuse Activities – Managing reuse. Object design: Specifying Interface – Introduction – Overview of Interface Specification – Concepts – Activities – Managing Object design

UNIT 5

Mapping models to code: Introduction – Overview - Concepts – Activities – Managing Implementation. Testing: Introduction – Overview – Concepts – Activities – Managing testing.

TEXT BOOK

1. Object Oriented Software Engineering using UML, Patterns and Java by Bernd Brugge and Allen H. Dutoit , third edition

UNITS COVERED

Unit 1 – Chapter 1, 2 and 3

Unit 2 – Chapter 4 and 5

Unit 3 – Chapter 6 and 7

Unit 4 – Chapter 8 and 9

Unit 5 – Chapter 10 and 11

SEMESTER: II

ELECTIVE I (2): SYSTEM SOFTWARE

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit : 3**

AIM:

To enable the students to learn various concepts on System software

UNIT I :

System software and machine architecture – The Simplified Instructional Computer (SIC) – Traditional CISC machines-RISC machines.

UNIT II :

Basic assembler functions - A simple SIC assembler – Assembler algorithm and data structures - Machine dependent assembler features - Instruction formats and addressing modes – Program relocation - Machine independent assembler features - Literals – Symbol-defining statements – Expressions - One pass assemblers and Multi pass assemblers - implementation example - MASM assembler.

UNIT III:

Basic loader functions - Design of an Absolute Loader – A Simple Bootstrap Loader -Machine dependent loader features - Relocation – Program Linking – Algorithm and Data Structures for Linking Loader - Machine-independent loader features – Automatic Library Search – Loader Options - Loader design options - Linkage Editors – Dynamic Linking – Bootstrap Loaders - Implementation example - MSDOS linker.

UNIT IV:

Basic macro processor functions - Macro Definition and Expansion – Macro Processor Algorithm and data structures - Machine-independent macro processor features - Concatenation of Macro Parameters – Generation of Unique Labels – Conditional Macro Expansion – Keyword Macro Parameters-Macro within Macro-Implementation example - MASM Macro Processor – ANSI C Macro language.

UNIT V:

Basic compiler function-machine dependent compiler features-machine independent features-implementation examples

TEXT BOOKS:

1. Leland L. Beck, "System Software – An Introduction to Systems Programming", 3rd Edition, Pearson Education Asia, 2000

2. John R. Levine, Linkers & Loaders – Harcourt India Pvt. Ltd., Morgan Kaufmann Publishers, 2000.

REFERENCE BOOKS:

1. D. M. Dhamdhere, "Systems Programming and Operating Systems", Second Revised Edition, Tata McGraw-Hill, 1999.

2. John J. Donovan "Systems Programming", Tata McGraw-Hill Edition, 1972

SEMESTER: II

ELECTIVE I (3): ARTIFICIAL INTELLIGENCE

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 3**

AIM:

This concept explains in detail about Artificial Intelligence.

UNIT I:

Introduction to AI-Foundation and history of AI-AI Problems and Techniques-Introduction to Intelligent agents-Problem spaces and searches-Blind search strategies: Breadth first, Depth first, Heuristic search Techniques-Hill climbing-Best first-A* algorithm-AO* algorithm-Bi-directional search-Comparing search strategies.

UNIT II:

Logic based system - Review of Prepositional and first order logic-Logical inferences-Forward and Backward chaining-Introduction to Prolog-Unification and Resolution-Game playing-Minimax algorithm-Alpha beta pruning-Resolution.

UNIT III:

Programming in Prolog - Introduction-Syntax-Basic data structures-Lists-Structures and Trees-Recursion-Built-in-predicates-Example programs-Debugging prolog programs-Introduction to Uncertain Knowledge-Review of probability-Prior and Conditional Probability, Axioms of Probability-Baye's rule and its Applications-Belief network: Syntax and Semantics.

UNIT IV:

Planning-Introduction-Planning in situational calculus-Representation for planning-Partial order planning algorithm-Learning from examples-Discovery as Learning-Learning by analogy-explanation based learning-Neural nets.

UNIT V:

Principles of Natural Language Processing-Rule based system architecture-Expert systems-Knowledge acquisition concepts-AI application to robotics-current trends in intelligent systems.

TEXT BOOKS:

1. Elain rich and Kevin Knight," Artificial Intelligence", Tata McGraw-Hill Publishing Limited, NewDelhi, 1995

2. Stuart Russell and Peter Norving,"Artificial Intelligence"-A Modern Approach, Prentice Hall, 1995

REFERENCE BOOKS:

1. P.H.Winston," Artificial Intelligence", Addison Wesley, Third edition, 2000

2. Dan W.Patterson,"Introduction to Artificial Intelligence and Expert System", Prentice Hall, 1992

SEMESTER: III

OPEN SOURCE WEB PROGRAMMING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM:

To enhance the knowledge on PHP & Mysql concepts

UNIT I:

PHP-Introduction-Common uses of PHP-characteristics of PHP-"hello world " script in PHP-PHP Syntax Overview-PHP Variable ,DataTypes-PHP Constants-Operators.

UNIT II

PHP Decision Making-Loop Types-Arrays-Strings-Web concepts-Using HTML forms-Browser redirection-PHP GET and POST Methods-PHP file inclusion-PHP files and I/O.

UNIT III

PHP Functions-Cookies-Sessions-PHP Predefined variable-PHP Regular Expression-Posix expressions, posix functions,ereg( ),ereg_replace( ),eregi( ), eregi_replace( ),split( ),spliti( ),sql_regcase( ).

UNIT IV:

PHP Error and Exception Handling- using Die( ) function, defining custom error handling function, exception handling-Date and Time .

UNIT V:

PHP and MYSQL- PHP and XML- PHP Object Oriented Programming.

TEXT REFERENCE:

"PHP TUTORIALSPOINT" - LECTURER NOTES

UNITS COVERED:

- **UNIT I** -Chap 1, 3,4,5,6
- **UNIT II**-Chap 7,8,9,10,11,12,13,14
- **UNIT III**-Chap 15,16,17,21,22
- **UNIT IV**-Chap 23,25
- **UNIT V**-Chap 26 ,28,29

REFERENCE BOOKS:

1. "The Complete Reference PHP"- Stever Holzner McGraw Hill

2. "Beginning PHP 5.0 Database Christopher Scollo",- Harish Rawat, Deepak Thomas Wrox Press

SEMESTER: III

DATASTRUCTURES AND ALGORITHMS

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM

1. To understand the basics of Algorithm.
2. To gain knowledge about the advanced data structure

UNIT I

Problem solving : Introduction – problem solving – Top down design approach, **Pointers:** Introduction – pointer operators and expressions – call by value – call by reference - pointers and arrays – pointers and character strings – pointer to pointer – function pointer – memory allocation function,

UNIT II

Data structure: AbstractDataType – Linked list – Doubly linked list – Circularly linked list – Header linkedlist – applications, **Stack and Queue**: stacks – implementation of stack using array and linkedlist – application – Queue - implementation of queue using array and linkedlist Circular Queue – Priority Queue - Deque – Applications.

UNIT III

Graphs: Definition – graph representation: Adjacency list – Adjacency matrix – Graph traversal: DepthFirstSearch – BreadthFirstSearch – Application : spanning tree - Biconnectivity – Topological sort, **Tree:** Definition – Binary tree –

Binary search Tree: Insertion – Tree traversal – Deletion – Searching an element – Breadth First Traversal - General tree into a Binary tree.

UNIT IV

Algorithm analysis and design Techniques: Efficiency of algorithms – analysis of recursive programs - Divide and conquer algorithms – Greedy algorithms –Solving recurrence equations-local search algorithms, **External storage:** A model of external computation –External sorting- storing information .in files.

UNIT V

Memory management: the Issues in memory management – managing equal sized blocks – garbage collection algorithms for equal sized blocks – storage allocation for objects with mixed sizes – fragmentation and compaction of empty blocks - Buddy systems - storage compaction.

TEXT BOOKS:

1. P. Radha Ganesan, "Data structures using C",Scitech Publications.
2. Alfred v. Aho, john E.Hopcroft, and Jeffrey D. Ullman, "Data Structures and algorithms", Pearson Education

UNITS COVERED:

BOOK 1

- **UNIT I** -Chap 1, 4
- **UNIT II**-Chap 6,7
- **UNIT III**-Chap 8,9

TEXT BOOK 2

- **UNIT IV**-Chap 9,10,11.
- **UNIT V**-Chap 12

REFERENCE BOOKS:

1. Robert L. Kruse, "Data structures and program design", prentice hall of India, 3rd edition.
2. Seymour Lipschutz, "Data Structures", McGraw Hills.
3. P.Radha Ganesan, " Data structures using C", Scitech Publication.

SEMESTER: III

DATA COMMUNICATIONS AND NETWORKING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 3**

AIM :

To provide knowledge about the Data Communication and Network

UNIT I:

Introduction-Data Communications-Components-Data representation-Data flow-Networks-Distributed processing-Network Criteria-Physical structures-Network models-Categories of network-Protocols and standards-Network model-Layers in the OSI model.

UNIT II:

TCP/IP protocol suite-Addressing-Physical layer and media-data and signals-analog and digital-periodic analog signals-digital signals-Performance-Transmission Media-Guided media-Unguided media

UNIT III:

Switching-circuit switched networks-datagram networks-Virtual circuit networks-Data link layer-Error detection and correction-types of errors-data link control-framing-flow and error control-Noiseless channels-Noisy channels

UNIT IV:

HDLC-Point to point protocol-Network layer-Unicost routing protocols-Multicost routing protocols-Connecting LAN's-Backbone Networks –Virtual LAN'S

UNIT V:

Transport layer-Process to process delivery-User datagram protocol-TCP services-TCP features-SCTP Services-SCTP features-Application layer-Remote logging-Telnet-Email-File transfer.

TEXT BOOK:

1. "Data Communication and Networking" – Behrouz A.Forouzan IV Edition

REFERENCE BOOK:

1. "Computer Networks" -Andrew S.Tanenbaum III Edition

UNITS COVERED:

UNIT I - Chapter-1,3 from TB

UNIT II - Chapter-4 from Text Book and Chap-2 from Ref.Book

UNIT III – Chapter-14 from Text Book and Chap-3 from Ref.Book

UNIT IV - Chapter-15 from Text Book and Chap-3 from Ref.Book

UNIT V - Chapter-6,7 from Ref. Book

SEMESTER: III

PROGRAMMING IN ASP.NET

Total hours: 60hrs **Hrs / week: 4**

Sub. Code: **Credit : 3**

AIM:

To enhance the knowledge on .Net environment

UNIT 1

Introduction – Environment setup – Lifecycle – First example – Event Handling – Server side – Server Controls

UNIT 2

HTML Server – Client Side – Basic controls – Directives – Managing states – Validators.

UNIT 3

Database Access – ADO. Net – File Uploading – AD Rotators – Calendars – Multi views – Panel Controls

UNIT 4

AJAX Controls – Data sources – Data Binding – Custom Controls – Personalization – Error Handling – Debugging

UNIT 5

LINQ – Security – Data Caching – Web services – Multi threading – Configuration – Deployment

TEXT BOOK

“Learn ASP.Net Web application framework “ -- Tutorial point

UNITS COVERED

Unit 1 – Chapter 1, 2, 3, 4, 5, 6 and 7

Unit 2 – Chapter 8, 9, 10, 11, 12 and 13

Unit 3 – Chapter 14, 15, 16, 17, 18, 19 and 20

Unit 4 – Chapter 21, 22, 23, 24, 25, 26 and 27

Unit 5 – Chapter 28, 29,30, 31, 32, 33 and 34

SEMESTER: III

PHP LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Creating simple webpage using PHP
2. Use of conditional statements in PHP
3. Use of looping statements in PHP
4. Creating different types of arrays
5. Usage of array functions
6. Creating user defined functions
7. Creation of files
8. File manipulation using PHP
9. Creation of sessions
10. Creation of cookies
11. Creating simple applications using PHP
12. Creating simple table with constraints
13. Insertion, Updating and Deletion of rows in MYSQL tables
14. Searching of data by different criteria
15. Sorting of data
16. Usage of sub queries
17. Usage of aggregate functions
18. Working with set operators
19. Working with string, numeric and date functions
20. Database connectivity in PHP with MySQL

SEMESTER: III

DATA STRUCTURES LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Program to find maximum number in array.
2. Program for three dimensional array.
3. Program to insert and delete elements in a linear array.
4. Program to illustrate structure and pointer.
5. Program to print current date and time using functions.
6. Implement PUSH, POP operations of stack using Arrays.
7. Implement insertion, deletion operations using linked list.
8. Program for linear array operations.
9. Implement add, delete operations of a queue using Pointers.
10. Program for circular queue.
11. Postfix Expression Evaluation.
12. Program for single linked list.
13. Creation, insertion, and deletion in doubly linked list.
14. Program to illustrate the implementation of stacks using linked list.
15. Program to implement circular linked list.
16. Program to demonstrate binary search tree.
17. Program to demonstrate depth first search.
18. Program to demonstrate breadth first search.
19. Binary tree traversals (in-order, pre-order, and post-order) using linked list.
20. Depth First Search and Breadth first Search for Graphs using Recursion.

SEMESTER: III

ASP.NET LAB

Total hours: 60hrs **Hrs / week: 4**
Sub. Code: **Credit : 2**

1. Program using structure and enum
2. Program using classes, methods, properties and read only property
3. Program for calculator program
4. Program using constructors, overload constructors and class events
5. Program using exception handling
6. Functions to perform various string operations
7. Program using .net built-in collection classes namely array list, bit array, hash tables, queue, sorted list, stack, collection, dictionary base.
8. Program using inheritance, constructors in inheritance
9. Program using overriding, abstract base classes, shared members and interface
10. Program using winForm controls
11. Program using streams and serialization
12. Program using database
13. Program to make a puzzle
14. Program for new component
15. Program for web application

SEMESTER: III

ELECTIVE II (1): MINI PROJECT

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 4**

SEMESTER: III

ELECTIVE II (2): MULTIMEDIA

Total hours: 60hrs	**Hrs / week: 3**
Sub. Code:	**Credit : 4**

AIM:

To provide knowledge on Media, Text, Image, Audio, Video and Animation

UNIT I:

Introduction: Multimedia Presentation and Production – Characteristics of Multimedia Presentation –Utilities of multi sensory perception-uses of multimedia– Hardware and Software Requirements. Text: Types of Text – Font – Insertion of Text – Text compression – File formats.

UNIT II:

Image: Image Types – Seeing Color – Color Models – Basic Steps for Image Processing – Scanner –Specification of Digital Images – Device Independent Color Models – Image Processing software – File Formats .

UNIT III:

Audio: Introduction – Acoustics – Nature of Sound Waves –Sound Card – Audio Transmission – Audio and Multimedia – Voice Recognition and Response - Audio Processing Software.

UNIT IV:

Video: Analog Video Camera – Video Signal Formats – Digital Video –- video capture software – Video Editing – Video Editing Software.

UNIT V:

Animation: Introduction- uses- Types of Animation –Principles of Animation– Animation on the Web – Special Effects – Animation software.

TEXTBOOK:

1. "PRINCIPLES OF MULTIMEDIA" – Ranjan Parekh, 2007, TMH.

UNITS COVERED:

- **UNIT I**-Chapters-1,4.
- **UNIT II**- Chapters-5
- **UNIT III**- Chapters-7
- **UNIT IV**- Chapters-8
- **UNIT V**-Chapters-9

REFERENCE BOOKS:

1. "MULTIMEDIA Making it Work "– Tay Vaughan, 7th edition, TMH.
2. "Comdex MULTIMEDIA AND WEB DESIGN" – Vikas Gupta, DreamTech press.2007.

SEMESTER: III

ELECTIVE II (3): WIRELESS &MOBILE COMPUTING

Total hours: 60hrs **Hrs / week: 3**
Sub. Code: **Credit : 4**

AIM:

To understand the concept of wireless communication, networks, mobile network layers, wireless application protocol models

UNIT I:

WIRELESS COMMUNICATION FUNDAMENTALS: Introduction – Wireless transmission – Frequencies for radio transmission – Signals – Antennas – Signal Propagation – Multiplexing – Modulations – Spread spectrum – MAC – SDMA – FDMA – TDMA – CDMA – Cellular Wireless Networks.

UNIT II:

TELECOMMUNICATION NETWORKS: Telecommunication systems – GSM – GPRS – DECT – UMTS – IMT-2000 – Satellite Networks - Basics – Parameters and Configurations – Capacity Allocation – FAMA and DAMA – Broadcast Systems – DAB - DVB.

UNIT III:

WIRLESS LAN: Wireless LAN – IEEE 802.11 - Architecture – services – MAC – Physical layer – IEEE 802.11a - 802.11b standards – HIPERLAN – Blue Tooth.

UNIT IV:

MOBILE NETWORK LAYER: Mobile IP – Dynamic Host Configuration Protocol - Routing – DSDV – DSR – Alternative Metrics.

UNIT V:

TRANSPORT AND APPLICATION LAYERS: Traditional TCP – Classical TCP improvements – WAP, WAP 2.0.

TEXT BOOK:

Jochen Schiller, "Mobile Communications", PHI/Pearson Education, Second Edition, 2003.

UNITS COVERED:

- **UNIT I** -Chap 1, 2 &3
- **UNIT II** -Chap 4, 5 &6
- **UNIT III** -Chap 7.
- **UNIT IV** -Chap 8
- **UNIT V** -Chap 9&10

REFERENCE BOOKS:

1. William Stallings, "Wireless Communications and Networks", PHI/Pearson Education, 2002.
2. Kaveh Pahlavan, Prasanth Krishna moorthy, "Principles of Wireless Networks", PHI/Pearson Education, 2003

SELF STUDY PAPER

LINUX

Semester : III **Credit: 1**

Subject Code:

AIM:

The Primary objective of this course is to learn principles of problem solving using Linux.

UNIT I:

History of Linux – Features of Linux operating system – Advantages of Linux –The Linux Architecture – Linux versus Unix – Linux Directory Hierarchy – Getting started with Linux.

UNIT II:

Linux file system – Types of files in Linux – Types of Users in Linux – Pathnames – Redirecting Input & Output – Essential Linux commands.

UNIT III:

Directory manipulation commands – File manipulation commands – File Comparison commands – Filter commands – Pattern searching commands – File Permission Commands – Communication commands – Process commands – File storage commands.

UNIT IV:

Text Editors – Function of an Editor-Vi Editor- Getting started with Vi Editor – Shell – Features of the Linux Shell – Shell as a command interpreter – Commonly available Shells.

UNIT V:

Shell Scripts in Linux – Shell Variables – Command substitution – Conditional execution constructs – Iteration constructs – Working with GNOME – Working with KDE.

REFERENCE BOOK:

1. P.Sudharson , “Linux Programming” second edition RPB Publications
2. RedHat Linux “Advanced programming in the Linux environment”
3. W. Stevens, Bill Fenner, Andrew Rudoff, “Linux Network Programming”

SEMESTER: IV

CLOUD COMPUTING

Total hours: 60hrs **Hrs / week:6**
Sub. Code: **Credit :3**

AIM

To enable the students to learn the concepts of cloud computing.

UNIT I:

Understanding cloud computing: An Introduction to cloud computing – what it is & what it is not – History: How cloud computing works – Cloud computing today: Computing in the cloud – Developing cloud services.

UNIT II:

Cloud computing for the community – Cloud computing for the corporation – Using cloud services : Collaborating on calendars, Schedules and task management – Exploring online calendar application – Exploring online schedule application – Exploring online Planning and task management.

UNIT III:

Collaborating on event management : Event management application – Exploring event management application – Collaborating on project management: Exploring project management applications – Collaborating on databases: how it works- exploring web based databases.

UNIT IV:

Storing and Sharing Files and other online content: Understanding cloud storage- Evaluating online File- Storage and sharing services – Exploring online book marketing services.

Sharing Digital Photographs: Exploring online photo – editing applications – exploring photo sharing communities – Controlling it all with Web based desktops.

UNIT V:

Collaborating via web based communication Tools: Evaluating Mail services – Instant Messaging Services – Web conferencing tools.

Collaborating via social networks & errorpware: Creating groups on social networks evaluation online groupware.

TEXT BOOK:

1. "Cloud computing web based application that change the way you work and collaborate online" by Michael miller

UNITS COVERED:

- **UNIT I** -Chap 1, 2 ,3
- **UNIT II** -Chap 5,7
- **UNIT III** -Chap 8,10,13
- **UNIT IV** -Chap 15,16,17
- **UNIT V** -Chap 18,19

REFERENCE BOOK:

1. "Cloud Computing: A Practical Approach" – Anthony T Velte, Toby J Velte, MGH, 2010
2. "Enterprise Cloud Computing" – Gautam Shroff, Cambridge, 2010

SEMESTER: IV

ORGANIZATIONAL BEHAVIOUR

Total hours: 60hrs **Hrs / week: 6**
Sub. Code: **Credit : 3**

AIM:

- Manage individuals and groups in organizations for maximum effectiveness.
- Describe, understand and manage formal organization structures.

UNIT I:

Organisation - Nature of Organisation-Concept of organization-Concept, nature of organizational behaviour-disciplines of OB-OB Model.

UNIT II:

Personality – Personality theories- Determinants of Personality– Concept of Perception-Perceptual process-Perception Inputs, Outputs-Perceptual organization-Interpersonal Perception.

UNIT III:

Concept, Nature of Learning-Components of Learning process-Factors affecting Learning- Concept, nature of motivation-Types of needs-Factors in job design.

UNIT IV:

Job satisfaction- Determinants of Job satisfaction- Effects of job satisfaction-Concept of Stress-Causes of Stress-Effects of stress-Coping strategies for stress.

UNIT V:

Concept of Leadership - Importance of leadership-Trait theory-Concept of communication- Elements of communication process- Two-way communication-Communication symbols-Communication Network-Barriers in communication.

TEXT BOOKS:

1. Organisational Behaviour-L.M.Prasad-Sultan chand & sons.

UNITS COVERED:

- **UNIT I** -Chap 1.
- **UNIT II** -Chap 4,5
- **UNIT III** -Chap 6,9
- **UNIT IV** -Chap 10,21
- **UNIT V** -Chap 16,17

REFERENCE BOOKS:

1. V.S.P Rao, Organizational Behaviour, Excel Books, 2009
2. Sekaran Uma Organizational Behaviour 2nd Edition Tata McGraw Hill 2006

SEMESTER: IV

CRYPTOGRAPHY & NETWORK SECURITY

Total hours: 60hrs **Hrs / week: 6**
Sub. Code: **Credit : 4**

AIM:

To enhance the knowledge on Cryptography Techniques

UNIT I:

Introduction: Overview – Services, Mechanisms, Attacks – OSI Security Architecture – Model for Network Security

Classical Encryption Techniques: Symmetric cipher model – Substitution techniques – transposition techniques – Rotor machine – Stenography

UNIT II:

Block ciphers, DES and AES: Simplified DES – Block cipher principles – Data Encryption Standard – Strength of DES - Evaluation criteria for AES – Advanced Encryption Standard cipher.

UNIT III:

Contemporary Symmetric Ciphers: Triple DES – Blowfish – RC5 – Characteristics of Advanced Symmetric Block Ciphers

Confidentiality using Symmetric Encryption: Placement of Encryption function – traffic Confidentiality – key distribution

UNIT IV:

Public key Cryptography and RSA: Principles of Public Key – Cryptosystems – RSA Algorithm – key Management – Diffie-Helmen key exchange

Message authentication and Hash Function: Authentication Requirements, Functions – Message Authentication Codes – Hash Functions

UNIT V:

Digital Signature: Digital Signature – Authentication protocols – Digital Signature Standard

System Security: Intruders - Intrusion Detection – Password management- Malicious software- viruses& related threats.

TEXT BOOK

1. "Cryptography & network security principles & practical"– William Stallings, 3rd edition.

UNITS COVERED

UNIT 1 – Chapter 1 (1.1-1.3), Chapter 2 (2.1-2.5)

UNIT 2 – Chapter 3 (3.1 – 3.4), Chapter 5 (5.1, 5.2)

UNIT 3 – Chapter 6 (6.1-6.4), Chapter 7 (7.1-7.3)

UNIT 4 – Chapter 9 (9.1, 9.2), Chapter 10 (10.1, 10.2), Chap- 11 (11.1-11.4)

UNIT 5 – Chapter 13 (13.1-13.3), Chapter 18 (18.1-18.3), Chapter 19 (19.1)

REFERENCE BOOKS:

1. "Cryptography and Network Security" – Behrouz A.Forouzan, The Mc Graw Hill, 2008
2. Cryptography and Network Security – William Stallings, PHI, 2008

SEMESTER: IV

RESEARCH - PROJECT

Total hours: 60hrs **Hrs / week: 12**
Sub. Code: **Credit : 10**

SELF STUDY PAPER

BIGDATA ANALYTICS

Semester : IV **Credit:1**

Subject Code:

UNIT I

INTRODUCTION TO BIG DATA - Big Data – Definition, Characteristic Features – Big Data Applications - Big Data vs Traditional Data - Risks of Big Data - Structure of Big Data - Challenges of Conventional Systems - Web Data – Evolution of Analytic Scalability - Evolution of Analytic Processes, Tools and methods - Analysis vs Reporting - Modern Data Analytic Tools.

UNIT II

HADOOP FRAMEWORK-distributed File Systems - Large-Scale File System Organization – HDFS concepts – Map Reduce Execution, Algorithms using Map Reduce, Matrix-Vector Multiplication – Hadoop YARN

UNIT III

DATA ANALYSIS-Statistical Methods: Regression modeling, Multivariate Analysis - Classification: SVM & Kernel Methods - Rule Mining - Cluster Analysis, Types of Data in Cluster Analysis, Partitioning Methods, Hierarchical Methods, Density Based Methods, Grid Based Methods, Model Based Clustering Methods, Clustering High Dimensional Data - Predictive Analytics – Data analysis using R.

UNIT IV

MINING DATA STREAMS- Streams: Concepts – Stream Data Model and Architecture - Sampling data in a stream - Mining Data Streams and Mining Time-series data - Real Time Analytics Platform (RTAP) Applications - Case Studies - Real Time Sentiment Analysis, Stock Market Predictions.

UNIT V

BIG DATA FRAMEWORKS-Introduction to NoSQL – Aggregate Data Models – Hbase: Data Model and Implementations – Hbase Clients – Examples – .Cassandra: Data Model – Examples – Cassandra Clients – Hadoop Integration. Pig – Grunt – Pig Data Model – Pig Latin – developing and testing Pig Latin scripts. Hive – Data Types and File Formats – HiveQL Data Definition – HiveQL Data Manipulation – HiveQL Queries

REFERENCE BOOKS:

1. Bill Franks, ―Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics‖, Wiley and SAS Business Series, 2012.
2. David Loshin, "Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph", 2013.
3. Michael Berthold, David J. Hand, ―Intelligent Data Analysis‖, Springer, Second Edition, 2007.
4. Michael Minelli, Michelle Chambers, and Ambiga Dhiraj, "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley, 2013.

5. P. J. Sadalage and M. Fowler, "NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence", Addison-Wesley Professional, 2012. 6. Richard Cotton, "Learning R – A Step-by-step Function Guide to Data Analysis, , O‘Reilly Media, 2013.

YADAVA COLLEGE

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Govindarajan Campus, Tiruppalai, Madurai-14.

DEPARTMENT OF INFORMATION TECHNOLOGY

CERTIFICATE COURSE

2018 - 2021

ENTREPRENEURSHIP AND SMALL BUSINESS

UNIT I:

Entrepreneurship-Definition- who is an entrepreneur- types- classification of Entrepreneur.

UNIT II:

Characteristics of an ideal and successful entrepreneur and essential qualities of an entrepreneur.

UNIT III:

How to start a new business-starting a new venture- sources of ideas- identifying a business opportunity.

UNIT IV:

Women entrepreneurs- functions –role- qualities-problems-development of Women Entrepreneurship in India.

UNIT V:

Space age technology- impact of new technology on existing entrepreneur- scope of automation.

TEXT BOOK:

J.Shanmuganathan, J.J. Publications, Madurai-20.

ORGANIZATIONAL BEHAVIOUR

UNIT I:

OB-Definition-Scope-Disciplines-Psychology-Sociology-social psychology-anthropology-political science-Economics-Ethics-Mathematics-Statistics

UNIT II:

Perception-Definition-Elements in perceptual process-Factors Influencing perception-perceiver-target-situation.

UNIT III:

Personality-Definition-Determinance of personality-biological contribution-cultural and family contribution-socialisation process-situational factors.

UNIT IV:

Motivation-Types of Motives-primary motives-general motives-secondary motives-affliation motives-security motives-status motives-The MBO approach to motivation

UNIT V:

Stress-Meaning-Factors-perception-prior experience-social acceptance and support-personalized individual differences-Effects of stress-management of stress.

TEXT BOOK:

Organizational Behaviour- Text & cases-Suja R Nair

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DEPARTMENT OF INFORMATION TECHNOLOGY

DIPLOMA COURSE

2018 - 2021

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

SYLLABUS FOR DCA

Semester	Part Code	Title of the Paper
I	I	PC HARDWARE
	II	MULTIMEDIA
	Lab	MULTIMEDIA LAB
II	I	INTERNET & E-COMMERCE
	II	CLIENT/SERVER COMPUTING
	Lab	WEB-PAGE DEVELOPMENT

SEMESTER I

PC HARDWARE

Total hours :90hrs **Hrs / week: 5**
Sub. Code :

UNIT I:

Fundamentals of PC technology: Fundamental building blocks of PC- Principles of CPU operation – Basic PC Signaling principles- BITS- BYTES & BUSES.

Microprocessor: CPU operation – CPU terminology – The PC family Tree- Trouble shooting with CPU- Handling & replacing the CPU- CPU configuration- CPU trouble shooting Check list.

UNIT II:

Mother boards: Mother boards controller and system resources- The IO system Bus- On-board IO devices- Chip set – ROM BIOS – ROM POST- CMOS Setup- Mother board physical form factors.

IO Ports & Devices: Serial Ports- Parallel Ports- Universal Serial Bus. **Keyboards & Pointing Devices**: Keyboards- Pointing Device.

UNIT III:

Power Supply, Cooling & Protection: The Power supply- Ventilation and cooling protection – Power protection and Backup.

Memory: How memory works – DRAM – SRAM- Memory chips & modules- Module sizes & banks of memory- Parity checking & ECC – DRAM timing & memory types- Trouble shooting memory – Advanced Memory technologies.

UNIT IV:

Modems and communications: Modems – ISDN – CATV network modems – DSL.

Networking: Networking fundamentals: Networking Hardware – Networking Protocols.

Portable PCs: Portable PC design – Portable System components.

UNIT V:

Trouble shooting Tools & Techniques: Tools of the trade- Basic Hardware tools – Advanced Tools- Software Tools- Basic PC handling Techniques – Handling the Power supply – ESD handling techniques- Component connection – Connecting the PC to the external environment.

Basic data recovery and disaster recovery : Disk structure and data recovery – Disaster recovery.

TEXTBOOK:

1. PC Hardware – The Complete Reference – Craig Zacker, John Rourke- Tata McGraw Hill Publishers.

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SEMESTER I

MULTIMEDIA

Total hours :90hrs **Hrs / week: 5**
Sub. Code :

UNIT I:

Introduction: Objectives – History of Multimedia – Its market – Content copyright – Resources for multimedia developers – Types of products – Evaluation – Hardware Architecture – OS and Software – Multimedia Architecture – Software library – Drivers.

UNIT II:

Text and Graphics : Elements of Text – Text Data files – Using text in Multimedia Application – Hypertext – Elements of Graphics – Images and color – Graphics files and Application formats – Creating images for multimedia use –Using graphics in Application.

UNIT III:

Digital Audio and Video : Characteristics of sound and Digital audio – Digital Audio systems – MIDI – Audio file formats – Using Audio in Multimedia Applications – Audio for content – Background as video – Characteristics of digital video – digital video data sizing - Video capture and playback systems –computer animation.

UNIT IV:

Product design and Authoring tools: Building blocks – classes of products – Content organizational strategies – story boarding – Multimedia tool selection – Tool feature – categories of Authoring tools – selecting the right authoring paradigm.

UNIT V:

Multimedia - Internet and Development: Internet – HTML and web authoring – Multimedia considerations for Internet – Design considerations for web pages-Team approach – Structured Multimedia development.

TEXT BOOK:

1. "Multimedia Technology and Applications" – David Hillman-Galgotia Publications pvt. Ltd, 1998.

REFERENCE BOOK:

1. "Multimedia making it works"- Tay Vaughan TMH, 1997

SEMESTER I

MULTIMEDIA LAB

Total hours :90hrs **Hrs / week: 5**
Sub. Code :

1. Write a program to Justify a text
2. Write a program to Study the notes of piano using the keyboard and store it in a file
3. Write a program to create a paragraph and store it in to a file name
4. Write a program for animation effect to transfer square to a triangle and then to a circle
5. Write a Program to show a bitmap image
6. Write a program to Create a web page for clothing company and it must have five links to other webpages
7. Write a program to Split MPEG video into smaller pieces for the purpose of sending it over the web.
8. Write a program to stimulate the game of pool table
9. Write a Program to simulate the game minesweeper
10. Write a Program to play wave or MIDI format sound files

SEMESTER II

INTERNET & E-COMMERCE

Total hours :90hrs **Hrs / week: 5**
Sub. Code :

UNIT I:

Introduction to E-Commerce: Internet & E-Commerce- History of Internet – Requirements for Internet.

Applications: Communicating with other users(E-Mail)- Getting informations (Browsers)- Connecting to Other computer systems (TELNET).

WWW: Web browsers – URL – Firewalls.

UNIT II:

E-Commerce in India: Business models of E-Commerce- B2B,B2C, C2B, C2C, G2B.

E-Commerce in Banking: E-Banking – INFINET-VSAT- ATM- ATM technology- Bio-metric ATM- ATM card- ATM usage- Internet banking – Secure growth of Internet Banking & E-Commerce.

Electronic Payments: VISA card- MASTER card- Credit card- Debit card- E-Cheque- E-Cheque process- E-Cash-E- purse.

UNIT III:

Online – business: E-payment – E-ticketing- E-dining- E-Ticketing in railways- E-brokerage- E-bill-E-ticketing in Jet airways- Online Marketing-Smart card .

Electronic data Interchange: EDI in E-Commerce – EDI in supply chain management – advantages of SCM- E-Commerce in SCM – SCM & Logistics- Information systems capability- Payment security- Spoofing – Sniffer- Content of Alteration – Deniel of Service.

UNIT IV:

Computer crimes: Money Thefting – Service Theft- System Theft- Information Altering – Malicious Access- Viruses.

Cryptograpy: Encryption & Decryption- Secret Key Cryptology – Data Encryption Standard – Public Key Encryption- SSL- SET- Security & Tips to Secure E-Commerce- Internet, Intranet and Extranet in E-Commerce.

Cyber Laws: Privacy protection Act- Electronic Communication privacy Act- Electronic Communication service- Digital Signature method of the recognition – Key pair method of recognition – Arrest without warrant – Recognition of electronic records- Indian IT act.

UNIT V :

HTML : Introduction to HTML – Adding headings- Adding paragraphs- Line break – Adding List- Text Style – Graphics – Tables in HTML – Hyper links – CSS.

TEXT BOOK:

1. Internet & E-Commerce – C. Nellai Kannan – NELS publication 2008.

SEMESTER II

CLIENT SERVER COMPUTING

Total hours :90hrs **Hrs / week: 5**
Sub. Code :

UNIT I:

Introduction to Client/server computing: Mainframe-Centric Client/server computing-Downsizing and client/server computing-client/server development tools-advantages of client/server computing-connectivity-User productivity-Reduction in Network traffic-Fasteer delivery of systems.

UNIT II:

Components of client applications: The client-the role of the client-client services-request for service-dynamic data exchange-object linking and embedding-common object request broker architecture.

UNIT III:

Components of server applications: Role of the server-Server functions-Network operating systems-Novell network-Lan manager-IBM lan server-Banyan vines-pc network file service-server operating systems:netware,OS/2,Windows NT,UNIX-system application architecture.

UNIT IV:

Components of client/server Architecture: Connectivity-Opensystem interconnect-Interprocess communication-communication Interface technology-client/server system development software-platform migration and

reengineering of existing systems-client/server development methodology-client/server systems development hardware.

UNIT V:

PC level processing units: Unix workstation server hardware-mirror disk-RAID-disk array-CDROM-WORM-network interface cards-client/server systems developments-service and support-system administration-availability-reliability-servicability-performance-network management-remote system management-security-LAN and Network management.

TEXT BOOK:

1.Patrick smith and steve Guengerich,Client/Server Computing,Prentice Hall of India,II Edition,1997.

REFERENCE BOOK:

1.Dewire and Dawana Travis, Client/Server Computing,MC GrawHill,1993.

SEMESTER II

WEB PAGE DEVELOPMENT

Total hours :90hrs **Hrs / week: 5**
Sub. Code :

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1. Creating a web-Page for University.
2. Creating a web-Page for Indian Southern Airlines.
3. Creating a web-Page for Tamilnadu Transport Corporation.
4. Creating a web-Page for Tamilnadu Tourism.
5. Creating a web-Page for Mobile shop
6. Creating a web-Page for Jewellery shop
7. Creating a web-Page for Boutique
8. Creating a web-Page for Furniture shop.
9. Creating a web-Page for Cosmetic shop.
10. Creating a web-Page for School.