YADAVA COLLEGE

(* An Autonomous Co-Educational Institution*

Affiliated to Madurai Kamaraj University)

Govindarajan Campus, Thiruppalai, Madurai – 625014.

DEPARTMENT OF INFORMATION TECHNOLOGY

UNDERGRADUATE

CBCS (2022-2025)

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 Choice)	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 Hours	100
Practical	40	60	3 Hours	100
Project	40	60	-	100

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2022-2025)

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
	Core 1		Programming in C	5	3
	Core 2		Programming in C Lab	3	3
	Core 3		Office Application Lab	2	2
	Allied 1		Statistics	6	5
	IV ENS		Environmental Studies	2	2
	IV SBE		Skill Based Elective	2	2
II	I		Tamil	5	3
	II		English	5	3
	Core 4		Data Structures with C++	5	3
	Core 5		Data Structure with C++ Lab	3	3

	Core 6		Web Technology Lab	2	2
	Allied 2		Digital Principles and Computer Organization	6	5
	IV VAE		Value Education	2	2
	IV SBE		Skill Based Elective	2	2
III	I		Tamil	5	3
	II		English	5	3
	Core 7		Data Base Management System	5	4
	Core 8		DBMS Lab	3	4
	Core 9		Accounting Software Lab	3	4
	Allied 3		Financial and Management Accounting	5	5
	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
	Core 10		Java Programming	5	4
	Core 11		Java Programming Lab	3	4

	Allied 4		Operational Research	5	5
	Elective 1		1. PHP Lab 2. Multimedia Lab 3. GUI Lab	3	3
	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	Core 12		Software Engineering	6	4
	Core 13		Operating System	6	4
	Core 14		.Net lab	5	4
	Core 15		Shell Programming Lab	5	4
	Elective 2		1. Computer Graphics 2. .Net Programming 3. Multimedia	6	3
	IV SBE		Skill Based Elective	2	2
VI	Core 16		Computer Network	5	4
	Core 17		Programming in PYTHON LAB	4	4
	Elective 3		1. PYTHON Programming 2. Artificial Intelligence	5	3

			3. Software Testing		
	Research		Project	12	6
	IV SBE		Skill Based Elective	2	2
	V PE/NCC		PE/NCC/NSS/EXT	2	1
Total				180	140

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2022-2025)

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	Programming in C	5	3
Core Papers	2	Programming in C LAB	3	3
	3	Office Application Lab	2	2
	4	Data Structure with C++	5	3
	5	Data Structure with C++ Lab	3	3
	6	Web Technology Lab	2	2
	7	Data Base Management System	5	4
	8	DBMS Lab	3	4
	9	Accounting Software Lab	3	4
	10	Java Programming	5	4
	11	Java Programming Lab	3	4
	12	Software Engineering	6	4

	13	Operating System	6	4
	14	.Net Lab	5	4
	15	Shell Programming Lab	5	4
	16	Computer Network	5	4
	17	Python Lab	4	4
Allied	1	Statistics	6	5
	2	Digital Principles & Computer Organization	6	5
	3	Financial and Management Accounting	5	5
	4	Operational Research	5	5
Elective	I	1. PHP Lab 2. Multimedia Lab 3. GUI Lab	3	3
	II	1. Computer Graphics 2. .Net Programming 3. Multimedia	6	3
	III	1. PYTHON Programming 2. Artificial Intelligence 3. Software Testing	5	3

Research		Project	12	6
Part IV	1	EVS	2	2
	2	VAE	2	2
	3	TAB/TAA/NME	4	4
	4	SBE	12	12
Part V		PE/NCC/NSS/EXT	2	1
Total			180	140

PROGRAMMING IN C

Semester   : I   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit   : 3

Objective:

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 1: (18 Hours)

Outcome: Understand the concept of basic program structure, data types and operators

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 2: (18 Hours)

Outcome: Gain the knowledge by analyze looping statements and Decision Making

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

Unit 3: (15 Hours)

Outcome: Understanding the concept of arrays and strings.

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 4: (14 Hours)

Outcome: Obtain the knowledge about Functions, Structures and Unions.

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

Unit 5: (10 Hours)

Outcome: Learn about pointers and I/O Operation of Files.

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

Pedagogy: (Teaching Methods):

Assignments, Chalk and Talk

Text Books:

1. "Programming in ANSI C", Tata McGraw Hill, New Delhi, 8ᵗʰ edition by Balagurusamy.E.

Reference Books:

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, D.M.Ritehie.

E – Resources

1. Tutorialpoints.com
2. W3school.com
3. Codeguru.com

Name of the Course Designer
1. M.UMA MAHESWARI

PROGRAMMING IN C LAB

Semester : I

Subject Code :

Hours/Week : 3

Total Hours/Semester: 45

Credit : 3

Objective:

To give the knowledge of Basic Program Constructs using C

Unit 1: (10 Hours)

Outcome: Develop the programs to gain knowledge of Operators, Data types and Branching.

Program to find simple interest for implementing operator and expression - Program to find biggest among 3 numbers for implementing Else-if ladder statement– Program to Generate EB bill for implementing nested if-else statement – Program to perform arithmetic operation for implementing switch statement

Unit 2: (9 Hours)

Outcome: Handle Decision making with while loop statements.

Program to find sum of digits for implementing while loop - Program to find reverse the digits for implementing while loop - Program to check palindrome number for implementing while loop - Program to check Armstrong number for implementing while loop combined with if statement

Unit 3: (8 Hours)

Outcome: Handle Decision making with for loop statements

Program to generate Fibonacci series to implement for loop - Program to generate Multiplication table to implement for loop - Program to generate print series to implement for loop - Program to check prime number to implement for loop combine with if statement.

Unit 4: (10 Hours)

Outcome: Gain the knowledge by implementing arrays and string

Program for sorting the number to implement one dimensional Array - Program for searching the number to implement one dimensional Array - Program for Matrix Addition to implement two dimensional Arrays – Program for string manipulation to implement String handling function

Unit 5: (8 Hours)

Outcome: Implementing functions, files, structure and pointers.

Program to find factorial of a number to implement function – Program for swapping to implement pointer – Program to generate student mark list for implementing structure – program to read and write in text file for implementing file management concepts

Name of the Course Designer

1. M.UMA MAHESWARI

OFFICE APPLICATION LAB

Semester : I   **Subject Code :**

Hours/Week : 2   **Total Hours/Semester: 30**

Credit : 2

Objective:

To give the knowledge of Office Application Software

Unit 1: (6 Hours)

Outcome: Give the Knowledge of Formatting in Word Processing

Preparing a neat aligned, error free document, add header and footer, also perform find replace operation and define bookmarks - Preparing documents with special effects and adding new Symbols and frames - Preparing documents with inserts pictures objects and database - Preparing labels - Preparing the documents in newspaper column layout.

Unit 2: (8 Hours)

Outcome: Demonstrating more options of word document.

Perform mail merger operation and preparing labels - Prepare a job application letter enclosing your bio-data - Demonstrate OLE concept by linking an excel worksheet into a word document - Type the text, check spelling and grammar, bullets and numbering list items.

Unit 3: (6 Hours)

Outcome: Handle worksheet and its features

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

Unit 4: (5 Hours)

Outcome: Give the experience of presentation

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

Unit 5: (5 Hours)

Outcome: gain the knowledge on database and reports.

      Create a query using the Query Wizard to sort the records based on a key in descending order - Create a report named "Books" and the books issued to date serial number of the book id - Design and create a database for Birthday list for family and friends.

Name of the Course Designer

1. P. MUTHUPETCHIAMMAL

STATISTICS

Semester   **: I**   **Subject Code :**

Hours/Week **: 6**   **Total Hours/Semester: 90**

Credit   **: 5**

Objective:

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

Unit 1: (20 Hours)

Outcome: Able to measures the value of central tendencies

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 2: (20 Hours)

Outcome: Understand the basics of Dispersion

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

Unit 3: (18 Hours)

Outcome: Able to find variation between the variables using correlation and regression.

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

Unit 4: (14 Hours)

Outcome: Analyze the regression co - efficient

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

Unit 5: (18 Hours)

Outcome: Gain knowledge of index numbers.

      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.

Pedagogy: (Teaching Methods):

      Assignments, Chalk and Talk, Video Tutorial,

Text Books:

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

Reference Books:

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

E – Resources

1. listendata.com
2. edureka.com

Name of the Course Designer
1. M.UMA MAHESWARI

DATA STRUCTURE WITH C++

Semester : II	**Subject Code** :
Hours/Week : 5	**Total Hours/Semester: 75**
Credit : 3	

Objective:

To gain knowledge about the implementation of the different data structures.

Unit 1: (15 Hours)

Outcome: Gain knowledge about Functions, Classes and Objects.

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 2: (18 Hours)

Outcome: Analyze constructor, destructor, and Inheritance and Overloading concepts.

Constructors and Destructors: Constructors – Parameterized constructors –Multiple constructors – Default constructor - Copy constructor – Destructors. **Inheritance:** Introduction - Single Inheritance - Multilevel inheritance - Multiple inheritances - Hierarchical Inheritance - Hybrid Inheritance. **Polymorphism**: Function Overloading – Operator Overloading

Unit 3: (12 Hours)

Outcome: Discuss the Basic terminologies of Algorithm

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

Unit 4: (15 Hours)

Outcome: Implementing strings, arrays and Handling Stacks and Queue

String processing: Introduction – Basic terminology - string operations. Arrays**:** Introduction-linear arrays - Traversing linear arrays - inserting and deleting. **Stacks:**

Introduction-array representation of stacks- linked representation of stacks- insertion and deletion in stack - application of stacks – recursion. **Queues:** Introduction – linked representation of queues.

Unit 5: (15 Hours)

Outcome: Discuss about trees Illustrate about linked list and memory allocation.

Linked lists: Introduction – representation of linked lists in memory - traversing a linked list – searching a linked list - insertion into a linked list- deletion from a linked list.

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

Pedagogy: (Teaching Methods):
PPT, Chalk and Talk

Text Books:

1. "Object Oriented Programming with C++" by E. Balagurusamy

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

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

Reference Books:

1. Object Oriented Programming in Microsoft C++,   Galgotia publication   by Robert Lafore.
2. Robert L.kruse, "Data structures and program design", prentice hall of India, 3ʳᵈ edition.

E – Resources

1. W3school.com
2. Codeguru.com

Name of the Course Designer

1. A. VENKATESAN

DATA STRUCTURE WITH C++ LAB

Semester   : II   **Subject Code :**

Hours/Week : 3   **Total Hours/Semester: 45**

Credit   : 3

Objective: To implement the basic constructs of storage structures with C++

Unit 1: (8 Hours)

Outcome: Gain knowledge by implementing functions, class, array and overloading

   Program for Swapping two values – Program for manipulators - Program for Function overloading - Program for Data conversion

Unit 2: (10 Hours)

Outcome: Obtain the knowledge of inheritance

   Program for Single inheritance - Program for Multiple inheritance - Program for Multi-level inheritance - Program for Hybrid inheritance

Unit 3: (9 Hours)

Outcome: Develop the program for linear array.

   Program to sort numbers in ascending order - Program for three dimensional array - Program to insert and delete elements in a linear array - Program to illustrate joining of strings - Program to find a letter in a string - Program to find a word in a string using string function.

Unit 4: (10 Hours)

Outcome: Implement PUSH, POP operations using stack.

   Implement PUSH, POP operations of stack using Arrays - Implement insertion, deletion operations using linked list - Program for linear array operations - Implement add, delete operations of a queue using Pointers - Program for circular queue.

Unit 5: (8 Hours)

Outcome: Demonstrate a Tree structure

Binary tree traversals (in-order, pre-order, and post-order) using linked list - Program to demonstrate binary search tree - Program to find number of nodes, depth and leaves in a tree - Program to demonstrate depth first search - Program to demonstrate breadth first search.

Name of the Course Designer

1. A.VENKATESAN

WEB TECHNOLOGY LAB

Semester   : II   **Subject Code :**

Hours/Week : 2   **Total Hours/Semester: 30**

Credit   : 2

Objective: To gain the knowledge on web page designing

Unit 1: (6 Hours)

Outcome: Gain knowledge by implementing basic components of HTML

Create a HTML Program for Levels of Heading - Create a HTML Program for Text Formatting - Create a HTML Program to display Ordered and Unordered List - Create a HTML Program for Link Tag.

Unit 2: (6 Hours)

Outcome: Obtain the knowledge of formatting, list and link

Create a HTML Program to Display Images - Create a HTML Program to Create Timetable - Create a Webpage using Marquee Tag - Create a Form for Students Details.

Unit 3: (5 Hours)

Outcome: Develop the program to handle multimedia objects.

Create a HTML Program to display Images using 2 division Frame - Create a HTML Program for 3d Frame - Create a HTML Program for Audio and Video Tag

Unit 4: (5 Hours)

Outcome: Implement programs for DHTML

Display data using External style sheet - Display the Contents using Event Handling method - Display data using internal style sheet - Create a simple Website

Unit 5: (8 Hours)

Outcome: Demonstrate Script programs

Write a Java script program to find Factorial - Write a Java script program to Reverse the digit - Write a Java script program to print Multiplication Table - Write a Java script program to generate Fibonacci series - Write a Java script program to find Biggest and Smallest Number.

Name of the Course Designer
1. S. THENMOZHI

DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION

Semester : II   **Subject Code :**

Hours/Week : 6   **Total Hours/Semester: 90**

Credit : 5

Objective: To gain the knowledge about the Digital computers, Number system and System Architecture.

Unit 1: (14 Hours)

Outcome: To gain the knowledge about the Number systems.

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

Unit 2: (18 Hours)

Outcome: Understand the concept of Gates and K-map.

Binary Codes**:** Excess 3 code - Gray Code-ASCII Code - Logic gates. Boolean Algebra**:** Laws of Boolean Algebra – Boolean simplifications- Karnaugh Map**:** K-Map simplifications-2variable K-map, 3variable K-map, 4variable K-map.

Unit 3: (20 Hours)

Outcome: To gain knowledge about the Flipflops, Register and Instructions.

Flip flops- Register transfer – Register transfer language - Arithmetic micro operations-logic Micro operations-Instruction codes-Computer registers-Computer Instructions-Instruction cycle.

Unit 4: (20 Hours)

Outcome: Gain the concept of Stack,Computer algorithms.

Stack organization-Instruction formats-Addressing modes-Computer Arithmetic-Addition, Subtraction, Multiplication, Division Algorithms.

Unit 5: (18 Hours)

Outcome: Understand the concept of Memory Organization.

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

Pedagogy: (Teaching Methods):

PPT, Chalk and Talk

Text Books:

1. Digital Circuits and Design", S. Salivahanan, S. Arivazhagan, Second Edition.

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

Reference Books:

1. "Digital Fundamentals" by V. Vijayendran.

2. John P. Hayes, "Computer Architrave and Organization", McGraw hill.

E – Resources

1. www.tutorialspoint.com
2. www.javatpoint.com

Name of the Course Designer

1. P.KARTHIKESWARI

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DEPARTMENT OF INFORMATION TECHNOLOGY

POSTGRADUATE

CBCS (2022-2024)

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 (Either or Choice)	5	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 (2022-2024)

POST GRADUATE PROGRAMME

M.Sc. INFORMATION TECHNOLOGY

Semester	Part Code	Subject Code	Title of the Paper	Teaching	
				Hours	Credits
I	Core 1		Data Structure and Algorithm	5	4
	Core 2		.Net Programming	5	4
	Core 3		Relational Data Base Management System	5	4
	Core 4		Data Structure lab	3	3
	Core 5		.Net Programming Lab	3	3
	Core 6		RDBMS Lab	3	3
	Elective 1		1. Statistical Computing 2. Operating System 3. Wireless and Mobile Computing	6	5
II	Core 7		Data Mining	5	4
	Core 8		Digital Image Processing	5	4
	Core 9		Advanced Java	5	4
	Core 10		Internet Programming Lab	3	3
	Core 11		Image Processing Lab	3	3

II	Core 12		Advanced Java Lab	3	3
	Elective II		1. Object Oriented Software Engineering 2. Optimization Technique 3. Artificial Intelligence	6	5
III	Core 13		Android Programming	5	4
	Core 14		Python Programming	5	4
	Core 15		Android Lab	2	3
	Core 16		Python Lab	2	3
	Core 17		Machine Learning	4	4
	Elective III		1. Mini Project 2. Cryptography and Network Security 3. Software Testing	6	5
	Elective IV		1. Internet Of Things 2. Software Project Management & Quality Assurance 3. Cloud Computing	6	5
	SS		Self study – Linux Programming	-	1
IV	Research		Project	30	10
	SS		Self Study- Big Data Analytics	--	1
Total				120	90

DEPARTMENT OF INFORMATION TECHNOLOGY

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2022-2024)

POST GRADUATE PROGRAMME

M.Sc. INFORMATION TECHNOLOGY

Nature Of Subject		Title	Hours	Credit
Core Theory	1	Data Structures and Algorithms	5	4
	2	.Net Programming	5	4
	3	Relational Database Management System	5	4
	4	Data Structures Lab	3	3
	5	.Net Programming Lab	3	3
	6	RDBMS Lab	3	3
	7	Data Mining	5	4
	8	Digital Image Processing	5	4
	9	Advanced Java	5	4
	10	Internet Programming Lab	3	3
	11	Image Processing Lab	3	3
	12	Advanced Java Lab	3	3

	13	Android Programming	5	4
	14	Python Programming	5	4
	15	Android Lab	2	3
	16	Python Lab	2	3
	17	Machine Learning	4	4
Elective	I II	1. Statistical Computing 2. Operating System 3. Wireless and Mobile Computing	6	5
	III	1. Object Oriented Software Engineering 2. Optimization Technique 3. Artificial Intelligence	6	5
	IV	1. Mini Project 2. Cryptography and Network Security 3. Software Testing	6	5
		1. Internet Of Things 2. Software Project Management & Quality Assurance 3. Cloud Computing	6	5
Research		Project Viva-Voce	30	10
Total			120	90

DATA STRUCTURES AND ALGORITHM

Semester   : I   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit   : 4

Objective:

To understand the basics of Algorithm and to gain knowledge about the advanced data structure

Unit 1: (15 Hours)

Outcome: Introduce problem solving techniques and pointers.

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 2: (18 Hours)

Outcome: Implementation of stack and queues.

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

Unit 3: (18 Hours)

Outcome: Representing graph and its search techniques.

Graphs: Definition – graph representation: Adjacency list – Adjacency matrix – Graph traversal: Depth First Search – Breadth First Search. **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 4: (12 Hours)

Outcome: Defining tree structure and its traversal.

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 5: (12 Hours)

Outcome: Analyze Algorithm and design techniques.

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.

Pedagogy: (Teaching Methods):

Seminar, Group Discussion. PPT, Chalk and Talk

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

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.

E – Resources:

1. Tutorialpoint.com
2. Codeguru.com

Name of the Course Designer:

1. **A.VENKATESAN**

.NET PROGRAMMING

Semester   : I   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit   : 4

Objective: To enhance the knowledge of   **.Net** Environment.

Unit 1: (12 Hours)
Outcome: To Understand the concepts of .NET framework

      The .Net framework: Introduction-Net revolution- .Net framework and its architecture-CLR-What is Assembly-Components of Assembly-DLL- Namespaces-Setting up ASP.Net and IIS. **VB.NET:** Introduction to VB.Net-VB.Net Applications, VB IDE, Forms, Properties, Events-VB language-Console Application and Windows Applications

Unit 2: (15 Hours)
Outcome: Gain the knowledge of VB.NET Applications

      Developing VB.NET Application: Data type, Declaring Variable, Scope of variable, Operators and Statements-Windows Applications-Forms, Adding controls to forms, Handling events, Msg box, Input box, Multiple forms, Handling mouse, keyboard events-Handling exceptions.

Unit 3: (15 Hours)
Outcome: Gain the knowledge of ASP.NET Applications

      Asp.Net Introduction: The .Net Framework-Learning the visual Basic .Net Language-Types, Object, and Namespaces. Developing Asp.Net Applications: Asp.Net Application – Web Form Fundamentals.

Unit 4: (15 Hours)

Outcome: Gain the knowledge of ASP.NET Applications

      Developing Asp.Net Applications: Web Controls – Using Visual studio. Net – Validation and Rich controls – State Management – Tracing, Logging, and Error Handling – Deploying Asp.Net.

Unit 5: (18 Hours)

Outcome: Understand the Concepts of ADO.NET

      ADO.NET: Overview of ADO.NET-ADO.NET Data Access-Connected and Disconnected database-Create connection using ADO.Net Object Model-Connection class, command class data binding-data list-data grid.

Pedagogy: (Teaching Methods):

      Chalk & Talk, Assignments, PPT

Text Books:

1. "Visual Basic .Net Black book"-Steven holzner.
2. "ASP.NET complete reference" –Mathew Mac donald,TMH.

Reference Books:
1. "ASP.NET Unleashed C# Programming"-Wrox publication
2. "Programming C#"- Jesse Liberty-O'Reilty Media

E – Resources:

1. www.html.com
2. www.geeksforgeeks.org

Name of the Course Designer:

1. S.THENMOZHI

RELATIONAL DATABASE MANAGEMENT SYSTEM

Semester   : I   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit   : 4

Objective:

To inculcate knowledge on RDBMS concepts and Programming with Oracle

Unit 1: (12 Hours)

Outcome: Understand DBMS concepts, database design

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 2: (18 Hours)

Outcome: Able to implement and work with oracle tables.

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 3: (15 Hours)

Outcome: Gain knowledge of arithmetic operations, functions, joins and set operations.

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 4: (15 Hours)

Outcome: Understand about PL/SQL, cursors & exceptions

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 5: (15 Hours)

Outcome: Analyze the PL/SQL procedure, packages and triggers.

PL/SQL Composite Data Types: Records – Tables – Varrays. **Named Blocks:** Procedures – Functions – Packages –Triggers –Data Dictionary Views.

Pedagogy: (Teaching Methods):
Chalk & Talk, Assignments, PPT

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

Reference Books:
1. Database Management Systems – Gerald V. Post, 3rd edition, TMH.
2. Database Management Systems – Arun Majumdar & Pritimoy Bhattacharya, 2007, TMH.

E – Resources
1. www.oracletutorial.com

Name of the Course Designer:
1. V. RATHI DEVI

DATA STRUCTURES LAB

Semester : I **Subject Code :**

Hours/Week : 3 **Total Hours/Semester: 45**

Credit : 3

Objective:

To give practical knowledge for various memory storage structure and algorithm

Unit 1: (10 Hours)

Outcome: Implement the concept of structure and pointers.

Program to find maximum number in array - Program for three dimensional array - Program to insert and delete elements in a linear array - Program to illustrate structure and pointer.

Unit 2: (8 Hours)

Outcome: Implement program for operations on stack

Program to print current date and time using functions - Implement PUSH, POP operations of stack using Arrays - Implement insertion, deletion operations using linked list - Program for linear array operations.

Unit 3: (8 Hours)

Outcome: Develop program for operations on Queues

Implement add, delete operations of a queue using Pointers - Program for circular queue - Postfix Expression Evaluation - Program for single linked list.

Unit 4: (9 Hours)

Outcome: Implement the coding using Linked List.

Creation, insertion, and deletion in doubly linked list - Program to illustrate the implementation of stacks using linked list - Program to implement circular linked list -Program to demonstrate binary search tree.

Unit 5: (10 Hours)

Outcome: Develop program for operations on tree structures

Program to demonstrate depth first search - Program to demonstrate breadth first search - Binary tree traversals (in-order, pre-order, and post-order) using linked list - Depth First Search and Breadth first Search for Graphs using Recursion.

Name of the Course Designer:

1. **A.VENKATESAN**

.NET PROGRAMMING LAB

Semester : I   **Subject Code :**

Hours/Week : 3   **Total Hours/Semester: 45**

Credit   : 3

Objective:

To obtain the knowledge of VB.NET, ASP.NET and ADO.NET

Unit 1: (10 Hours)

Outcome: Develop the programs to gain knowledge of Operators, Looping, Conditional statements.

Program using Operators-Program to display student's details-Programs using conditional statements-Program using Looping statements-Programs using forms.

Unit 2: (10 Hours)

Outcome: Develop the programs to gain knowledge of Windows and Console applications, branching statements.

Program to display patterns-Program for windows applications-Programs for Console applications-Programs using branching statements- Programs using forms.

Unit 3: (8 Hours)

Outcome: Develop the programs to gain knowledge of Msg box, Events, Database connections

Program for functions-Program for Delegates-Program using Mouse events-Program to display Information in Msgbox-Student details using Database-Employee details using Database-Program to display Information in Grid view.

Unit 4: (7 Hours)

Outcome: Develop the programs to gain knowledge of ASP.NET controls

Program using controls-Program using Image buttons-Web application to demonstrate properties of Image control-Program for Event handling-Program for Data manipulation using Grid-Program for Error handling.

Unit 5: (10 Hours)

Outcome: Develop the programs to gain knowledge of C#, Database connections

Program using Operators- -Programs using conditional statements-Program using Looping statements-Programs for Arrays-Programs for Class, objects, Constructors-Programs for Inheritance-Creating Employee database-Program for data grid.

Name of the Course Designer:

1. S.THENMOZHI

RDBMS LAB

Semester   : I   **Subject Code :**

Hours/Week : 3   **Total Hours/Semester: 45**

Credit   : 3

Objective:

To get aware of database related process through oracle

Unit 1: (12 Hours)

Outcome: Understand to create different types of queries

Handling Data Definition Languages - Handling Data Manipulation Languages -
Implementing Constraints

Unit 2: (10 Hours)

Outcome: Gain knowledge in writing queries and sub queries using Joins and Set Operations.

Queries using Arithmetic Operators – Queries for Handling Functions and Groupings,
Queries implementing Joins & Set operations - Implementing Sub Queries & Nested Queries

Unit 3: (8 Hours)

Outcome: Understand to Implement Control structures in PL/SQL

PL/SQL programs using Control Structures and Embedded SQL

Unit 4: (8 Hours)

Outcome: Gain knowledge to develop PL/SQL programs using Cursor & Exceptions, Triggers

PL/SQL programs implementing Cursors – Programs implementing Exception handling

Unit 5: (7 Hours)

Outcome: Gain knowledge to develop PL/SQL programs using Procedures, Functions & Packages

      PL/SQL programs for implementing Procedures – Programs implementing Functions – Programs implementing Packages – Programs raising Triggers

Name of the Course Designer

      1. V. RATHIDEVI

ELECTIVE I

STATISTICAL COMPUTING

Semester   : I   **Subject Code :**

Hours/Week : 6   **Total Hours/Semester: 90**

Credit   : 5

Objective:

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

Unit 1: (15 Hours)

Outcome: Understand the concept of Statistics & Classification

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

Unit 2: (20 Hours)

Outcome: Understand Central tendency, Dispersion

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

Unit 3: (15 Hours)

Outcome: Understand Procedure for testing of hypothesis I

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 4: (20Hours)

Outcome: Understand Procedure for testing of hypothesis II

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

Unit 5: (20 Hours)

Outcome: Understand Correlation & Regression

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

Pedagogy: (Teaching Methods):

Seminar, Chalk and Talk

Text Books:

1. Statistical Method – R.S. Guptha

Reference Books:

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

E – Resources

1. www.researchgate.net
2. www.coursera.org

Name of the Course Designer:

1. A.G.ALAMELUGEETHA

ELECTIVE I

OPERATING SYSTEM

Semester   : I   **Subject Code :**

Hours/Week : 6   **Total Hours/Semester: 90**

Credit   : 5

Objective:

To enhance the knowledge on Advanced Operating System

Unit 1: (15 Hours)

Outcome: Identify the different OS structure.

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 2: (20 Hours)

Outcome: Develop process models and compare different scheduling algorithms and Justify the IPC problems in Threads

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 3: (20 Hours)

Outcome: Managing memory allocation and resource allocation using deadlocks.

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

Unit 4: (15 Hours)

Outcome: Understand the Multimedia Operating System

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

Unit 5: (20 Hours)

Outcome: Learn the multiprocessor types and its scheduling.

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.

Pedagogy: (Teaching Methods):

Seminar, Group Discussion. PPT, Chalk and Talk

Text Books:

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

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.

E – Resources

1. www.britannica.com
2. www.compuhoy.com

Name of the Course Designer:

1. V.RATHIDEVI

ELECTIVE I

WIRELESS AND MOBILE COMPUTING

Semester **: I** **Subject Code :**

Hours/Week : 6 **Total Hours/Semester: 90**

Credit **: 5**

Objective:

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

Unit 1: (18 Hours)

Outcome: Understand the fundamentals of Wireless Communication

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 2: (22 Hours)

Outcome: Gain the knowledge for Telecommunication system

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 3: (15 Hours)

Outcome: Discuss about the 802.11 structure

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

Unit 4: (15 Hours)

Outcome: Manage the Network layer and DHCP

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

Unit 5: (20 Hours)

Outcome: Analyze Transport and Application Layer.

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

Pedagogy: (Teaching Methods):

Seminar, Group Discussion. PPT, Chalk and Talk

Text Books:

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

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

E – Resources

1. www.tutorialpoint.com
2. www.javatpoint.com

Name of the Course Designer:

1. L.UMARANI

DATA MINING

Semester : II   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit : 4

Objective: To enhance the knowledge of **.Net** Environment.

Unit 1: (12 Hours)
Outcome: To Understand the concepts of OLAP Technology and Data Warehousing

Data Mining: Introduction – Kind of Data – Data Mining Functionalities. **Data Warehouse and OLAP Technology**: Data Warehouse – A multidimensional Data Model – Data Warehouse Architecture – Data Warehouse Implementation.

Unit 2: (15 Hours)
Outcome: Gain the knowledge of Data Preprocessing and Data Mining Primitives.

Data Preprocessing: Data Cleaning – Data Integration and Transformation – Data Reduction. **Data Mining Primitives, Languages, and System Architecture**: Data mining Primitives – Data Mining Query Language – Architecture of Data Mining System.

Unit 3: (15 Hours)
Outcome: Gain the knowledge of Concept Description and Mining Association rules

Concept Description: Data Generalization and Summarization Based Characterization – Analytical Characterization – Mining Class Comparison – Mining Descriptive Statistical Measure in Large Databases. **Mining Association Rules**: Association Rule Mining - Mining Single-Dimensional Boolean Association rules from Transactional Databases – Mining Multi-Dimensional Association rules

Unit 4: (15 Hours)

Outcome: Understand the Knowledge of Classification and Prediction

      Classification and Prediction: Introduction – Issues regarding Classification and Prediction – Classification by Decision Tree Induction – Bayesian Classification – Classification by Back propagation – Other Classification methods – Prediction.

Unit 5: (18 Hours)

Outcome: Understand the Concepts Cluster Analysis

      Cluster Analysis: Introduction – Types of Data in Cluster Analysis – Categorization – Partitioning methods – Hierarchical methods – Density-Based methods – Grid-Based methods – Model based Clustering methods – Outlier Analysis

Pedagogy: (Teaching Methods):
      Seminar, Group Discussion. PPT, Chalk and Talk

Text Books:
1. "Data Mining: Concepts and Techniques" – Morgan Kaufmann Publishers by Jiawi Han, Micheline Kamber

Reference Books:
1. "Introduction to Data Mining" by Tan, Steinbach & Kumar
2. "Data Mining: Practical Machine Learning Tools and Techniques" by Ian H.Witten & Eibe Frank

E – Resources

1. www.ngdata.com

2. www.cometativeedge.com

Name of the Course Designer:

1. M.UMA MAHESWARI

DIGITAL IMAGE PROCESSING

Semester : II   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit : 4

Objective:

To provide more techniques in the Digital Image Processing for image enhancement, restoration of noisy images and have wide applicability in any field which needs to handle the image data.

Unit 1: (15 Hours)

Outcome: Understand the basics of Digital Image Processing

Introduction: What is Digital Image Processing – Components of an Image Processing System- Fundamental steps in Digital Image Processing.

Digital Image Fundamentals: Image Sensing and Acquisition – Some Basic relationship between pixels – Using Arithmetic / Logic operations

Unit 2: (15 Hours)

Outcome: Understand the basic image enhancement techniques in spatial domain

Intensity transformation and spatial filtering: Some Basic Intensity transformation function – Image Negatives- Log Transformation – Power law Transformation – Smoothing Spatial filters – Sharpening Spatial filters

Unit 3: (15 Hours)

Outcome: Understand the basic Color models and to apply in various image handling fields

Color Image Processing: Color models – The RGB Color model – The CMY and CMYK Color models – HSI model.

Pseudo color Image Processing: Intensity Slicing – Intensity to Color Transformation

Smoothing and Sharpening: Color Image Smoothing – Color Image Sharpening.

Unit 4: (15 Hours)

Outcome: Understand the Image compression techniques

Image Compression: Coding Redundancy – Spatial and Temporal Redundancy – Image Compression models

Unit 5: (15 Hours)

Outcome: Understand the basic Segmentation methods

Point, Line and Edge Detection: Detection of Isolated points – Line detection – Edge models – Basic Edge Detection.

Region – Based Segmentation: Region Growing – Region Splitting and Merging.

Pedagogy: (Teaching Methods):

Seminar, Group Discussion. PPT, Chalk and Talk

Text Books:

1. Digital Image Processing, Third Edition by Rafel C. Gonzalez and Richard E. Woods, Pearson Education

Reference Books:

1. Fundamentals of Digital Image Processing by Anil K. Jain, PHI

E – Resources
1. www.mathworks.com
2. www.analyticsvidhya.com

Name of the Course Designer:

1. V. RATHI DEVI

ADVANCED JAVA

Semester   : II   **Subject Code :**

Hours/Week : 5   **Total Hours/Semester: 75**

Credit   : 4

Objective:

To study the importance of networking in java and to gain knowledge about JFC, JSP and Servlets.

Unit 1: (15 Hours)

Outcome: Understand about Interfaces & Packages

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. Interface**:** Defining interfaces – extending and implementing interfaces. **Packages:** Java API packages – creating packages – accessing and using a package.

Unit 2: (15 Hours)

Outcome: Understanding the concepts of Threads, Exception handling and JDBC connectivity

Thread: creating threads – extending the thread class - Life cycle of thread – thread priority. **Managing errors and exceptions:** exceptions – exception handling code - multiple catch statements. **Java Database Connectivity**: JDBC Drivers – statements - catching database result.

Unit 3: (15 Hours)

Outcome: Learning the importance of J2EE Architecture, swings and networking in java.

J2EE Multitier Architecture: Distributive Systems – J2EE Multitier Architecture – Client Tier Implementation – Web tier Implementation.

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 4: (15 Hours)

Outcome: Gain knowledge about RMI and Servlets.

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.

Unit 5:

Outcome: Analyze the components of JSP and EJP

JSP: JSP tags – Variables and Objects – Methods – Control Statements – Loops – Cookies – Session – Objects.

EJB: Enterprise Java Beans – Deployment Descriptor – The Anatomy of Deployment Descriptor – Environment elements – Referring EJP – Reference other resources – Sharing resources – Security elements – Query elements – Relationship elements – Assembly elements – Exclude list elements.

Pedagogy: (Teaching Methods):

Seminar, PPT, Chalk and Talk

Text Books:

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

2. C.Xavier, "Java Programming a Practical Approach" McGraw Hill

3. Tim Keough, "The Complete Reference J2EE" TMH Publication

Reference Books:

1. Ivan Bayross, "Java 2.0 (Web enabled commercial application development)", BPB Publications.
2. MCGovern, "J2EE Bible", Wiley Dreamtech India PVT, Ltd.

E – Resources

1. www.w3schools.com

Name of the Course Designer:

1. **A.VENKATESAN**

INTERNET PROGRAMMING LAB

Semester   **: II**   **Subject Code :**

Hours/Week : 3   **Total Hours/Semester: 45**

Credit   **: 3**

Objective:

       To gain experience in developing websites

Unit 1: (10 Hours)

Outcome: Develop Programs using HTML Tags and CSS

       Develop program using Basic HTML Tags – program using List tags – Program using Image tag – Develop program using Table tag – Program using Anchor Tag- program using frame tag – program using Cascading Style sheet - program using External Style Sheet.

Unit 2: (8 Hours)

Outcome: Implement Java script Conditional checking, Looping and Dialog boxes

       Develop Program using JavaScript Basic programming Techniques- Program using Operator and Expression - Program using Conditional Checking- Program using Looping Constructor - Program using Function - Program using Dialog box.

Unit 3: (10 Hours)

Outcome: Handling Events and Build in Object

       Program using Event Handling - Program using Form Object - Program using Other Built in Object - Program using User defined object.

Unit 4: (9 Hours)

Outcome: Develop program using Bootstrap controls

Develop Program using Bootstrap Grid System – program using Components –Label, Buttons, Forms, Horizontal Forms, Control Size, More Buttons, Input group, Navigation bar (navbar).

Unit 5: (8 Hours)

Outcome: Implement jQuery concepts

Develop program using jQuery Element, Filters – Program using Event Handling.

Name of the Course Designer
   1. S.THENMOZHI

IMAGE PROCESSING LAB

Semester : II	**Subject Code :**
Hours/Week : 3	**Total Hours/Semester: 45**
Credit : 3	

Objective: To implement Image Processing Techniques using MATLAB

Unit 1: (10 Hours)

Outcome: To manipulate images

Manipulation of Images, Drawing Concentric Circle – Bar Chart with legends – Image Negation.

Unit 2: (10 Hours)

Outcome: To undergo Transformation functions and perform Histogram mapping

Space Curve fitting - Histogram Mapping and Equalization – Rcosine Plotting – Power Law Transformation

Unit 3: (10 Hours)

Outcome: To perform Arithmetic Operation on images

Complement of Images – 3D Plotting -Arithmetic Operation on Images – Image Cropping

Unit 4: (8 Hours)

Outcome: To perform Flipping and stretching of images

Basic Operation on Matrices – Flipping of Images – Student Marklist Preparation - Image Stretching

Unit 5: (7 Hours)

Outcome: To undergo Smoothening and Sharpening of Images

Drawing Sinewave in Subplots – Drawing Shapes in Figure Window- Extraction of Different Image Attributes – Image Smoothening and Sharpening.

Name of the Course Designer:

1. **V. RATHI DEVI**

ADVANCED JAVA LAB

Semester   : II   **Subject Code :**

Hours/Week : 3   **Total Hours/Semester: 45**

Credit   : 3

Objective:

To Implement Advanced Java Components

Unit 1: (8 Hours)

Outcome: Create a program using string function.

Program for print the Adam numbers - Program using with string function - Program for multilevel inheritance - Program for using interface.

Unit 2: (10 Hours)

Outcome: Design the Applet program.

Program to invoke the user defined package - Applet program that calculate the employee salary details - Applet program to change the font style and size.

Unit 3: (8 Hours)

Outcome: Construct the Coding for swing concept.

Program to print the URL and local port - Program to send the message from one system to another using networking concept - Create the students details using Swing - Program to retrieve the data from the combo box using JDBC.

Unit 4: (10 Hours)

Outcome: Implement RMI concept.

Program using RMI to sort the given numbers - Program using RMI to generate ticket ID for the ticket issued by the client - Program using RMI to add the numbers.

Unit 5: (9 Hours)

Outcome: Develop a webpage using JSP.

Program using frame which display time and date in client from the server - Create a webpage using JSP - Create a bio-data using JSP.

Name of the Course Designer:

1. **A.VENKATESAN**

ELECTIVE II

OBJECT ORIENTED SOFTWARE ENGINEERING

Semester   : II   **Subject Code :**

Hours/Week : 6   **Total Hours/Semester: 90**

Credit   : 5

Objective:

To understand UML concepts

Unit 1: (20 Hours)

Outcome: Modeling the UML diagrams.

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: (20 Hours)

Outcome: Analyzing the requirements.

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

Unit 3: (15 Hours)

Outcome: Addressing the system design.

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

Unit 4: (20 Hours)

Outcome: Managing reuse techniques and specifying object design interface.

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: (15 Hours)

Outcome: Mapping models to code and managing implementation and testing.

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

Pedagogy: (Teaching Methods):

Seminar, Group Discussion. PPT, Chalk and Talk,

Text Books:

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

Reference Books:

1. Object Oriented Software Engineering by Ivar Jaccobson, Magnus christerson

E – Resources

1. www.researchgate.net
2. www.wikipedia.com

Name of the Course Designer:

1. **S.THENMOZHI**

ELECTIVE II

OPTIMIZATION TECHNIQUES

Semester   : II   **Subject Code :**

Hours/Week : 6   **Total Hours/Semester: 90**

Credit   : 5

Objective:

Improving management skills by applying management theories in real life and understanding and Interpreting Financial Statements

Unit 1: (20 Hours)

Outcome: Understand to convert problems into mathematical model

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 2: (20 Hours)

Outcome: Understand to Solve Transportation Problems

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 3: (15 Hours)

Outcome: Understand to Solve Assignment, Travelling Salesman Problems

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 4: (12 Hours)

Outcome: Understand the usage of Game Theory

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 5: (18 Hours)

Outcome: Understand to Formulate and solve problems as Networks and Graphs

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

Pedagogy: (Teaching Methods):

Seminar, Group Discussion, Chalk and Talk

Text Books:

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

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.

E – Resources

1. www.britannica.com
2. www.researchgate.net

Name of the Course Designer:

1. **A.G.ALAMELU GEETHA**

ELECTIVE II

ARTIFICIAL INTELLIGENCE

Semester   : II   **Subject Code :**

Hours/Week : 6   **Total Hours/Semester: 90**

Credit   : 5

Objective:

This concept explains in detail about Artificial Intelligence.

Unit 1: (18 Hours)

Outcome: Understand the basic concepts and Algorithms of AI

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 2: (12 Hours)

Outcome: Gain Knowledge on chaining concepts.

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 3: (20 Hours)

Outcome: Understand the concepts of Prolog

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 4: (20 Hours)

Outcome: Analyze the concepts of Planning and Neural Networks

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 5: (20 Hours)

Outcome: Gain knowledge about Expert system

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

Pedagogy: (Teaching Methods):

Seminar, Group Discussion. PPT, Chalk and Talk

Text Books:

1. Elain rich and Kevin Knight," Artificial Intelligence", Tata McGraw-Hill Publishing Limited, NewDelhi, 1995
2. 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. 2. Dan W.Patterson,"Introduction to Artificial Intelligence and Expert System", Prentice Hall, 1992

E – Resources

1. www.techopedia.com
2. www.researchgate.net

Name of the Course Designer:

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