




**PSGR
Krishnammal College for Women**



College of Excellence,  2021-6th Rank

Autonomous and Affiliated to Bharathiar University

Reaccredited with A++ grade by NAAC, An ISO 9001: 2015 Certified Institution

Peelamedu, Coimbatore-641004

DEPARTMENT OF COMPUTER SCIENCE (PG)

**CHOICE BASED CREDIT SYSTEM (CBCS) & LEARNING OUTCOME BASED
CURRICULAR FRAMEWORK (LOCF)**

MASTER OF SCIENCE (COMPUTER SCIENCE)

2022 - 2024 BATCH

(Semesters I)



M.Sc. Computer Science

Programme Outcomes

After completion of the programme, the student will be able to

PO1: Demonstrate broad knowledge in core areas of computer science, current and emerging technologies in IT

PO2: Apply higher degree of technical skills in problem solving and application development

PO3: Gain analytical and managerial skills to enhance employment potential

PO4: Acquire holistic development with strong emphasis on values and ethics

Programme Specific Outcomes

The students at the time of graduation will

PSO1: Identify and formulate complex problems to achieve solutions using concepts of algorithms, advanced networks, database management systems, artificial intelligence and machine learning

PSO2: Design solutions for complex problems and design processes that meet the specific needs of the society.

PSO3: Create and apply appropriate techniques, resources and tools including prediction and modeling to multifaceted activities

PSO4: Apply programming and technical skills to solve real life complex problems and hence enhance employability

PSO5: Analyze research methods including interpretation of data and synthesis of the information to provide valid conclusions.

PSO6: Demonstrate skills as an individual and as a member or leader in diverse teams

PSO7: Recognize the need for life-long learning and pursue career as a researcher or software engineer.

PSO8: Apply ethical principles and contribute effectively to the welfare of the society



**Programme & Branch: M.Sc. Computer Science
Curriculum and Scheme of Examination (2022 - 2024 Batch onwards)
Semesters I**

Semester	Part	Subject Code	Title of Paper	Instruction hours/week	Contact hours	Tutorial hours	Duration of Examination	Examination Marks			Credits
								CA	ESE	Total	
I	III	MCS2201	Paper 1: Design and Analysis of Algorithms	4	56	4	3	50	50	100	4
I	III	MCS2202	Paper 2: Network Security	4	56	4	3	50	50	100	4
I	III	MCS2203	Paper 3: Modern Operating Systems	4	56	4	3	50	50	100	4
I	III	MCS2204	Paper 4: Web Programming	4	56	4	3	50	50	100	4
I	III	MCS2205	Paper 5: Advanced Database Management Systems	4	56	4	3	50	50	100	4
I	III	MCS21P1	Lab 1: ADBMS Lab	5	75	-	3	50	50	100	3
I	III	MCS22P2	Lab 2: Web Programming Lab	5	75	-	3	50	50	100	3
I	III		Online course	-	-	-	-	-	-	-	-

QUESTION PAPER PATTERN

Core Papers

CA I & II:

CIA Question Paper Pattern: 2 x 25 = 50 Marks

One question from each unit with each question comprising of

- Two questions with a weightage of 2 marks (no choice)
- Two questions with a weightage of 6 marks (no choice)
- One question with weightage of 9 marks (Internal Choice at the same CLO level)

ESE Question Paper Pattern: 5 x 20 = 100 Marks

One question from each unit with each question comprising of

- One question with a weightage of 2 marks (no choice)
- One question with a weightage of 6 marks (Internal Choice at the same CLO level)
- One question with weightage of 12 marks (Internal Choice at the same CLO level)

MCS2201	DESIGN AND ANALYSIS OF ALGORITHMS	Category	L	T	P	Credit
		III	56	4	-	4

Preamble

This course covers the fundamental techniques for designing and analyzing algorithms, including asymptotic analysis, Trees, graphs, divide and conquer algorithms and recurrences. It also presents effective search methods, graph algorithms and randomized algorithms

Prerequisite

Data structures and algorithms

Course Learning Outcomes

On successful completion of the course, the students will be able to

CLO Number	CLO Statement	Knowledge Level
CLO1.	Understand the performance of algorithms using analysis techniques.	K2
CLO2	Apply appropriate algorithms and data structures for various applications	K3
CLO3.	Analyze the computational complexity of various and estimate their worst-case and average-case behavior	K4
CLO4.	Evaluate the analysis of algorithm efficiency using different notations	K5
CLO5	Design, implement, and evaluate an algorithm to meet desired needs	K6

Mapping with Programme Outcomes

CLOs	PO1	PO2	PO3	PO4
CLO1.	S	M	M	L
CLO2.	S	M	M	L
CLO3.	S	M	M	L
CLO4.	S	M	M	L
CLO5.	S	M	M	L

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(11 Hrs)

Basic concepts in Algorithmic Analysis: Introduction- Historical Background - **Binary Search-Merging Two Sorted -Selection Sort - Insertion Sort**-Bottom-up Merge Sorting- **Time**

Complexity- Space Complexity- How to Estimate the Running Time of an Algorithm Worst-Case and Average-Case Analysis- Amortized Analysis.

UNIT II

(11 Hrs)

Data Structures: Introduction- **Linked Lists-Trees- Binary Trees**. Heaps data structures: Introduction- Heaps- Divide and Conquer: Introduction- Binary Search-**Merge sort**- The Divide-and-Conquer Paradigm- Selection: Finding the Median and the kth Smallest- **Quick sort**.

UNIT III

(11 Hrs)

AVL trees: Definition – Height – searching – insertion and deletion of elements-**AVL rotations – Analysis**. Red black trees: Definition – searching – **insertion and deletion of elements** – Algorithms and their time complexities. Splay trees: Definition – **Steps in Splaying** – Analysis -Multi-way search trees: Indexed Sequential Access – m-way search trees – B-Tree – searching, **insertion and deletion - B⁺ trees**

UNIT IV

(11 Hrs)

Dynamic Programming: Introduction- The Longest Common Subsequence Problem- The Dynamic Programming Paradigm- The All-Pairs Shortest Path Problem- **Travelling sales Person problem** - The Knapsack Problem. Greedy Approach: Introduction- The Shortest Path Problem- **Minimum Cost Spanning Trees (Kruskal’s Algorithm)- Minimum Cost Spanning Trees (Prim’s Algorithm)**

UNIT V

(12 Hrs)

Graph Traversal : Introduction-Depth First search-**Applications of DFS**-Breadth-First search-**Applications of BFS**-Complexity of Problems: NP-complete Problems:- Introduction-The Class P-The Class NP-**NP-complete Problems**.Backtracking: Introduction-**The 8-Queens Problem- Sum of Subset Problem – Graph Coloring – Hamiltonian Cycles**

Text Book

M. H. Alsuwaiyel (2016), "Algorithms Design Techniques and Analysis" Revised Edition, World Scientific Publishing Co. Pvt. Ltd

Reference Books

1. Ellis Horowitz, SartajSahni and S,anguthevarRajasekaran (2019). Fundamentals of Computer Algorithms, 2/e, Universities Press Private Limited, India
2. PriyaSen, “Design and Analysis of Algorithm” (2017), Tutorial Point(I) Pvt. Ltd.

Web Resources

- 1.<https://www.kobo.com/us/en/ebook/basic-concepts-in-data-structures>
- 2.<https://www.amazon.in/Trees-Data-Structures-Hrushikesava-Sangaraju/dp/6203192775>
- 3.https://www.google.co.in/books/edition/A_Common_Sense_Guide_to_Data_Structures/dg4CEAAQBAJ?hl=en&gbpv=1&printsec=frontcover

Pedagogy:

Lectures, Group Discussions, Case studies

Course Designers:

1. Dr.J.Athena
- 2.Ms.A.SheelaRini

MCS2202	NETWORK SECURITY	Category	L	T	P	Credit
		III	56	4	-	4

Preamble

This course presents the fundamental concepts of cryptography and network security. It focuses on web security, IP security and system security. It also deals with the practical applications of network security.

Prerequisite

- Number Theory
- Computer Networks

Course Learning Outcomes

On successful completion of the course, the students will be able to

CLO Number	CLO Statement	Knowledge Level
CLO1.	Understand the basics of Cryptography and Network Security	K2
CLO2.	Apply Cryptography Theories, Algorithms and Techniques to Build Protection Mechanisms	K3
CLO3.	Analyze Cryptographic methods and algorithms for a secure storage and movement of data	K4
CLO4.	Evaluate the security of the in-built cryptosystems and threats in network security	K5
CLO5.	Develop cryptographic algorithms and authentication schemes for information security and authorization.	K6

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4
CLO1.	S	S	M	M
CLO2.	S	S	M	S
CLO3.	S	S	M	S
CLO4.	S	S	S	S
CLO5.	S	S	S	S

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(10 Hrs)

Computer and Network Security Concepts: Computer Security Concepts, **OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms**, Fundamental Security Design Principles, Attack Surfaces and Attack Trees, Model for Network Security. Classical Encryption Techniques: Symmetric Cipher Model, Substitution Techniques, Transposition Techniques, **Steganography**.

UNIT II

(11 Hrs)

Block Ciphers and the DES: Traditional Block Cipher Structure, DES, DES Example, **Strength of DES, Block Cipher Design Principles**. Random Bit Generation and Stream Ciphers: Principles of Pseudorandom Number Generation, Pseudorandom Number Generation Using a Block Cipher, **Stream Ciphers**, RC4. Public Key cryptography and RSA: Principles of Public–Key Cryptosystems, RSA Algorithm.

UNIT III

(11 Hrs)

Other Public–Key Cryptosystems: Diffie-Hellman Key exchange, Elliptic Curve Cryptography. **Cryptographic Hash Functions: Applications of Cryptographic Hash Functions, Secure Hash Algorithm (SHA)**. Message Authentication Codes: Message Authentication Requirements, Message Authentication Functions, Requirements for Message Authentication Codes, Security of MACs.

UNIT IV

(12 Hrs)

Digital Signatures: Introduction, Elgamal and Schnorr Digital Signature Scheme, NIST, Elliptic Curve and RSA-PSS Digital Signature Algorithm. Transport-Level Security: Web Security Considerations, Transport Layer Security, HTTPS, Secure Shell (SSH). **Electronic Mail Security: Internet Mail Architecture, Email Formats, S/MIME, Pretty Good Privacy**

UNIT V

(12 Hrs)

IP Security: Overview, Policy, Encapsulating Security Payload. Intruders: Intruders, Intrusion Detection, Password Management. Malicious Software: Types, Viruses, Virus Countermeasures, Distributed Denial of Service Attacks. **Firewalls: The Need for Firewalls, Firewall Characteristics, Types of Firewalls**.

Text Book

William Stallings (2017). Cryptography and Network Security - Principles and Practices, Seventh Edition, Pearson India Education.

Reference Books

1. AtulKahate (2019). Cryptography and Network Security, 4E,McGraw-Hill
2. BruceSchneier (2008). Applied Cryptography – Principles, Algorithm and Source in C, 2/e, Wiley India Pvt. Ltd, New Delhi.

Pedagogy:Lectures, Demonstrations, Case Studies

Course Designers

1. Dr. M. Sasikala
2. Dr. R. Kowsalya

MCS2203	MODERN OPERATING SYSTEMS	Category	L	T	P	Credit
		III	56	4	-	4

Preamble

This course introduces the architecture of various modern operating systems. It also includes the techniques such as virtualization, scheduling, memory management and distributed system. The course provides case studies in Linux and Android.

Prerequisite

- Operating System
- Data Structure

Course Learning Outcomes

On successful completion of the course, the students will be able to

CLO Number	CLO Statement	Knowledge Level
CLO1.	Understand the concepts of distributed operating system.	K2
CLO2.	Apply the concepts of distributed operating system in various models	K3
CLO3.	Analyze the controlling access techniques in distributed operating system in various environments	K4
CLO4.	Evaluate file system structure tools used in modern operating systems	K5
CLO5.	Perform administrative tasks on Linux Servers and compare iOS and Android Operating Systems.	K6

Mapping with Programme Outcomes

CLOs	PO1	PO2	PO3	PO4
CLO1.	S	M	M	S
CLO2.	S	S	M	M
CLO3.	S	M	M	S
CLO4.	M	S	L	S
CLO5.	S	S	M	S

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(11 Hrs)

Distributed Systems – Network Hardware - Network Services and Protocols-Document Based Middleware – File system based middleware - Object based middleware- Co-ordination based middleware – **Multi computers : User level Communication software** – Remote Procedure call - Distributed shared memory – Multicomputer scheduling – Load Balancing.

UNIT II

(11 Hrs)

Virtualization and the cloud – History - Requirements for virtualization - Type 1 and Type 2 Hypervisors - Techniques for efficient virtualization - Memory Virtualization - I/O Virtualization - Virtual Appliances - **Virtual Machines on Multicore CPUs – Clouds - Research on virtualization and the cloud**

UNIT III

(12 Hrs)

Security Environment: Threats – Attackers - Controlling Access to Resources - Protection Domains - Access control lists – Capabilities - Formal Models of Secure Systems - Multilevel security – Covert Channels - Authentication using a Physical object - Authentication using Biometrics – **Defenses – Code signing – Jailing – Model based intrusion detection – encapsulating mobile code**

UNIT IV

(11 Hrs)

Case Study : Linux Overview – Processes in Linux : Process Management system calls in Linux – Implementation of processes and threads – Scheduling – Memory Management System calls- Paging – **Input –output system calls - Linux file system: Fundamental concepts – File system calls in Linux**

UNIT V

(11 Hrs)

Case Study: Android and Google - History of Android - Design Goals - Android Architecture - Linux Extensions – Dalvik - Binder IPC – Android Applications - Intents – Security - Process Model. Mobile OS - iOS and **Android - Architecture and SDK Framework**, Media Layer, Services Layer, Core OS Layer, File System.

Text Book

1. Andrew S. Tanenbaum Herbert Bos (2015). Modern Operating Systems, 4/e, Pearson Education.

Reference Books

1. Andrew S.Tanenbaum (2011). MaartenVan Steen, Distributed System – Principles and Paradigms, 2/e, Prentice Hall of India Pvt. Ltd.
2. Shubra Garg(2013). Fundamentals of Distributed Operating Systems, S.K. Kataria& Sons, 2013.
3. Andrew S.Tanenbaum (2011). Distributed Operating System, 10/e, Pearson Education.
4. Daniel P Bovet and Marco Cesati, —Understanding the Linux kernell, 3rd edition, O‘Reilly, 2005.
5. Neil Smyth, —iPhone iOS 4 Development Essentials – Xcodell, Fourth Edition, Payload media, 2011.

Pedagogy : Lectures, Demonstrations, Group Discussions

Course Designers:

1. Dr. D. KrithikaRenuka
2. Dr. R. Kowsalya

MCS2204	WEB PROGRAMMING	Category	L	T	P	Credit
		III	56	4	-	4

Preamble

This course introduces the concepts of PHP, MySQL, HTML 5, CSS, JavaScript, JQuery and Angular. It provides concepts of creating dynamic web application using client and server-sidescripting languages.

Prerequisite

- Client/ Server Processing concepts, Fundamentals of Web applications
- Database Management System

Course Learning Outcomes

On successful completion of the course, the students will be able to

CLO Number	CLO Statement	Knowledge Level
CLO1.	Understand the concepts of dynamic web design	K2
CLO2.	Apply the concepts of web programming to create simple web applications	K3
CLO3.	Analyze the usage of SQL language, JavaScript, jQuery, PHP and CSS for real time applications	K4
CLO4.	Design dynamic web application using server and client side	K5
CLO5.	Develop interactive web applications using JavaScript, jQuery, PHP, CSS and angular framework	K6

Mapping with Programme Outcomes

CLOs	PO1	PO2	PO3	PO4
CLO1.	S	M	M	M
CLO2.	S	M	M	M
CLO3.	S	M	M	M
CLO4.	S	S	S	M
CLO5.	S	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(11Hrs)

Introduction to Dynamic Web Content: HTTP and HTML- The Request /Response Procedure – Benefits of PHP. My SQL, Javascript, CSS and HTML5- **Introduction to PHP- Expressions and Control Flow in PHP – PHP Functions and Objects- Arrays – File Handling**

UNIT II

(11 Hrs)

Accessing MySQL using PHP – Form Handling – Cookies, Sessions, and Authentication – Exploring JavaScript – Functions, Objects and Arrays-**JavaScript and PHP validation and Error Handling: Validating User Input with JavaScript–Using Ajax.**

UNIT III

(11Hrs)

Introduction to CSS: Importing style sheet- CSS Rules – Style Types – CSS Selectors –Fonts and Typography – Managing Text styles – color- positioning elements – Box model and Layout – **Advanced CSS and CSS3: Attribute Selectors – Box -sizing Property – CSS3 Backgrounds – Borders- Multicolumn Layout – Text effects.**

UNIT IV

(11 Hrs)

Accessing CSS from JavaScript: Revisiting the getElementById function – Accessing CSS properties from JavaScript – Inline Javascript – Adding NEW elements – Using Interrupts – Introduction to jQuery: selectors- Handling events – Event functions and Properties -Special effects – **Manipulating the DOM – Dynamically Applying classes – Modifying Dimensions – DOM Traversal- Using jQuery without selectors.**

UNIT V

(12Hrs)

React JS: ReactDOM - JSX - Components - Properties – Fetch API - State and Lifecycle – JS Local storage - Events - Lifting State Up - Composition and Inheritance. Learning Angular: Jumping into typescript – Angular components - Expressions – Data binding – **Advanced Angular: Events and Change detection – Implementing Angular services in Web applications.**

Text Book

1. Robin Nixon (2017) Learning PHP, MySQL& JavaScript with jQuery, CSS &HTML5, (4/e) with jQuery, Thomson Press (India) Ltd., Delhi. (I-IV Units)

Reference Books

1. Brad Dayley, Brendan Dayley,CalebDayley (2018), Node.js, MongoDB and Angular Web Development: The definitive guide to using the MEAN stack to build web applications (Developer's Library),(2/e), Pearson education (V Unit)
2. Alex Banks, Eve Porcello, "Learning React", O'Reilly Media, Inc, 2nd Edition, 2020. (React JS) (V Unit)
3. Ralph Moseley,M.T.Savaliya, (2013), Developing Web Applications,(2/e),Wiley India Pvt. Ltd., NewDelhi.

Pedagogy:

Lectures, Demonstrations

Course Designers:

1. Mrs. A. Sheela Rini
2. Dr. D. Krithika Renuka

MCS2205	ADVANCED DATABASE MANAGEMENT SYSTEMS	Category	L	T	P	Credit
		III	56	4	-	4

Preamble

This course presents the advanced concepts of Database Management Systems and various databases like parallel, distributed and object oriented database management systems. This course also introduces various advanced databases like Spatial and NoSQL databases.

Prerequisite

- DBMS Concepts
- Data Structures and Algorithms

Course Learning Outcomes

On successful completion of the course, students will be able to

CLO Number	CLO Statement	Knowledge
CLO1.	Understand the concepts and operations of different databases	K2
CLO2.	Apply various databases to develop suitable applications	K3
CLO3.	Analyze the issues and challenges of advanced databases for handling data processing	K4
CLO4.	Design appropriate databases suitable for various domains	K5
CLO5	Develop real time applications using advanced databases	K6

Mapping with Programme Outcomes

CLOs	PO1	PO2	PO3	PO4
CLO1.	S	S	M	M
CLO2.	S	S	M	M
CLO3.	S	S	M	S
CLO4.	S	S	S	S
CLO5.	S	S	M	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(11 Hrs)

Parallel Database: Introduction - Architecture for Parallel Databases - Parallel Query Evaluation - Parallelizing Individual Operations - Parallel Query Optimization. Distributed Database - Distributed DBMS Architectures - Storing Data in a Distributed DBMS - Distributed Catalog Management

- Distributed Query Processing - Updating Distributed Data - Distributed Transaction - Distributed Concurrency Control - Distributed Recovery

UNIT II (11 Hrs)

Object Database System: Motivating Example - Structured Data Types - Operations on Structured Data - Encapsulation and ADTs - Inheritance - Object, OIDs, and Reference Types - Database Design for ORDBMS - **ORDBMS Implementation Challenges - OODBMS - Comparing RDBMS, OODBMS, and ORDBMS**

UNIT III (12 Hrs)

Emerging Trends and Example DBMS Architectures: Introduction – The emergence of multimedia database – **Multimedia data – Differentiating multimedia data from other types of data – Types of multimedia database – Multimedia databases – Structure of multimedia database – Structure of multimedia database – deductive database – GIS and spatial database** – Knowledge database – Information Visualization – Information Visualization versus Graphical Presentation – Gnome database - Wireless networks and databases – Personal database – Digital libraries - Web Databases.

UNIT IV (11 Hrs)

Information retrieval: Introduction - Indexing for Text Search - Web Search Engines- Managing Text in a DBMS. **Spatial data management: Types of Spatial Data and Queries-Applications Involving Spatial Data.**NoSQL databases: Introduction - Column oriented stores – Key-value stores - Document databases. Graph databases: Introduction - Neo4j - Key concept and characteristics -Modeling data for Neo4j - Importing data into Neo4j

UNIT V (11 Hrs)

Data Warehousing And Decision Support: Introduction to Decision Support - OLAP: Multidimensional Data Model - Multidimensional Aggregation Queries - Implementation Techniques for OLAP - **Data Warehousing - Data Warehouse Architecture - Data Warehouse Implementation - Views And Decision Support** - View Materialization - Maintain Materialized Views - Data Mining : Introduction to Data Mining – Counting Co-occurrences – Mining for Rules - Clustering – Similarity Search over Sequences. **Introduction to Data Lake.**

Reference Books

1. Raghu Ramakrishnan and Johannes Gehrke (2014). Database Management System, 3/e, McGraw Hill, Singapore. (Unit I,II, V)
2. Dr. Sanjeev Sharma, Dr.JitendraAgarwal, Dr.ShikshaAgarwal (2017). Advanced Database Management System, Wiley India, Private Ltd. (Unit III)
3. ShashankTiwari (2011). Professional NoSQL, John Wiley & Sons (Unit IV)
4. Dr. Jim webber, Rik Van Bruggen (2020). Graph Databases for dummies, Neo4j special edition, John Wiley & Sons, Inc. (Unit IV)

Web Resource

<https://www.oreilly.com/library/view/the-enterprise-big/9781491931547/ch01.html> (Unit V)

Pedagogy

Lectures, Demonstrations, Group Discussions

Course Designer

1. Dr. S. Meera
2. Dr. M. Sasikala

MCS21P1	ADBMS LAB	Category	L	T	P	Credit
		III	-	-	75	3

Preamble

This course provides implementation of object oriented, parallel and partitioning concepts in RDBMS packages. This course also covers various queries in advanced databases like Neo4j and MongoDB

Prerequisite

- RDBMS
- SQL
- Oracle & MS-Access

Course Learning Outcomes

On successful completion of the course, the students will be able to

CLO Number	CLO Statement	Knowledge Level
CLO1.	Understand the concepts of integrity constraints with some example queries	K2
CLO2.	Implementing object oriented, parallel and partitioning queries and queries in MongoDB	K3
CLO3.	Analyze the concepts of different databases	K4
CLO4.	Design simple applications using VB with MS-ACCESS, Oracle and SQL	K5
CLO5.	Develop real time applications using advanced databases like Graph databases	K6

Mapping with Programme Outcomes

CLOs	PO1	PO2	PO3	PO4
CLO1.	S	M	M	M
CLO2.	S	M	M	M
CLO3.	S	S	M	M
CLO4.	S	M	S	M
CLO5.	S	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

- Exercises to implement the concepts of null constraint, unique constraint, integrity constraints, check constraints.
- Exercises to implement parallel queries.
- Exercises to implement the concepts of partitioning queries.
- Exercises to implement object oriented concepts.
- Implement the various queries for CRUD operations in MongoDB and MapReduce.
- Implement the various queries for CRUD operations in Neo4j.
- Develop a simple application using ADODC with front-end as VB and MS-ACCESS as back - end.
- Develop a simple application using ADODC with front-end as VB and Oracle as back-end.
- Develop a simple application using ADODC with front-end as VB and SQL as back-end connectivity.

Pedagogy: Demonstrations

Course Designers

1. Dr. S. Meera
2. Dr. M. Sasikala

MCS22P2	WEB PROGRAMMING LAB	Category	L	T	P	Credit
		III	-	-	75	3

Preamble

This course provides exercises to create dynamic web application in both client and server side using CSS3, AJAX, Javascript, jQuery, PHP/ MySQL, Angular and ReactJS. It enables students to equip themselves as a full stack developer.

Prerequisite

- Essentials of Web application
- PHP / MYSQL

Course Outcomes

On successful completion of the course, the students will be able to

CLO Number	CO Statement	Knowledge Level
CLO1.	Understand the concepts of Client side /Server sideweb programming	K2
CLO2.	Implement validation concepts using jQuery&Javascript	K3
CLO3.	Analyzethe requirements to implement the principles of web page development	K4
CLO4.	Design applications using connectivity with MySQL database	K5
CLO5.	Develop dynamic web pages using client side and server side scripting	K6

Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4
CLO1.	S	S	S	M
CLO2.	M	S	S	M
CLO3.	M	S	S	M
CLO4.	M	S	S	M
CLO5.	M	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

- Exercise to pass information between web pages using GET and POST methods.
- Exercise to apply string functions to manipulate strings.
- Exercise to implement file operations.
- Exercise to implement the date and time functions.
- Exercise to create menus, styles, Animation using CSS.
- Exercise to validate the HTML form fields using Javascript.
- Exercise using jQuery and CSS.
- Exercise to handle events and special effects using jQuery
- Exercise to implement explode and implode functions

- Exercise to create data base connectivity using PHP and MySQL
- Exercise using Angular
- Exercise using ReactJS.

Pedagogy: Demonstrations

Course Designers:

1. Mrs.A.Sheela Rini
2. Dr.D.Krithika Renuka