

LESSON PLAN

CLASS: - MSc (Computer Science)

SEMESTER: - 1st Semester

Name: - Dr. Vikas Suhag

Subject/Paper: - Computer Fundamentals and Programming in C

S. No.	Week Days	Syllabus
Unit-1	31/08/2026 - 10/09/2026	Computer Fundamentals: Concept of data and information; Components of Computer: Hardware Input Device, Output Device. CPU: Components of CPU; Memory and Storage Devices; Computer Software: System Software and Application Software; Functions of Operating System. Programming Languages: Machine, Assembly, High Level Language, 4GL; Language Translator; Linker, Loader;
	11/09/2026 - 20/09/2026	Classification of Computers: Micro, Mini, Mainframe, Super computer. Advantages of Computer, Limitations of Computer, Range of Applications of Computer, Social concerns of Computer Technology: Positive and Negative Impacts, Computer Crimes, Viruses and their remedial solutions.
Unit-2	21/09/2026 - 30/09/2026	Problem Solving: Problem Identification, Analysis, Flowcharts, Decision Tables, Pseudo codes and algorithms, Program Coding, Program Testing and Execution.
	01/10/2026 - 10/10/2026	C Programming Fundamentals: Keywords, Variables and Constants, Structure of a C program. Operators & Expressions: Arithmetic, Unary, Logical, Bit-wise, Assignment & Conditional Operators, Library Functions, Control Statements: Looping using while, do...while, for statements, Nested loops; decision making using if...else, Else If Ladder; Switch, break, Continue and Goto statements.
Unit-3	11/10/2026 - 20/10/2026	Arrays & Functions: Declaration and Initialization; Multidimensional Arrays. String: Operations of Strings; Functions: Defining & Accessing User defined functions, Function Prototype, Passing Arguments, Passing array as argument, Recursion, Use of Library Functions; Macro vs. Functions.
	21/10/2026 - 31/10/2026	Pointers: Declarations, Operations on Pointers, Passing to a function, Pointers & Arrays, Array of Pointers, Array accessing through pointers, Pointer to functions, Function returning pointers, Dynamic Memory Allocations
Unit-4	10/11/2026 - 20/11/2026	Structures and Union: Defining and Initializing Structure, Array within Structure, Array of Structure, Nesting of Structure, Pointer to Structure, Passing structure and its pointer to Functions; Unions: Introduction to Unions and its Utilities
	21/11/2026 - 06/12/2026	Files Handling: Opening and closing file in C; Create, Read and Write data to a file; Modes of Files, Operations on file using C Library Functions; Working with Command Line Arguments. Program Debugging and types of errors.

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LESSON PLAN

CLASS: - MSc (Computer Science)

SEMESTER: - 1st Semester

Name: - Dr. Vikas Suhag

Subject/Paper: - Web Development-I

S. No.	Week Days	Syllabus
Unit-1	31/08/2026 - 10/09/2026	Introduction: Internet, Evolution of Internet, Types of Computer Network: LAN, WAN, MAN Internet Protocol, Internet Services, WWW, Working of Internet, Introduction to Intranet, DNS working, Configuring Internet Connection, Connecting LAN to Internet; Client-Server environment: Single User, Multi User, Server, Workstation.
	11/09/2026 - 20/09/2026	Computer Network; Network Topologies; Network Protocols, E-Mail Concepts – Configuring EMail Program, Sending and Receiving Files through E-Mail, Fighting Spam, Sorting Mail, E-Mail mailing lists and avoiding E-Mail viruses
Unit-2	21/09/2026 - 30/09/2026	Searching and Web Casting Technique: Popular web servers, Web Browsers; basic features of browsers: bookmarks, cookies, progress indicators, customization of browsers, browsing tricks, next generation web browsing, search engines; Hypertext Transfer Protocol (HTTP), URL.
	01/10/2026 – 10/10/2026	Internet Tools: Online Chatting, Messaging, and Conferencing Concepts, Usenet newsgroup concepts: Reading UseNet newsgroups, Instant messaging, Web-Based chat rooms and discussion boards, Voice and Video conferencing. Streamlining Browsing, Keeping track of Favourite Websites, Web Security, Privacy, and SiteBlocking.
Unit-3	11/10/2026 - 20/10/2026	Web Designing using HTML: Understanding HTML, XHTML Syntax and Semantics, HTML Elements: Paragraph, Lists, Tables, Images, Frames, Forms, Linking to other Web Pages: External and Internal linking, Email Links;
	21/10/2026 - 31/10/2026	Working with Background colors and Images; Marquee; Text Alignment and Text Formatting, Advanced Layout with Tables; Publishing HTML Pages.
Unit-4	10/11/2026 - 20/11/2026	Cascading Style Sheets (CSS): Introduction, Inline, Internal, External CSS, Linking CSS to Web Page. Client-Side Programming: Introduction to JavaScript, Basic Syntax, Variables and Data types, Statements, Operators, Literals, Functions, Objects, Arrays.
	21/11/2026 – 06/12/2026	XML: Relation between XML and HTML, Goals of XML, Structure and Syntax of XML, Well Formed XML, DTD and its Structure, tree structures in data organization, Searching with XPath.

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LESSON PLAN

CLASS: - MSc (Computer Science)

SEMESTER: - 3rd Semester

Name: - Sh. Vikas Suhag

Subject/Paper: - Full Stack Development

S. No.	Week Days	Syllabus
Unit-1	11/08/2026 - 25/08/2026	Frontend Development Fundamentals: Introduction to Web Development: Client-Server Architecture, HTML5: Elements, Forms, Semantic Tags,
	26/08/2026 - 10/09/2026	CSS3: Selectors, Box Model, Grid, Flexbox, JavaScript Basics: DOM Manipulation, Events, ES6 Features, Tools: Browser Developer Tools.
Unit-2	11/09/2026 - 25/09/2026	Advanced Frontend Techniques: Responsive Design: Media Queries, Bootstrap, Tailwind CSS, JavaScript Libraries: jQuery, AJAX,
	26/09/2026 - 15/10/2026	Frontend Frameworks: Introduction to React.js/Angular/Vue.js, Component-based Development and State Management, Case Study: Developing a Responsive Website.
Unit-3	16/10/2026 - 25/10/2026	Backend Development Basics: Introduction to Backend Development: Role and Concepts, Node.js: Setting up, Basic Syntax, File System, Modules,
	26/10/2026 - 10/11/2026	RESTful API Development with Express.js, Database Integration: MongoDB Basics and CRUD Operations, Authentication: JWT, OAuth Basics.
Unit-4	11/11/2026 - 25/11/2026	Deployment and Testing: Version Control: Git Basics and GitHub, Deployment: Using Platforms like Heroku, Vercel, Debugging and Testing: Unit Testing, Mocha, and Chai,
	26/11/2026 - 06/12/2026	Continuous Integration/Continuous Deployment (CI/CD) Basics, Case Study: Developing and Deploying a Full Stack Application.

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