LESSON PLAN

CLASS: - **B.C.A 3rd Year** SEMESTER:- **5th Sem**

Name of Teacher - **Dr.Sudhir**

Subject/Paper: - **Software Engineering**

S.No.	Week Days	Syllabus
Unit-1	11/08/2026 -16/08/2026	**Introduction to Software Engineering:** Software and its Characteristics, Evolving Role of Software,Software Product, Software Processes, Software crisis, Software engineering Approach and Challenges,Principles of software engineering, Software development process models with comparison: Waterfall, Prototype, Iterative enhancement model, Time boxing, Spiral Model, RAD Model and Object-Oriented Models.
	17/08/2026 – 31/08/2026	**Software Project Management:** Management activities, Project planning, Project scheduling, and Risk management activities
Unit-2	01/09/2026 – 15/09/2026	**Software Requirements Engineering:** Requirements Engineering Processes, Feasibility studies,Requirements elicitation and analysis, Requirements validation, equirements management. **Software Requirements Analysis & Specifications:** Software requirements, Structured analysis: Data Flow diagram, data dictionary. Object-oriented analysis, Software Requirement Specification (SRS): Need of SRS, Characteristics of SRS, Components of SRS, Structure of SRS.
	16/09/2026 – 30/09/2026	**Software Metrics and Measures:** Need and benefits of Software Metrics, Size Metrics: Line of code, Token metrics, Function point metrics, Software Project Estimation Models- COCOMO models.
Unit-3	01/10/2026- 15/10/2026	**Software Design:** Basic Concept of Software Design, Architectural Design, Low-Level Design: Modularization, Design Structure Charts, Flow Charts, Coupling and Cohesion Measures; Design Strategies: Function Oriented Design, Object Oriented Design, Top-Down and Bottom-Up Design, User Interface Design **Coding:** Goals of coding phase, Programming style, Structured programming: objectives of structured programming, Principles of structured programming, advantages and disadvantages of structured programming.
	16/10/2026 – 31/10/2026	**Software Testing:** Impracticality of Testing, Levels of Testing, Structural Testing (White Box Testing), Functional Testing (Black Box Testing).
Unit-4	1/11/2026 – 15/11/2026	**Software Maintenance:** Need for Maintenance, Categories of Maintenance: Preventive, Corrective and Perfective Maintenance, Cost of Maintenance; Software Re- Engineering, everse Engineering, Software Documentation.
	15/11/2026 – 05/12/2026	**Software Quality**: Software quality attributes, Software Quality Assurance – plans & activities **Software Quality Standards:** ISO 9001, SEI-CMM

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LESSON PLAN

CLASS: - **B.C.A 3rd Year** SEMESTER:- **5th Sem**

Name of Teacher - **Dr.Sudhir**

Subject/Paper: - **Artificial Intelligence & Expert System**

S.No.	Week Days	Syllabus
Unit-1	11/08/2026 -16/08/2026	**Introduction:** Definition, Concepts and applications of Artificial Intelligence, Problem solving: Defining problem as State space search, Production systems, Problem Characteristics, Search techniques: Brute force and Heuristic search and their different searching techniques.
	17/08/2026 – 31/08/2026	**Intelligent Agents:** Agent types (simple reflex, model-based, goal-based, utility-based, learning agents). Agent environments (static/dynamic, observable/partially observable, eterministic/stochastic). **Ethical Considerations:** Bias, privacy, job displacement, and societal impact.
Unit-2	01/09/2026 – 15/09/2026	**Knowledge representation:** Types of knowledge, Inferencing, Inference rule, Knowledge Representation: Logic based Knowledge representation, Rule based knowledge representation
	16/09/2026 – 30/09/2026	**Knowledge representation:** Non-Monotonic reasoning, Knowledge representation based on probability and uncertainty; Knowledge representation schemes: Formal logic, Semantic net, Frame, Scripts.
Unit-3	01/10/2026- 15/10/2026	**Expert System:** Definition, Role of Knowledge in expert system, Architecture of Expert system
	16/10/2026 – 31/10/2026	**Expert system development life cycle:** Problem selection, Prototype construction, Formalization, Implementation, Evaluation, Knowledge acquisition and different acquisition techniques, Knowledge engineering, Cognitive behaviour. **Perception:** Sensing, Speech recognition, Vision, Action
Unit-4	1/11/2026 – 15/11/2026	**Learning, Planning and Understanding:** Learning and its different types, Planning, understanding. **Neural Networks:** Introduction, Comparison of artificial neural networks with biological neural networks, Learning in neural networks, Perceptions, Back propagation networks, application of neural networks
	15/11/2026 – 05/12/2026	**Fuzzy logic:** Definition, Difference between Boolean and Fuzzy logic, fuzzy subset, fuzzy membership function, fuzzy expert system, Fuzzy Inference system, fuzzy controller.

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LESSON PLAN

CLASS: - **B.C.A 3rd Year** SEMESTER:- **5th Sem**

Name of Teacher - **Dr.Sudhir**

Subject/Paper: - **Web Application Development**

S.No.	Week Days	Syllabus
Unit-1	11/08/2026 -16/08/2026	**Introduction:** Concept of WWW, Internet and WWW, HTTP Protocol: Request and Response, Web browser and Web servers, Features of the latest version of Web
	17/08/2026 – 31/08/2026	**Web Design:** Concepts of effective web design, Web design issues including Browser, Bandwidth and Cache, Display resolution, Look and Feel of the Website, Page Layout and linking, User-centric design, Sitemap, Planning and publishing website, Designing effective navigation.
Unit-2	01/09/2026 – 15/09/2026	**HTML:** Basics of HTML, formatting and fonts, commenting code, color, hyperlink, lists, tables, images, forms, XHTML, Meta tags, Character entities, frames and frame sets, Browser architecture and Web site structure. Overview and features of the latest version of HTML.
	16/09/2026 – 30/09/2026	**Stylesheets:** Need for CSS, introduction to CSS, basic syntax and structure, using CSS, background images, colours and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, CSS2, Overview and features of the latest version of CSS
Unit-3	01/10/2026- 15/10/2026	**JavaScript:** Client-side scripting with JavaScript, variables, functions, conditions, loops and repetition, Pop up boxes, Advance JavaScript: JavaScript and objects, JavaScript own objects, the DOM and web browser environments, Manipulation using DOM, forms and validations, DHTML: Combining HTML, CSS and JavaScript, Events and buttons.
	16/10/2026 – 31/10/2026	**XML:** Introduction to XML, uses of XML, simple XML, XML key components, DTD and Schemas, Using XML with application. Transforming XML using XSL and XSLT
Unit-4	1/11/2026 – 15/11/2026	**PHP: Introduction** and basic syntax of PHP, decision and looping with examples, PHP and HTML, Arrays, Functions, Browser control and detection, string, Form processing, Files, Advance Features: Cookies and Sessions.
	15/11/2026 – 05/12/2026	**PHP and MySQL:** Basic commands with PHP examples, Connection to server, creating database, selecting adatabase, listing database, listing table names, creating a table, inserting data, altering tables, queries, deleting database, deleting data and tables, PHP my admin and database bugs

Signature

LESSON PLAN

CLASS: - **M.Sc CS**

SEMESTER:- **3rd Sem**

Name of Teacher - **Dr.Sudhir**

Subject/Paper: - **Computer Graphics**

S.No.	Week Days	Syllabus
Unit-1	11/08/2026 -16/08/2026	**Introduction:** History, applications, and scope of computer graphics. **Graphics Systems:** Working of Raster and vector graphics, working of display devices, input/output devices, and color models (RGB, CMYK, HSV).
	17/08/2026 – 31/08/2026	**2D Graphics and Picture Construction:** 2D Primitives: Line- DDA, Bresenham's, Mid-point method, circle – Cartesian, Polar, Mid-point method. Polygon drawing algorithms.
Unit-2	01/09/2026 – 15/09/2026	**Transformations:** Translation, scaling, rotation, reflection, and shearing, composite transformation and co-ordinate transformations. Window-viewport transformation. **Clipping:** Line Clipping - Midpoint subdivision, Cohen-Sutherland, Liang-Barsky, NLN. Polygon clipping algorithms – Area sub-division method, Sutherland Hodgman
	16/09/2026 – 30/09/2026	**Picture Construction Techniques:** Geometric primitives and their representation. Filling Algorithms: boundary fill, flood fill, Scan line filling algorithms, Aliasing problem, anti-aliasing techniques
Unit-3	01/10/2026- 15/10/2026	**Interactive Graphics:** basic positioning methods, constraints, grids, gravity field, rubber-band methods, dragging, painting and drawing. **3D Primitives:** Display methods: Projections: Perspective, Parallel, anomalies associated with projections, depth cueing, visible line and surface rendering, stereoscopic views.
	16/10/2026 – 31/10/2026	**3D Transformations:** Translation, rotation, scaling, and perspective projections. Visible-surface detection methods, back-face detection, Depth-buffer method, A-buffer method, scan line method, depth sorting, and Area-subdivision method.
Unit-4	1/11/2026 – 15/11/2026	**Lighting and Shading:** Basic lighting models, Flat shading, Gouraud shading, Phong shading.
	15/11/2026 – 05/12/2026	**Introduction to Blender:** Interface overview, navigation, and basic modeling tools. Mesh modeling, modifiers, and sculpting techniques. Materials, textures, and UV mapping. Keyframing and simple animations in Blender. Basic Animation: Keyframing, interpolation techniques, and introduction to physics-based animation

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