**GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA**

**LESSON-PLAN (Session 2024-25) EVENSEMESTER**

**Name of Teacher**:Anita Soni

**Designation:Assistant Professor**

**Class: BCA II, Sem IV**

**Subject/ Paper: Software Testing Course Code B23-VOC-216**

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| **S. No.** | **Month** | **Topics to be covered** | **Teaching Learning Strategy** | **Learning Outcomes of Students** | **Remarks** |
| **1.** | **Feb** | Introduction: Definition of Software Testing and its Role, Terms: - Failure, Error, Fault, Defect, Bug, Goals of Testing, Principles of Testing, Software Testing Life Cycle, Verification and Validation: - V-testing Life cycle | **Students will learn through practical about software testing**  1. Prepare a small project and submit SRS, design, coding and test plan. | **To understand the basic terminologies and types of testing** |  |
| **2.** | **March** | Types of Testing: Black Box Testing: Overview: What is &When? Techniques: Boundary Value Analysis, Equivalence class testing, Decision Table White Box Testing: What is white box Testing, Need of white box Testing, Classification , Structural : Coverage, Path testing | 2. Study of any one of the testing tools.  MANUAL TESTING for the project a. Whitebox Testing b. Blackbox Testing | **Understand different testing methods** |  |
| **3.** | **April** | Levels of Testing Unit Testing : Overview, Integration Testing : Overview, Techniques: Graph based & Path based, Functional Testing, System Testing : Overview, Categories: Reliability Security Performance Recovery, Acceptance Testing : Overview, Types of Acceptance Testing | Functional Testing  a. Boundary value Testing  b. Equivalence class testing | **Understand the testing process** |  |
| **4.** | **May** | Test Planning: Preparing a Test plan, Scope management, Decide Test Approach, Setting Up Criteria, for testing, Identifying responsibilities, Staffing, training needs, Resource requirements, Test deliverables, Testing Tasks | Structural Testing  a. Path testing  b. Data-flow testing | **Manage the tests, plan testing process and create reports**  **Testing the software/projects using various techniques** |  |

* **Seminar/Presentation/Assignment/Quiz/Class Test /Mid-Term Exam will be taken as per schedule.**

**Signature of Teacher Principal**

**GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA**

**LESSON-PLAN (Session 2024-25) EVENSEMESTER**

**Name of Teacher**:Anita Soni

**Designation:Assistant Professor**

**Class:BCA II**

**Subject/ Paper:Front-end Development; Course Code B23-CAP-402**

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| **S. No.** | **Month** | **Topics to be covered** | **Teaching Learning Strategy** | **Learning Outcomes of Students** | **Remarks** |
| **1.** | **Feb** | Objects in JavaScript: Introduction to objects, Type of objects in JavaScript, creating objects, Object methods, Constructor function, Prototype in JavaScript, Inheritance using prototype chain. Regular Expressions: Introduction to RegExp, Regular expression usage, Modifiers, RegExp patterns, RegExp methods, String methods for RegExp, Type conversion in JavaScript. | **Through practical students will learn:**  Use of JavaScript in Web page designing  • Effective web page design  • Creation of Event listeners in JavaScript  • Update and modify website elements dynamically using asynchronously retrieved data  • Style HTML content with JavaScript  • Iterate over arrays and objects using JavaScript for syntax.  • JavaScript Program to Create Objects (4 Different Ways)  • JavaScript Program to Iterate Over an Object  • JavaScript Program to Find Max/Min Value of an Attribute in an Array of Objects  • JavaScript Program to Remove Duplicates from an Array of Objects  • Writing programs for event handling in JavaScript.  • Write a JavaScript function to add rows to a table.  • Write a JavaScript program to remove items from a drop-down list.  • Write a JavaScript program to calculate sphere volume. 30 7  • Write a JavaScript program to get the window width and height  • Using BOM navigation and location  • Creating cookies and sessions.  • How can you create forms and perform validations on the forms?  • How can you use jQuery and perform various functions using jQuery? | understand the basic concept of objects and regular expressions in JavaScript; |  |
| **2.** | **March** | Event handling: JavaScript events, Event handler, Event flow, Event bubbling and capturing, Event listeners, Event types. Document Object Model (DOM): Introduction to DOM, Types of DOM, DOM standards and methods, Manipulating documents using DOM, Handling images, Table manipulation, Animation, Node and Node-list handling | acquire knowledge of JavaScript events and DOM |  |
| **3.** | **April** | Browser Object Model (BOM): Introduction to BOM, DOM vs BOM differences, Window object and methods, BOM navigator, BOM history, BOM location, BOM timer, Introduction to Cookies, Session and persistent cookies. Form Handling: Introduction to forms, Form processing, Forms object, Accessing data from forms, Form validation, Additional features in forms, Validation APIs | learn to use forms and BOM in JavaScript; |  |
| **4.** | **May** | Introduction to jQuery: jQuery Syntax, jQuery Selectors, jQuery Events, jQuery Effects, jQuery HTML, jQuery Traversing, jQuery AJAX, jQuery Misc. | get familiar with jQuery  Understand the programming of web pages and handling events using JavaScript and jQuery. |  |

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**Signature of Teacher Principal**

**GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA**

**LESSON-PLAN (Session 2024-25) EVEN SEMESTER**

**Name of Teacher: Sapna Malik**

**Designation: Extension Lecturer**

**Class: BCA-IInd Year (4th Semester)**

**Subject/ Paper: Computer Graphics (B23-CAP-403)**

**Type of course : Major**

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| **S. No.** | **Month** | **Topics to be covered** | **Teaching Learning Strategy** | **Learning Outcomes of Students** | **Remarks** |
| **1.** | **January** | Introduction: History of Computer Graphics (CG), Applications of Computer Graphics, Components of interactive graphics systems Display devices: Refresh CRT, Color CRT, Plasma Panel displays LCD Panels, Raster-scan System, | **Outlining** | **Student will be able to understand basic componenets of Graphics and different types of I/O devices** | **Oral Discussion** |
| **2.** | **February** | Random scan System, Graphic software, Input/Output Devices, Tablets  Output Primitives: Points and Lines, Line Drawing Algorithms: DDA algorithm, Bresenham’s algorithm, | **Group**  **discussion** | **Students will be able to understand different types of Line drawing algorithms** | **Assignment-1** |
| **3.** | **March** | Circle drawing Algorithms: Polynomial Method, Bresenham’s algorithm. Parametric representation of Cubic Curves, Bezier Curves  2D Transformation: Use of Homogeneous Coordinates Systems, Composite Transformation: Translation, Scaling, Rotation, Mirror Reflection | **Questioning** | **Students will be able to analyze Circle drawing algorithm and 2D types of transformations and Clipping Algorithm** | **Class Test** |
| **4.** | **April** | , Rotation about an Arbitrary Point. Clipping and Windowing, Clipping Operations. Line Clipping Algorithms: The Mid-Point subdivision method, Cohen-Sutherland Line Clipping Algorithms, Polygon Clipping, Sutherland Hodgeman Algorithms, Text Clipping. | **Make them to explain their understanding about the topic to other student** | **Student will learn about** | **Assignment-2** |
| **5.** | **May** | 3-D Graphics: 3-D object representations, 3-D Transformations: Translation, Rotation, Scaling, Projections, Hidden surface elimination: Back face removal, Depth Buffer algorithm, Scan-line algorithm, Depth sort algorithm, Shading. | **Providing Practical Environment for better understanding of graphics** | **Student will able to learn about Searching 3-D graphics techniques,** | **Unit Test** |

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**Signature of Teacher Principal**

**GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA**

**LESSON-PLAN (Session 2024-25) EVEN SEMESTER**

**Name of Teacher: Sapna Malik**

**Designation: Extension Lecturer**

**Class: BCA-IInd Year ( 4th Semester)**

**Subject/ Paper: Data Structures and Applications (B23-CAP-401)**

**Type of course: Major**

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| **S. No.** | **Month** | **Topics to be covered** | **Teaching Learning Strategy** | **Learning Outcomes of Students** | **Remarks** |
| **1.** | **January** | Data Structure Definition, Data Type vs. Data Structure, Classification of Data Structures, Data Structure Operations, Applications of Data Structures. Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis). Arrays: Introduction, Linear Arrays, Representation of Linear Array in Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation, | **Outlining** | **Student will be able to understand basic Data Structure like Array, String, Link list** | **Oral Discussion** |
| **2.** | **February** | Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation  String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Substring, Insertion, Deletion, Replacement, Pattern Matching Linked List: Introduction, Array vs. linked list, Representation of linked lists in Memory, | **Group**  **discussion** | **Students will be able to understand different types of Link List, Linklist Operations** | **Assignment-1** |
| **3.** | **March** | Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.  Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms, Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion. Introduction to Queues: Simple Queue, Double Ended Queue, Circular Queue, Priority Queue, | **Questioning** | **Students will be able to analyze different types of conversion and queues** | **Class Test** |
| **4.** | **April** | Representation of Queues as Linked List and Array, Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue. Priority Queues.  Tree: Definitions and Concepts, Representation of Binary Tree, Binary Tree Traversal (Inorder, postorder, preorder), | **Make them to explain their understanding about the topic to other student** | **Student will learn about Tree operations** | **Assignment-2** |
| **5.** | **May** | Binary Search Trees – Definition, Operations viz., searching, insertions and deletion; Searching and Sorting Techniques, Sorting Techniques: Bubble sort, Merge sort, Selection sort, Quick sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching | **Providing Practical Environment for better understanding of Data structure** | **Student will able to learn about Searching techniques, sorting.** | **Unit Test** |

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