CSE 2141: Computer Science Workshop 1

	ITER, SIKSHA 'O' ANUSANDHAN **(Deemed to be University)**		**LESSON PLAN**
Programme	**B.Tech.**	Academic Year	**2024-25**
Department	**CSE**	Semester	**3rd**
Credit	**4**	Grading Pattern	**5**
Subject Code	**CSE 2141**		
Subject Name	**Computer Science Workshop 1**		
Weekly Course Format	**0L - 8P**		
Subject Coordinator (s)	**Rasmiranjan Mohakud (Course Strategist)** **Rakesh Ranjan Swain (Coordinator)** **Santosh Kumar (Associate Coordinator)**		

Text Books(s):

(1) Full Stack Java Development with Spring MVC, Hibernate, jQuery, and Bootstrap by Mayur Ramgir, Wiley India.

Course Outcomes	Students will be able to	
	CO1	Develop a solid foundation in Full Stack Web Development, including proficiency in HTML and a comprehensive understanding of the principles and technologies involved, with a focus on implementing the Model View Controller (MVC) architecture.
	CO2	Design and style interactive, responsive front-end components using CSS, creating visually appealing web pages that adhere to best practices in design and user experience.
	CO3	Enhance user interactivity on web pages using jQuery, employing selectors, events, effects, and traversing techniques to create dynamic and engaging user interfaces.
	CO4	Gain comprehensive knowledge of the Bootstrap framework, enabling the creation of responsive web pages that adapt seamlessly to various screen sizes and devices. Utilize Bootstrap components to ensure consistent and modern UI design.
	CO5	Integrate web services into applications, demonstrating proficiency in creating dynamic and interactive web pages using technologies such as HTML, CSS, jQuery, and Bootstrap.
	CO6	Develop strong problem-solving skills in Java programming, including proficiency in data types, bit-wise operators, and wrapper classes.

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Sl.No.	Lessons/Topics to be covered	Book Reference (sections)	Mapping with COs	Home Work/ Assignments/ Quizzes
1	Introduction to course and POs and COs. Introduction to full stack web development, web application development, and Front-End technologies.	1.1-1.4 (pg.1-8)	**All COs**	
2	Back-end Technologies, Introduction to back-end development with Java 11, and Introduction to Model View Controller (MVC)	1.5-1.7 (pg.8-12)	**CO1**	
3	Introduction to web service communication between front-end and back-end, Introduction to ORM with hibernate	1.8-1.10 (pg.12-18)	**CO1**	
4	Project planning for e-commerce, designing required entities, ER diagrams, flowcharts, UML class diagrams, front-end flow design, and back-end API endpoints.	2.1-2.9 (pg.19-35)	**CO1**	Assignment-1 (Ch.1-Ch.2)
5	Introduction to hyper text mark up language, overview of HTML, and important components of HTML.	3.1-3.3 (pg.37-49)	**CO1**	
6	HTML Text formatting tags and Quotations	3.4-3.5 (pg.50-56)	**CO1**	
7	HTML Comments, Links, and Images	3.6-3.8 (pg.57-61)	**CO1**	
8	HTML Tables, Lists, and Forms	3.9-3.10 (pg.62-65)	**CO1**	
9	Attributes to style HTML elements and Exercises	3.11 (pg.66-71)	**CO1**	Assignment-2 (Ch.3)
10	Introduction to cascading style sheets(CSS), Overview of CSS, Relationship between HTML and CSS, and CSS working on DOM model	4.1-4.4 (pg.73-74)	**CO2**	Quiz-1 (Ch.1,Ch.2,Ch.3)
11	CSS Syntax, Different methods to integrate CSS with HTML, Colors, and Backgrounds in CSS	4.5-4.8 (pg.74-82)	**CO2**	
12	CSS setting up height and width of an element, Box model, CSS outline, Text in CSS, and Fonts	4.9-4.13 (pg.85-94)	**CO2**	
13	Links in CSS, Lists in CSS, Tables in CSS, and Responsiveness	4.14-4.17 (pg.95-102)	**CO2**	

Sl.No.	Lessons/Topics to be covered	Book Reference (sections)	Mapping with COs	Home Work/ Assignments/ Quizzes
14	Positioning property in CSS, Navigation Bars, and Drop-down Menu	4.18-4.20 (pg.104-113)	**CO2**	
15	HTML form styled through CSS, Exercises, and Project Idea	4.21 (pg.113-116)	**CO2**	Assignment-3 (Ch.4)
16	Overview of jQuery, Configuration of jQuery, and Syntax	5.1-5.3 (pg.117-118)	**CO3**	
17	jQuery Selectors, jQuery Event Methods	5.4-5.5 (pg.119-125)	**CO3**	
18	jQuery Effects on HTML Elements	5.6 (pg.126-137)	**CO3**	
19	DoM Manipulation using jQuery	5.7 (pg.138-152)	**CO3**	
20	jQuery with CSS, and Traversing	5.8-5.9 (pg.153-170)	**CO3**	
21	jQuery Filtering, Review Questions, Exercises, and Project Idea	5.10 (pg.171-179)	**CO3**	Assignment-4 (Ch.5)
22	Overview of Bootstrap, Structure of a Bootstrap-enabled Webpage	6.1-6.2 (pg.177-179)	**CO4**	Quiz-2 (Ch.4,Ch.5)
23	Bootstrap Grids, Typography, Color, and Images	6.3-6.6 (pg.179-189)	**CO4**	
24	Bootstrap Jumbotron, Alerts, Buttons, and Button Groups	6.7-6.10 (pg.190-200)	**CO4**	

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25	Bootstrap Progress Bars, Pagination, and Cards	6.11-6.13 (pg.201-209)	**CO4**	
26	Bootstrap Navigation Menus, Navigation Bar, Forms, and Carousel	6.14-6.17 (pg.209-222)	**CO4**	
27	Bootstrap Media Objects, Review Questions, Exercises, and Project Idea	6.18 (pg.223-229)	**CO4**	Assignment-5 (Ch.6)
28	Building pages for MyEShop with HTML, and CSS, Setting up environment, Identify the pages, Getting started with HTML pages, Adding CSS to the HTML page	7.1-7.4 (pg.231-241)	**CO5**	
29	Use of jQuery on HTML CSS, Getting started with jQuery, Home page with jQuery	8.1-8.2 (pg.243-249)	**CO5**	
30	Use of Bootstrap to make HTML responsive, Setting up environment, Homepage with Bootstrap	9.1 (pg.251-258)	**CO5**	Quiz-3 (Ch.7,Ch.8,Ch.9)
31	Overview of Java, Basic Java Concepts, Principle of Object-Oriented Programming in Java, and Programming Syntax in Java	10.1-10.4 (pg.259-278)	**CO6**	
32	Java Packages, New Features in Java 9, and Eclipse IDE for Programming	10.5-10.7 (pg.279-297)	**CO6**	Assignment-6 (Ch.10)
33	Building Blocks of Java, Calling the Main Method, String Options, Arrays, and Enums	11.1-11.5 (pg.299-308)	**CO6**	
34	Java Wrapper Classes, Different techniques of wrapping, Autoboxing and Unboxing	11.6-11.7 (pg.309-313)	**CO6**	
35	Developing Logic, Datatype, BitWise Operator, Control Flow, Loops, and Branching in Java	11.8-11.11 (pg.313-333)	**CO6**	Assignment-7 (Ch.11)

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36	✡ Testing of Project (Mini Project)		**CO1-CO6**	Quiz-4 (Ch.10,Ch.11)

☞ Few Groups will be assigned to conduct Module based Experiments (Verification / Understanding domain knowledge) and Some groups need to be assigned with design projects (Analysis/ Implementation).

✡ **List of Projects:**

1. **E-Commerce Website**
   Description: Develop a basic e-commerce website that showcases products, allows users to browse and search for items, add them to a cart, and proceed to checkout. Implement both front-end and back-end functionalities. Apply HTML, CSS, Bootstrap, Java for back-end processing, and Hibernate for managing product data in a database.

2. **Personal Portfolio Website**
   Description: Create a personal portfolio website for showcasing your skills and projects. Design an interactive and responsive user interface using HTML, CSS, and Bootstrap. Implement a contact form that sends messages to an email address using Java-based back-end processing.

3. **Online Quiz Application**
   Description: Build an online quiz application where users can select a quiz topic, answer multiple-choice questions, and receive instant feedback on their performance. Design an engaging user interface using HTML, CSS, and Bootstrap. Implement the quiz logic using Java for back-end processing and store quiz data using Hibernate.

4. **Task Manager Web App**
   Description: Develop a task manager web application that allows users to create, update, and delete tasks. Implement user authentication and authorization for accessing tasks. Use HTML, CSS, Bootstrap for the front-end, and Java with Hibernate for the back-end to manage task data in a database.

5. **Blogging Platform**
   Description: Create a blogging platform where users can write and publish articles. Design an intuitive front-end using HTML, CSS, and Bootstrap. Develop a user authentication system and allow registered users to create, edit, and delete their posts. Use Java and Hibernate to manage user and article data.

6. **Weather Dashboard**
   Description: Build a weather dashboard that allows users to search for the weather forecast of different cities. Utilize APIs to fetch weather data and display it in a user-friendly interface. Design the dashboard using HTML, CSS, and Bootstrap. Implement back-end functionality in Java to handle API requests and responses.

7. **Event Management Portal**
   Description: Create an event management portal where users can browse and register for various events.

Admins can create, update, and manage events. Design the front-end with HTML, CSS, and Bootstrap. Implement user authentication and event management features using Java.

8. **Online Food Ordering System**
   Description: Build an online food ordering system where users can browse menus, place orders, and track delivery status. Restaurant admins can manage menu items, orders, and delivery. Design the interface using HTML, CSS, and Bootstrap. Develop the back-end using Java for order processing and managing order.

These project ideas align with the course outcomes have provided and offer opportunities for students to apply their knowledge of full-stack web development, Java programming, Hibernate, and other relevant concepts. Students can work on these projects to gain practical experience and demonstrate their skills.