



SMART TRAINERS

LESSON PLAN FOR FRONTEND WEB DEVELOPMENT COURSE

COURSE TITLE: Frontend Web Development		COURSECODE: FWD 001	CREDIT HOURS: 01	DURATION: 08 Weeks (03 Classes Each Week)
COURSE INSTRUCTOR: Sakhawat Ali Larik				
Batch:	Course Starting Date:		Course Suspension Date:	
<p>COURSE LEARNING OUTCOMES: Upon successful completion of the course, the student will be able to: Design and Develop responsive and accessible front-end applications with HTML, CSS and Bootstrap and Tailwind CSS. Build interactive user interfaces (UI) and improve user experience (UX) and create Web Applications with JavaScript and React JS. Student would be able to understand and clearly manage components, props, state, and hooks inside the frontend projects. Students can also integrate REST APIs and manage web application state effectively.</p>				
CLO	DESCRIPTION	Learnings		
<ol style="list-style-type: none"> 1. Networking Basics 2. Website Designing 3. Frontend Basics 4. JavaScript Language 5. API Integration 6. Frontend tools and libraries 	<p>Understand the network, browser and how websites work. Create web applications using JavaScript, JavaScript libraries and implement API calls to backend and manage frontend DOM according to backend data.</p> <p>Also discussing the programming concepts, code logics and DSA solutions for web apps.</p>	<ol style="list-style-type: none"> 1. Basics of Networking and Website Development Process 2. Web Design with HTML & CSS 3. Bootstrap and Tailwind CSS 4. JavaScript Language 5. Event Handling, DOM and Data Manipulation 6. API and Data Testing, Validation, and Implementation 		
<ol style="list-style-type: none"> 1. React JS 2. State Management 3. Tailwind CSS 4. API Integration 	<p>Using React JS for frontend development along with Tailwind CSS. Managing large applications and their multiple states and components with React JS and its core concepts of Virtual DOM, State Management and Components based approach.</p>	<ol style="list-style-type: none"> 1. React JS 2. Tailwind CSS 3. React Router 4. State Management 5. Virtual DOM Vs Real DOM 6. AXIOS and API Techniques 		

LESSON CONTENTS AND ASSOCIATED CLO(s)				
Contents	CLO / Week	Marks %	Delivery Methods	Assessment Methods
<p>1. Introduction of web development</p> <ul style="list-style-type: none"> • How internet and websites work • The client-server architecture • Types of web development • The website evaluation • Basics of web browsers <p>2. HTML Language (first web page)</p> <ul style="list-style-type: none"> • HTML basics • Creating the first web page • HTML elements • HTML attributes • HTML metadata and SEO concepts <p>3. HTML Language</p> <ul style="list-style-type: none"> • Media elements • Html entities and using icons • Tables and table layouts • Web structure with table layout • Form and form controls • Form validations and submission rules • Data preparation and control through forms 	01	5%	Online Lectures & Practical work	Practical Project
<p>4. CSS Language</p> <ul style="list-style-type: none"> • CSS styling language • Types of CSS selectors • Applying CSS styles to html elements • Basic CSS styles (colors, fonts, background, alignment, borders, shadows, spacings) <p>5. CSS Language</p> <ul style="list-style-type: none"> • Box layout • Positioning and display property • Pseudo elements and selectors • Flex layout • Grid layout <p>6. CSS Language</p> <ul style="list-style-type: none"> • Animations and effects in CSS • Designing web components • Web layouts and structure management • Responsive layouts and media queries • Full Web Designing with HTML & CSS (Shop) 	02	5%	Online Lectures & Practical work	Practical Project

<p>7. Bootstrap</p> <ul style="list-style-type: none"> • Introduction to Bootstrap framework • Bootstrap theme psychology and customization • Bootstrap colors, backgrounds, breakpoints <p>8. Bootstrap Components</p> <ul style="list-style-type: none"> • Forms, Tables, Modals, Accordions, Navbars, Cards, Carousel etc. • Website design with bootstrap <p>9. Understanding UI/UX and brand strategy</p> <ul style="list-style-type: none"> • User interfaces Vs User Experience • Exploring common user interfaces • Exploring common user experiences • Common branding strategies and consistency • Brand recognition and confidence 	03	10%	Online Lectures & Practical work	Practical Project
<p>10. JavaScript Language (Intro)</p> <ul style="list-style-type: none"> • Introduction to JavaScript programming • Ways to attach JavaScript to your web • JavaScript basics (alert, write, log, confirm, prompts etc.) • Variables and data types • Operators and types of operators <p>11. JavaScript Language (Collection Data)</p> <ul style="list-style-type: none"> • Dealing with complex data types • String, Arrays, Objects and local storage <p>12. JavaScript Language (Control Statements)</p> <ul style="list-style-type: none"> • Exception handling • If and if else ladder • Switch cases • For, while, do-while loops 	04	10%	Online Lectures & Practical work	Practical Project
<p>13. JavaScript Language (Functions/Methods)</p> <ul style="list-style-type: none"> • JavaScript default functions • Types of functions • JavaScript custom functions • Recursions <p>14. Promises and API</p> <ul style="list-style-type: none"> • Getting Mock data and API data • API testing, Data preparation, and implementation • Fetch API promise • Custom promises <p>15. Asynchronous JavaScript And XML (AJAX)</p> <ul style="list-style-type: none"> • Sync and async promises • JSON and XML for data share 	05	10%	Online Lectures & Practical work	Practical Project

<ul style="list-style-type: none"> Request and response basics Implementing AJAX for API call 				
<p>16. DOM Manipulation</p> <ul style="list-style-type: none"> Basics of DOM Create, Read, Update and Delete DOM elements and attributes Sample creation Vs Node creation DOM traversal <p>17. Event Handling</p> <ul style="list-style-type: none"> Event handling basics DOM events Keyboard events Mouse events <p>18. Libraries and Frameworks</p> <ul style="list-style-type: none"> jQuery Swiper JS Chart JS 	06	20%	Online Lectures & Practical work	Practical Project
<p>19. React JS Introduction</p> <ul style="list-style-type: none"> The Facebook UI problem Introduction and Installation of React JS Real DOM Vs Virtual DOM concept Files and Folder structure of React JS Basic React JS web app JSX concept Components and Props Component composition <p>20. Complex and Collection Data Management</p> <ul style="list-style-type: none"> Array, Objects in React JS List and keys for data representation Table and card for data representation <p>21. Tailwind CSS & React Router DOM in React JS</p> <ul style="list-style-type: none"> Installation of Tailwind CSS Using Tailwind CSS to style components Tailwind CSS for web design Installation of React Router DOM Routing Basics Using React Router DOM for SPA Pages Vs Components Linking and Rendering Pages 	07	20%	Online Lectures & Practical work	Practical Project

<p>22. React JS Hooks</p> <ul style="list-style-type: none"> • useState, useEffect, useRef, useMemo, useReducer Hooks • Context API and global state management <p>23. API Call and Management</p> <ul style="list-style-type: none"> • Event handling • Conditional rendering • Installing AXIOS • API basics in React JS • Using public APIs <p>24. React JS Projects</p> <ul style="list-style-type: none"> • Using all learnt concepts to create a complete frontend based React JS projects • Course Closing and Next Steps (Discussion) 	08	20%	Online Lectures & Practical work	Practical Project
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