



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**  
(Accredited by NBA, UG: CSE)  
**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**UNIVERSITY COLLEGE OF ENGINEERING JAGTIAL**  
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**A Twenty-Day Workshop**  
On  
**“FULL STACK DEVELOPMENT”**  
(22-10-2024 to 15-11-2024)

**SCHEDULE**

Day #	Date	Time	Topic	Description	Practical Exercise
1	22-10-2024 (Tuesday)	2:00 PM to 5:00 PM	Introduction & Setup	Overview of Full Stack Development. Setup Node.js, npm, and Git.	Install Node.js, npm, and Git on local machine. Create a GitHub repo.
2	23-10-2024 (Wednesday)	2:00 PM to 5:00 PM	HTML & CSS Basics	Refresher on HTML5, CSS3, and responsive design.	Create a simple responsive webpage with HTML and CSS.
3	24-10-2024 (Thursday)	2:00 PM to 5:00 PM	JavaScript (ES6+) Fundamentals	Advanced JavaScript concepts like arrow functions, promises, async/await, destructuring.	Write code examples for promises and async/await.
4	25-10-2024 (Friday)	2:00 PM to 5:00 PM	React.js Setup	Introduction to React. Setting up a React project using Create React App.	Create a simple React app with functional components.
5	26-10-2024 (Saturday)	10:00 AM to 1:00 PM & 2:00 PM to 5:00 PM	React Components & State Management	Understanding component architecture, props, state, and events in React.	Build a to-do list with state management in React.
6	27-10-2024 (Sunday)	10:00 AM to 1:00 PM & 2:00 PM to 5:00 PM	React Routing	Implementing routing in React using React Router.	Add multiple pages to the React app using React Router.
7	28-10-2024 (Monday)	2:00 PM to 5:00 PM	Node.js & Express.js Setup	Setting up a basic Node.js and Express server. Introduction to REST APIs.	Create an Express.js server and build basic API endpoints.
8	29-10-2024 (Tuesday)	2:00 PM to 5:00 PM	MongoDB & Mongoose Integration	Introduction to NoSQL databases and MongoDB. Connecting Node.js to MongoDB using Mongoose.	Setup MongoDB, create a database, and perform CRUD operations with Mongoose.

9	04-11-2024 (Monday)	2:00 PM to 5:00 PM	Building a RESTful API	Creating RESTful API endpoints in Express.js.	Build a RESTful API with routes for CRUD operations on a simple resource.
10	05-11-2024 (Tuesday)	2:00 PM to 5:00 PM	Connecting Frontend to Backend	Fetching data from the backend API using Axios or Fetch API in React.	Connect React frontend to Express API using Axios for data fetching.
11	06-11-2024 (Wednesday)	2:00 PM to 5:00 PM	User Authentication (JWT)	Implementing authentication with JSON Web Tokens (JWT).	Build user login/signup endpoints and secure routes with JWT.
12	07-11-2024 (Thursday)	2:00 PM to 5:00 PM	Error Handling & Validation	Handling errors in Express and input validation with middleware.	Add error handling and input validation using Express middleware (e.g., Joi).
13	08-11-2024 (Friday)	2:00 PM to 5:00 PM	React Forms & State Handling	Creating and handling forms in React.	Build a user registration and login form in React, connecting to the backend API.
14	09-11-2024 (Saturday)	10:00 AM to 1:00 PM & 2:00 PM to 5:00 PM	Frontend State Management with Redux	Introduction to Redux and its integration with React.	Implement Redux in the project to manage global state.
15	10-11-2024 (Sunday)	10:00 AM to 1:00 PM & 2:00 PM to 5:00 PM	Testing REST APIs	Introduction to API testing using Postman.	Test the API endpoints using Postman for different HTTP methods.
16	11-11-2024 (Monday)	2:00 PM to 5:00 PM	Introduction to Flask	Setting up a basic Flask server and RESTful APIs.	Create a simple Flask API and serve responses for basic requests.
17	12-11-2024 (Tuesday)	2:00 PM to 5:00 PM	Flutter Setup	Introduction to Flutter for building hybrid mobile apps.	Setup a basic Flutter project and build a simple mobile app.
18	13-11-2024 (Wednesday)	2:00 PM to 5:00 PM	Building Mobile Apps with Flutter	Integrating APIs into Flutter mobile apps.	Build a mobile app in Flutter that fetches data from the Flask or Express API.
19	14-11-2024 (Thursday)	2:00 PM to 5:00 PM	Project Integration & Final Testing	Final integration of frontend and backend, and testing all functionalities.	Test the full application end- to-end and troubleshoot any issues.
20	15-11-2024 (Friday)	2:00 PM to 5:00 PM	Project Presentation & Wrap-up	Review of key concepts. Participants present their projects.	Present the final full stack application and get feedback.

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**Head, CSE**