**Introduction to Full-Stack Development**

- Overview of Full-Stack Development, Understanding the MERN/MEAN stack architecture, Importance and advantages of using these stacks.

**Week 1: Foundation and Basics**

**Day 1: Introduction to Hackathon and MERN Stack**

Overview of the hackathon: objectives, rules, judging criteria

Introduction to the MERN stack and its components

Setting up development environment: installing Node.js, npm, MongoDB

Introduction to version control with Git and GitHub

**MongoDB (Database)**

- Introduction to NoSQL databases and MongoDB, Setting up MongoDB locally and using cloud services like MongoDB Atlas, Basic CRUD operations (Create, Read, Update, Delete), Schema design and data modeling, Using Mongoose for MongoDB (for MERN), Aggregation framework and querying, Indexing and performance optimization.

**Week 2: Backend and Frontend Framework**

**Express.js (Backend Framework)**

- Introduction to Express.js and its role in the stack, Setting up an Express.js project, Middleware functions and their usage, Routing and handling HTTP requests, Connecting Express.js with MongoDB, Building RESTful APIs, Error handling and debugging, Authentication and authorization (JWT, OAuth)

**React.js (Frontend Framework for MERN)**

- Introduction to React.js and component-based architecture, Setting up a React.js project using Create React App, JSX syntax and rendering elements, State and props management, Component lifecycle methods, Handling events and forms, Making API calls with Axios or Fetch, React Router for client-side routing, Introduction to React hooks (useState, useEffect, etc.), State management with Redux (optional but recommended)

**Week 3:**

**Node.js (Runtime Environment)**

- Introduction to Node.js and its role in the stack, Setting up a Node.js project, Understanding the event-driven architecture, Working with Node.js modules and npm, Building a simple server with HTTP module, Using Node.js with Express.js for backend development

**Integrating the Stack**

- Connecting frontend (React/Angular) with backend (Express.js), Managing environment variables and configurations, Building and consuming RESTful APIs, Handling CORS issues

**Week 4:**

**Project Development Workflow**

- Setting up a development environment, Version control with Git and GitHub

**Final Project**

- Choosing a project idea relevant to the hackathon theme

- Defining project requirements and features

- Setting up the project repository

- Breaking down tasks and assigning them to team members

- Implementing the project step-by-step, integrating each component

- Regularly testing and debugging

- Preparing a final presentation or demo

**Week 5 to Week 7:** Hackathon Projects, Practice Sessions, Doubts Session.