303105386-MEA(R)N Stack Web Development Laboratory

Course: BTech   **Semester:** 6

Prerequisite: Database Management system, SQL, Basics of Javascript and web development

Rationale : 1. Understanding the basics of web development and JavaScript programming 2. Learning how to use MongoDB, a popular NoSQL database, to store and retrieve data 3. Learning how to use Node.js, a server-side JavaScript runtime, to create APIs and handle server-side logic 4. Learning how to use Express.js, a lightweight web application framework for Node.js, to build web applications 5. Learning how to use AngularJS, a powerful front-end JavaScript framework, to create dynamic user interfaces and connect with APIs 6. Building a full-stack web application from scratch using the MEAN stack 7. Understanding best practices for deploying, testing, and maintaining MEAN stack applications

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
					Internal Marks			External Marks		
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Seminar Hrs/Week	Credit	T	CE	P	T	P	
0	0	2	-	1	-	-	20	-	30	50

SEE - Semester End Examination, **T** - Theory, **P** - Practical

Course Outcome

After Learning the Course the students shall be able to:

1.   Have a comprehensive understanding of the technologies and frameworks that make up the MEAN stack, including MongoDB, Expíess.js, AngularJS, and Node.js.
2.   Build full-stack web applications.
3.   Understand web development best practices:
4.   Work on real-world projects using the MEAN stack. This could include developing a portfolio of projects of contributing to opensource projects.

List of Practical

1.	1. Introduction to MEAN stack 2. Setting up the development environment 3. Overview of MongoDB, Express.js, Angular, and Node.js
2.	1. Creating and configuring MongoDB 2. Creating and configuring Express.js 3. Building RESTful APIs with Express.js
3.	1. Introduction to Angular 2. Building basic UI components with Angular 3. Creating a Single-Page Application (SPA) with

	Angular
4.	**1. Introduction to Node.js 2. Creating and configuring Node.js 3. Building server-side applications with Node.js**
5.	**1. Integrating all components to build a full-stack application 2. Testing and debugging the application 3. Deploying the application on a cloud platform**