**Course:** BTech **Semester:** 6

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

**Course Objective:** 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.<br>2. Build full-stack web applications.<br>3. Understand web development best practices:<br>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

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|---|---|
| **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** |