

MERN Stack Development

Course Code	20CS3603	Year	III	Semester	II
Course Category	PCC	Branch	CSE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Programming with JAVA
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to

CO1	Understand the fundamental concepts of web application development.	L2
CO2	Apply Node.JS restful APIs to Interact with HTTP services	L3
CO3	Apply React JS concepts to build an Application.	L3
CO4	Apply the concepts of Mongo DB to manipulate the Database	L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	√													
CO2			√						√	√			√	
CO3			√						√	√			√	
CO4			√						√	√			√	

Syllabus

Unit No.	Contents	Mapped CO
I	Introducing the Node.js-to-Angular Stack: Understanding the Basic Web Development Framework, Understanding the Node.js-to-Angular Stack Components, JavaScript Primer - Defining Variables, Understanding JavaScript Data Types, Using Operators, Implementing Looping, Creating Functions, Understanding Variable Scope, Using JavaScript Objects, Manipulating Strings, Working with Arrays, Adding Error Handling	CO1

II	Getting Started with Node.js: Understanding Node.js, Installing Node.js, Working with Node Packages, Creating a Node.js Application, Writing Data to the Console	CO1, CO2
III	Implementing HTTP Services in Node.js: Processing URLs, Understanding Request, Response, and Server Objects, Implementing HTTP Clients and Servers in Node.js, Implementing HTTPS Servers and Clients, Implementing Express in Node.js: Getting Started with Express, Configuring Routes, Using Request/Responses Objects	CO1, CO2
IV	How React Works_ - Page Setup, React Elements, ReactDOM, React, components, React with JSX- React Elements as JSX, Babel , Recipes as JSX, React Fragments, Intro to webpack, React State Management_ - Building Forms, Incorporating Data_ - Requesting Data, Virtualized Lists - Creating a Fetch Hook, Creating a Fetch Component, Handling Multiple Requests, Memoizing Values, React Router.	CO1, CO3
V	Understanding NoSQL and MongoDB: Why NoSQL?, Understanding MongoDB, MongoDB Data Types; Getting Started with MongoDB and Node.js: Building the MongoDB Environment, Accessing MongoDB from the Shell Client, MongoDB Shell commands and methods, Adding the MongoDB Driver to Node.js, Connecting to MongoDB from Node.js	CO1, CO4

Learning Resources

Text Books

1. Node.js, MongoDB and Angular Web Development by Brad Dayley, Brendan Dayley, Caleb Dayley, 2nd edition, Pearson, ISBN-13: 978-0134655536, ISBN-10: 0134655532
2. Learning React Modern Patterns for Developing React Apps, 2nd Edition, O'Reilly, ISBN: 978-1-492-D5172-5

References

1. Pro MERN Stack: Full Stack Web App Development with Mongo, Express, React, and Node by Vasanth Subramanian, Apress; 2nd ed. edition (13 May 2019), ISBN-10 : 1484243900, ISBN-13 : 978-1484243909
2. MongoDB, React, React Native Full-Stack Fundamentals and Beyond, by Eric Bush, Zaccus Entertainment Publication, ISBN-10 : 0997196688, ISBN-13 : 978-0997196689
3. Quick Start Guide: Build web applications with MongoDB, Express.js, React, and Node by Eddy Wilson Iriarte Koroliova, Packt Publishing, ISBN-10: 1787281086, ISBN-13: 978-1787281080
4. Beginning Node.js, Express & MongoDB Development, by Greg Lim (Author), ISBN-10 : 9811480281
5. Beginning Node.js, Basarat Syed, Apress, ISBN-10: 9781484201886

e-Resources and other Digital Material

1. www.w3schools.com
2. <https://www.javatpoint.com/mean-stack-tutorial>
3. <https://www.linode.com/docs/guides/mean-stack-tutorial/>