

**MERN Stack Development Lab**

<b>Course Code</b>	20CS3653	<b>Year</b>	III	<b>Semester</b>	II
<b>Course Category</b>	PCC	<b>Branch</b>	CSE	<b>Course Type</b>	Practical
<b>Credits</b>	1.5	<b>L-T-P</b>	0-0-3	<b>Prerequisites</b>	Programming with JAVA
<b>Continuou s Internal Evaluation :</b>	15	<b>Semester End Evaluation:</b>	35	<b>Total Marks:</b>	50

**Course Outcomes**

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

<b>CO1</b>	Apply MERN technologies to develop web applications.	<b>L2</b>
<b>CO2</b>	Implement various applications as an individual or team member	<b>L3</b>
<b>CO3</b>	Develop an effective report based on various programs implemented	<b>L3</b>
<b>CO4</b>	Apply technical knowledge for a given problem and express with an effective oral communication	<b>L3</b>
<b>CO5</b>	Analyze outputs of web based applications	<b>L4</b>

**Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>CO1</b>														3
<b>CO2</b>					1				2					
<b>CO3</b>										2				
<b>CO4</b>						1				3				
<b>CO5</b>		3												

<b>Syllabus</b>		
<b>Expt. No.</b>	<b>Contents</b>	<b>Mapped CO</b>
1	Demonstration of const, let, string templates, callbacks, arrow functions, class, class-properties, methods using Java Script.	<b>CO1,CO2,CO3, CO4,CO5</b>
2	Use of global object, Variables, Standard input and standard output in Node JS to build application.	<b>CO1,CO2,CO3, CO4,CO5</b>
3	Develop Node JS Application and Implement HTTP Services in Node JS (Request and Response)	<b>CO1,CO2,CO3, CO4,CO5</b>
4	Implement React Elements and Components	<b>CO1,CO2,CO3, CO4,CO5</b>
5	Develop a Single Page Application (SPA)	<b>CO1,CO2,CO3, CO4,CO5</b>
6	Reading and writing to MongoDB database using APIs	<b>CO1,CO2,CO3, CO4,CO5</b>
7	Developing a simple CRUD application using the MERN stack	<b>CO1,CO2,CO3, CO4,CO5</b>
8	Case Studies: Build web applications based on the <b>choice of student/faculty</b>	<b>CO1,CO2,CO3, CO4,CO5</b>

<b>Learning Resources</b>
<b>Text Books</b>
<ol style="list-style-type: none"> <li>1. Node.js, MongoDB and Angular Web Development by Brad Dayley, Brendan Dayley, Caleb Dayley, 2nd edition, Perason, ISBN-13: 978-0134655536, ISBN-10: 0134655532</li> <li>2. Learning React Modern Patterns for Developing React Apps, 2<sup>nd</sup> Edition, O'Reilly, ISBN: 978-1-492-D5172-5</li> </ol>
<b>References</b>
<ol style="list-style-type: none"> <li>1. Pro MERN Stack: Full Stack Web App Development with Mongo, Express, React, and Node by Vasam Subramanian, Apress; 2nd ed. edition (13 May 2019), ISBN-10 : 1484243900, ISBN-13 : 978-1484243909</li> <li>2. MongoDB, React, React Native Full-Stack Fundamentals and Beyond, by Eric Bush, Zaccheus Entertainment Publication, ISBN-10 : 0997196688, ISBN-13 : 978-0997196689</li> <li>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</li> <li>4. Beginning Node.js, Express &amp; MongoDB Development, by Greg Lim (Author), ISBN-10 : 9811480281</li> <li>5. Beginning Node.js, Basarat Syed, APress, ISBN-10: 9781484201886</li> <li>6. Learning React Functional Web Development with React and Redux by Alex Banks and Eve Porcello, Published by O_Reilly Media, Inc. , ISBN-10 : 9352135636, ISBN-13 : 978-9352135639</li> <li>7. React Quickly: Painless web apps with React, JSX, Redux, and GraphQL, by Azat Mardan, Published by Manning Publications, Manning Publications, ISBN-10 : 1617293342, ISBN-13 : 978-1617293344</li> </ol>

**e-Resources and other Digital Material**

4. [www.w3schools.com](http://www.w3schools.com)
5. <https://www.javatpoint.com/mean-stack-tutorial>
6. <https://www.linode.com/docs/guides/mean-stack-tutorial/>
7. <https://blog.logrocket.com/mern-stack-tutorial/>