MERN STACK DEVELOPMENT LAB

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| **Course Code** | **20CS3653** | **Year** | III | **Semester** | II |
| **Course**  **Category** | PCC | **Branch** | CSE | **Course Type** | Practical |
| **Credits** | 1.5 | **L-T-P** | 0-0-3 | **Prerequisites** | Programming with JAVA |
| **Continuous Internal**  **Evaluation :** | 15 | **Semester End Evaluation:** | 35 | **Total Marks:** | 50 |

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| **Course Outcomes** | | |
| Upon successful completion of the course, the student will be able to | | |
| **CO1** | Apply MERN Technologies to develop Web Applications. | **L3** |
| **CO2** | Implement various applications as an individual or team member | **L3** |
| **CO3** | Develop an effective report based on various programs implemented | **L3** |
| **CO4** | Apply technical knowledge for a given problem and express with an effective  oral communication | **L3** |
| **CO5** | Analyze outputs of web based applications | **L4** |

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

**Course Coordinator**

Dr P Sai Kiran -

B Vishnu Vardhan -

Y Ayyappa - **HOD**

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| **Learning Resources** |
| **Text Books** |
| 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 2. Learning React Modern Patterns for Developing React Apps, 2nd Edition, Oreilly, ISBN: 978-1-492-D5172-5 |
| **References** |
| 1. Pro MERN Stack: Full Stack Web App Development with Mongo, Express, React, and Node by Vasan 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, Zaccheus Entertainment Publication, ISBN-10 ‏ : ‎ 0997196688, ISBN-13 ‏ : ‎ 978-0997196689  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: ‎ 978-1787281080Beginning Node.js, Express & MongoDB Development, by Greg Lim (Author), ISBN-10 : 9811480281Beginning Node.js, Basarat Syed, APress, ISBN-10: 9781484201886Learning 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 ‏ : ‎ 978-9352135639React 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 |

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| **e-Resources and other Digital Material** |
| 1. [www.w3schools.com](http://www.w3schools.com) 2. <https://www.javatpoint.com/mean-stack-tutorial> 3. <https://www.linode.com/docs/guides/mean-stack-tutorial/> 4. <https://blog.logrocket.com/mern-stack-tutorial/> |

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