

MODERN WEB APPLICATIONS

Course Code	20IT3602	Year	III	Semester	II
Course Category	PC	Branch	IT	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	-
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		Blooms Taxonomy Level
Upon Successful completion of course, the student will be able to		
CO1	Understand core concepts of both the frontend and backend technologies.	L2
CO2	Apply Express JS, React JS which are used extensively to handle both the Front-end and Back-end development processes.	L3
CO3	Construct server side web applications by applying Node.js elements	L3
CO4	Build applications for accessing data using MongoDB	L3

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Syllabus		
Unit No	Contents	Mapped CO
I	Introduction: MERN, MERN Components, Serverless Hello World Application, ES6, DOM, JSON, Installation. React Basics: Introduction, Virtual DOM, Components in React, Tradeoffs, using JSX , React Project Structure, State, Component Communication, One-way data flow, Rendering and Life Cycle methods.	CO1,CO2
II	Updating React Components, Creating a Newsfeed. Forms, Libraries & Routing: Working with Forms &Third Party libraries, Routing. Redux: Application Architecture, Integrating Redux with React.	CO1,CO2
III	Node.js: Getting Started with Node.js, Using Events, Listeners, Timers, and Callbacks in Node.js, Handling Data I/O in Node.js. Accessing the File System from Node.js, Implementing HTTP Services in Node.js.	CO1,CO3
IV	Express with Node.js, Routes, Request and Response objects, Template engine. Understanding middleware, Query middleware, Serving static files, Handling POST body data, Cookies, Sessions, Authentication	CO1,CO3
V	MongoDB: Understanding NoSQL and MongoDB, Getting Started with MongoDB, Getting Started with MongoDB and Node.js, Manipulating MongoDB Documents from Node.js, Accessing MongoDB from Node.js.	CO1,CO3, CO4
Learning Resources		
Textbooks		
1) React in Action, Mark Tielens Thomas, Manning Publications, 2018, ISBN:978-1617293856 , First Edition 2) Node.js, MongoDB and Angular Web Development, Brad Dayley, Brendan Dayley Caleb Dayley, 2/e, Pearson Edu., Inc. 2018, ISBN: 978-0-13-465553-6		
References		
1) Pro MERN Stack, Vasan Subramanian, 2/e, Apress, 2019, ISBN: 978-1-4842-4390-9 2) Full Stack React – The Complete Guide to ReactJS and Friends, Anthony Accomazzo, Nate Murray, Ari Lerner, Clay Allsopp, David Guttman, and Tyler McGinnis, 2020, \newline, 3) Node.js in Action, Mike Cantelon, Marc Harter, T.J. Holowaychuk& Nathan Rajlich, Manning Publications, 2014, ISBN: 9781617290572. 4) MongoDB in Action, 2/e, Kyle Banker, Peter Bakkum, Shaun Verch, Douglas Garrett & Tim Hawkins, Manning Publications, 2016, ISBN: 9781617291609.		
e-Resources and other Digital Material		
1. The-Complete-Beginners-Guide-to-React_Dyrr.pdf (html5hive.org) 2. React for Beginners – A React.js Handbook for Front End Developers (freecodecamp.org) 3. How To Code in React.js (digitalocean.com) 4. The-Complete-Beginners-Guide-to-React_Dyrr.pdf (html5hive.org) 5. Nodejs Programming By Example - Google Play Books		