

PCC	FULL STACK WEB DEVELOPMENT	3	0	0	3
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Course Objectives

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
 - To develop simple web applications with React

UNIT I : BASICS OF FULL STACK 9

Understanding the Basic Web Development Framework - - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II : NODE JS 9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III : MONGO DB 9

Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts – Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV : EXPRESS AND ANGULAR 9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V : REACT 9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

TOTAL HOURS : 45

Text Books:

1. Brad Dayley, Brendan Dayley, Caleb Dayley, ‘Node.js, MongoDB and Angular Web Development’, Addison-Wesley, Second Edition, 2018

2. Vasan Subramanian, 'Pro MERN Stack, Full Stack Web App Development with Mongo, Express, React, and Node', Second Edition, Apress, 2019.

Reference Books:

1. Chris Northwood, 'The Full Stack Developer: Your Essential Guide to the Everyday Skills Expected of a Modern Full Stack Web Developer', Apress; 1st edition, 2018
2. Kirupa Chinnathambi, 'Learning React: A Hands-On Guide to Building Web Applications Using React and Redux', Addison-Wesley Professional, 2nd edition, 2018
3. https://www.tutorialspoint.com/the_full_stack_web_development/index.asp
4. <https://www.coursera.org/specializations/full-stack-react>
5. <https://www.udemy.com/course/the-full-stack-web-development/> Web Links:

Weblinks

1. <https://angular.io/>
2. <https://nodejs.org/en/>
3. <https://expressjs.com/>
4. <https://www.mongodb.com/>

COURSE OUTCOMES

CO1	Understand the various stacks available for web application development	K1
CO2	Use Node.js for application development	K5
CO3	Develop applications with MongoDB	K4
CO4	Use the features of Angular and Express	K6
CO5	Develop React applica	K6

Mapping Of Course Outcomes to Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	-	-	-	-	-	-	-	3	3
CO2	3	2	2	3	2	-	-	-	-	-	-	-	3	3
CO3	3	3	3	3	1	-	-	-	-	-	-	-	3	3

CO4	3	3	2	3	2	-	-	-	-	-	-	-	3	3
CO5	2	2	3	3	2	-	-	-	-	-	-	-	2	3

ASSESSMENT METHODS:

CAT 1	CAT 2	Model Exam	End Semester Exams	Assignments	Case Studies
✓	✓	✓	✓	✓	
Quiz	MCQ	Projects	Seminars	Demonstration/ Presentation	Open book test
✓	✓	✓	✓	✓	✓

PCC	FULL STACK WEB DEVELOPMENT LAB	0	0	2	1
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Course Objectives

- To develop full stack applications with clear understanding of user interface, business logic and data storage.
- To design and develop user interface screens for a given scenario
- To develop the functionalities as web components as per the requirements
- To implement the database according to the functional requirements
- To integrate the user interface with the functionalities and data storage.

List of Experiments:

1. Develop a portfolio website for yourself which gives details about yourself for a potential recruiter.
2. Create a web application to manage the TO-DO list of users, where users can login and manage their to-do items
3. Create a simple micro blogging application (like twitter) that allows people to post their content which can be viewed by people who follow them.
4. Create a food delivery website where users can order food from a particular restaurant listed in the website.
5. Develop a classifieds web application to buy and sell used products. rest api

with node

6. Develop a leave management system for an organization where users can apply different types of leaves such as casual leave and medical leave. They also can view the available number of days.
7. Develop a simple dashboard for project management where the statuses of various tasks are available. New tasks can be added and the status of existing tasks can be changed among Pending, In Progress or Completed.
8. Develop an online survey application where a collection of questions is available and users are asked to answer any random 5 questions
9. Create your Own Web Application
10. Mini Project

Text Books:

1. Amos Q. Haviv, MEAN Web Development, 2nd Revised edition, Packt Publishing
2. Ethan Brown, Web Development with Node and Express, Oreilly

Reference Books:

1. Colin J Ihrig , Adam Bretz Full Stack JavaScript Development With MEAN, First Edition

Web Links:

1. <https://angular.io/>

TOTAL HOURS : 30

COURSE OUTCOMES

CO1	Design full stack applications with clear understanding of user interface, business logic and data storage	K3
CO2	Design and develop user interface screens	K4
CO3	Implement the functional requirements using appropriate tool	K6
CO4	Design and develop database based on the requirements	K4
CO5	Integrate all the necessary components of the application	K6

Mapping Of Course Outcomes to Program Outcomes

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

ASSESSMENT METHODS:

CAT 1	CAT 2	Model Exam	End Semester Exams	Observation
		✓	✓	✓
Record	MCQ	Projects	Viva	Demonstration / Presentation
✓			✓	✓