

Full Stack Web Development

Course Code		Year	IV	Semester	I
Course Category	Honors	Branch	CSE	Course Type	Theory
Credits	4	L-T-P	4-0-0	Prerequisites	Programming with Java, Web Technologies
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 fundamental concepts of web application development	L2
CO2	Apply the concepts of user interface to develop front end of web application	L3
CO3	Apply concepts of database to develop web application	L3
CO4	Analyze the Front End and Back-End Technologies to develop and host Web Application	L4

Syllabus

Unit No.	Contents	Mapped CO
I	Intro to HTML: Browser to browser differences, Tags, Attributes and elements, DocType Element, Comments, Headings, Paragraphs, Formatting text, Lists, Links, Images and Table, Intro CSS- selectors , properties, values, color , backgrounds, pop-box (model box), Padding, margin, Applying styles via classes, id, tags, Bootstrap	CO1, CO2
II	Introduction to JavaScript - Syntax, Document object, Variables, declaration & operators, Data types, Conditional statements & Loops, Objects & Arrays, Date Time, Functions, Debugging.	CO1,CO2, CO4
III	Introduction to ReactJS - Installation/Configuring react environments, JSX, Components & Props, State & lifecycle, Virtual DOM, Routing, Data Management - Rest API, Local Storage,	CO1, CO2, CO4

	Debugging	
IV	Introduction to backend - Overview of (nodejs or java), Request Types -POST, PUT, PATCH,DELETE, GET, Response Types - json, xml, string, etc, Develop endpoints/ REST API, Cookies, Authentication & Authorization (using in memory data structures), Database connectivity (One with SQL and one with NoSql), Authentication & Authorization (using stored data login data in DB, Auth0), CRUD Operations, Protect API/App from unauthorized access., Add a cache for frequently used data, Logging, Debugging	CO1, CO3, CO4
V	VSC, Full Stack Project & deploying the application - Version Control System - Git & Github, Create an simple project, Login page, Automatic redirect when user login time expired, Packaging the application.	CO1, CO2, CO3, CO4

Learning Resources

Text Books

1. Web Technologies, Black Book, Kogent Learning Solutions Inc, Dreamtech Press.
2. Learning React Functional Web Development with React and Redux by Alex Banks and Eve Porcello, 2017, O'Reilly books
3. Version Control with Git, Jon Loeliger, Matthew McCullough, 2nd Edition, 2012,O'Reilly Media

References

1. Fullstack React: The Complete Guide to ReactJS and Friends by Anthony Accomazzo, Fullstack, 2017, IO publisher.
2. Modern Full-Stack Development:Using TypeScript, React, Node.js, Webpack, and Docker, by Rank Zammetti, Apress publisher, 1st edition (1 January 2020)

e-Resources and other Digital Material

1. <https://www.freecodecamp.org/news/fullstack-react-blog-app-with-express-and-psql/>
2. <https://fullstackopen.com/en/>
3. <https://aws.amazon.com/getting-started/hands-on/build-react-app-amplify-graphql/>
4. <https://www.fullstacktutorials.com/tutorials/reactjs/reactjs-tutorial.html>