| **Brief Course Description** | First implemented in Facebook’s 2011 news feed, React is a Javascript library used to build user interfaces. In this challenging, hands-on course students will apply the concepts of Web Development I and II and learn to create fast and modular applications using React, Document Object Model (DOM), JavaScript ES6, JSX, and Redux. This course focuses on structuring and developing industry standard single page applications. |
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| **Course Prerequisites** | WADP 101, 102, 202 |

| **Learning Objectives** | Upon completion of this course the successful student will have reliably demonstrated the ability to:   * Build composable user interfaces using reusable components * Setup and use the create-react-app toolchain * Build performant, interactive and data driven web applications * Build Single Page Apps (SPAs) * Build dynamic components that interact with APIs, services * Write reusable, shared logic for use in application ecosystem * Build interactive forms * Implement routing with React Router * Use Redux and middleware like redux-thunk * Test using Jest, React Testing Library and Enzyme |
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| **Required course materials** | | N/A | |
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| **Course Duration** | | 7 weeks / 140 hours | |
| **Homework Hours** | | 2-3 hours per day | |
| **Delivery Methods** | | *Indicate how the course is delivered:*  ☒  *In-class instruction*  ☐ *Distance education*  ☐ *Combined delivery (both in-class and distance)* | |
| **T**e**aching Methods**  **Method(s) of Student Evaluation** | | *In-class lecture*  *Lab practice*  *Projects*  *Group collaboration* | |
| * 15% Finish freecodecamp (Front End Libraries Certification) * 10% Quiz / Lab / Assignment Marks * 25% Midterm Project * 40% Final Project * 10% Attendance and Participation |  |
| **Completion Requirements** | *A minimum grade of 70% on the final exam and an overall grade of 70% are required to successfully pass the course.* | | |

**Schedule**

| **Dates** | **Topics to cover** |
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| **Week 1** | JavaScript Fundamentals  React Introduction:  Basic concepts of React: components/ virtual DOM/ JSX syntax / lifecycles/ modules (import/export) / destructure / props and state / using functions (class/functional) / fragments / CSS file structure / styles / forms + inputs / images |
| **Week 2** | React-Router: Routing / nested routing / path params / protected routing  React-Hooks - useState, useEffect, custom Hooks / useful NPM Libraries (classname, lodash, react-media, axios, etc..) |
| **Week 3** | **Midterm Project Week** |
| **Week 4** | TypeScript / prop-types |
| **Week 5** | React with PaaS (Platform as a service: User Authentication/ Hosting/Database)  Basic Redux from legacy to Redux toolkit |
| **Week 6** | Advanced concepts:  ContextAPI / Testing / renderProps/ HOCs  Deploying / Mastering GraphQL + Apollo |
| **Week 7** | **Final Project Week** |