



Course Title:	Cutting Edge Web Development										
Course Code:	CSCE 188										
Subject:	Computer Science										
Credits:	4										
Contact Hours:	50										
Semester/Term:	<input checked="" type="checkbox"/> Semester <input type="checkbox"/> J-Term <input type="checkbox"/> Summer										
Course Description:	<p>The course introduces progressive web applications and explores React, the leading front-end library for full-stack web development. Students will continue to build their web application portfolio from CSFE 185, CSIS 186, and CSFS 187 using React. Emphasis is placed on building competencies in technical knowledge and the ability to demonstrate real-world use cases for web applications. In groups, students will present a final novel application to be deployed to real-world users and defend their application in a career-preparedness simulation.</p> <p>Throughout the course, students will more broadly gain an appreciation and framework for learning new technologies and in understanding broader software development principles. Students also learn teamwork, project management and presentation skills as part of a collaborative final project to develop a complex web application that integrates prior learning.</p>										
Course Requirements:	<p>Required Text Digital access and/or copies will be provided at no cost to students.</p> <p>Assignments</p> <table border="1"> <thead> <tr> <th>Course Requirements</th> <th>Percentages</th> </tr> </thead> <tbody> <tr> <td>Progressive Budget Tracker</td> <td>20 %</td> </tr> <tr> <td>Google Books React Search</td> <td>20 %</td> </tr> <tr> <td>Novel Full-Stack Web Application & Presentation</td> <td>60%</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </tbody> </table> <p>Progressive Budget Tracker (20%) Convert an existing Budget Tracker application into a Progressive Web Application (PWA) to allow for offline access and functionality.</p> <p>Google Books React Search (20%) Build a React app that lets users search a Mongo database of articles and allow them to save articles to read later.</p>	Course Requirements	Percentages	Progressive Budget Tracker	20 %	Google Books React Search	20 %	Novel Full-Stack Web Application & Presentation	60%	Total	100%
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	<p>Novel Full-Stack Web Application & Presentation (60%) Work as part of a collaborative project team to build a novel full-stack application that utilizes many of the languages and libraries covered in previous courses. Deliver a presentation demonstrating the final application and clearly outlining the development process steps. Justify that a proposed application effectively addresses a practical need via real-world research.</p>								
<p>Learning Outcomes and/or Expected Student Competencies and Assessment Measures:</p>	<p>On completion of the course, students should be able to:</p> <table border="1" data-bbox="464 554 1468 1883"> <thead> <tr> <th data-bbox="464 554 964 663">Learning Outcomes</th> <th data-bbox="964 554 1468 663">Course Requirement that will be used to assess the student's achievement of this outcome</th> </tr> </thead> <tbody> <tr> <td data-bbox="464 663 964 915"> Explain performance in the context of web applications; Implement service workers and the Cache API to cache and retrieve assets on user device while offline; Reduce web application bundle sizes and improve load times and time to interaction </td> <td data-bbox="964 663 1468 915"> Progressive Budget Tracker </td> </tr> <tr> <td data-bbox="464 915 964 1381"> Explain the purpose of the Create React App dependencies Webpack and Babel; Explain and implement JSX and JSX variables to dynamically render HTML; Compose functional and stateful components and explain their differences; Explain one-way data binding and its relationship to components and props; Compose event handlers and update application state based on user form input; Build and deploy a static React application to GitHub Pages using gh-pages </td> <td data-bbox="964 915 1468 1381"> Pupster App </td> </tr> <tr> <td data-bbox="464 1381 964 1883"> Explain the importance and use of React lifecycle methods, and identify the pros and cons of React Single-Page Applications; Implement React Router for conditional rendering of components; Configure a proxy server for local development of a MERN application; Implement MVC paradigm in a MERN application; Distinguish the differences between a Container Component and a Presentational Component; Successfully configure and deploy a MERN application to Heroku </td> <td data-bbox="964 1381 1468 1883"> Google Books React Search </td> </tr> </tbody> </table>	Learning Outcomes	Course Requirement that will be used to assess the student's achievement of this outcome	Explain performance in the context of web applications; Implement service workers and the Cache API to cache and retrieve assets on user device while offline; Reduce web application bundle sizes and improve load times and time to interaction	Progressive Budget Tracker	Explain the purpose of the Create React App dependencies Webpack and Babel; Explain and implement JSX and JSX variables to dynamically render HTML; Compose functional and stateful components and explain their differences; Explain one-way data binding and its relationship to components and props; Compose event handlers and update application state based on user form input; Build and deploy a static React application to GitHub Pages using gh-pages	Pupster App	Explain the importance and use of React lifecycle methods, and identify the pros and cons of React Single-Page Applications; Implement React Router for conditional rendering of components; Configure a proxy server for local development of a MERN application; Implement MVC paradigm in a MERN application; Distinguish the differences between a Container Component and a Presentational Component; Successfully configure and deploy a MERN application to Heroku	Google Books React Search
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	<p>Students can express the correlation between Context Objects, Providers, and Consumers; Students will be able to compose a React application that utilizes the Context API, React Hooks, and stateful components, distinguish between the three and identify the proper use-cases for each; Students will be able to articulate at least one way to manage global application state; Students will be able to explain at a high level how authentication works</p>	<p>Custom CMS</p>																								
	<p>Design and build a single-page application using the MERN stack; Deploy the final application so it is accessible by real-world users; Defend design decisions by speaking about complex, abstract concepts with clear, high-level commentary</p>	<p>Novel Full-Stack Web Application & Presentation</p>																								
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Other Policies:	<p>Expectations Professional behavior is expected of all students. This includes preparation for classes, on-time attendance at classes, attendance at all group sessions and appropriate participation in the form of attentiveness and contributions to the course. Respect for the academic process is the major guiding principle for professional behavior and extends to all communications, including email.</p> <p>Attendance/Participation Prompt attendance, full preparation, and active participation in class discussions are expected from every student in every class session. Students who miss more than two course sessions will be in jeopardy of successful completion of the course and its requirements. Students should consult their instructor regarding absences to address missed work and/or make-up assignments.</p> <p>Course Policies For email communications, students must use their Arcadia University email account. Students are responsible for any information provided by e-mail or through Intranet postings.</p> <p>Plagiarism Representation of another's work or ideas as one's own in academic submissions is plagiarism, and is cause for disciplinary action. <i>Cheating</i> is actual or attempted use of resources not authorized by the instructor(s) for academic submissions. Students caught cheating in this course will receive a failing grade. <i>Fabrication</i> is the falsification or creation of data, research or resources to support academic submissions, and cause for disciplinary action.</p> <p>Late or Missed Assignments Will not be accepted for grading. Completion of all projects and homework is required for course completion.</p> <p>Students with Disabilities Persons with documented disabilities requiring accommodations to meet the expectations of this course should disclose this information while enrolling into the program, and before the start of term so that appropriate arrangements can be made.</p> <p>Title IX Statement Arcadia University is committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. The only exceptions a faculty member's reporting obligation are when incidents of sexual</p>
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	<p>violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project.</p> <p>Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at https://www.arcadia.edu/university/policies-guidelines/title-ix.</p>
Prerequisites:	CSFE 185, CSIS 186, CSFS 187

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