

Course Syllabus Part I

WEB 450 Mastering the MEAN Stack Bootcamp

6 Credit Hours

Course Description

This course is an immersive web development bootcamp. It is a full stack experience using the skills previously developed in languages, API, and framework. The course pulls it all together in a more challenging and highly demanding environment. Topics include UI considerations, web services, server-side scripting, and database development and use. Students will complete individual JavaScript projects using the entire web stack. Groups will complete a real-world, highly complex, JavaScript project using the entire web stack and using separate development environments to promote software through development, QA, and production. GitHub is used to store the projects. The course is synchronous with all students participating at the same time five nights a week for 9 consecutive weeks.

Course Prerequisites

None

Course Skills

Students will exercise the following program skills during this course:

- Develop high-quality web application software components throughout the full stack.
- Select optimal middleware solutions to integrate software components in differing portions of the stack.
- Use information security techniques to protect the data used in web applications.
- Employ efficient web analytics tools and techniques to collect, analyze, and report web usage data.
- Evaluate web application functionality throughout the full stack, using methodologies for test planning and execution, and reporting results to stakeholders.
- Critique web application design elements to promote alignment with contemporary style and best practices.
- Evaluate software maturity and readiness for promotion through the various development environments.
- Predict the resources required to develop web applications.
- Create a design plan for a web application development, including software components required, milestones, and resources required.
- Research stakeholder requirements for web applications, including documentation and coordination of specifications.

- Assess requirements for feasibility to ensure the development meets both technical and resource constraints.
 - Make and defend recommendations on the viability of web services to meet stakeholder requirements.
 - Demonstrate effective communications with all stakeholders, including clear and concise written and oral communications to technical and non-technical audiences.
 - Create productive and professional relationships among team members and stakeholders to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.
 - Use effective time management and task prioritization techniques to meet obligations to the team and achieve a common purpose.
 - Use principles of ethics and leadership to align team actions while balancing individual and group values and priorities.
 - Use creative thinking and innovative approaches to solve problems and overcome challenges in a development team.
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Course Objectives

Students who successfully complete this course should be able to:

1. Explain the responsibilities of a full stack developer.
 2. Discuss the core principles of a full stack web architecture.
 3. Justify the use of separate source control environments for managing code projects.
 4. Develop a strategy for collaborating in a team-based virtual environment.
 5. Choose a design strategy for a highly complex web project.
 6. Solve security vulnerabilities in a full stack web application.
 7. Build a full stack web application.
 8. Measure the effectiveness of quality assurance test plans.
 9. Propose a strategy for regression testing.
 10. Justify the completeness of a full stack web project to business stakeholders.
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Grading Scale

93 – 100% = A	87 – 89% = B+	77 – 79% = C+	67 – 69% = D+
90 – 92% = A-	83 – 86% = B	73 – 76% = C	63 – 66% = D
	80 – 82% = B-	70 – 72% = C-	60 – 62% = D-
			0 – 59% = F

Topic Outline

- I. MEAN Stack Bootcamp
 - A. Course Structure
 - B. Expectations
 - C. Schedule
- II. nodebucket
 - A. Project Overview
 - B. Planning and Design
 - C. Sprint 1
 - D. Sprint 2
 - E. Sprint 3
 - F. Delivery
- III. Bob's Computer Repair Shop
 - A. Project Overview
 - B. Planning and Design
 - C. Sprint 1
 - D. Sprint 2
 - E. Sprint 3
 - F. Delivery
 - G. Group Presentations