CS 50B Course Outline as of Fall 2023

CATALOG INFORMATION

Dept and Nbr: CS 50B   Title: WEB DEVELOPMENT 2
Full Title: Web Development 2
Last Reviewed: 10/24/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00   Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable
Grading: Grade or P/NP
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly: CS 50.11C

Catalog Description:
This class offers advanced instruction in client-side Web development technology and design. Students work on project-based assignments using front-end frameworks, such as Bootstrap, and Web content management systems, such as WordPress. An introduction to the JavaScript language is included. Advanced topics in HTML and CSS, including language pre-processors, are presented. User-centered design, user experience research, and search engine optimization practices are explored and practiced with each project.

Prerequisites/Corequisites:
Course Completion of CS 50A

Recommended Preparation:
Eligibility for ENGL 1A or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: This class offers advanced instruction in client-side Web development technology and design. Students work on project-based assignments using front-end frameworks, such as Bootstrap, and Web content management systems, such as WordPress. An introduction to the

JavaScript language is included. Advanced topics in HTML and CSS, including language pre-processors, are presented. User-centered design, user experience research, and search engine optimization practices are explored and practiced with each project. (Grade or P/NP)
Prerequisites/Corequisites: Course Completion of CS 50A
Recommended: Eligibility for ENGL 1A or equivalent
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 2006	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Use HTML, CSS, and frameworks that meet current industry standards to create a multipage website that includes accessible content, navigation, and user interfaces.
2. Create a website powered by a web content management system (CMS) that demonstrates best practices of user experience (UX) research, user-centered and responsive design.
3. Understand current accessibility, search engine optimization (SEO), and validation standards and create search-engine-optimized content that adheres to these standards.

Objectives:
At the conclusion of this course, the student should be able to:
1. Describe the process of creating style rules using CSS language preprocessors such as syntactically awesome style sheet (Sass).
2. Analyze and modify an existing website's HTML and CSS using developer tools in a browser.
3. Use a front-end framework such as Bootstrap to create a Web site.
4. Use a Web content management system (CMS) such as WordPress to create a Web site.
5. Produce validated and accessible HTML and CSS documents that are optimized for search engines.
6. Produce a file system structure that matches industry standards.
7. Conduct user research (UX) and design development practices to support user-centered site design.

Topics and Scope:

I. Responsive HTML and CSS Review
   A. HTML semantic and other elements review
   B. CSS language standards and media queries review
   C. Responsive Web design (RWD) review
II. Front-End Frameworks
   A. Introduction to common front-end framework concepts and practices: styles, classes, and components
   B. Creating responsive user interfaces using framework components
   C. Framework typography and content support
   D. Working with images and rich media via frameworks
   E. Navigation interfaces using framework components
   F. Interactive interfaces using framework components
   G. Web form composition using framework components
   H. Decorative content and icon font libraries
III. Web Content Management Systems
   A. Introduction to common CMS concepts and practices: content, users, navigation, themes
   B. Page-based and recurring content elements
   C. Multi-user authentication systems
   D. Navigation menus and links
   E. Presentation layer access and theme modification
   F. Functionality extensions: plug-ins
   G. Custom theme creation
   H. CMS-based site development, production, and maintenance best practices
   I. CMS file system organization
IV. Introduction to JavaScript
   A. Language basics, including keywords and syntax
   B. JavaScript event model, including browser and user-triggered events
   C. Calling pre-existing JavaScript code, including jQuery library and Bootstrap JavaScript library
V. Advanced Styling with CSS Language Preprocessors
   A. CSS Language Preprocessors: Sass and Less
   B. Capabilities provided by language preprocessors
   C. Workflows using language preprocessors
VI. Search Engine Optimization
   A. Technical best practices for SEO, including HTML coding
   B. Content-related practices for SEO, including marketing
   C. Evaluating SEO with analytics
VII. User Experience (UX) Research
   A. Remote testing tools and practices
   B. Card sorting and taxonomy research
   C. User definitions: personas, interviews, stories of use, and journey mapping
   D. User-centered design principles and practices
VIII. Design Prototyping
   A. Interactive prototype creation and tools
   B. Prototype testing practices
   C. Iterative prototyping
IX. Professional Practices
   A. Project documentation practices
   B. Site backup and migration practices for CMS-powered sites
   C. Introduction to automated version control tools and practices
   D. Review of code validation practices

Assignment:

1. Textbook and other assigned reading (25-60 pages per week)
2. Web page assignments (7-15). All HTML and CSS code submitted must be validated.
3. Midterm static HTML project and final CMS-powered project (2). Each project must include:
   A. At least seven pages
   B. A navigation system
   C. HTML elements
   D. CSS styles
   E. Rich media elements, including images, audio, and video elements
   F. Links using relative and absolute paths
   G. Fully validated and accessible code
   H. Project documentation
4. Quizzes and exams (2-4)
5. Discussions (5-8). Conducted in-class or online with participation from all students.
6. Project presentations and peer feedback (2). Each student must present their project to classmates, either online or in-class, and provide feedback to at least two peers. May be ungraded.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Project presentations and peer feedback	Writing 0 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Web page assignments	Problem solving 30 - 60%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Midterm and final projects	Skill Demonstrations 10 - 30%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes and exams	Exams 20 - 40%

Other: Includes any assessment tools that do not logically fit into the above categories.

Participation in discussions	Other Category 10 - 20%

Representative Textbooks and Materials:

WordPress 5 Complete. 7th ed. Król, Karol. Packt. 2019.
The Field Guide to Human-Centered Design. IDEO.org / Design Kit. IDEO.org. 2015 (classic).
Instructor prepared materials