CS 50C Course Outline as of Fall 2014

CATALOG INFORMATION

Dept and Nbr: CS 50C   Title: WEB DEVELOPMENT 3
Full Title: Web Development 3
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	4	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 50.12

Catalog Description:
Students will use HTML, CSS, & JavaScript to produce powerful interactive web content.
Topics include semantic elements, forms, canvas, audio, video, geolocation. Students will create responsive websites using a grid-based Bootstrap framework.

Prerequisites/Corequisites:
Course Completion of CS 50B

Recommended Preparation:
Eligibility for ENGL 1A or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: Students will use HTML, CSS, & JavaScript to produce powerful interactive web content. Topics include semantic elements, forms, canvas, audio, video, geolocation. Students will create responsive websites using a grid-based Bootstrap framework. (Grade or P/NP)
Prerequisites/Corequisites: Course Completion of CS 50B
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: Fall 2011 Inactive:

UC Transfer: Effective: Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of course, students will be able to:
1. Build web pages using HTML5 code.
2. Explain the major benefits of HTML5.
3. Compare and contrast HTML5 and HTML4.
4. Incorporate HTML5's new elements and attributes into websites.
5. Utilize HTML5 to incorporate semantic elements.
6. Develop web pages using HTML5's new, audio, video elements.
7. Produce code which uses the canvas element to create code-based drawings and animations.
8. Analyze and implement code to create Web Storage for offline applications.
9. Use new HTML5 form elements.
10. Develop web content that utilizes the geo-location elements in HTML5.
11. Discuss web site accessibility issues and implementations.
12. Utilize Bootstrap to style forms, tables, and navigational elements.
13. Utilize Bootstrap to create responsive designs which work well with mobile devices.

Topics and Scope:

1. Introducing HTML5 (HyperText Markup Language)
   a. Exploring prior standards
   b. The need for HTML5
   c. Current HTML5 support
2. HTML5 New Features
   a. HTML5 vs. HTML4
   b. Structural tags
   c. Content tags
   d. Application-focused tags
   e. Deprecated elements
   f. API (Application Programming Interface) overview
3. Creating HTML5 Documents

a. Content models
b. Understanding the outline algorithm
c. The role of <div> tags
d. Using ID and class attributes
e. DOCTYPE declarations
f. Character encoding

4. Structuring HTML5 Documents
   a. Basic page structure
   b. Structuring top-level elements
   c. Structuring interior content
   d. Building headers
   e. Checking document outlines
   f. Ensuring cross-browser structure

5. Building Forms in HTML5
   a. New input types
   b. Setting form autofocus
   c. Using placeholder data
   d. Marking required fields
   e. Working with number inputs
   f. Using date pickers
   g. New pseudo classes
   h. Styling forms
   i. Validating and processing forms

6. HTML5 API Support
   a. Canvas overview
   b. Adding canvas content
   c. Drawing in the canvas environment
   d. Charts with canvas
   e. Drag-and-drop API overview
   f. Offline applications overview
   g. Video overview
   h. Encoding video
   i. Adding video
   j. Utilizing a jQuery media player

7. Associated Technologies
   a. Geolocation API overview
   b. Web storage API overview
   c. History API
   d. CSS3 (Cascading Style Sheets) overview
   e. Enhancing typography with CSS3
   f. Using @font-face
   g. Styling HTML5 with CSS3
   h. Using CSS3 transitions
   i. Scalable Vector Graphics (SVG)
   j. Image strategiees, image sprites, pixel density for retina images
   k. Microdata

8. Compatibility Testing
   a. Current browser
   b. Older browsers
   c. Mobile devices

9. Responsive Web Design
   a. Responsive vs. adaptive web design

   b. Media queries
   c. Introduction to grid-based frameworks
   d. Bootstrap
   e. Progressive enhancement vs. graceful degradation
10. Accessibility
   a. Accessible Rich Internet Applications (ARIA)
   b. Accessible forms
   c. Accessible tables
   d. Testing for accessibility
   e. Features and considerations for making accessible web sites

Assignment:

1. 25 to 60 pages of textbook reading per week
2. One written analysis and critique of current browser support for HTML5 elements
3. Three to five tests
4. Develop 5-20 webpages that incorporate HTML code that produces the following features:
   a. semantic HTML
   b. the outline model
   c. forms
   d. audio and video elements
   e. canvas elements such as drawings, animations and interactivity
   f. storage of information offline
   g. graceful degradation
   h. functionality on mobile devices

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.

Critique and analysis	Writing 5 - 20%

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

Website projects	Problem solving 30 - 65%

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

None	Skill Demonstrations 0 - 0%

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

Exams	Exams 20 - 40%

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

| Attendance and participation | Other Category 0 - 10% |

Representative Textbooks and Materials:
Introducing HTML5 (Voices That Matter), by Bruce Lawson and Remy Sharp, Publisher New Riders Press, 2010.
HTML5: Up and Running, by Mark Pilgrim, O'Reilly Media, 2010.