

*Lecture Contact Hours: 32-36; Outside-of-Class Hours: 64-72;
Laboratory Contact Hours: 48-54; Outside-of-Class Hours: 0;
Total Student Learning Hours: 144-162*

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

Computer and Information Science 211 – Web Development I

2 hours lecture, 2 units
3 hours laboratory, 1 unit
Total units: 3

Catalog Description

This course is a hands-on overview of current web development. Emphasis will be placed on coding and debugging valid HTML, Cascading Style Sheets (CSS), and front-end JavaScript. The course shall also include design principles and introductory graphics to encourage attractive, usable design. Mobile (responsive) development will be introduced. Student will use industry standard development environments to create websites.

Prerequisite

None

Recommended Preparation

Basic computer skills (ability to use the Internet, word process documents, manage electronic files)

Entrance Skills

Without the following skills, competencies and/or knowledge, students entering this course will be highly unlikely to succeed:

- 1) Send, receive and manage electronic mail.
- 2) Use a web browser to browse, navigate and conduct research.
- 3) Use computer operating system to copy, paste, move and rename files.
- 4) Open and save word processing files.
- 5) Copy and paste text or graphics from one window or application to another.
- 6) Organize files using folders.
- 7) Follow written instructions.

Course Content

- 1) Introduction and orientation
 - a. Course orientation
 - b. Internet overview (client, server, upload, download, FTP, HTML, CSS, servers, browsers, hosting, domain names, etc.)
 - c. HTML overview - using a text editor or integrated development environment (IDE) to create simple web pages that include formatted text, images, links, lists, and embedded CSS)
- 2) Web Development overview – how to code, test and validate
 - a. Overview of editors and Integrated Development Environments (IDEs)
 - b. Development process
 - c. Basic HTML document structure and syntax
 - d. Basic CSS syntax
 - e. Basic JavaScript code and actions
 - f. Testing, debugging and validating
 - g. File naming and management, FTP
 - h. Getting your own domain and hosting service
 - i. Basic forms and actions

- 3) HTML structure
 - a. Head – title, favicon, metadata
 - b. Coding text elements
 - c. Structuring content (div, span, and HTML5 semantic elements)
 - d. Coding links, lists and images
- 4) Design principles
 - a. Target audience
 - b. Visual design and color
 - c. Site organization
 - d. Navigation
 - e. Layout
 - f. Responsive design
- 5) Basic CSS for formatting
 - a. inline, embedded and external styles
 - b. measurements and colors
 - c. selectors (elements, ids, classes, relational, pseudo-class and pseudo-elements)
 - d. formatting text
 - e. CSS validation
- 6) Graphics
 - a. file types
 - b. basic editing (resize, optimization)
 - c. CSS formatting (border, float, spacing, alignment)
 - d. thumbnails, rollovers, image maps
 - e. favicon
 - f. accessibility (alt text)
 - g. background images
- 7) CSS fonts and box model
 - a. embedding fonts
 - b. spacing
 - c. borders
 - d. backgrounds
 - e. CSS3 shadows, opacity, color and gradients
- 8) CSS layout and navigation
 - a. floating in multi-column layouts
 - b. CSS3 text columns
 - c. positioning (absolute, fixed, relative)
 - d. CSS navigation with unordered lists
 - e. CSS Flexbox layout
- 9) More on CSS, mobile overview
 - a. Relative linking
 - b. HTML5 figure and figcaption
 - c. CSS for print
 - d. Mobile web design
 - e. Viewport meta tag
 - f. Media queries
 - g. Flexible images
- 10) Tables basics
 - a. basic table structure (table, th, tr, td, caption, thead, tbody, tfoot)
 - b. styling tables
- 11) Form basics
 - a. form elements (form, buttons, text fields, text areas, radio buttons, check boxes, drop-down lists, labels, fieldset, legend)
 - b. HTML5 form controls
- 12) Media and interactivity

- a. Configuring Audio and Video
- b. Iframe element
- c. CSS Transform and Transition properties
- d. CSS drop down menu
- e. Coding slide shows and galleries

Course Objectives

Students will be able to:

- 1) Apply file management best practices to organize, name, backup, and upload files.
- 2) Read, write, analyze, and debug HTML, CSS, and JavaScript to create standards compliant web pages that include formatted text, internal and external links, images, tables, forms, and lists.
- 3) Use CSS to control presentation, including fonts, colors, backgrounds, layout, and list-based navigation.
- 4) Use JavaScript to perform form validation, effects, and special actions.
- 5) Apply web design best practices to develop an attractive and usable website.

Method of Evaluation

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in the subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

- 1) Hands-on exercises that require students to code and upload web pages that use valid HTML and CSS.
- 2) Quizzes and exams that measure students' ability to use coding terminology and explain coding concepts.
- 3) Practical exams that measure the students' ability to use computer applications to solve real-life web design problems.
- 4) Projects that require students to integrate production skills and design best practices to create technically proficient and well-designed websites.

Special Materials Required of Student

- 1) File storage system
- 2) Access to web-based course material and software specified in syllabus

Minimum Instructional Facilities

Computer lab with Internet access, appropriate software

Method of Instruction

- 1) Lecture and demonstration
- 2) Hands-on practice
- 3) Assignments

Out-of-Class Assignments

- 1) **Reading:** Read textbook and assignment instructions; Review online resources, including videos
- 2) **Writing:** Participate in online discussion;
- 3) **Other:** Complete assignments and online quizzes; coding; debugging

Texts and References

- 1) Required (representative example): Felke-Morris, Terry Ann. Basics of Web Design: HTML5 & CSS. 6th ed., Pearson, 2021.
- 2) Supplemental: None

Exit Skills

Students having successfully completed this course exit with the following skills, competencies and/or knowledge:

- 1) Apply file management best practices to organize, name, backup, and upload files.
- 2) Read, write, analyze, and debug HTML, CSS, and JavaScript to create standards compliant web pages that include formatted text, internal and external links, images, tables, forms, and lists.
- 3) Use CSS to control presentation, including fonts, colors, backgrounds, layout, and list-based navigation.
- 4) Apply web design best practices to develop an attractive and usable website.

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- 1) Create a small website (>5 pages) that meets 80% of the technical, organizational, structural, and presentation requirements outlined in a detailed scoring rubric based on the course content and objectives.