GROSSMONT COLLEGE

OFFICIAL COURSE OUTLINE

Curriculum Committee Approval: 04/20/2021

GCCCD Governing Board Approval: 05/18/2021

COMPUTER SCIENCE INFORMATION SYSTEMS 132 – INTRODUCTION TO WEB DEVELOPMENT

1. Course Number Course Title Semester Units

CSIS 132 Introduction to Web Development 3

Semester Hours

3 hours lecture 48-54 total hours 96-108 outside-of-class hours 144-162 total hours

2. Prerequisite

None

Corequisite

None

Recommended Preparation

A “C” grade or higher or “Pass” in CSIS 105 or 110 or equivalent.

1. Course Description

This course surveys and introduces web design and development fundamentals, involving key technologies and skills used in website construction alongside hands-on coding experience. Best practices in coding and debugging HTML and CSS will be emphasized along with the use of modern CMS systems such as WordPress. Other topics will include web terminology, technology and careers, website development platform options, code editors, and web graphics.

1. Course Objectives

Upon successful completion of this course, students should:

1. Be familiar with the most common and popular web design and development terminology, technology and career options.
2. Be able to create a simple web page by writing HTML and CSS code using a code editor, then publish it using FTP or a CMS (Content Management System).
3. Understand the basic range of website development options, including theme frameworks, front and back end toolkits and CMS systems.
4. Understand the most important HTML concepts and be able to implement key HTML tags and techniques including: semantic and other structural tags, creating hyperlinks, placing images on pages as well as embedding and formatting audio and video media, SEO considerations, the use of tables and HTML forms, and responsive design considerations.
5. Understand the most important CSS concepts and be able to implement key CSS properties including: external vs. inline vs. embedded styles, use of CSS to format text, CSS to create element spacing and sizing (ie: the "box model"), creating page and element backgrounds, block vs. inline elements, CSS position property importance, core CSS techniques for implementing column layout and responsive functionality.
6. Understand the role of Javascript in creating web page interactivity along with CSS and HTML.
7. Understand issues related to different browsers and cross-browser testing, familiarity with browser and viewport demographics and their implications for web design and development.
8. Discover recommended resources for research and networking within the fast-evolving web development field.
9. Instructional Facilities
   1. Computer lab with appropriate software
   2. Access to the internet
10. Special Materials Required by the Student

Electronic storage media

7. Course Content

a. Introduction and Orientation

1) Course orientation (Canvas tutorials, Student Services, Instructor and course intro)

2) Web Design & Development overview (common terminology, popular technologies and platform options, career options).

3) The role of HTML, CSS and in creating web pages and websites.

4) Web hosting and domain options.

b. Web Development Basics

1) Web Design & Development overview (common terminology, popular technologies, web development platform options, career options).

2) Use of code editors for website creation.

3) The role of HTML, CSS and in creating web pages and websites.

4) Full-stack vs. Client-side and Server-side technologies.

5) Basic HTML document structure, syntax and usage

6) Basic CSS property and value pair structure, syntax and usage

7) Best practices re: coding, testing and debugging simple web pages

8) File naming conventions and site organization basics

9) Use of FTP and CMS systems in site creation and maintenance tasks

10) Web hosting and domain options.

c. HTML Basics

1) HEAD vs BODY sections

2) Common HEAD section tags incl. META and LINK

3) Common semantic vs. other structural BODY tags

4) Structuring content for both BLOCK and INLINE presentation (using DIV, SECTION, SPAN)

5) Coding hyperlinks

6) Formatting of text via CSS applied to P tags

7) Creating ordered and unordered lists

8) Embedding images on pages

9) Embedding streaming audio and video on pages

d. Common Design and UX Principles

1) Visual, navigation and UX considerations

2) Cross-browser issues and testing overview

3) Responsive design and viewport issues and testing overview

e. CSS Basics

1) The role of CSS in styling HTML (and interaction with Javascript)

2) External vs. Inline vs. Embedded CSS styles

3) Basic CSS syntax, common pitfalls and best practices

4) Common CSS unit, measurement and positioning issues and tradeoffs

5) Formatting text and fonts examples

6) Element positioning via the CSS "box model" (eg: MARGIN, PADDING and BORDER)

7) CSS taxonomy (ie: properties, values, IDs, classes, pseudo-classes)

8) CSS "cascading rules" and validation

f. Web Graphics

1) Primary file format options and related selection and trade-off criteria

2) Image optimization demos and practice stressing resolution and file size basics

3) Image editing and optimization techniques

4) Use of CSS to format images (eg: margins, alignment, spacing, borders)

5) Image SEO and accessibility issues related to use of ALT and other IMG attributes

6) Background images for page elements

g. CSS for Page Layout Functionality

1) Use of the COLUMNS property for simple text-flow based columns

2) Using CSS with OL and UL to create ordered and unordered lists and menus

3) CSS positioning basics (ie: absolute, fixed, relative and static options)

h. Responsive issues

1) Use of various sized images for responsive needs and implementation methods examples

2) Basic use of @media queries to determine and respond to viewport dimensions

i. Creating and Styling HTML Tables and Forms

1) Basic TABLE structure (the TABLE related tag and attribute set with examples)

2) Examples of styling HTML tables to create desired effects

3) Basic FORM structure (the FORM related tag and attribute set with examples)

4) Examples of styling HTML forms

j. Embedded Media

1) Use of the IFRAME tag

2) Use of the AUDIO tag to embed audio tracks

3) Use of the VIDEO tag to embed video tracks

k. Popular CMS systems

1) Overview of WordPress as the world's most popular website development platform (2010-20)

2) Advantages and disadvantages of CMS systems vs. assorted mix-and-match stack options

3) WordPress vs. platforms like Wix, Weebly, Squarespace and IDEs like Sharepoint.

4) Hands-on use of a popular CMS system, like WordPress.

8. Method of Instruction

1. Online Computer-based reading and video assignments
2. Lecture and demonstration in a traditional classroom or via electronic means
3. Hands-on practice in either a dedicated or a virtual lab environment
4. Topical discussion of current web development trends and issues

9. Methods of Evaluating Student Performance

Student grades will be based on demonstrated proficiency in the subject matter determined by multiple evaluation techniques, including hands-on coding and website development exercises, discussion post assignments and periodic quizzes.

a) Hands-on exercises will be used which require students to code and upload web pages implementing HTML and CSS best practices taught in the course, to accomplish specific results, accompanied by scoring rubrics.

b For all sections, quizzes will be used often to measure student competency in understanding both survey topics and the ability to successfully implement core website development techniques addressed by course materials.

c Discussion assignments that require students to discuss concepts, skills and techniques covered in specific modules are designed to increase student engagement and success factors while providing a complimentary method of evaluation per the preceding items.

10. Outside Class Assignments

a. Textbook reading assignments.

b. Problem-solving exercises, such as creating an individual resume with HTML, creating a complete website with the most popular theme in WordPress.

c. Web site creation.

d. Respond to other students’ analysis and comments on the class discussion board.

e. Read and analyze instructor assigned case studies; post analysis and comments to the class discussion board.

f. Complete and pass section quizzes.

11. Representative Texts

1. Representative Text:

Felke-Morris, Terry. *Web Development and Design Foundations with HTML 5*, 9th Edition. Boston, MA. Pearson Education, 2019

1. Supplementary texts and workbooks:

None

Addendum: Student Learning Outcomes:

Upon completion of this course, our students should be able to do the following:

a. Create a minimum 5-page web site that meets 80% of the technical, organizational, structural, and presentation requirements outlined in a detailed scoring rubric based on the course content and objectives.

b. Utilize valid HTML syntax to configure web pages as well as implement valid Cascading Style Sheets (CSS) syntax to configure text, color, and page layout.

c. Describe, recognize, and implement web design best practices.