

Web Site Development

Level 3: Student explored previously; second pathway specific course

Pathway(s): Web Design

Description

Web Site Development builds on the skills and knowledge gained in Web Design Foundations to further prepare students for success in the web design and development fields. Emphasis is placed on applying the design process toward projects of increasing sophistication, culminating in the production of a functional, static website. As students work toward this goal, they acquire key skills in coding, project management, basic troubleshooting and validation, and content development and analysis. Artifacts of the work completed in this course will be logged in a student portfolio demonstrating mastery of skills and knowledge. Upon completion of this course, proficient students will be prepared to pursue a variety of postsecondary programs in the computer sciences, sit for industry certification, or apply their skills in a capstone Web Design Practicum.

Student Learning Outcomes

Safety

- 1) Practice safe habits and procedures when sharing and sending files, navigating websites, and connecting to servers and networks.
- 2) Determine how companies, organizations, and individuals keep their data secure from theft and identify fraud.

Career Exploration

- 3) Investigate opportunities for personal and professional growth in the web design and computer science fields, Examples include:
 - a. Opportunities to enter design contests
 - b. Assist with the maintenance or development of a website
 - c. Participate in initiatives such as the national Hour of Code
- 4) Explore postsecondary programs in the computer sciences, such as web site development, animation and graphics, or website administration.

The Design Process

- 5) Critically evaluate a website on the merits of its design features, applying knowledge and skills related to webpage composition to critique the following:
 - a. Navigational hierarchy
 - b. Balance
 - c. Color unity
 - d. Typography, formatting, and other aspects of the text layout and style
 - e. Compatibility across multiple browsers and devices
 - f. Flow and arrangement of content

- 6) Synthesize the steps of the web design process learned in previous courses with research into emerging or alternating design models.
- 7) Produce a sophisticated flowchart, diagram, or other logic model that will serve as a template to guide the development of projects and activities.
 - a. Annotate the model with the inputs, constraints, activities, and target outcomes involved in a given project.
 - b. Demonstrate where inputs flow from one stage of the project to the next.

Project Management

- 8) Research how web development teams use project management tools to divide roles and responsibilities among team members, track progress towards goals, and satisfy client specifications.
- 9) Explore a variety of tools and develop systems for applying selected tools to projects and assignments in this course.

Coding Skills

- 10) Demonstrate technical fluency in a variety of programming and markup languages (e.g. HTML, XML, CSS, JavaScript, JQuery, PHP, and/or SQL).
 - a. Describe the particular functions and environments in which each language operates
 - i. Detail the benefits, limitations, and unique features of each.
 - b. Justify when one programming language would be ideal.
- 11) Correctly apply tags, embed links, manipulate space, customize attributes, and incorporate style elements related to typography, margins, and spanning and padding.
- 12) Demonstrate the ability to code web page elements such as tables and forms according to the specifications of the client.
- 13) Distinguish between different units of measurement systems used in website development.
 - a. Accurately define terms such as size, aspect ratio, percentage units, and pixels as they relate to specific style commands.
 - b. Accurately apply and modify the appropriate units when writing and editing code for objects/text in a programming environment.
- 14) Apply, edit, and continually revise code using appropriate software.
- 15) Create and edit graphics and other multimedia for web pages, evaluating and customizing their attributes according to client/instructor specifications.
- 16) Summarize the functions of plug-ins for content management systems as well as static websites.

Basic Troubleshooting and Validation

- 17) Apply basic troubleshooting strategies to resolve errors in syntax, fix broken links, edit distorted images, and align website content for seamless navigation.
- 18) Research methods of performing code validation on a completed or in-progress web page.
- 19) Validate code for compatibility across browser and devices.

Content Development and Analysis

- 20) Conduct a preliminary investigation of various branding strategies used by companies that sell their products and services online.

- 21) Evaluate selected companies' website to determine how such strategies are deployed throughout a site.
- 22) Define web analytics, and discuss the increasingly sophisticated role that analytics play in the marketing and management of content for websites.
- 23) Interpret simple analytics in the dashboard interface of a content management system.
- 24) Describe trends, analyze performance, and describe how a website's "reach" can be determined with analytics.
- 25) Build on the work of previous Web Design courses and practice writing original web content for a particular audience.
 - a. Adhere to client specifications regarding tone, length, and style of language, writing in a manner appropriate for the target audience.
 - b. Regularly edit writing and solicit peer feedback for continuity of message and language.

Web Hosting and Publishing

- 26) Model the process for setting up a website.
 - a. Investigate domain name availability.
 - b. Register hosting service.
 - c. Download a File Transfer Protocol (FTP) program.
- 27) Upload and organize files onto a server.
- 28) Arrange content to map out a simple multi-page website.
- 29) Maintain accurate and navigable directories for retrieving and storing files.
- 30) Incorporate original writing content onto the site.
- 31) Publish content online for the instructor or class to see on a standard Internet browser.

Trends in Web Design and Development

- 32) Explore a range of new and emerging trends in web design and development. Examples include:
 - a. Movement towards responsive design to expand web compatibility
 - b. The increasing use of HTML5
 - c. Embedding of social media within websites for the purposes of sharing content or crowdsourcing a product idea