

**ADVANCED WEBPAGE DESIGN AND DEVELOPMENT**  
**COURSE CODE: 5033**

**COURSE DESCRIPTION:** This advanced course is designed to provide students with the knowledge and skills necessary to pursue careers in web design and development. Students will develop skills in advanced HTML and CSS coding, scripting, layout techniques, and other industry-standard practices. In Advanced Web Design and Development, students must be able to edit source code directly rather than using a WYSIWYG editor.

*NOTE:* Websites created by students in this course are not to be published without following district guidelines.

**OBJECTIVE:** Given the necessary equipment, supplies, and facilities, the student will be able to successfully complete all of the following core standards for a course that grants one unit of credit.

**RECOMMENDED GRADE LEVELS:** 11–12

**COURSE CREDIT:** 1 Carnegie unit

**PREREQUISITE:** Fundamentals of Web Design and Development

**COMPUTER REQUIREMENTS:** One computer per student

**AVAILABLE CERTIFICATIONS:**

CIW Web Foundations Associate  
Adobe Certified Associate

**APPLICABLE SOFTWARE:**

Advanced Text Editors (e.g., Notepad++, TextWrangler, Komodo Edit, Brackets)  
Operating System Text Editor such as Notepad and TextEdit

The following can be used in the Optional Units: Adobe Creative Suite (Photoshop, Fireworks, and Illustrator) and GIMP

**RESOURCES:**

[www.mysctextbooks.com](http://www.mysctextbooks.com)

**A. SAFETY**

1. Review school safety policies and procedures.
2. Review classroom safety rules and procedures.

3. Review safety procedures for using equipment in the classroom.
4. Identify major causes of work-related accidents in office environments.
5. Demonstrate safety skills in an office/work environment.

## **B. STUDENT ORGANIZATIONS**

1. Identify the purpose and goals of a Career and Technology Student Organization (CTSO).
2. Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.
3. Explain the benefits and responsibilities of being a member of a CTSO.
4. List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.
5. Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.

## **C. TECHNOLOGY KNOWLEDGE**

1. Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation.
2. Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.
3. Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.
4. Explain the consequences of social, illegal, and unethical uses of technology (e.g., piracy; illegal downloading; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).
5. Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, and other elements for personal use.
6. Describe ethical and legal practices of safeguarding the confidentiality of business-related information.
7. Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.

## **D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS**

1. Demonstrate punctuality.
2. Demonstrate self-representation.
3. Demonstrate work ethic.
4. Demonstrate respect.
5. Demonstrate time management.
6. Demonstrate integrity.
7. Demonstrate leadership.
8. Demonstrate teamwork and collaboration.
9. Demonstrate conflict resolution.
10. Demonstrate perseverance.

11. Demonstrate commitment.
12. Demonstrate a healthy view of competition.
13. Demonstrate a global perspective.
14. Demonstrate health and fitness.
15. Demonstrate self-direction.
16. Demonstrate lifelong learning.

#### **E. PROFESSIONAL KNOWLEDGE**

1. Demonstrate effective speaking and listening skills.
2. Demonstrate effective reading and writing skills.
3. Demonstrate mathematical reasoning.
4. Demonstrate job-specific mathematics skills.
5. Demonstrate critical-thinking and problem-solving skills.
6. Demonstrate creativity and resourcefulness.
7. Demonstrate an understanding of business ethics.
8. Demonstrate confidentiality.
9. Demonstrate an understanding of workplace structures, organizations, systems, and climates.
10. Demonstrate diversity awareness.
11. Demonstrate job acquisition and advancement skills.
12. Demonstrate task management skills.
13. Demonstrate customer-service skills.

#### **F. ADVANCED WEB DESIGN CONCEPTS**

1. Define advanced web terminology.
2. Research current best practices and emerging technologies.
3. Utilize technical documentation as part of the design and development process.
4. Compare and contrast static and dynamic websites.
5. Explore websites that incorporate advanced web technologies such as browser scripting, server site scripting, content management systems, and database integration.

#### **G. PLANNING AND DESIGN**

1. Determine the purpose and target audience of a website.
2. Create relevant and appropriate content including text, graphics, and hyperlinks.
3. List and describe best practices in content creation that foster indexing and ranking of websites.
4. Develop a site map and navigation plan.
5. Identify concepts in usability for components of a website.
6. Develop wireframes for initial design concept.
7. Apply color principles to websites.
8. Apply current best practices for web typography.
9. Critique websites for professional quality in look and layout based on design principles.

## **H. CONSTRUCTING WEBSITES**

1. Develop a file management system for website content, utilizing proper naming conventions for files and folders.
2. Code a website utilizing proper HTML document structure and elements.
3. Create and modify internal and external CSS to format the styling of HTML elements and positioning of objects.
4. Utilize advanced CSS layout techniques.
5. Test and debug websites in multiple browsers.
6. Identify and use validation tools.

## **I. IMPLEMENTING AND MAINTAINING WEBSITES**

1. Evaluate features and costs of domain name and hosting providers.
2. Implement the process for obtaining a domain name, acquiring hosting, and uploading and maintaining a website.
3. Identify the purpose of File Transfer Protocol (FTP) and demonstrate its use.
4. Differentiate between secure and unsecure web protocols.
5. Describe web analytics for purposes of understanding and analyzing web usage.

## **J. ACCESSIBILITY AND USABILITY**

1. Comply with legal requirements and standards for accessibility on the web.
2. Optimize websites to accommodate users with special needs.
3. Implement solutions that address usability on a variety of platforms and devices.

## **K. JAVASCRIPT**

1. Differentiate between JavaScript statement, code, blocks, comments, variables, operators, and syntax.
2. Create JavaScript that responds to events.
3. Evaluate mathematical expressions.
4. Use JavaScript to update the content of HTML elements and CSS styles.
5. Implement JavaScript functions.
6. Design algorithms involving conditionals and loops.
7. Manipulate strings and arrays.
8. Use JavaScript to perform form processing and validation.
9. Use JavaScript to read and write data to and from cookies.

## **L. DEVELOPING A PORTFOLIO WEB SITE**

1. Identify careers in the web design and development industry.
2. Explain the role of portfolios in the design industry.
3. Create a biographical narrative to include on the portfolio website.
4. Assemble a portfolio website including a variety of work created in the course.

## **M. CREATING GRAPHICS FOR THE WEB (OPTIONAL)**

1. Create a mockup of a web page utilizing professional graphic design software (e.g., Adobe Photoshop, Adobe Illustrator, Adobe Fireworks, GIMP).
2. Compare and contrast graphic file formats for web use.
3. Select appropriate image compression and scaling to optimize graphics.
4. Utilize slicing tools and export options to produce graphics.

## **N. MEDIA FOR THE WEB (OPTIONAL)**

1. Compare and contrast common media file formats.
2. Describe common media file formats.
3. Identify appropriate software for media creation.
4. Create and edit media files (e.g., sound, video, graphics, multimedia).
5. Optimize media files for uploading using compression tools.
6. Embed media files in a web design.

## **O. CONTENT MANAGEMENT (OPTIONAL)**

1. Compare and contrast commonly used content management systems (CMS) (e.g., WordPress.org, Drupal, Joomla).
2. Install and maintain an instance of a CMS.
3. Construct a site using a CMS.
4. Explore available templates, plug-ins, and widgets.
5. Design or modify CMS templates and style sheets using PHP and CSS.
6. Create users and assign appropriate roles.
7. Discuss issues related to website security when using a CMS.

## **P. DATABASE INTEGRATION (OPTIONAL)**

1. Describe the purpose of a database as it relates to web development.
2. Identify and describe relational databases.
3. Identify the use of Extensible Markup Language (XML) for the transportation and storage of data.
4. Incorporate a database into a website using a server-side scripting language such as PHP.

## **Q. E-COMMERCE (OPTIONAL)**

1. Define e-commerce as it relates to web development.
2. Explain how to integrate a shopping cart into a web page.
3. Evaluate payment portal options.