FUNDAMENTALS OF WEB PAGE DESIGN AND DEVELOPMENT
COURSE CODE: 5031

COURSE DESCRIPTION: This course will guide students in the development of websites in a project-based, problem-solving environment. Students will learn the industry standard languages, HTML and CSS, which are used in every website on the web today. Students will learn how to create a portfolio of content-rich, well-styled websites. Successful completion of this course will prepare students for industry certification.

NOTE: Websites created by students in this course are not to be published without following district guidelines.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: 9 – 12

COURSE CREDIT: 1 Carnegie unit (120 hours)

RECOMMENDED PREREQUISITE: Exploring Computer Science or Digital Multimedia and/or any digital literacy course

COMPUTER REQUIREMENTS: 1 computer per student

REQUIRED SOFTWARE: Text Editor

CERTIFICATION ALIGNMENT:

CIW - Web Foundations Associate
CIW - Site Development Associate
Introduction to Programming using HTML and CSS by Microsoft
NOCTI Web Design

RESOURCES: **MySCTextbooks**

A. SAFETY

Effective professionals know the academic subject matter, including safety as required for proficiency within their area. They will use this knowledge as needed in their role. The following accountability criteria are considered essential for students in any program of study.

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

Effective professionals know the academic subject matter, including professional development, required for proficiency within their area. They will use this knowledge as needed in their role. The following accountability criteria are considered essential for students in any program of study.

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

Effective professionals know the academic subject matter, including the ethical use of technology as needed in their role. The following accountability criteria are considered essential for students in any program of study.

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; cyberbullying; 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

Effective professionals know the academic subject matter, including positive work practices and interpersonal skills, as needed in their role. The following accountability criteria are considered essential for students in any program of study.

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

Effective professionals know the academic subject matter, including positive work practices and interpersonal skills, as needed in their role. The following accountability criteria are considered essential for students in any program of study.

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. UNDERSTANDING THE INTERNET

Effective web designers demonstrate a basic knowledge of the internet and the tools used to access information, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Define web terminology.
2. Describe the history and evolution of the internet.
3. Explain how the Internet functions, including the World Wide Web (WWW), browsers,

FTP, URL, ISP and domains.
4. Describe the tools for accessing the Internet.

G. FOUNDATIONS OF WEB DESIGN (INCORPORATED THROUGHOUT THE COURSE)

Effective web designers demonstrate a basic knowledge of web design concepts, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Research current best practices and emerging technologies.
2. Utilize technical documentation as part of the design and development process.
3. Explain how websites and social media solve problems in business, industry, government, and education.
4. Explain the role of Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript in Web development.
5. Evaluate the design of existing websites and their source code.
6. View multiple websites using various browsers and computing devices.

H. PLANNING AND DESIGN

Effective web designers plan and design webpages using industry design principles, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Determine the purpose and target audience of a website.
2. Create relevant and appropriate content including text, graphics, and hyperlinks.
3. Develop a design solution for a website including a storyboard, navigation plan, and wireframes/mockups.
4. Research and incorporate features that ensure a quality user experience (e.g., white space, page speed, interactivity, hyperlink differentiation, website consistency, responsiveness, accessibility, data usage).
5. Explore and apply color principles to websites.
6. Explore and apply current best practices for web typography.
7. Critique websites for professional quality in look and layout based on design principles.

I. CONSTRUCTING WEBSITES

Effective web designers develop functional web pages, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Develop a file management system for website content, utilizing proper naming conventions for files and folders.
2. Optimize media for web content (i.e., file size, resolution, compression).
3. Identify and solve coding errors throughout design process (i.e., debug).
4. Add interactivity to a webpage using JavaScript.
5. Integrate 3rd party code snippets (i.e., embed video, embed maps, shopping cart payment

buttons).

J. CONSTRUCTING WEBSITES: HTML

Effective web designers use HTML to structure web content, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Structure a webpage using appropriate HTML elements (i.e., html, head, title, body, meta, style).
2. Explain the purpose of the doctype declaration.
3. Explain and use appropriate file structure and naming.
4. Use HTML rules to create functional web pages (i.e., lowercase elements, proper nesting, quotes for attribute values).
5. Use a variety of HTML elements to create webpages (i.e., headings, lists, images, hyperlinks, span, div, etc.).
6. Compare and contrast block and inline elements.
7. Create relative and absolute hyperlinks.
8. Use special characters (e.g.,   © &quote; < > & &mdash)
9. Demonstrate the use of semantic elements (e.g., header, footer, section, article, nav, aside).
10. Embed third-party content into a web page (e.g., calendar, form, map, video).

K. CONSTRUCTING WEBSITES: CSS

Effective web designers use CSS to format and layout web pages, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Create and modify CSS to format the styling of HTML elements and page layout.
2. Identify parts of CSS syntax (i.e., rule, declaration, selector, property, value).
3. Compare and contrast inline, internal and external styles.
4. Use CSS to format HTML elements including:
   a. background (i.e., color, image);
   b. font (i.e., type, size, and color);
   c. text (i.e., align);
   d. border (i.e., width, style, and color);
   e. list (i.e., style type, position).
5. Format page layout with CSS including:
   a. CSS box model (i.e., width, height, border, padding, margin);
   b. absolute and relative positioning;
   c. floating elements;
   d. converting between inline elements and block elements;
   e. responsive design.

L. QUALITY USER EXPERIENCE

Effective web designers examine factors affecting a quality user experience, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Comply with legal requirements and standards for accessibility on the web.
2. Optimize websites to accommodate users with special needs.
3. Discuss issues relating to usability on a variety of platforms and devices.
4. Test and debug websites in multiple browsers.
5. Identify and use validation tools.

M. PUBLISHING AND MAINTAINING WEBSITES

Effective web designers explain the process for publishing and maintaining websites, as needed in their role. The following accountability criteria are considered essential for students in the Information Technology programs of study.

1. Explain the domain naming system.
2. Identify the process for obtaining a domain name, acquiring hosting, and uploading and maintaining a website.
3. Research features and costs of domain name and hosting providers.

N. CAREER DEVELOPMENT

Effective web designers explore and prepare for careers in the Web Design and Development industry, as needed in their role. The following accountability criteria are considered essential for students in Information Technology programs of study.

1. Compare and contrast various job positions in the web design and development industry including compensation, required credentials, educational pathways, and work environment.
2. Prepare an electronic portfolio of projects developed in the class.

Course Materials and Resources

Course Academic Standards and Indicators