Web Development IA & *IB

Levels: 10-12
Units of Credit: 1.00
CIP Code: 11.0230
Core Code: 35020000060
Prerequisite: Computer Technology
Skill Test: #893 Web Development 1A
894 Web Development 1B
CIW Foundations
CIW Site Development Associate (1D)-51B)
Adobe Web Communication

COURSE DESCRIPTION
Web Development is a course designed to guide students in a project-based environment in the development of up-to-date concepts and skills that are used in the development of today's websites. Students will learn the basic fundamentals of how the Internet works. They will learn and use the basic building blocks of the World Wide Web: XHTML coding, Cascading Style Sheets (CSS), and JavaScript. They learn and follow the steps to create a website by planning, designing, developing, deploying, and maintaining of the website projects. Students will learn and use different scripting technologies to create more dynamic and interactive websites. They will learn what it takes for a career in Web Development as they complete projects and create their own Web portfolio. **Items with * will be tested in the second semester on test Web Development 1B.**

CORE STANDARDS, OBJECTIVES AND INDICATORS

STANDARD 1
Internet Standards & Fundamentals: Students will understand the basic principles of how the Internet is constructed, how it functions, and how it is used.

Objective 1: Identify the infrastructure required to access the Internet.
a. Explain hardware and software used to connect to the Internet.
b. Explain the role of an Internet Service Provider (ISP)

Objective 2: Understand Internet development & functions.
a. Understand how the Internet was developed
b. Identify how web servers, routers, packets, IP Address, the "backbone", firewalls, and port forwarding work.

Objective 3: Understand the Purpose of domains
a. Explain the purpose of an IP address.
b. Explain the purpose of a domain name.

Objective 4: Differencate between types of IP addresses
a. Describe a static IP address.
b. Describe a Dynamic IP address
c. Compare static and dynamic IP addresses.

Objective 5: Understand the function of a Domain Name Server.
a. Explain the function of a Domain Name Server (DNS).
b. Demonstrate how to register a domain name.

Objective 6: Define important Internet communications protocols and their roles in delivering basic Internet services. .

a. Explain the terms, http, https, ftp, and describe how each protocol is used.
b. Demonstrate an understanding of the protocol tcp-ip

Objective 7: Demonstrate knowledge of standard copyright rules

a. Obtain copyright for original creations
b. Understand the creative commons license
c. Demonstrate how to obtaining permission
d. Cite copyrighted material used in websites

Objective 8: Understand the use and purpose of acceptable use policy (AUP).

a. Read the AUP for your school
b. Use ethical behavior as described in the AUP.

STANDARD 2
Fundamentals of XHTML: Students will use XHTML standards & coding to create "well formed" web pages.

Objective 1: Demonstrate knowledge required to create a web page.

a. Code the foundation for a webpage.
b. Include the element tags html, head, title, and body.

Objective 2: Understand appropriate file structure and naming.

a. Use logical file structure to build websites
b. Incorporate appropriate file nameing for a website.

Objective 3: Know and use the rules to create "well formed" web pages with appropriate XHTML structure and standards that can be validated. (W3C)

a. Use root element on all documents.
b. Use lowercase for XHTML elements.
c. Close all elements.
d. Properly nest XHTML elements.
e. Use quotes on attribute values.
f. Use full attribute form in coding
g. Close Empty elements.

Objective 4: Understand and use the DOCTYPE Declaration (DTD) in the types of XHTML.

a. Compose pages using th strict and transitional DOCTYPE.
b. Validate code according to the DOCTYPE used.
c. Incorporate frameset DTD (optional)

Objective 5: Use the required and basic XHTML elements.

a. Create pages with tags and attributes at the block and inline level.
b. Create web pages with text formatting, links, images, special characters, lists, tables, etc.

Objective 6: Use Metatags for page documentation and search engine optimization (SEO).

a. Specify page description, keywords, and author using metatags.
b. Declare encoding using metatags.
c. Understand principles of search engine optimization

*** Objective 7:** Use advanced elements to create web pages.(Semester 1B)

a. Incorporate image maps on web page.
b. Incorporate forms on web page.

c. Incorporate iframes on a web page.
d. Use a GUI-based HTML editing software to create web pages.

STANDARD 3
Cascading Style Sheets (CSS): Students will format web pages using CSS formatting: Advanced

Objective 1: Apply essential aspects of the CSS.
a. Add a background attributes color and image.
b. Add font type, size, and color.
c. Add border attributes width, style,and color.

Objective 2: Apply CSS to your website
a. Apply CSS to an element unsing an inline style
b. Apply CSS to a webpage using an internal style.
c. Apply CSS to a website using an external stylesheet.

***Objective 3: Use selectors in a CSS** (Semester 1B)
a. Impliment a type selector to modify an XHTML element.
b. Impliment an id selector to modify a single element on the page.
c. Impliment a class selectors to modify several class elements.
d. Impliment contexual selectors to modify elements within a container.????

*** Objective 4: Create a layout for your page by formatting div elements.** (Semester 1B)
a. Use width, height, to adjust the size.
b. Use float to position div elements.
c. Use absolute and relative to position div elements.
d. Use text align, margin, and padding for formatting

STANDARD 4
Site Planning and Design: Students will plan, design, add content, and maintain web pages.

Objective 1: Analyize Project requirements
a. Identify the purpose, audience, and audience needs for a website.
b. Demonstrate knowledge of website accessibility standards that address the needs of people with visual and motor impairments. Such as using alt tags, strong instead of bold, etc..
c. Identify and follow the steps in the website planning and development process.

Objective 2: Planning site design and page layout
a. Demonstrate knowledge of best practices for designing a website; such as, maintaining consistency, separating content from design, using standard fonts and Web- safe colors.
b. Identify basic principles of website usability, readability, and accessibility.
c. Plan a website by using sketches, website hierarchy, or a site map.
d. Communicate with others (such as peers and clients) about design and content plans.
e. Produce website designs that work equally well on various operating systems and browser versions/configurations.
f. Plan, communicate, or present a client's website before, during or after website development.

*__Objective 3:__ Create content for website

a. Create and prepare 2D images.
b. Prepare rich media; such as, video, sound, or animation.
c. Identify when to use various image and digital media file formats.
d. Edit, and slice images for web content.
e. Insert navigation bars, rollover images, or buttons created in graphics editor.

***Objective 4:** Uploading and maintaining a site (Semester 1B)

a. Understand and be able to describe the capabilities of web servers.
b. Upload pages to a web server.
c. Conduct basic technical tests such as validating the website (wc3 compliant), accessibility, SEO, etc.
d. Present web pages to others for quality assurances (QA) such as team members and clients for feedback and evaluation on technical merits and usability.
e. Identify methods for collecting site feedback, such as using counters, feedback forums, Google Analytics.
f. Provide site maintenance using bug reports, backups, and promotion.
g. Document all aspects of website maintenance.

*** Objective 5:** Web server (Optional Objective) (Semester 1B)

a. Install a web server on a computer or virtual machine such as wamp, iis, apache etc.
b. Identify the benefits and drawbacks of running your own web server versus using a service provider.

***STANDARD 5** (Semester 1B)
Scripting and Interactivity: Students will understand and use both server and client scripting to create dynamic and interactive web pages.

***Objective 1:** Use a scripting language (Semester 1B)

a. Add interactivity to your website using a script.
b. Understand the difference between client side and server side scripting languages.

***Objective 2:** Use a Database (Semester 1B)

a. Understand when to use popular tools to connect a web server to a database.
b. Recognize the structure of database (tables, rows, fields)
c. (Optional) Implement interactivity using connections between the web pages and a database.

STANDARD 6
Exploration & Preparation for Careers in Web Development: Students will explore careers in Web Development and prepare a portfolio of projects created.

Objective 1: Explore IT Web Development careers

a. Identify job roles in the Information Technology (IT) industry as they apply to web development.
b. Understand the responsibilities, tasks, and skills each job they requires.

Objective 2: Create a Student portfolio

a. Prepare an electronic portfolio of projects developed in the class.

***Objective 3: Explore** Emerging technologies (Semester 1B)

a. Utilize new and emerging Web technologies such as Web 2.0, wikis, blogs, forums, etc.
b. Add content to a content management system(CMS) Google sites, Joomla, Wordpress, etc.