



TENNESSEE DEPARTMENT OF

EDUCATION

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Web Page Design I – Foundations

Primary Career Cluster:	Information Technology
Consultant:	Bethany King Wilkes, (615) 532-2844, Bethany.Wilkes@tn.gov
Course Code(s):	6100
Recommended Prerequisite(s):	Keyboarding (0810) or Document Formatting (5909), Computer Applications (5891/3638/3721), Algebra I (3102)
Credit:	1
Grade Level:	10-11
Aligned Student Organization(s):	Skills USA: www.tnskillsusa.com Brandon Hudson, (615) 532-2804, Brandon.Hudson@tn.gov Technology Student Association (TSA): www.tntsa.org Amanda Hodges, (615) 532-6270, Amanda.Hodges@tn.gov Future Business Leaders of America (FBLA): www.fblatn.org Sarah Williams, (615) 532-2829, Sarah.G.Williams@tn.gov
Teacher Resources:	http://www.tn.gov/education/cte/InformationTechnology.shtml

Course Description

This course prepares students with work-related skills for advancement into postsecondary education or industry. Course content includes exposure to basic Web Design and the dynamics of networking/Internetworking, Web hosting and Web design in e-commerce. The course content provides students the opportunity to acquire fundamental skills in both theory and practical application of Web Design and of leadership and interpersonal skill development. Laboratory facilities and experiences simulate those found in the Web Page Design and construction industry. *(This course requires a computerized workstation and supportive software for required applications.)*

Course Standards

Standard 1.0

Students will identify the infrastructure, servers, and protocols required to access the Internet (includes hardware and software components).

The student will:

- 1.1 Identify the infrastructure needed to support an Internet client.
- 1.2 Identify hardware and software connection devices and their uses.
- 1.3 Describe the hierarchical nature of the Domain Name System (DNS).

Sample Performance Task

- Provide students with an exercise to design the physical topology of a small intranet that connects to the World Wide Web. The exercise should contain “item specific” requirements for the sample organization. Students must identify and outline the infrastructure, hardware and software required to satisfy the exercise.

Standard 2.0

Students will identify the functions and operations of Web and E-mail clients.

The student will:

- 2.1 Identify and use Web browsers to access the World Wide Web.
- 2.2 Describe appropriate and inappropriate uses of e-mail in the workplace.
- 2.3 Understand concerns for Web-based and IMAP-based e-mail.

Sample Performance Task

- Students will conduct lab exercises using various web clients. These will include the use of FTP clients, making and editing favorites and bookmarks, configuration of browser preferences, configuration of security preferences and performing updates.

Standard 3.0

Students will describe, use, and troubleshoot common Internet services (e.g., news servers, ftp, P2P, and databases).

The student will:

- 3.1 Use the Internet to transfer files.
- 3.2 Use the Internet for person-to-person communications.
- 3.3 Use the Internet for database-like processes.
- 3.4 Troubleshoot connectivity issues.

Sample Performance Task

- Students will use an FTP client and a web browser to transfer files to an Internet server using File Transfer protocol.



Standard 4.0

Students will identify Internet security issues.

The student will:

- 4.1 Describe the purpose of encryption.
- 4.2 Understand client security issues.
- 4.3 Understand enterprise-level security issues.

Sample Performance Task

- Students will define the major encryption types and the protocols that accompany them.

Standard 5.0

Students will demonstrate effective and ethical ways to search for, communicate, and transfer information using Internet technology.

The student will:

- 5.1 Use the Internet as a search tool.
- 5.2 Use email as a communication tool.
- 5.3 Use the Internet to transfer files.
- 5.4. Identify ethical issues when communicating with others using Internet-based technology.

Sample Performance Task

- Students will perform basic and advanced Internet searches using Boolean expressions to narrow the search parameters.

Standard 6.0

Students will relate project management concepts to the IT profession.

The student will:

- 6.1 Describe management issues related to an IT department.

Sample Performance Task

- Students will conduct a research project on a local business or sample company. Provide a scenario where the sample company considers an upgrade to part of its IT assets. Students must perform a cost analysis for the upgrade project and consider the ROI against the company's expense. Students will then provide a recommendation to management based on the data obtained.



Standard 7.0

Students will use basic HTML to handle a web page containing text, including hyperlinks, tables, frames, and forms.

The student will:

- 7.1 Display paragraph text using basic HTML on a web page.
- 7.2 Create text hyperlinks using basic HTML on a web page.
- 7.3 Create tables using basic HTML on a web page.
- 7.4 Display simple web page elements in frames on a web page.
- 7.5 Process user input using CGI forms.

Sample Performance Task

- Standard 7-8: Students may construct a semester project website. Projects should apply an overall theme and be patterned after a local business model available to them. The project site should be developed over an acceptable period and should include the concepts described in the Performance Standards above. Projects, upon completion, should be presented to their peer group for evaluation and input. Projects should be graded on these factors including elements of design covered in these standards.

Standard 8.0

The student will use basic HTML to include images and colors on web pages.

The student will:

- 8.1 Display images using basic HTML on a web page.
- 8.2 Create image hyperlinks using basic HTML on a web page.
- 8.3 Alter the appearance of images included on a web page.
- 8.4. Customize the color and general appearance of a web page using basic HTML.

Sample Performance Task

- Students may construct a semester project website. Projects should apply an overall theme and be patterned after a local business model available to them. The project site should be developed over an acceptable period and should include the concepts described in the Performance Standards above. Projects, upon completion, should be presented to their peer group for evaluation and input. Projects should be graded on these factors including elements of design covered in Standards 7-8.



Standard 9.0

Students will identify essential web site navigation issues, and ensure page/site accessibility.

The student will:

- 9.1 Incorporate basic levels of accessibility and sensitivity in created web pages.
- 9.2 Incorporate various web site design requirements, such as might be specified by a customer or employer.

Sample Performance Task

- Students will conduct usability testing to ensure browser compatibility, and view ability.

Standard 10.0

Students will identify technologies for enhancing the user's web experience, including programming languages, multimedia technologies.

The student will:

- 10.1 Identify formatted document file types (other than HTML) that can be displayed with most web browsers.
- 10.2 Identify multimedia file types that can be displayed with most web browsers.
- 10.3 Identify proprietary file types that can be displayed with most web browsers.
- 10.4 Identify programming technologies that can provide custom features with most web browsers.
- 10.5 Identify database technologies applicable to Web sites and other Internet-based services.

Sample Performance Task

- 10.1-10.3: Students will construct sample pages that incorporate various documents i.e. PDF, DOC, AVI, .XLS, MOV, MPEG, MIDI, and WAV. Determine additional considerations when incorporating these document s types.

Standard 11.0

Students will use GUI-based HTML editing software to create and maintain web pages.

The student will:

- 11.1 Evaluate a GUI HTML editor.
- 11.2 Create web pages using a GUI HTML editor.
- 11.3 Publish (i.e., upload) web pages and sites to a web server.

Sample Performance Task

- Given access to a GUI HTML editor, students will construct sample pages using the proficiencies described in Standards 7 and 8 above. A suitable freeware GUI/HTML editor can be found at: <http://trellian.com/codepad/index.html>; <http://trellian.com/wege/index.html>



Standard 12.0

Students will identify essential issues in planning, developing, and maintaining a Web site, including project management, testing, and legal issues.

The student will:

- 12.1 Plan a simple Web site.
- 12.2 Implement a Web site development plan.
- 12.3 Maintain a Web site.

Sample Performance Task

- As a group project, students create a plan for a web site (i.e., a story board or prototype), having at least two levels, and translate it into a site map and Document a Web site plan. Create a web site based on a plan and site map. Students work as team members to develop the sites. Students plans and deliver oral presentations of the Web site, during and after site development and identify fundamentals of project management, including major stages of a Web design/development project cycle. Further, students define legal issues related to the Web site, including trademarking, licensing, copyrighting, licensing copyrighted materials, scope of copyright, reach of copyright, copyrighting process, copyright infringement and consequences.

Standard 13.0

Students will define electronic commerce (eCommerce) and related technologies and concepts necessary to develop a secure, useful interface (i.e., storefront).

The student will:

- 13.1 Define e-commerce terms and concepts.
- 13.2 Compare and contrast eCommerce to traditional commerce.

Sample Performance Task

- Using predefined websites, students must define and give examples of business-to-business, business-to-consumer, Electronic Funds Transfer, Electronic Data Interchange, Open Trading Protocol, merchant systems, relationship management, customer self-service, Internet marketing, and SET (Secure Electronic Transactions).

Standard 14.0

Students will demonstrate knowledge of basic data communications.

The student will:

- 14.1 Understand hardware topics related to network connectivity.
- 14.2 Understand software topics related to network connectivity.
- 14.3 Define the basic theory used in network communications.

Sample Performance Task

- Students will explore and analyze their schools intranet. They will discuss the physical topology that connects to the World Wide Web and all components involved in that communication. Students must accurately identify and explain each hardware components role. The exercise should contain "item specific" requirements for the schools infrastructure. Students must identify and outline the infrastructure, hardware and software required to satisfy the exercise.



Standard 15.0

Students will identify common performance issues affecting Internet clients.

The student will:

- 15.1 Analyze and diagnose basic software performance issues.
- 15.2 Analyze and diagnose basic hardware performance issues.

Sample Performance Task

- Students identify issues to consider when troubleshooting IP-enabled systems, including: DNS/name resolution, correct default gateway and subnet mask, and DHCP versus static IP configuration. Students explain when to use various diagnostic tools for troubleshooting and resolving Internet problems, including: ping, winipcfg, ipconfig, route, arp, traceroute, a and netstat. Students then identify maintenance issues for common system elements, and distinguish between client-side and server-side hardware problems when troubleshooting common services.

Standard 16.0

Students will manage fundamental elements of modern network-based client operating systems.

The student will:

- 16.1 Setup and install a network operating system.
- 16.2 Maintain a network operating system.

Sample Performance Task

- Using lab computers, in small groups; students will install various network operating systems and identify problems involved in this process. Students will identify ways to resolve problems they encounter on their own.



Standard 17.0

Student will develop and demonstrate human relations, self-management, organizational and professional leadership skills.

The student will:

- 17.1 Demonstrate self-initiative through group projects.
- 17.2 Examine the value of leadership skills.
- 17.3 Illustrate image building and public relations techniques.
- 17.4 Assess decision-making skills.
- 17.5 Demonstrate effective teamwork and critical analysis applying conflict resolution techniques.
- 17.6 Examine the value of leadership skills and confidence through personal reflection.
- 17.7 Demonstrate parliamentary procedure skills through team activities.
- 17.8 Analyze the goals and applies the principles of Future Business Leaders of America.

Sample Performance Task

- Research, design and lay out a membership recruitment bulletin for the Future Business Leaders of America that is appropriate for the school Web page.
- Using the Internet researches and critiques a Future Business Leaders of America corporate annual report. Consider type of information included, the writing styles and presentation formatted.
- Complete a written analysis of findings and conclusions.
- Prepare and deliver a presentation on the findings.

