

Appendix N

INFORMATION TECHNOLOGY (IT) YOUTH APPRENTICESHIP

WEB & DIGITAL COMMUNICATIONS PATHWAY WEB & DIGITAL MEDIA UNIT UNIT 6

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

1. Maintain web/digital media production and progress records

Performance Standard Condition

Competence will be demonstrated

- at the worksite

Performance Standard Criteria

Performance will be successful when the learner:

- Selects appropriate forms/records
- Codes documents as required
- Files forms/records in appropriate location
- Retrieves and replaces files in correct position
- Uses appropriate computer codes, formatting, macros, charts, spreadsheets, etc.
- Verifies data prior to entry/storage
- Maintains files
- Works with team members to report project status
 - Compile information in format required
 - Identify and track critical milestones
 - Regularly, report project status to team members in a timely and accurate manner as required

Learning Objectives

- Identify the history and fundamentals of the internet and digital communications
- Explain the use on internet based communications tools such as social networking, online collaboration, online learning, and online meetings and conferences
- Describe the impact of online technologies and communications to personal, educational and business entities
- Compare features of different online social, collaboration and business tools
- Explain the process for documenting web and digital communication work
- Describe the importance of record retention in development projects

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

2. Assist to outline structural content

Performance Standard Condition

Competence will be demonstrated

- at the worksite
- while assisting a worksite professional

Performance Standard Criteria

Performance will be successful when the learner:

- Refers to client requirements and project plan
- Lists the areas of information to be disseminated
- Organizes the basic information into an outline of content to be used within each area (site map)
- Selects the media elements (e.g., sound, video, graphics, text, motion graphics) to be used with the verbal content
- Prepares draft flowcharts, navigational blueprints and/or storyboards to describe the verbal content and media elements for each page
- Finalizes the draft outline with details on layout and interface of pages

Learning Objectives

- Explain the concept of intellectual property
- Differentiate between copyright and trademarks
- Describe the function of a non-disclosure agreement (NDA)
- Explain the impact publication process and distribution method have on product development
- Explain how copy write and trademark law applies legally and ethically to the use of other source code and web page design
- Define the purpose and function of WAI (Web Accessibility Initiative) guidelines

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

3. Assist to create verbal content

Performance Standard Condition

Competence will be demonstrated

- at the worksite
- while assisting a worksite professional

Performance Standard Criteria

Performance will be successful when the learner:

- Refers to client requirements and project plan
- Collects the text documents (content information) and images that will appear on the web site or in the digital communication product from the client
- Reads through the content information
- Confers with worksite professional to determine key content pieces to include or highlight in final product
- Writes script OR arranges content from client content information
- Reviews, edits, and revises content with client & worksite professional
- Finalizes content
- Converts content into a format which can be viewed
- Works with other team members to integrate the verbal content with site design for final product

Learning Objectives

- Define the purpose and use of web metrics and governance (policies and stylebooks)
- Discuss some cultural implications on design and deployment of digital communication products
- Explain ways to manage and update verbal content on a web sites and in other digital communication methods

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

4. Create or edit images and graphics for website/digital media use

Performance Standard Condition

Competence will be demonstrated

- at the worksite

Performance Standard Criteria

Performance will be successful when the learner:

- Refers to client requirements and project plan
- Creates or edits images and graphics based on knowledge of principles of design (color theory and schemes, proximity, alignment, repetition, web graphics, optimization, typography)
 - Produce or acquire graphics content
 - Produce or acquire audio content
 - Produce or acquire video content
- Determines size and arrangement of graphics material and copy
- Selects style and size of type
- Draws and prints charts, graphs, illustrations, and other artwork, using computer
- Uses computer software to generate new images
- Evaluates visual appeal with worksite professional
- Reviews, edits, and revises images & graphics with client & worksite professional
- Makes improvements as needed
 - Alter digitized images using an image manipulation program
 - Alter digitized video using a video manipulation program
- Finalizes images and graphics
- Converts images and graphics into a format which can be viewed

Learning Objectives

- Describe principles and elements of design
- Explain how color theory is used to select appropriate colors
- Define typography
- Discuss how elements of typography are incorporated into overall design
- Explain how basic motion graphics are programmed
- Give examples of photographic special effects and how they are incorporated into interactive media presentations
- Describe how to integrate photographically derived images with hand-drawn graphic images
- Explain the use of digital imaging, digital video techniques, and equipment to obtain images
- List common graphics, video, motion graphics, and web software programs
- Describe the use of integrated development environments (such as Visual Studio, Dreamweaver, Flash, Waterproof, etc)
- Describe the basic principles of motion graphics
- Identify how different user agents (browsers, devices) affect the digital communication product

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

5. Create templates for website layout

Performance Standard Condition

Competence will be demonstrated

- at the worksite

Performance Standard Criteria

Performance will be successful when the learner:

- Refers to client requirements and project plan
- Creates the website layout template based on knowledge of principles of design (color theory and schemes, proximity, alignment, repetition, web graphics, optimization, typography)
 - Create an integrated template theme for the Portal Page, Sub Pages, etc.
- Determines size and arrangement of graphics material and copy
- Selects style and size of type
- Draws and prints charts, graphs, illustrations, and other artwork, using computer
- Uses computer software to generate new images
- Evaluates visual appeal with worksite professional
- Reviews, edits, and revises template with client & worksite professional
- Makes improvements as needed
- Finalizes template
- Converts template into a format which can be viewed

Learning Objectives

- Define reusable components and how that relates to web design
- Describe principles and elements of design
- Explain how color theory is used to select appropriate colors
- Define typography
- Discuss how elements of typography are incorporated into overall design
- List sources of web design element help
- Describe the use of integrated development environments (such as Visual Studio, Dreamweaver, Flash, Waterproof, etc)
- Identify how different user agents (browsers, devices) affect the digital communication product

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

6. Write program code for a website

Performance Standard Condition

Competence will be demonstrated

- at the worksite or in the classroom in a simulated setting

Performance Standard Criteria

Performance will be successful when the learner:

- Refers to client requirements, project plan, and site map plan
- Codes the website elements (content, links, images, graphics, specialized scripts) created using HTML or GUI design software
- Creates pages that can be used on any type of server and viewed with any type of browser
- Reviews, edits, and revises coding as needed
- Reviews draft product with client & worksite professional
- ***Performs user testing***

Learning Objectives

- Explain the features and functions of Web page design software
- Compare/contrast the features and functions of software editors available for designing web pages
- Identify standard scripting languages (e.g., JavaScript, .NET frameworks, PHP, ActiveX)
- Explain the uses and advantages/disadvantages of various scripting languages
- Explain how to use a scripting language to program a site
- Compare the web coding languages & formatting of HTML, XHTML, CSS, XML/XSL
- Describe how version control and documentation are used and managed in programming web pages
- Explain the coding elements required for basic web application security.
- Discuss the code elements needed to ensure that a website is compatible across multiple browsers and devices
- Explain importance of web standards
- Explain the purpose of web content delivery enablers (e.g., CGI, API, SSI)
- Describe how to interface client/server
- Explain advantages & disadvantages of client-side processing
- Identify security issues related to server-side processing

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

7. Assist to create specialized scripts/motion graphics

Performance Standard Condition

Competence will be demonstrated

- at the worksite
- while assisting a worksite professional

Performance Standard Criteria

Performance will be successful when the learner:

- Refers to client requirements, project plan, and site map
- Coordinates with programmers to create specialized scripts
 - Use motion graphics to create a visual Web/digital designs
 - Produce or acquire the specialized script or motion graphics content
- Creates the special feature based on knowledge of principles of design (color theory and schemes, proximity, alignment, repetition, web graphics, optimization, typography)
 - Employ basic motion graphic programming knowledge demonstrating use of key frames and frames, impact of deployment device, animation techniques, security and compatibility across multiple browsers or devices
- Reviews, edits, and revises scripts/motion graphics with client & worksite professional
- Makes improvements as needed
 - Alter digitized images using an image manipulation program
 - Alter digitized video using a video manipulation program
- Finalizes script/motion graphics
- Converts script/motion graphics into a format which can be viewed

Learning Objectives

- Describe the purpose for enhanced web and digital experiences
- Compare motion graphics to other forms of media
- List common types of specialized scripts that a client may require
- Define and compare podcasts, vodcasts, and other e-business, e-commerce and e-training solutions

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

8. Perform user testing

Performance Standard Condition

Competence will be demonstrated

- at the worksite

Performance Standard Criteria

Performance will be successful when the learner:

- Performs user testing throughout the design and development process
- Implements a test plan for the web/digital communication product
- Performs usability tests
 - Assess product effectiveness
 - Test product for reliability
- Plans and coordinates customer acceptance testing
- Resolves product problems
 - Define the problem
 - Identify/test possible solutions
 - Develop resolution plan
 - Implement solution
- Documents all phases and issues of user testing

Learning Objectives

- Explain the role of browsers in reading files on the World Wide Web (text-only, hypertext)
- Identify how different browsers affect the look of a web page
- Demonstrate knowledge of the characteristics and uses of plug-ins
- Describe how bandwidth affects data transmission and on-screen image
- Demonstrate knowledge of how bandwidths affect data transmission and on-screen image
- Compare and contrast clients and servers
- Differentiate between a client and a server

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

9. Assist to finalize a website

Performance Standard Condition

Competence will be demonstrated

- at the worksite
- while assisting a worksite professional

Performance Standard Criteria

Performance will be successful when the learner:

- Establishes and registers a domain name
- Posts completed site to internet server
- Complies with TCP/IP (Transfer Control Protocol/Internet Protocol)
- Documents server environment to include specifications, passwords, and software versions
- Uses FTP software as needed to support website
- Submits completed site to search engines

Learning Objectives

- Compare domain name registries and extensions
- Explain the DNS (domain name server) hierarchy
- Identify elements of DNS (e.g., zones, server types)
- Compare the advantages and disadvantages of running your own server vs. using a server provider
- Identify hardware requirements for a server
- Identify server software options
- Evaluate server providers
- Describe issues of browser/server compatibility, including which browsers and servers work well together and which ones do not
- Describe Internet protocols
- Explain Transmission Control Protocol/Internet Protocol (TCP/IP) suite
- Explain the concept of routing
- Describe search engine management (SEM) and search engine optimization (SEO)
- Explain the use of transfer protocols (FTP, WebDav)
- Identify cross-platform issues
- Discuss new and emerging trends related to the Internet
- Define the purpose and use of Web 2.0
- Explain concepts involved in social networking
- Describe applications and services used to create rich internet applications
- Identify Web 2.0 solutions

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

10. Assist to maintain a website

Performance Standard Condition

Competence will be demonstrated

- at the worksite
- while assisting a worksite professional

Performance Standard Criteria

Performance will be successful when the learner:

- Makes changes to the site as directed by client
- Analyzes software technical support needs
 - Identify maintenance and support requirements
 - Define scope of work to meet customer support needs
- Accesses needed information using appropriate reference materials
- Provides help to first line user-support personnel to answer user questions
- Assists to troubleshoot hardware, access and usability issues
- Performs system-tuning function
- Performs product maintenance activities
 - Upload files to the server
 - Publicize the site (e.g., submit announcements to major search engines)
 - Collect/analyze usage statistics
 - Utilize back-up and restore software features
- Follows established procedures for testing, identifying problems, and tracking resolutions
 - Identify and analyze problem
 - Analyze and propose solutions
 - Implement solutions in code and documentation
- Uses customer satisfaction in determining product characteristics (e.g., cost, user-friendliness)
- Communicates and documents technical support provided

Learning Objectives

- Describe the relationship between dependability, functionality, ease of use, etc.
- Summarize Internet security issues and systems available for addressing them
- Explain data communication equipment and media
- List common uses of data communication equipment
- Compare types of communications media
- Explain data transmission codes and protocols
- Demonstrate knowledge of data transmission codes and protocols
- Explain the differences between local and wide area networks
- Summarize data communication trends and issues
- Identify major current issues in data communications
- Identify the relationship between computer networks and other communications networks (e.g., Telephone Network), and the Internet

Comments:

Unit 6: Web & Digital Media Pathway

Web & Digital Media

Competency

11. Participate on website/digital media project team

Performance Standard Condition

Competence will be demonstrated

- at the worksite

Performance Standard Criteria

Performance will be successful when the learner:

- Participates as a team member in the following website/digital media project tasks as able:
 - Meet with the client to determine purpose of project, scope, target audience requirements, time constraints, design desires, etc
 - **Outline structural content**
 - Design delivery platforms, system architecture, user interface, navigational schema, and coding requirements for site creation including: e-commerce capability, forms and specialized scripts
 - Prepare visual design specifications for layout, organization, color, images, video, etc.
 - Identify technical constraints
 - Identify available media and content sources
 - Create sample design
 - Create final project plan including time line for completion, staffing resources, preliminary project budget, detailed task list, user testing plan, critical milestones, interdependencies, etc.
 - Obtain client approval on scope of work
 - **Create content**
 - **Code website/project**
 - **Perform user testing**
 - **Finalize project**
- Periodically reviews project progress and results

Learning Objectives

- Explain the purpose and use of project management and collaborative tools
- Identify roles of team members/customers in the project process
- Describe web & media development processes and methodology
- Discuss key elements of functional requirements for web & digital media development
- Discuss nonfunctional requirements for a web & digital media development plan (e.g., security, reliability, support, and documentation)
- Explain the use, structure, and contents of a requirements specification document
- Describe common system analysis issues related to design, testing, implementation, and maintenance

Comments: