

DIGITAL COMMUNICATIONS III: DIGITAL MEDIA

Curriculum Content Frameworks

Please note: All assessment questions will be taken from the knowledge portion of these frameworks.

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Curriculum Content Frameworks

DIGITAL COMMUNICATIONS III: DIGITAL MEDIA

Grade Levels:10,11,12
Course Code:492360
Units of Credit:.5

Prerequisite: Computerized business applications, OR Computer applications I and II, and
Digital Communications I and II

Digital Communications III: Digital Media is a hands-on course focuses on the creative and technical skills necessary for Web design and animation. Students will create visual effects and animated graphics for video, web, and other types of media using computer software. Students learn the fundamentals of Web design and HTML, explore techniques used in building media for the Web, along with learning to develop content and publish media-based Web sites to the Internet.

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Unit 1: Elements of Media

Hours: 5

Terminology: Animation software, Apps, Blog, Cloud computing, Copyright law, Drawing software, DVD authoring software, E-reader, Fair use, File conversion software, Image editing software, Mobile device, Online learning system, Painting software, Podcast, Podcasting software, Public Domain, Royalty-free, Shareware, Social networking, Sound editing software, Video editing software, Web design software

CAREER and TECHNICAL SKILLS	
What the Student Should Know	What the Student Should be Able to Demonstrate
Knowledge	Application
1.1 Define terminology	1.1.1 Prepare a list of terms with definitions
1.2 Describe the basic elements of media	1.2.1 Identify the typical components of media: text, graphics, sound, video, and animation
	1.2.2 Review the basic concepts of text and graphics as they relate to digital media
	1.2.3 Evaluate the appropriate use of elements in media
1.3 Examine the types of software used in the development of digital media	1.3.1 Evaluate the types of software used in the development of digital media: animation, sound editing, podcasting, file conversion, painting, drawing, image editing, video editing, DVD authoring, web design
1.4 Identify current and emerging technologies as they apply to digital media	1.4.1 Identify current and emerging technologies, i.e. E-readers, social networking, podcasts, apps, games, wiki, blog, mobile devices, online learning systems, cloud computing
1.5 Discuss the copyright laws and guidelines that affect the use of digital media	1.5.1 Analyze and illustrate the basic concepts of ethics, copyright law, fair use, public domain, shareware, and royalty-free

Unit 2: Web Design

Hours: 15

Terminology: .biz, .com, .edu, .gov, .info, .mil, .mobi, .net, .org, Alternative text, Domain name, Forms, Home page/Index page, Hot spot, Hover/Rollover buttons, HTML, Hyperlink, Image map, Javascript, Navigational map, Page banner, Plug-in, Publishing, Site map, Template, Thumbnails, Web hosting, Web-safe colors

CAREER and TECHNICAL SKILLS	
What the Student Should Know	What the Student Should be Able to Demonstrate
Knowledge	Application
2.1 Define terminology	2.1.1 Prepare a list of terms with definitions
2.2 Identify the options for developing a website	2.2.1 Explain the options for designing and creating a website, i.e. writing the code, using web design software, using an online website builder, outsourcing to a professional web designer
2.3 Discuss design considerations and planning steps in developing an effective website	2.3.1 Explain concepts to be considered when planning a website: web-safe colors, appropriate fonts, screen size, file naming conventions, browser compatibility, download time
	2.3.2 Evaluate web sites for effectiveness
	2.3.3 Determine target audience
	2.3.4 Develop a navigational structure
2.4 Review the copyright/trademark laws as they relate to creating and publishing	2.4.1 Identify and critique acceptable sources of media for websites
2.5 Identify components of a website	2.5.1 Identify a multipage website using components such as: templates, thumbnails, banner, photo gallery, alternative text, page captions, tables, hover/rollover buttons, forms, image map/hot spot, site map
2.6 Create a website	2.6.1 Create a basic website with components such as: banner, page titles, background color or images, graphics, appropriate text, hyperlinks
	2.6.2 Create a multi-page website with components such as: navigational structure, hot spot, rollover, animated gifs, tables, etc.
2.7 Examine web hosting options	2.7.1 Identify the various options for hosting a website
	2.7.2 Explain domain naming

Unit 3: Audio/Sound

Hours: 20

Terminology: AIF, Audio/Sound, Bit rate, Bidirectional microphone, Boom microphone, Channels, Key frame, Kilohertz, Lavalier microphone (lapel), MIDI, Mixing, Mono, Mounted microphone, MP3, MP4, Omnidirectional microphone, Original work, Ripping, Sampling rate, Silence, Sound effects, Speakers, Speech, Stereo, Streaming, WAV, Wireless microphone, WMA

CAREER and TECHNICAL SKILLS	
What the Student Should Know	What the Student Should be Able to Demonstrate
Knowledge	Application
3.1 Define terminology	3.1.1 Prepare a list of terms with definitions
3.2 Discuss the categories of audio	3.2.1 Identify and give examples of the categories of audio: speech, sound effects, music, and silence
3.3 Discuss common sound file formats	3.3.1 Compare quality size, compression and platform compatibility of audio formats: MP4, Midi, AIF, Wave, WMA, MP3
	3.3.2 Compare and contrast the following: streaming audio and downloading audio
3.4 Discuss the hardware needed for sound	3.4.1 Connect speakers, microphone, and headphones to the computer and adjust settings
	3.4.2 Identify different types of microphones: omnidirectional microphone, bidirectional microphone, boom microphone, lavalier microphone (lapel), wireless microphone, mounted microphone
	3.4.3 Assess appropriate use of microphones
3.5 Discuss the software needed for sound	3.5.1 Compare and contrast the software used to manipulate audio: editing, playback, conversion
	3.5.2 Create a sound file
	3.5.3 Adjust settings to maximize sound quality: sampling rate, bit rate, and channels
3.6 Review the copyright laws and guidelines that affect the use of sound	3.6.1 Analyze and critique acceptable sources of sound for digital media productions, i.e. royalty-free, original works, etc.
3.7 Describe the process of editing sound	3.7.1 Edit a sound file using a sound editor program, i.e. mix sound, insert sounds, cut sounds, rip sound files, convert sound formats
3.8 Incorporate sounds in media	3.8.1 Create and incorporate sound in media, i.e. public service announcement, podcast, webcast, etc.
	3.8.2 Upload sound files to webpage

Unit 4: Animation

Hours: 15

Terminology: 2D, 3D, Animated gif, Animation, Computer Generated Imagery (CGI), Frame, Frame animation, Frame rate (fps), Key frame, Looping, Morphing, Stop motion animation, Tweening, Warping

CAREER and TECHNICAL SKILLS	
What the Student Should Know	What the Student Should be Able to Demonstrate
Knowledge	Application
4.1 Define terminology	4.1.1 Prepare a list of terms with definitions
4.2 Discuss the different types of animation	4.2.1 Compare and contrast 2D and 3D animation
	4.2.2 Examine the different types of animation: frame, stop motion, morphing, warping
4.3 Discuss the software needed to create animation	4.3.1 Compare and contrast the software used to create the different types of animation
4.4 Describe the different processes for creating animation	4.4.1 Create a frame animation, i.e. animated GIF
	4.4.2 Create a stop motion animation
	4.4.3 Create a morphing/warping animation
4.5 Incorporate an animation in a media production	4.5.1 Utilize animation in media production

Unit 5: Integration

Hours: 5

Terminology: NONE

CAREER and TECHNICAL SKILLS	
What the Student Should Know	What the Student Should be Able to Demonstrate
Knowledge	Application
5.1 Integrate the basic elements of media into a project	5.1.1 Create a project incorporating the media elements

Glossary

Unit 1: Elements of Media

1. Animation software – software that takes independent pictures or frames and puts them together to form the illusion of continuous motion
2. Apps – short for application, but generally refers to mobile applications
3. Blog – a web site that contains an online personal journal with reflections, comments and often hyperlinks provided by the writer
4. Cloud computing – use of web services to perform functions that were traditionally performed with software on an individual computer; i.e. Flickr, Google Docs, etc.
5. Copyright law – laws designed to protect intellectual property rights and to provide monetary rewards for inventiveness and hard work; protects works "fixed in any tangible form of expression"
6. Drawing software – programs used to create vector graphics; can create images by drawing freehand or by using geometric shapes
7. DVD authoring software – programs aimed primarily at converting videos, complete with titles and menus, into DVD movies that can be played on a DVD player
8. E-reader – a handheld device for reading content such as books, newspapers, and documents; may also be used for other Internet content; one major advantage is the extremely long battery life
9. Fair use – Section 107 of the Copyright code (commonly called Fair Use) limits the rights of the author, allowing parts of a copyrighted work to be used without requesting permission. Such circumstances are limited to criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research
10. File conversion software – programs used to convert a file from one format to another; i.e. convert a wave file to an mp3
11. Image editing software – programs designed to edit, manipulate, or modify digital photographs
12. Mobile device – a portable electronic device which allows users to process, receive, and send data without the need to maintain a wired connection with the Internet
13. Online learning system – any form of educational material which is readily available for distribution on the Web or privately over an internal network, such as Moodle, Blackboard, etc.
14. Painting software – programs used to create bitmap images, useful in creating original art; uses brushes and pens to create images
15. Podcast – a pre-recorded audio/video program that is posted to a website and is made available for download so people can listen/view them on personal computers or mobile devices. Some use the term vodcasting to refer to video
16. Podcasting software – a collection of programs used to create, broadcast, and receive podcasts
17. Public domain – property rights that belong to the community at large, are unprotected by copyright or patent, and are subject to use by anyone. This includes works created before 1922, created for public use, or those works that have over the years fallen into public domain because the copyright expired. This includes documents of the United States government, unless stated otherwise

18. Royalty-free – prepared material that can be used legally without paying a fee each time the material is used
19. Shareware – software that is available free of charge; may be distributed for evaluation with a fee requested for additional features or a manual
20. Social networking – a website where one connects with those sharing personal or professional interests
21. Sound editing software – programs used to record, edit and manipulate audio files
22. Video editing software – programs used to capture, edit and manipulate video images, add effects, titles, and music to create studio-quality video
23. Web design software – programs used to design and create single web pages and entire websites

Unit 2: Web Design

1. .biz – top-level domain reserved for the business community
2. .com – unrestricted top-level domain typically used by the commercial community
3. .edu – top-level domain reserved for the education community, typically higher education
4. .gov – top-level domain reserved for the government community
5. .info – unrestricted top-level domain
6. .mil – top-level domain reserved for the United States Department of Defense and its subsidiary or affiliated organizations
7. .mob – top-level domain dedicated to delivering the internet to the mobile phone
8. .net – unrestricted top-level domain
9. .org – unrestricted top-level domain typically used by non-profit organizations or organizations of a non-commercial character
10. Alternative text – descriptive text that can be set to appear in place of an image
11. Domain name – the part of an Internet URL (Universal Resource Locator) selected and registered by an individual, business or organization to represent their web presence. It consists of at least two parts that are separated by "dots." The last part or suffix indicates the type of site (top level domain) such as ".edu" for schools, ".gov" for government, and ".com" for commercial business
12. Forms – an area of a web page that allows the viewer to enter data and information to be sent back to the web server
13. Home page/Index page – the top level or entry page of a website
14. Hot spot – an invisible region on an image that contains a hyperlink
15. Hover/Rollover buttons – a navigation button that changes when the mouse is positioned over it
16. HTML (Hypertext Markup Language) – the predominant language used to create web pages
17. Hyperlink – connection from one page to another or from one site to another
18. Image map – a region on a web page that contains one or more hot spots
19. JavaScript – language used to add special effects to a website
20. Navigational map – the organizational structure of a website

21. Page banner – a section of a web page containing a graphic element and text, such as the page title, that is displayed at the top of the page
22. Plug-in – one of a set of software modules that integrate into web browsers to offer a range of interactive and multimedia capabilities
23. Publishing – sending or uploading web pages to a server where they are made available on the World Wide Web
24. Site map – a list of the pages in a website; also referred to as a site index
25. Template – a set of predesigned formats for text and graphics on which new pages and webs can be based. After a page or web is created using a template, you can customize the page or web
26. Thumbnails – miniature representations of a picture
27. Web hosting – providing space on Internet servers for the storage of World Wide Web sites which can be accessed by others through the network. This service is usually offered by ISPs or web hosting specialists
28. Web-safe colors – 216 colors that appear consistently across web browsers and across computer platforms

Unit 3: Audio/Sound

1. AIF – audio interchange format; an uncompressed audio file format used by Macs
2. Audio/sound – audible content in media production and publishing
3. Bidirectional microphone – microphone that picks up sound from two opposite directions
4. Bit rate – the number of bits per second processed when sampling sound (bps).
5. Boom microphone – a directional mic that is mounted on a boom arm and positioned just out of camera
6. Key frame – a frame in a timeline where a change will occur; used in audio, video and animation production
7. Kilohertz – one thousand hertz; measures the sampling rate of an audio file
8. Lavalier microphone (lapel) – a small microphone designed to pick up speech from a single person, typically attached to the subject's clothing with a specialized clip
9. MIDI – musical instrument digital interface; format for recording music from synthesizers and other electronic instruments
10. Mixing – audio mixing is the process by which sounds are combined into one or more channels
11. Mono – an audio signal that is mixed together and routed through a single audio channel
12. Mounted microphone – a microphone that is attached to a stand or boom
13. MP3 – mpeg 3; a compressed audio file format that is the current standard for exchanging audio files over the Internet; 1/10 the size of a wave file
14. MP4 – mpeg 4; a compressed file format that can be used for audio or video; appropriate for streaming
15. Omnidirectional microphone – microphone that captures equally from all directions
16. Original work – a distinctive piece created by an author or artist
17. Ripping – the process of digitally extracting audio from CDs to your hard drive
18. Sampling rate – the number of samples taken per second when sound is recorded; 1Hz-1 sample per second; currently measured in kilohertz; 44.1 is CD quality, 22.1 is radio quality
19. Silence – the absence of sound in a production; used to set a mood or provide a moment for reflection
20. Sound effects – audio effects other than music or speech that are enhanced or artificially created and added in postproduction
21. Speech – an example of audio that can include voice overlay, dialogue or direct address

22. Stereo – an audio signaled divided into two separate channels, played back simultaneously via separate speakers
23. Streaming – playing audio or video immediately as it is downloaded from the Internet, rather than storing it in a file on the receiving computer first
24. WAV – waveform; uncompressed audio format for Windows
25. Wireless microphone – a microphone that is not physically connected to a camera or recording equipment
26. WMA – windows media audio; compressed audio format originally designed for Windows Media Player

Unit 4: Animation

1. Animated gif – a single graphic file that contains a series of images which are displayed sequentially to give the illusion of movement or change over time
2. Animation – the simulation of movement created by displaying a series of pictures or frames
3. Frame – an individual picture in a sequence of images
4. Frame animation – a computer animation technique that creates movement one frame at a time; the illusion of movement is created by displaying objects in slightly different poses or positions, one frame after another in rapid succession
5. Frame rate (fps) – the number of frames per second at which an animation or video is intended to be viewed
6. Looping – playing a sequence of frames over and over
7. Morphing – a special-effects process in which persons or objects seem to change shape, form, etc.
8. Stop motion animation – animation where a model is moved incrementally and photographed one frame at a time
9. Tweening – an animation technique that, based on starting and ending shapes, creates the necessary "in-between" frames
10. Warping – a special-effects process in which an object is bent or twisted out of shape
11. Key frame – a frame in an animated sequence of frames which was drawn or otherwise constructed directly by the user rather than generated automatically, e.g. by tweening
12. 2D animation – the creation of moving pictures in a two-dimensional environment, such as computerized animation software
13. 3D animation – the creation of moving pictures in a three-dimensional environment; Objects can be rotated and moved like real objects
14. Computer generated imagery (CGI) – the application of the field of computer graphics (specifically 3D) to special effects