Design, Multimedia, and Web Technologies, Advanced

6631/36 weeks

6633/18 weeks

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Virginia Department of Education

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Course Description

Suggested Grade Level: 10 or 11 or 12

Prerequisites: 6630 or 6632

In this course, students acquire advanced skills in design, multimedia, and web development by applying project management principles to create professional quality digital media projects. Work-based learning experiences allow students to apply layout and design techniques in real-world situations. Students create portfolios that include a résumé, certifications earned, and a variety of print, multimedia, and website projects produced in the course.

Task Essentials Table

• Tasks/competencies designated by plus icons (+) in the left-hand column(s) are essential
• Tasks/competencies designated by empty-circle icons (○) are optional
• Tasks/competencies designated by minus icons (−) are omitted
• Tasks marked with an asterisk (*) are sensitive.

<table>
<thead>
<tr>
<th>6631</th>
<th>6633</th>
<th>Tasks/Competencies</th>
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<tbody>
<tr>
<td>39</td>
<td>+</td>
<td>Identify components of project management.</td>
</tr>
<tr>
<td>40</td>
<td>+</td>
<td>Explain how project management is applied to design, multimedia, and web technologies.</td>
</tr>
<tr>
<td>41</td>
<td>+</td>
<td>Apply the project-management cycle to a class project.</td>
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Designing and Creating Advanced Visual Design Projects

| 42   | +    | Select appropriate software for a visual design project. |
| 43   | +    | Apply principles of design, layout, and typography to an advanced visual design project. |
| 44   | +    | Convert graphic elements and text to compatible formats for integration into publications. |
| 45   | +    | Create a variety of specialized materials for traditional and digital delivery. |
| 46   | ○    | Analyze options and costs for printing a graphic design project. |

Designing and Creating Advanced Interactive Multimedia Projects

<p>| 47   | +    | Incorporate audio and visual elements into an interactive multimedia project. |</p>
<table>
<thead>
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<th>Task/Competencies</th>
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<td>48 Convert a publication to an interactive multimedia project.</td>
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<td>49 Research the different types of interactive multimedia software available.</td>
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<td><strong>Examining Web Technologies</strong></td>
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<td>50 Analyze networking essentials in website construction.</td>
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<td>51 Identify key Internet protocols.</td>
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<td>52 Explain IP addresses and the domain naming system (DNS).</td>
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<td>53 Evaluate website hosting options.</td>
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<td><strong>Designing and Creating Advanced Websites</strong></td>
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<td>54 Evaluate an advanced website according to design principles.</td>
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<td>55 Create a website by applying design principles.</td>
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<td>56 Examine new and emerging trends in web development.</td>
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<td>57 Create an advanced website, using design software and/or a programming language.</td>
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<td>58 Use client-side and server-side scripting to create database-driven websites and applications.</td>
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<td>59 Describe the design of websites for accessibility and accommodation of persons with special needs.</td>
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<td>60 Apply search engine optimization (SEO) techniques in websites.</td>
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<td>61 Edit an advanced website.</td>
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<td>63 Describe the process for publishing a website.</td>
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<td>66 Identify the basic components of an e-commerce website.</td>
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<td>77 Describe the process and requirements for obtaining industry certifications related to the course.</td>
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<td>79 Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions similar to those on certification exams).</td>
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<tr>
<td>80 Complete an industry certification examination representative of skills learned in this course (e.g., MOS, IC3, ACA, CIW).</td>
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<tr>
<td><strong>Developing Employability Skills</strong></td>
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<td>82 Update a professional portfolio.</td>
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<td>83 Deliver an oral presentation of a professional portfolio.</td>
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<td>84 Investigate new and emerging technological trends in the workplace.</td>
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</table>

Legend: ☑Essential ☐Non-essential ☞Omitted
Task Number 39

Identify components of project management.

Definition
Identification should include the project-management life cycle to address

- analysis and planning (e.g., message, audience, format, deadline, budget)
- design (e.g., font, style, color scheme)
- development (e.g., producing content)
- testing (e.g., troubleshooting, debugging)
- implementation (e.g., publishing)
- evaluation and maintenance (e.g., gathering feedback, revising).

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
Accounting I
Accounting II
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design & Application
Digital Video
E-business
Entrepreneurship
Graphic Design
Hospitality and Event Management
International Business
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Management Decision Making
Management Information Systems
Marketing
Network Design
Partnership with Business
Publication Design
Sales Presentation
Sports and Entertainment Management
Spreadsheet Application
Website Design
Word Processing

Task Number 40

Explain how project management is applied to design, multimedia, and web technologies.
Definition
Explanation should include the application of project management to address

- determining scope
- setting goals
- analyzing skills
- prioritizing
- assigning tasks
- setting milestones
- collaborating and working in teams.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Digital Video
E-business
Entrepreneurship
Graphic Design
Hospitality and Event Management
International Business
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Management Decision Making
Management Information Systems
Marketing
Network Design
Partnership with Business
Publication Design
Sales Presentation
Sports and Entertainment Management
Website Design

Task Number 41
Apply the project-management cycle to a class project.

Definition
Application should incorporate the components of project management into a defined class project.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Digital Video
E-business
Electronic Career Portfolio
Entrepreneurship
Graphic Design
Hospitality and Event Management
International Business
Introduction to Business Presentation
Introduction to Event Planning
Designing and Creating Advanced Visual Design Projects

Task Number 42

Select appropriate software for a visual design project.

Definition
Selection should include determination of the software that offers the most desirable functionality for the job, based upon such considerations as

- purpose
- message
- audience
- format
- output medium (e.g., print, electronic).

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Digital Video
E-business
Electronic Career Portfolio
Entrepreneurship
Graphic Design
Hospitality and Event Management
International Business
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Management Decision Making
Management Information Systems
Marketing
Network Design
Partnership with Business
Publication Design
Sales Presentation
Social Media Strategies
Sports and Entertainment Management
Website Design
Task Number 43

Apply principles of design, layout, and typography to an advanced visual design project.

Definition
Application should include making appropriate choices concerning

- typography (i.e., font, size, style, effects)
- layout (i.e., page margins, columns, white space, text, graphics placement)
- design (i.e., balance, focus, proportion, consistency, color scheme).

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Partnership with Business
Publication Design
Sales Presentation
Website Design

Task Number 44

Convert graphic elements and text to compatible formats for integration into publications.

Definition
Conversion could include

- converting graphic elements to various file formats (e.g., jpeg, tiff, gif, png)
- converting text to portable document format (PDF) or rich text format (RTF).

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design and Application
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Task Number 45

Create a variety of specialized materials for traditional and digital delivery.

Definition
Creation should include applying principles of design, layout, and typography in the production of materials such as

- forms
- annual business reports
- advertisements
- catalogs
- magazines
- event programs
- business cards
- posters and banners.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design and Application
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Partnership with Business
Publication Design
Sales Presentation
Spreadsheet Applications
Website Design
Word Processing

Task Number 46

Analyze options and costs for printing a graphic design project.

Definition
Analysis should include researching and comparing costs associated with
- paper types
- use of color
- output types
- additional services (e.g., cutting, folding, stapling, binding).

**FBLA Competitive Events and Activities Area**  
Business Knowledge & Skills  
Accounting I  
Accounting II  
American Enterprise Project  
Business Financial Plan  
Business Plan  
Community Service Project  
Computer Applications  
Database Design and Application  
Digital Video  
E-business  
Electronic Career Portfolio  
Graphic Design  
Introduction to Business Presentation  
Introduction to Event Planning  
Introduction to Social Media Strategy  
Partnership with Business  
Publication Design  
Sales Presentation  
Spreadsheet Applications  
Website Design  
Word Processing

### Designing and Creating Advanced Interactive Multimedia Projects

#### Task Number 47

**Incorporate audio and visual elements into an interactive multimedia project.**

**Definition**

Incorporation should include

- video clips
- graphics
- animation
- audio clips
- digital photographs.

**FBLA Competitive Events and Activities Area**  
Business Knowledge & Skills  
American Enterprise Project  
Business Financial Plan  
Business Plan  
Community Service Project  
Computer Applications  
Database Design and Application  
Digital Video
Task Number 48

Convert a publication to an interactive multimedia project.

Definition
Conversion should include

- using information and graphics from a brochure in a presentation
- adapting text from a document to a presentation
- altering images for a presentation.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design and Application
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Partnership with Business
Publication Design
Sales Presentation
Spreadsheet Applications
Website Design
Word Processing

Task Number 49

Research the different types of interactive multimedia software available.

Definition
Research should include
- determining features, costs, and uses of different types of interactive proprietary and open-source software (e.g., multimedia software, video and audio recording and/or editing programs)
- investigating emerging audio and video file formats.

**FBLA Competitive Events and Activities Area**

Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design and Application
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Partnership with Business
Publication Design
Sales Presentation
Spreadsheet Applications
Website Design
Word Processing

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**Examining Web Technologies**

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**Task Number 50**

**Analyze networking essentials in website construction.**

**Definition**

Analysis should include

- client-server architecture and its role in delivering data over the Internet (i.e., uploading, downloading)
- types of Internet connections (e.g., wireless, cable modem, other high-speed options) and how they affect the speed and quality of data transmission
- network security issues
- mobile devices.

**FBLA Competitive Events and Activities Area**

Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

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**Task Number 51**

**Identify key Internet protocols.**
Definition
Identification should include describing the primary Internet protocols, including:

- transmission control protocol (TCP)/Internet protocol (IP)
- file transfer protocol (FTP)/secure file transfer protocol (SFTP)
- Secure Shell (SSH)
- Hypertext Transfer Protocol (HTTP)
- Hypertext Transfer Protocol Secure (HTTPS)
- Simple Mail Transfer Protocol (SMTP).

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 52

Explain IP addresses and the domain naming system (DNS).

Definition
Explanation should include the roles of IP addresses, such as providing unique addresses for websites and computers connected to the Internet and how DNS is used to resolve website names to IP addresses.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 53

Evaluate website hosting options.

Definition
Evaluation should include a comparison of using onsite servers and third-party hosting services for platforms, features, storage, and maintenance.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design
Designing and Creating Advanced Websites

Task Number 54
Evaluate an advanced website according to design principles.

Definition
Evaluation should assess such design considerations as

- load time
- readability (i.e., text layout, fonts, contrast with background)
- ease of navigation (e.g., consistently placed navigation links, including a “Home” link)
- page length (e.g., scrolling vs. going to an additional page)
- cross-browser compatibility
- mobile device compatibility
- consistent theme
- appealing, consistent color scheme
- user experience
- purposeful, aesthetically appealing visuals
- functional hyperlinks
- usability
- framework or grid system and division <div> tags used to position text and graphics
- use of multimedia elements (e.g., animation, video, audio)
- styles, code, and other techniques
- accessibility according to Web Accessibility Initiative (WAI) guidelines and 508 compliance.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 55
Create a website by applying design principles.

Definition
Creation should include the application of design principles such as

- load time
- readability (i.e., text layout, fonts, contrast with background)
- accessibility and 508 compliance
- ease of navigation (e.g., consistently placed navigation links, including a “Home” link)
- page length (e.g., scrolling vs. going to an additional page)
- cross-browser compatibility
- responsive design
- consistent theme
- appealing, consistent color scheme
- purposeful, aesthetically appealing visuals to enhance user experience
- functional hyperlinks
- usability
- ease of editing content
• accessibility according to WAI guidelines
• layout and positioning of elements
• use of multimedia elements (e.g., animation, video, audio)
• styles, code, and other techniques
• validation of code.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 56

Examine new and emerging trends in web development.

Definition
Examination should include reviewing World Wide Web Consortium (W3C) validator and other sources for information about new design trends, including

• latest trends in Hypertext Markup Language (HTML)5/Cascading Style Sheets (CSS)
• markup validity criteria for new versions of HTML
• Web 2.0 (e.g., cloud computing, social networking, collaboration)
• content management systems (e.g., WordPress, Joomla!, Drupal)
• JavaScript and PHP
• common front-end frameworks (e.g., Bootstrap).

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 57

Create an advanced website, using design software and/or a programming language.

Definition
Creation could include

• using wireframes and mockups
• using a content management system (e.g., WordPress) or a web programming language (e.g., PHP, JavaScript)
• using style sheets to format content layout (e.g., text, images, forms, hyperlinks, tables)
• ensuring accessibility and 508 compliance
• validating code against DOCTYPE declaration (e.g., http://validator.w3.org)
• testing the website with multiple browsers and devices.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
Computer Game and Simulation Programming
Task Number 58

Use client-side and server-side scripting to create database-driven websites and applications.

Definition
Use could include

- differentiating between static and dynamic websites
- explaining client-side scripting and server-side scripting
- identifying the advantages and disadvantages of client-side and server-side scripting
- indicating situations that favor client-side scripting and those that favor server-side scripting
- choosing a database or database complement (e.g., Access, PostgreSQL, MySQL, Microsoft SQL Server, Oracle) and compatible scripting language
- modifying a script to connect with a database.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
Database Design and Application
E-business
Network Design
Networking Infrastructures
Spreadsheet Applications
Website Design

Task Number 59

Describe the design of websites for accessibility and accommodation of persons with special needs.

Definition
Description should include

- accessibility issues pertaining to website content
- guidelines based on the Americans with Disabilities Act (ADA)
- guidelines for compliance with WAI
- methods for removing accessibility barriers.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 60
Apply search engine optimization (SEO) techniques in websites.

Definition
Application should include

- analyzing page rank algorithms
- inserting <META> tags (e.g., keywords, page summary) and <ALT> tags (i.e., alternative text tags for images)
- adding web page structure and design elements (e.g., title, heading, alt tags)
- analyzing keywords
- comparing methods of promoting web pages through search engines and other digital marketing means
- identifying factors that detract from search engine optimization.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
E-business
Marketing
Network Design
Networking Infrastructures
Website Design

Task Number 61

Edit an advanced website.

Definition
Editing should include

- proofreading and editing content for accuracy, clarity, and correctness
- reviewing pages for desired formatting and layout
- validating code for compliance
- reviewing pages for functionality
- conducting user focus groups to evaluate user experience effectiveness
- implementing third party feedback (e.g., peer review).

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
E-business
Network Design
Networking Infrastructures
Website Design
Word Processing

Task Number 62

Test an advanced website.

Definition
Testing should include

- viewing through multiple browsers on a variety of platforms to ensure page elements display as intended (e.g., colors, fonts, animation, graphics)
• reviewing pages for broken links and/or unlinked objects
• viewing on various devices with Internet connectivity
• accessing web pages via connections of various speeds to ensure pages load quickly
• ensuring accessibility and 508 compliance.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 63
Describe the process for publishing a website.

Definition
Description should include

• registering a domain name
• establishing a hosting account, if not hosted onsite
• following established publishing guidelines
• establishing a deployment process.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Business Procedures
Coding and Programming
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 64
Demonstrate publishing, updating, and maintaining an advanced website.

Definition
Demonstration should include

• selecting a host
• identifying who will provide information for the site, who will maintain it, and the frequency of updating
• following established steps for publishing and updating the site
• communicating the plan for publishing, updating, and maintaining the site according to the guidelines and needs of the customer.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
E-business
Network Design
Networking Infrastructures
Task Number 65

Research the effects of new and emerging technologies on web use.

Definition
Research could include

- mobile apps and/or web apps
- wearable technology
- Internet of Things (IoT)
- data applications
- web application programming interfaces (API).

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 66

Identify the basic components of an e-commerce website.

Definition
Identification should include the following components:

- Inventory
- Form to capture customer information
- Shopping cart
- Secure payment process (encryption)
- Payment options
- Boosting sales
- Order tracking
- Automatic customer messaging
- Cookies
- Returns
- Consumer experience

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Coding and Programming
E-business
Network Design
Networking Infrastructures
Website Design

Task Number 67

Explore the use of communication tools.
Definition
Exploration should include the varied uses in workplace communication of

- email (client vs. web-based)
- messaging apps
- blogging
- social networking
- video conferencing.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Business Procedures
Client Service
E-business
Introduction to Social Media Strategy
Network Design
Networking Infrastructures
Social Media Strategy
Website Design

Complying with Laws and Professional Ethics

Task Number 68

Comply with copyright laws when creating advanced digital media, multimedia, and website design projects.

Definition
Compliance should include

- summarizing the reasons for copyright laws and the importance of compliance
- identifying copyright laws pertaining to elements used in advanced projects
- distinguishing between national and international copyright issues and laws
- explaining the consequences of illegal use of copyrighted elements
- describing methods for obtaining permission to use copyrighted elements
- adhering to copyright laws when using elements from other sources
- maintaining documentation of permissions granted for use of copyrighted elements.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design and Application
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Partnership with Business
Task Number 69

Demonstrate ethical and appropriate use of elements in advanced projects.

Definition
Demonstration should include

- distinguishing between legal and ethical questions (i.e., how use of elements may be legal but unethical)
- explaining the criteria for determining whether use of elements is ethical and/or appropriate or unethical and/or inappropriate
- rejecting unethical and/or inappropriate use of elements.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Business Ethics
Business Law

Task Number 70

Comply with licensing agreements pertaining to software usage.

Definition
Compliance should include

- explaining licensing agreements related to desktop publishing, interactive multimedia, and website creation software
- developing a method to ensure compliance with licensing agreements (e.g., a checklist)
- demonstrating compliance with licensing agreements when using software
- differentiating between royalty-free and copyright-free media.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Business Ethics
Business Law
E-business
Public Service Announcement
Website Design

Task Number 71

Demonstrate procedures to guard against computer crimes.
Definition
Demonstration should include use of techniques and software to prevent or stop crimes such as

- computer viruses
- computer hacking
- cyberstalking
- cyberbullying
- software piracy
- identity theft
- data theft
- device theft.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Business Ethics
Business Law
Cyber Security
E-business
Website Design

Relating Classroom Applications to Business and Industry

Task Number 72
Describe new and emerging trends in digital media technologies.

Definition
Description should include use of a variety of current, credible sources (e.g., books, periodicals, Internet) to gather such information as

- popularity of a given trend
- circumstances that led to the rise of the trend
- advantages of the trend
- business application of the trend
- forecast regarding the trend’s continued success
- possible consequences of the trend becoming the norm.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Business Procedures
E-business
Introduction to Social Media Strategy
Network Design
Networking Infrastructures
Social Media Strategy
Website Design

Task Number 73
Explain the importance of digital media to business and industry.

Definition
Explanation should include

- listing ways graphic design documents, interactive multimedia presentations, and web applications affect performance of crucial tasks such as
  - disseminating information
  - promoting a company or a product
  - delivering products and services
  - tracking customer satisfaction
  - conducting surveys about products or services
  - describing how these tasks might be performed if digital technologies are not available.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Computer Applications
Database Design and Application
Digital Video
E-business
Electronic Career Portfolio
Graphic Design
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Partnership with Business
Publication Design
Sales Presentation
Spreadsheet Applications
Website Design
Word Processing

Task Number 74
Create a design team project for a business and/or industry client.

Definition
Creation should include

- demonstrating project-management skills, particularly those applicable to working in teams or collaborating
- identifying client’s objectives (e.g., purpose, message, audience to be reached)
- identifying client’s requirements (e.g., format, deadline, budget)
- selecting appropriate software and other design tools for the project
- planning and designing documents in accordance with the client’s objectives and requirements
- developing documents
- testing electronic documents, if applicable (e.g., troubleshooting, debugging)
- evaluating the project (e.g., gathering feedback, revising).
Task Number 75

Deliver a presentation according to the principles of effective communication.

Definition
Delivery should include

- wearing professional attire
- incorporating verbal skills (e.g., clarity of content, effective elocution)
- maintaining good posture
- using technology applications effectively
- adhering to a planned timeframe
- use of supplemental and/or collateral materials
- answering questions effectively.
Task Number 76

Critique a presentation.

Definition
Critique should determine whether

- audience and purpose were effectively addressed
- content was clear and concise
- content was delivered effectively
- length of presentation was appropriate
- presenter’s attire and demeanor were appropriate
- visuals and collateral materials were effective in communicating the message
- delivery was enhanced through the use of presentation software.

FBLA Competitive Events and Activities Area
Business Knowledge & Skills
American Enterprise Project
Business Financial Plan
Business Plan
Community Service Project
Digital Video
E-business
Electronic Career Portfolio
Entrepreneurship
Graphic Design
Hospitality and Event Management
International Business
Introduction to Business Presentation
Introduction to Event Planning
Introduction to Social Media Strategy
Management Decision Making
Management Information Systems
Marketing
Network Design
Partnership with Business
Public Service Announcement
Publication Design
Sales Presentation
Social Media Strategies
Sports and Entertainment Management
Website Design

Preparing for Industry Certification

Task Number 77
Describe the process and requirements for obtaining industry certifications related to the course.

Definition

Description should include a list of industry certifications related to the Design, Multimedia, and Web Technologies, Advanced course and the process/requirements for obtaining the certifications from:

- official websites of the testing organization and/or vendor
- materials from publishers that have developed practice materials and tests based on information from the testing organization and/or vendor
- information from certified instructors or industry-certified professionals.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Electronic Career Portfolio
Job Interview

Task Number 78

Identify testing skills and strategies for a certification examination.

Definition

Identification of testing skills and strategies should be undertaken by:

- conducting an Internet research project
- reviewing materials from exam and practice-exam publishers
- interviewing certified instructors and/or industry-certified professionals.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Computer Applications
Database Design and Application
Electronic Career Portfolio
Job Interview
Spreadsheet Applications
Word Processing

Task Number 79

Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions similar to those on certification exams).

Definition

Demonstration should include successfully completing practice examinations for selected certifications related to the course obtained from vendor sites and/or materials from publishers. The level of performance on a practice examination serves as a gauge of the applicant's readiness for formal industry testing.
Task Number 80

Complete an industry certification examination representative of skills learned in this course (e.g., MOS, IC3, ACA, CIW).

Definition

Completion of an industry certification examination will be achieved when the student applicant earns an examination score deemed "passing" by the testing organization. Qualifying examinations are those currently approved at the state level as representative of Design, Multimedia, and Web Technologies, Advanced skills.

Students should be encouraged to attain industry certification as evidence of their design, multimedia, and web technologies skill level and general employability.

Developing Employability Skills

Task Number 81

Identify job opportunities in the digital media industry.

Definition

Identification should result in a list of available jobs and should include the

- prerequisites for each
- salary range for each
- method of applying for each
- duties of each.

Students should use job databanks, the Internet, and other sources to search for job opportunities.
Task Number 82

Update a professional portfolio.

Definition
Update should include a résumé and a selection of the student’s most recent digital media projects, multimedia projects, and website projects produced in the course, illustrating the student’s knowledge, skills, and abilities.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Electronic Career Portfolio
Graphic Design
Job Interview
Publication Design
Website Design

Task Number 83

Deliver an oral presentation of a professional portfolio.

Definition
Delivery should include
- demonstrating preparation and knowledge of the content
- maintaining eye contact with audience
- speaking clearly and loudly enough for the entire audience to hear
- speaking with confidence and enthusiasm
- standing up straight and avoiding swaying and other nervous habits
- answering questions effectively.

FBLA Competitive Events and Activities Area
Business Knowledge and Skills
Electronic Career Portfolio
Graphic Design
Job Interview
Publication Design
Website Design

Task Number 84

Investigate new and emerging technological trends in the workplace.

Definition
Investigation should include an analysis of such trends as
- video and/or teleconferencing
- workgroup computing
- telecommuting
- virtual office employment
- use of voice recognition
- use of electronic calendars and task lists
- gig employment.

**FBLA Competitive Events and Activities Area**

**Business Knowledge and Skills**
**Business Procedures**
**Electronic Career Portfolio**
**Job Interview**

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## SOL Correlation by Task

### Enhancing Project Management Skills

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>English:</th>
<th>Mathematics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Identify components of project management.</td>
<td>10.5, 11.5, 12.5</td>
<td>COM.2, COM.2, COM.3, COM.5, COM.9, COM.11, COM.12, COM.14, COM.17, AFDA.8, PS.7*, PS.8*, PS.9*</td>
</tr>
<tr>
<td>40</td>
<td>Explain how project management is applied to design, multimedia, and web technologies.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Apply the project-management cycle to a class project.</td>
<td>10.5, 11.5, 12.5</td>
<td></td>
</tr>
</tbody>
</table>

### Designing and Creating Advanced Visual Design Projects

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>English:</th>
<th>Mathematics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Select appropriate software for a visual design project.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Apply principles of design, layout, and typography to an advanced visual design project.</td>
<td>10.5, 11.5, 12.5</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Convert graphic elements and text to compatible formats for integration into publications.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Create a variety of specialized materials for traditional and digital delivery.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Analyze options and costs for printing a graphic design project.</td>
<td>10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
<td></td>
</tr>
</tbody>
</table>

### Designing and Creating Advanced Interactive Multimedia Projects

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>English:</th>
<th>Mathematics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>Incorporate audio and visual elements into an interactive multimedia project.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Convert a publication to an interactive multimedia project.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Research the different types of interactive multimedia software available.</td>
<td>10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
<td></td>
</tr>
</tbody>
</table>

### Examining Web Technologies

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>English:</th>
<th>Mathematics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Analyze networking essentials in website construction.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Identify key Internet protocols.</td>
<td>10.5, 11.5, 12.5</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Explain IP addresses and the domain naming system (DNS).</td>
<td>10.5, 11.5, 12.5</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Evaluate website hosting options.</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
<td></td>
</tr>
</tbody>
</table>

### Designing and Creating Advanced Websites
54 Evaluate an advanced website according to design principles. English: 10.5, 11.5, 12.5
55 Create a website by applying design principles. English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5
56 Examine new and emerging trends in web development. English: 10.2, 10.5, 10.8, 11.2, 11.5, 11.8, 12.2, 12.5, 12.8
57 Create an advanced website, using design software and/or a programming language. English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5
58 Use client-side and server-side scripting to create database-driven websites and applications. English: 10.5, 11.5, 12.5
59 Describe the design of websites for accessibility and accommodation of persons with special needs. English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5
60 Apply search engine optimization (SEO) techniques in websites. English: 10.5, 11.5, 12.5
61 Edit an advanced website. English: 10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7
Mathematics: AFDA.8, PS.8*, PS.9*
62 Test an advanced website. English: 10.5, 11.5, 12.5
63 Describe the process for publishing a website. English: 10.5, 11.5, 12.5
64 Demonstrate publishing, updating, and maintaining an advanced website. English: 10.5, 11.5, 12.5
65 Research the effects of new and emerging technologies on web use. English: 10.2, 10.5, 10.8, 11.2, 11.5, 11.8, 12.2, 12.5, 12.8
66 Identify the basic components of an e-commerce website. English: 10.5, 11.5, 12.5
67 Explore the use of communication tools. English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5

Complying with Laws and Professional Ethics
68 Comply with copyright laws when creating advanced digital media, multimedia, and website design projects. English: 10.5, 11.5, 12.5
History: Govt 7, 8, 9, 15
69 Demonstrate ethical and appropriate use of elements in advanced projects. English: 10.5, 11.5, 12.5
70 Comply with licensing agreements pertaining to software usage. English: 10.5, 11.5, 12.5
History: Govt 7, 8, 9, 15
71 Demonstrate procedures to guard against computer crimes. English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5
History: Govt 7, 8, 9, 15

Relating Classroom Applications to Business and Industry
73 Explain the importance of digital media to business and industry. English: 10.5, 11.5, 12.5
74 Create a design team project for a business and/or industry client. English: 10.5, 11.5, 12.5
Mathematics: COM.1, COM.2, COM.3, COM.11, COM.17
75 Deliver a presentation according to the principles of effective communication. English: 10.5, 11.5, 12.5
76 Critique a presentation. English: 10.5, 11.5, 12.5

Preparing for Industry Certification
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Language Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>Describe the process and requirements for obtaining industry certifications related to the course.</td>
<td>English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
</tr>
<tr>
<td>78</td>
<td>Identify testing skills and strategies for a certification examination.</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>79</td>
<td>Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions similar to those on certification exams).</td>
<td>English: 10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>80</td>
<td>Complete an industry certification examination representative of skills learned in this course (e.g., MOS, IC3, ACA, CIW).</td>
<td>English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
</tr>
</tbody>
</table>

**Developing Employability Skills**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Language Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>81</td>
<td>Identify job opportunities in the digital media industry.</td>
<td>English: 10.2, 10.5, 10.8, 11.2, 11.5, 11.8, 12.2, 12.5, 12.8</td>
</tr>
<tr>
<td>82</td>
<td>Update a professional portfolio.</td>
<td>English: 10.1, 10.5, 11.1, 11.5, 12.1, 12.5</td>
</tr>
<tr>
<td>83</td>
<td>Deliver an oral presentation of a professional portfolio.</td>
<td>English: 10.1, 11.1, 12.1</td>
</tr>
<tr>
<td>84</td>
<td>Investigate new and emerging technological trends in the workplace.</td>
<td>English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
</tr>
</tbody>
</table>

**Teacher Resources**

**Instructional Scenarios**

**Layout and Design**

**Duty/Concept Area(s):** Applying Principles of Layout and Design

**Scenario:**

Congratulations! You have been hired by GamesRUs. You have been given two tasks to help promote the new PS5 and two new games that come as a package.

- The first task is to create a catalog page that presents the items as a package deal. Remember the idea of the catalog page is to make the item look presentable and desirable.
- The second task is to create an advertisement flyer for each of the products. The advertisement flyer should show all three products and make them look appealing.

**Big Question:** How important are aesthetics in advertising presentations?

**Focused Questions:** Does presentation matter in advertising?

**Design Event Advertising Project**

**Duty/Concept Area(s):** Designing and Creating Visual Design Projects

**Scenario:**

You are a graphic designer working for an advertising agency and have been assigned to create a poster for an upcoming event. You will need to utilize imagery and typography to properly depict the event to its audience. The client is requiring the following information to be included on the poster: date, time, venue, cost, and name of event at a minimum.

**Big Question:**
• How will the overall design (e.g., font, color, layout) of my project appeal to my audience?
• What design choices did I make to ensure my design markets to the correct audience?

Focused Questions:
• Who is your audience?
• What color scheme will you use? Why?
• What event does the poster advertise?
• What color format will I work in (e.g., RGB/CMYK)?
• Does my poster define the purpose without distracting the audience?

SOL Correlation: COM.1, COM.10, COM.12

What Happened?

Duty/Concept Area(s): Demonstrating Knowledge of Hardware, Software, and Operating Systems

Scenario:
Follow how a document is created, saved, edited and processed, and retrieved. Discuss how networks carry the information. By the end of the unit, students will understand the information processing cycle. Move into a discussion of processing speeds and how the amount of memory impacts processing. Discuss file types and extensions (e.g., concurrent discussion of what application software is, operating systems, security, and other utility software)

Big Question: How is data use and storage impacted by the hardware and software used?

Focused Questions:
• What is the information processing system? Give examples of input and output devices.
• What is the most efficient way to organize files?

Project-Based Assessment:
Have students in groups of four create a presentation on the information processing cycle (target audience can be varied: older citizens, language impacted people, younger students, etc.). Have them include examples of input and output devices that are used along the data paths of the information processing cycle. Have students create a PDF file of the project to be shared with instructor and editable document file (note: have students compare file sizes).

Resources:
Webopedia
Lifewire: Accessories and hardware
Planning Tank: Information processing cycle
Computer Basics: Input Devices

How-To Informational Video

Duty/Concept Area(s): Designing and Creating Multimedia Projects

Scenario:
You have a reputation for creating informative and instructional videos. As your reputation grows, the number of requests for your videos has grown. You decide to create a how-to video so others have access to your methods.

1. Brainstorm and identify a topic for your how-to video.
2. Identify your audience.
3. Identify effective components for a how-to video.
   a. Search for some similar how-to videos
   b. Determine what is valuable and what needs improvement. Review the design
      elements, purpose, audience, and text.
4. Share potential ideas with peers for feedback.
5. Create a storyboard for your video. Include the script, sketches, pictures, or video clip for
   each sequence.
   a. Include an introduction.
   b. Include a fun fact or trivia related to your topic.
   c. Illustrate steps that are easy to understand for all viewers.
6. Create the final video, making sure it is no longer than three minutes.

**Big Question:** What makes an informational video go viral?

**Focused Questions:**
1. Why would someone watch your video?
2. How do you capture your target audience’s attention?
3. What makes a viewer abandon a video in the first few seconds?
4. Why do people prefer watching informational videos over using printed directions?
5. When, where, and on what size device will someone watch your video?

**Resources:**
- Adobe Spark
- Adobe Spark Video Maker

**Holiday Web Page**

**Duty/Concept Area(s):** Designing and Creating Websites

**Scenario:**
In the week before the winter break, Design, Multimedia, and Web Technologies students will
create a festive holiday web page using the following resource: GCTAA: Web Page Design

**Big Question:** How do HTML and CSS combine to produce a web page combining text, color,
text fonts, and images?

**Focused Questions:**
- What is the difference between absolute and relative size units and the appropriate uses of
  each?
- What is a text font? How can you use custom fonts with CSS?

**SOL Correlation:**
Reinforce and apply concept of ratio and proportion as it relates to specifying relative sizes
which scale with the dimensions of the viewport in which they are rendered.
- ARI Curriculum Companion: Working with Ratios and Proportions

**Project-Based Assessment:**
Students will use their web development skills to create a web page involving HTML, CSS,
images, and a custom font.

**Resources:**
- GCTAA: Web Page Design
Design Event Advertising Project

Duty/Concept Area(s): Designing and Creating Advanced Visual Design Projects

Scenario:

You are a graphic designer working for a publishing company and are tasked with the job of creating three magazine covers for an organization. You will need to define a specific industry or hobby to establish the theme. Remember that the cover reinforces the brand of the magazine.

Magazine covers offer information about what is inside that specific issue. Your designs should identify the personality of the magazine and attract the correct target audience. All magazine covers are required to include: logo, lead article, price, bar code, main image (photograph or illustration created by you), and at least three cover lines (articles).

Big Question:

- How will the overall design (e.g., font, color, layout) of my project appeal to my audience?
- What design choices did I make to ensure successful sales of the publication?

Focused Questions:

- Who is your audience?
- What color scheme will you use? Why?
- What color format will I work in (e.g., RGB/CMYK)?
- Is the magazine cover easy to read?
- Does the magazine cover stand out and make you want to pick it up as you walk by?

SOL Correlation: COM.1, COM.10, COM.12

Project Management

Duty/Concept Area(s): Enhancing Project Management Skills

Scenario:

The teacher will define project management and then lead a discussion on the steps required for project management success. Also, there should be a discussion of the results of not following the appropriate steps.

Big Question:

What are the skills associated with project management?

Focused Questions:

What skills associated with project management leads to the project being successful?

Project-Based Assessment:

Project management is a series of task that work together to make a project successful. The practice of project management assists you in avoiding red flags, saving money, and catching risks before they become a problem. Match the project management task on the left with the results on the right by simply draw a line from the tasks to the results.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan the entire project out with the team working on the project.</td>
<td>The project is going as planned and manages to stay on budget.</td>
</tr>
<tr>
<td>The project team work together to set deadlines for small tasks affiliated with bigger tasks necessary for the project.</td>
<td>The team knows the goal of the project and when it is expected to end.</td>
</tr>
<tr>
<td>Tasks</td>
<td>Results</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Have meeting with people affected by the project.</td>
<td>Any member of the team can review the project chart and know when their task is due.</td>
</tr>
<tr>
<td>Set a budget for the project.</td>
<td>Members of the team are excited about the project and know exactly what to expect.</td>
</tr>
<tr>
<td>Develop a Gantt chart and make it public so all members of the project team know the deadlines.</td>
<td>All members of the project team are aware of smaller tasks deadlines.</td>
</tr>
</tbody>
</table>

Customer Website Project

Duty/Concept Area(s): Examining Web Technologies; Designing and Creating Advanced Websites

Scenario:
Build a website for a customer to meet their needs, utilizing HTML, CSS, and JavaScript.

Big Question: What are the skills and business practices needed to develop a public facing website for a customer?

Focused Questions:
- What are the customer needs that can be addressed using a public website?
- How can an iterative approach to web development involving customer feedback be utilized to meet customer needs?
- What are the specific technical skills required?
- What are the design skills required?

Project-Based Assessment:
- GCTAA Project: Part 1
- GCTAA Project: Part 2

Resources:
Getting Down with UNIX CLI
Getting Down with HTML
Getting Down with CSS

Cyber Security and Cyber Forensics Infusion Units

Cyber Security and Cyber Forensics Infusion Units (CYBR) were designed to be infused with designated CTE courses to help students in those programs achieve additional, focused, validated tasks/competencies in personal and professional cyber security skills. These units are not mandatory, and, as such, the tasks/competencies are marked as "optional," to be taught at the instructor's discretion.

Entrepreneurship Infusion Units

Entrepreneurship Infusion Units may be used to help students achieve additional, focused competencies and enhance the validated tasks/competencies related to identifying and starting a
new business venture. Because the unit is a complement to certain designated courses and is not mandatory, all tasks/competencies are marked “optional.”
Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- 3D Visualization & Animation Examination
- Adobe Certified Associate (ACA) Examinations
- App Development with Swift Level 1 Examination
- Avid Certified Professional for Media Composer Certification Examination
- Avid Certified User for Media Composer Certification Examination
- AWS Certified Cloud Practitioner Certification Examination
- Certified Internet Web (CIW) Advanced HTML 5 and CSS 3 Specialist Examination
- Certified Internet Web (CIW) Data Analyst Examination
- Certified Internet Web (CIW) Database Design Specialist Examination
- Certified Internet Web (CIW) E-Commerce Services Specialist Examination
- Certified Internet Web (CIW) Internet Business Associate Examination
- Certified Internet Web (CIW) JavaScript Specialist Examination
- Certified Internet Web (CIW) Social Media Strategist Examination
- Certified Internet Web (CIW) Site Development Associate Examination
- Certified Internet Web (CIW) User Interface Designer Examination
- Certified Internet Web (CIW) Web Security Specialist Examination
- Code HS Level 1 Certification Examinations
- College and Work Readiness Assessment (CWRA+)
- Computer Programming Assessment
- IC3 Digital Literacy Certification Examination
- Interactive Media Assessment
- Microsoft Certified Azure Fundamentals Examination
- Microsoft Dynamics 365 Fundamentals Examination
- Microsoft Office Specialist (MOS) Examinations
- Microsoft Technology Associate (MTA) Examinations
- National Career Readiness Certificate Assessment
- Workplace Readiness Skills for the Commonwealth Examination
- Accounting (6320/36 weeks)
- Accounting, Advanced (6321/36 weeks)
- Business Law (6131/36 weeks)
- Business Law (6132/18 weeks)
- Business Management (6135/36 weeks)
- Business Management (6136/18 weeks)
- Computer Information Systems (6612/36 weeks)
- Computer Information Systems (6614/18 weeks)
- Computer Information Systems, Advanced (6613/36 weeks)
- Computer Information Systems, Advanced (6615/18 weeks)
- Design, Multimedia, and Web Technologies (6630/36 weeks)
- Design, Multimedia, and Web Technologies (6632/18 weeks)
• Digital Applications (6611/36 weeks)
• Digital Applications (6617/18 weeks)
• Information Technology Fundamentals (6670/36 weeks)
• International Baccalaureate Business Management (IB6135/36 weeks)
• International Baccalaureate Information Technology in a Global Society (IB6613/36 weeks)
• Legal Administration (6736/18 weeks)
• Legal Administration (6735/36 weeks)
• Medical Administration (6731/18 weeks)
• Medical Administration (6730/36 weeks)
• Office Administration (6622/18 weeks)
• Office Administration (6621/36 weeks)
• Office Specialist I--Preparation (6740/36 weeks)
• Office Specialist II--Preparation (6741/36 weeks)
• Office Specialist III--Preparation (6742/36 weeks)
• Principles of Business and Marketing (6116/18 weeks)
• Principles of Business and Marketing (6115/36 weeks)
• Programming (6640/36 weeks)
• Programming, Advanced (6641/36 weeks)

Career Cluster: Arts, Audio/Video Technology and Communications

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio and Video Technology and Film</td>
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<td>Audio-Video Designer, Engineer</td>
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<tr>
<td></td>
<td>Editor</td>
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<td></td>
<td>Graphic Designer</td>
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<tr>
<td></td>
<td>Multimedia Artist, Animator</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td>Program Director</td>
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<td>Commercial Photographer</td>
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<td>Costume Designer</td>
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<td>Fashion Designer</td>
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<td>Fashion Illustrator</td>
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<td>Interior Designer</td>
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<tr>
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<td>Media Planner, Buyer</td>
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<td>Multimedia Artist, Animator</td>
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<td>Photographic Process Technician</td>
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<td>Textile Designer</td>
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<tr>
<td>Engineering Manager</td>
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<tr>
<td>Industrial Engineering Technician</td>
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<tr>
<td>Landscape Architect</td>
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<tr>
<td>Machine Setter, Operator</td>
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<tr>
<td>Materials Engineer</td>
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<tr>
<td>Mechanical Drafter</td>
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<tr>
<td>Mechanical Engineering Technician</td>
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<tr>
<td>Network and Computer Systems Administrator</td>
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<tr>
<td>Network Systems and Data Communication Analyst</td>
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<td>Production, Planning, Expediting Clerk</td>
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<td>Project Manager</td>
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<tr>
<td>Statistician</td>
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<tr>
<td>Stockroom, Warehouse, or Storage Yard Stock Clerk</td>
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<tr>
<td>Systems Analyst</td>
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<tr>
<td>Technical Writer</td>
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<tr>
<td>Telecommunications Specialist</td>
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<td>Transportation Manager</td>
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