

# Career & Technical Education | Information Technology

## Creating & Editing Digital Graphics

### Subject Code: 145100

### Outcome & Competency Descriptions

#### Course Description:

Students will learn to design, develop, and produce interactive media for projects, web sites, and social media contexts. Students will demonstrate methods of creating professional quality media using commercial and open-source software.

#### Strand 1. Business Operations/21st Century Skills

Learners apply principles of economics, business management, marketing, and employability in an entrepreneur, manager, and employee role to the leadership, planning, developing, and analyzing of business enterprises related to the career field.

#### Outcome: 1.1. Employability Skills

Develop career awareness and employability skills (e.g., face-to-face, online) needed for gaining and maintaining employment in diverse business settings.

#### Competencies

- 1.1.5. Develop strategies for self-promotion in the hiring process (e.g., filling out job applications, resumé writing, interviewing skills, portfolio development).
- 1.1.6. Explain the importance of work ethic, accountability and, responsibility and demonstrate associated behaviors in fulfilling personal, community, and workplace roles.
- 1.1.7. Apply problem-solving and critical-thinking skills to work-related issues when making decisions and formulating solutions.
- 1.1.9. Give and receive constructive feedback to improve work habits.
- 1.1.11. Recognize different cultural beliefs and practices in the workplace and demonstrate respect for them.
- 1.1.12. Identify healthy lifestyles that reduce the risk of chronic disease, unsafe habits and abusive behavior.

## **Outcome: 1.2. Leadership and Communications**

Process, maintain, evaluate, and disseminate information in a business.  
Develop leadership and team building to promote collaboration.

### **Competencies**

- 1.2.1. Extract relevant, valid information from materials and cite sources of information.
- 1.2.2. Deliver formal and informal presentations.
- 1.2.3. Identify and use verbal, nonverbal, and active listening skills to communicate effectively.
- 1.2.4. Use negotiation and conflict-resolution skills to reach solutions.
- 1.2.5. Communicate information (e.g., directions, ideas, vision, workplace expectations) for an intended audience and purpose.
- 1.2.6. Use proper grammar and expression in all aspects of communication.
- 1.2.7. Use problem-solving and consensus-building techniques to draw conclusions and determine next steps.
- 1.2.8. Identify the strengths, weaknesses, and characteristics of leadership styles that influence internal and external workplace relationships.
- 1.2.9. Identify advantages and disadvantages involving digital and/or electronic communications (e.g., common content for large audience, control of tone, speed, cost, lack of non-verbal cues, potential for forwarding information, longevity).
- 1.2.12. Use technical writing skills to complete forms and create reports.

## **Outcome: 1.3. Business Ethics and Law**

Analyze how professional, ethical, and legal behavior contributes to continuous improvement in organizational performance and regulatory compliance.

### **Competencies**

- 1.3.7. Identify the labor laws that affect employment and the consequences of noncompliance for both employee and employer (e.g., harassment, labor, employment, employment interview, testing, minor labor laws, Americans with Disabilities Act, Fair Labor Standards Acts, Equal Employment Opportunity Commission [EEOC]).

## **Outcome: 1.7. Entrepreneurship / Entrepreneurs**

Analyze the environment in which a business operates and the economic factors and opportunities associated with self-employment.

### **Competencies**

- 1.7.13. Protect intellectual property and knowledge (e.g., copyright, patent, trademark, trade secrets, processes).

### **Outcome: 1.8.      Operations Management**

Plan, organize and monitor an organization or department to maximize contribution to organizational goals and objectives.

#### **Competencies**

- 1.8.1.    Forecast future resources and budgetary needs using financial documents (e.g., balance sheet demand forecasting, financial ratios).
- 1.8.2.    Select and organize resources to develop a product or a service.
- 1.8.3.    Analyze the performance of organizational activities and reallocate resources to achieve established goals.
- 1.8.4.    Identify alternative actions to take when goals are not met (e.g., changing goals, changing strategies, efficiencies).
- 1.8.8.    Identify routine activities for maintaining business facilities and equipment.
- 1.8.9.    Develop a budget that reflects the strategies and goals of the organization.

### **Outcome: 1.10.      Sales and Marketing**

Manage pricing, place, promotion, packaging, positioning and public relations to improve quality customer service.

#### **Competencies**

- 1.10.2    Determine the customer's needs and identify solutions.
- 1.10.3    Communicate features, benefits, and warranties of a product or service to the customer.
- 1.10.5    Monitor customer expectations and determine product/services satisfaction by using measurement tools.
- 1.10.6    Discuss the importance of correct pricing to support a product or service's positioning in the marketing mix.
- 1.10.7    Describe the importance and diversity of distribution channels (i.e., direct, indirect) to sell a product.
- 1.10.8    Use promotional techniques to maximize sales revenues (e.g., advertising, sales promotions, publicity, public relations).

## **Strand 2. IT Fundamentals**

Learners apply fundamental principles of IT, including the history of IT and its impact on society, common industry terms, systems theory, information storage and retrieval, database management, and computer hardware, software, and peripheral device configuration and installation. This base of knowledge and skills may be applied across the career field.

### **Outcome: 2.9. Project Concept Proposal**

Develop a project concept proposal.

#### **Competencies**

- 2.9.1. Identify the scope and purpose of branding.
- 2.9.2. Determine the scope and purpose of the project.
- 2.9.3. Determine the target audience, client needs, expected outcomes, objectives, and budget.
- 2.9.4. Develop a conceptual model and design brief for the project.
- 2.9.5. Develop a timeline, a communication plan, a task breakdown, costs (e.g., equipment, labor), deliverables, and responsibilities for completion.
- 2.9.6. Develop and present a comprehensive proposal to stakeholders.

### **Outcome: 2.10. Equipment**

Select, prepare, operate, and maintain equipment.

#### **Competencies**

- 2.10.2. Identify processor, memory, storage, power, and environmental requirements.
- 2.10.4. Identify software application requirements.
- 2.10.7. Backup, restore, test, archive, and manage data.

### **Outcome: 2.12. Performance Tests and Acceptance**

Develop performance tests and acceptance plans.

#### **Competencies**

- 2.12.1. Create a written procedure agreed by the stakeholders and project team for determining the acceptability of the project deliverables.
- 2.12.6. Seek stakeholder acceptance upon successful completion of the test plan.

### **Outcome: 2.13. Rollout and Handoff**

Plan rollout and facilitate handoff to customers.

#### **Competencies**

- 2.13.1. Include overall project goals and timelines in the rollout plan.
- 2.13.2. Communicate rollout plans to key stakeholders in a timely manner.
- 2.13.3. Conduct final review and approvals according to company standards.

### **Outcome: 2.14. Artificial Intelligence**

Understand and apply prescribed methods of using Artificial Intelligence.

#### **Competencies**

- 2.14.3. Write and revise a prompt to generate the desired response from an AI.
- 2.14.4. Evaluate the result of an AI query on a variety of parameters (e.g. validity, relevance, authenticity, potential bias and hallucinations).

## **Strand 7. Digital Media**

Learners apply principles of digital media to produce interactive media; develop and produce multimedia applications; integrate typography into media; create 3D models and 2D and 3D animation; and create digital video, audio, and photographs.

### **Outcome: 7.1. Interactive Media**

Describe and explain interactive media and interactive media production.

#### **Competencies**

- 7.1.1. Identify the types and uses of interactive media environments (e.g., web-based, kiosks, games, mobile devices, video, print).
- 7.1.2. Describe the components of interactive media.
- 7.1.3. Identify the major characteristics of interactive media presentations.
- 7.1.7. Identify the intellectual property rights, responsibilities, and controls related to interactive media.
- 7.1.8. Analyze the social and cultural implications of interactive media.
- 7.1.9. Identify major applications for interactive media (e.g., sales and marketing, interactive advertising, education, online learning, corporate training, corporate communications, news, entertainment).
- 7.1.10. Identify specific uses for interactive media in potential markets.

### **Outcome: 7.2. Multimedia Tools**

Develop navigational structures, scripts, storyboards, and flowcharts for multimedia applications.

#### **Competencies**

- 7.2.5. Make preliminary sketches showing placement of images and text on screen.
- 7.2.7. Select colors based on color theory and psychology.
- 7.2.10. Select and create visual design elements appropriate for the intended audience and use.
- 7.2.11. Develop client personas and narratives for intended project outcomes.

**Outcome: 7.3.      Production**

Produce interactive media.

**Competencies**

- 7.3.1. Select media elements to be used (e.g., title graphics, charts, graphs).
- 7.3.2. Generate text for multi-image presentations (e.g., title graphics, charts, graphs).
- 7.3.3. Incorporate graphics (e.g., digital, hand-drawn, photographic).
- 7.3.5. Prepare and integrate photographic images and special effects with graphic images.
- 7.3.10. Produce, test, debug, and archive final product.
- 7.3.11. Apply accessibility guidelines to the selection and production of interactive media.

**Outcome: 7.4.      Graphics**

Construct and manipulate digital graphics.

**Competencies**

- 7.4.1. Select and manipulate color profiles (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone) for appropriate uses.
- 7.4.2. Select color, shape, size, and texture of objects.
- 7.4.3. Create or acquire graphics.
- 7.4.4. Manipulate and layer objects.
- 7.4.5. Differentiate between vector and raster images.
- 7.4.6. Select graphic software applications based on budget, technical capabilities and hardware specifications to meet intended project outcome.
- 7.4.7. Optimize and export graphics files for intended use.
- 7.4.8. Manipulate graphic objects.
- 7.4.9. Compress and decompress graphic files.
- 7.4.10. Describe and select color profiles (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone).

**Outcome: 7.5.      Typography**

Integrate typography in media.

**Competencies**

- 7.5.1. Identify typographic measurements (e.g., picas, points, pixels, ems).
- 7.5.2. Mix families of type within a project.
- 7.5.3. Select appropriate kerning, leading, tracking, and other related formatting.

- 7.5.4. Identify appropriate typefaces (e.g., serif, sans serif, Web Safe, screen, print).
- 7.5.5. Prepare a type style guide.

**Outcome: 7.9.      Photographs**  
Create photographs.

**Competencies**

- 7.9.1. Select and set up lighting needed (e.g., electronic flash units, reflectors, bounce, spot, daylight).
- 7.9.2. Select appropriate camera or device.
- 7.9.3. Select and attach lenses (e.g., wide-angle, telephoto, zoom) and filters (e.g., color-compensating, polarizing, special effects).
- 7.9.4. Determine composition, formal qualities, scale, and use of space.
- 7.9.5. Use International Standards Organization (ISO), shutter speed, aperture, and white balance settings to shoot manual photographs.
- 7.9.6. Edit photographs (e.g., color corrections, cropping, enhancements).
- 7.9.7. Identify differences between film photographs and digital images.