DIGITAL ART AND DESIGN 1, 2, 3, AND 4
Course Codes: 6120, 6121, 6122, 6123

PROGRAM DESCRIPTION: The ever changing and global technological advancements offer newer and broader opportunities in the creative industry. The Digital Art and Design program prepares students for a multitude of careers in the graphic design field. This program provides instruction in layout, computer design, electronic art, color enhancement, and digital photography. Students use design concepts, principles, and processes that meet client expectations using Adobe Creative Suite Software: Photoshop, Illustrator, and InDesign. Students will have the opportunity to attain Adobe Certified Associate certification. Career development and employability skills are the foundation of all career and technology education. Students will compile their works for inclusion in a portfolio, for use in this program of study, the workforce, or postsecondary education.

RECOMMENDED GRADE LEVEL: 9 Level 1 with Teacher Recommendation/Approval
                                                        10-11 Levels 1 & 2
                                                        11-12 Levels 3 & 4

RECOMMENDED UNITS: 1 (120 hours) 2 (240 hours) 3 (360 hours) Carnegie
                                                     units per course

RECOMMENDED INDUSTRY STANDARD SOFTWARE:
                                                    Adobe Creative Suite

RESOURCES: **MySCTextbooks**

A. SAFETY

Effective professionals know the academic subject matter, including safety as required for proficiency within their area. They will use this knowledge as needed in their role. The following accountability criteria are considered essential for students in any program of study.

1. Identify lab policies and procedures.
2. Identify lab equipment.
3. Identify contact information for classroom emergencies.
4. Demonstrate safety procedures used in digital art and design program including safe body mechanics and ergonomics.
5. Identify all fire exits.
6. Demonstrate proper workspace cleaning procedures.

B. STUDENT ORGANIZATIONS

Effective professionals know the academic subject matter, including professional development, required for proficiency within their area. They will use this knowledge as needed in their role. The following accountability criteria are considered essential

for students in any program of study.

1. Identify the purpose and goals of a Career and Technology Student Organization (CTSO).
2. Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.
3. Explain the benefits and responsibilities of being a member of a CTSO.
4. List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.
5. Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.

C. LEGAL REQUIREMENTS AND ETHICAL CONSIDERATIONS

Effective professionals know the academic subject matter, including the ethical use of technology as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation.
2. Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.
3. Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.
4. Explain the consequences of social, illegal, and unethical uses of technology (e.g., piracy; cyberbullying; illegal downloading; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).
5. Discuss legal issues and the terms of use (e.g., plagiarism) related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, and other elements for personal use.
6. Define differences between classroom and professional practices in regard to copyrights.
7. Define the impact of the Americans with Disabilities Act and other civil rights legislation   on a business/organization, its employees, and its customers.
8. Analyze accessibility laws and their impact on the end-user.
9. Describe ethical and legal practices of safeguarding the confidentiality of business-related information.
10. Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.

D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS

Effective professionals know the academic subject matter, including positive work practices and interpersonal skills, as needed in their role. The following accountability criteria are considered essential for students in any program of study.

1. Demonstrate punctuality.

2. Demonstrate self-representation.
3. Demonstrate work ethic.
4. Demonstrate respect.
5. Demonstrate time management.
6. Demonstrate integrity.
7. Demonstrate leadership.
8. Demonstrate teamwork and collaboration.
9. Demonstrate conflict resolution.
10. Demonstrate perseverance.
11. Demonstrate commitment.
12. Demonstrate a healthy view of competition.
13. Demonstrate a global perspective.
14. Demonstrate health and fitness.
15. Demonstrate self-direction.
16. Demonstrate lifelong learning.

E. PROFESSIONAL KNOWLEDGE

Effective professionals know the academic subject matter, including positive work practices and interpersonal skills, as needed in their role. The following accountability criteria are considered essential for students in any program of study.

1. Demonstrate effective speaking and listening skills.
2. Demonstrate effective reading and writing skills.
3. Demonstrate mathematical reasoning.
4. Demonstrate job-specific mathematics skills.
5. Demonstrate critical-thinking and problem-solving skills.
6. Demonstrate creativity and resourcefulness.
7. Demonstrate an understanding of business ethics.
8. Demonstrate confidentiality.
9. Demonstrate an understanding of workplace structures, organizations, systems, and climates.
10. Demonstrate diversity awareness.
11. Demonstrate job acquisition and advancement skills.
12. Demonstrate task management skills.
13. Demonstrate customer-service skills.

F. BASIC DRAWING SKILLS AND MEDIA EXPOSURE

Effective professionals demonstrate appropriate drawing skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Create line drawings.
2. Design compositions.
3. Render artwork using pencil.

4. Construct a color chart for color theory and harmony.
5. Create thumbnails and rough sketches.
6. Prepare photos and artwork for reproduction.
7. Prepare compositional layout.
8. Prepare electronic proofs.
9. Identify various printing processes.

G. TYPOGRAPHY

Effective professionals demonstrate appropriate typography skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Identify various forms and styles of typography.
2. Illustrate x-height, mean-line, base-line, ascenders, descenders, serifs, and leading, as well as their roles in measuring and designing with type.
3. Illustrate caps, lowercase, uppercase, small caps, and ligatures.
4. Define dingbats, bullets, rules, glyphs, and symbols, plus their uses in publications.
5. Distinguish between display (headline) type and body (text) type by their point sizes, styles, and uses.
6. List the major typefaces/font families and their uses.
7. Explain letter spacing, tracking, kerning, baseline shift, and horizontal scale.
8. Demonstrate the type arrangements: flush left–ragged right, flush right–ragged left, centered, justified, force justified, and widows and orphans.

H. PRE-PRODUCTION PRACTICES

Effective professionals demonstrate appropriate pre-production practices, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Demonstrate the ability to communicate with industry-appropriate language (e.g., signatures, mock-up, two-up, media, substrates).
2. Demonstrate skills used when meeting with clients.
3. Demonstrate project management skills to estimate costs and establish a budget.
4. List practices used to schedule project workflow.
5. State the importance of obtaining approval/sign-off.
6. Demonstrate best practices in concept development including layout and copy.
7. Maintain an ongoing sketch book/notebook.
8. Produce draft quality drawings, including thumbnail drawings and rough sketches (integral to the creative process).
9. Produce a comprehensive layout (integral to the creative process).
10. Brainstorm a design concept based on customer need and target audience.
11. Demonstrate an understanding of the relationship between message, color, typography, images, and layout.
12. Demonstrate an understanding of corporate identity including how branding

affects consumer recognition.

13. Explain color theory as it applies to design: additive, subtractive, CMYK, RGB, and Web safe.
14. Demonstrate an understanding of color theory by describing primary, secondary, and tertiary colors including hue, saturation, and lightness.
15. Demonstrate appropriate use of space (positive vs. negative; size and proportion).
16. Identify elements of design: line, shape, form, space, texture, value, and color.
17. Identify principles of design: contrast, unity, repetition, rhythm, balance, emphasis, and proportion.

I. PRODUCTION PRACTICES

Effective professionals demonstrate appropriate production practices, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. List procedures used to ensure proper execution of a production plan include keeping time log.
2. Demonstrate various United States Postal Service (USPS) design constraints and provide resources for more information on USPS requirements.
3. Demonstrate various electronic media design platforms.
4. Describe techniques used to monitor, review, and adjust production schedule as necessary to meet quality standards.
5. Choose appropriate design software applications to create art for end use.
6. Create original production pieces, meeting goals, timeline, and elements of style and design.
7. Demonstrate appropriate editing, proofing (spelling/grammar), and journalism skills.
8. Demonstrate procedures to prepare work for presentation (mounting, craftsmanship, digital portfolio).
9. Critique a layout to determine if it meets the customer's needs, and suggest improvements.
10. Collaborate with others to design and produce a finished project.
11. Utilize the critique and refinement strategy as part of the design process to achieve project goals.
12. Evaluate the work of others, drawing on design principles and project goals, to provide clear, specific, and constructive feedback.
13. Perform proportionate reasoning to estimate quantities, such as determining the appropriate scale of an image for a given sheet size.
14. Recognize and utilize size, weight, quantities, type, and amount of paper necessary for fulfilling a job order.

J. PHOTOGRAPHIC PRINCIPLES

> **Effective professionals demonstrate appropriate typography skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.**

1. Distinguish between digital and conventional photography.
2. Utilize design elements and apply photographic composition techniques (e.g., rule of thirds, point-of-view, framing).
3. Capture digital images using a scanner and other digital devices.
4. Demonstrate appropriate scanner/program operations for line artwork and continuous tone in both black/white and color.
5. Identify high/low resolution images and describe the uses of each.
6. Download/upload a digital image from various sources.
7. Scale and transform images proportionally (maintain aspect ratio) using the proper settings in order to maintain the appropriate resolution for output.
8. Apply camera modes, light and color principles, image stabilization, exposure, shutter speed, and aperture.
9. Describe file storage in memory cards and estimate the number of photographs a memory card can hold based on the resolution of the photographs and other factors (e.g., fine, large, megapixels, raw, etc.).
10. Define and explain white balance, positive and negative space, depth of field, and shutter speed.
11. Read and interpret instructional narratives, such as technical manuals, to perform basic photographic techniques.

K. DOCUMENT LAYOUT: ADOBE INDESIGN

> **Effective professionals demonstrate appropriate document layout skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.**

1. Define and utilize units of measure and proper uses of each (e.g., points, pixels, and/or inches).
2. Import copy from a word processing program and format in a page layout program.
3. Set text with appropriate margins, alignment, formatting, gutters, and proper leading.
4. Design and produce a document using desired fonts, styles, margins, indents, tabs, and colors.
5. Create multiple page documents using text blocks, graphics, frames, and headings using drop caps and wrap-a-rounds (run-a-rounds).
6. Create documents using grids, templates, master pages, paragraph style sheets, and character style sheets.
7. Determine appropriate size, resolution, and format of images before placing, embedding, and/or linking into a document.
8. Perform pre-flight, package, and compress files to transport to third party. Identify and resolve problems that may occur including resolution, overset text, missing fonts, missing graphics, number of inks, etc.

9. Export print-ready Portable Document Format (PDF) using page layout software.
10. Identify trim size, bleed size, and live area of a project.
11. Demonstrate having a plan by creating a dummy and impose a multiple-page document.
12. Locate examples of ad sizes from publications (full-page, half-page, and quarter-page ads).
13. Demonstrate an understanding of native file formats and file extensions (e.g., ai, jpg, psd, gif, png, indd, pdf, etc.), file organization, and file naming conventions.
14. Demonstrate an understanding of usability.
15. Demonstrate image/file conversions such as but not limited to CMYK process printing, RGB, and various color matching systems.
16. Demonstrate knowledge of spell check and proofreaders marks in order to proofread, edit, and make corrections/adjustments to copy.
17. Produce digital files using appropriate dots per inch (DPI) and pixels per inch (PPI) resolution for media.
18. Apply mathematics concepts and measurement techniques to design and finish layouts (e.g., converting fractions to decimals to the precision of 1/16 of an inch, working with different measurement units, and utilizing rulers and guidelines.)
19. Incorporate the use of image manipulation and illustration software into final products.

L. IMAGE CREATION AND MANIPULATION: ADOBE PHOTOSHOP

Effective professionals demonstrate appropriate image creation and manipulation skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Define raster graphics.
2. Use multiple input devices to import photos, images, and other content for a variety of digital uses.
3. Use proper settings when choosing line-art, grayscale, and color scanning.
4. Analyze RGB, CMYK, and grayscale image modes and their usage.
5. Demonstrate proficiency with various photo editing tools such as retouch, modify, correct image options and palettes, including but not limited to cropping, resizing, retouching, making selections, and using layers.
6. Edit a raster image by using color correction and tone control.
7. Demonstrate the use of various selection tools and techniques to save selection.
8. Improve photocomposition and focal points as well as color and tonal balance of an image.
9. Demonstrate layer management techniques including groups and folders.
10. Define and demonstrate non-destructive and destructive editing techniques including: adjustment layers, masks, and channels.
11. Differentiate between raster file and bitmap formats.
12. Explain how to save an original file with layers for future editing.
13. Demonstrate the procedures for editing raster-based imagery, both high resolution and low resolution, in CMYK and RGB, and preparing files for both print and web media.

M. VECTOR ILLUSTRATION: ADOBE ILLUSTRATOR

Effective professionals demonstrate appropriate vector illustration skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Define vector graphics.
2. Compare and contrast differences and appropriate applications of vector-based and bitmap images.
3. Use typography as a design element.
4. Set type on a path and within a shape.
5. Define and create outlines from text.
6. Apply patterns, textures, and gradients.
7. Apply layer management techniques.
8. Apply proper settings when saving or importing/exporting graphics.
9. Create or trace drawings/photographs with pen or live trace.
10. Create basic shapes using drawing or pen tool such as triangles, boxes, circles, etc.
11. Demonstrate assigning fill and stroke to objects.
12. Demonstrate proficiency in transforming objects.
13. Apply attributes, styles, and effects.
14. Assign color matching systems (PMS), blends, and effects to create a unified vector image by selecting colors from color swatch libraries.

N. COMPUTER BASICS

Effective professionals demonstrate appropriate computer literacy skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Compare basic computer platforms and operating systems between various computing devices.
2. Demonstrate troubleshooting skills and procedures.
3. Create and manage files and folders.
4. Understand and describe local and network drives, remote, and shared storage.
5. Save, retrieve, load, format, import data into, and export a variety of electronic documents (word processing, spreadsheet, database, design software, etc.).
6. Utilize desktop and online file management services to store, share, and backup files.
7. Demonstrate the proper use of a variety of external peripherals and how they connect to a computer.
8. Demonstrate the understanding of file sharing, file permissions, security, and transferring information.

O. PROFESSIONAL DEVELOPMENT

Effective professionals prepare for careers in the Digital Art and Design industry. The following accountability criteria are considered essential for students in Digital and Art Design program of study.

1. Identify industries, organizations, and careers that require design skills.
2. Create professional materials: cover letter, resume, formal letters, and emerging technologies.
3. Analyze your digital footprint, including but limited to gamer tags, avatars, e-mail addresses, and social media content.
4. Research, develop, maintain, and present a portfolio.
5. Utilize critique and peer review including a respect for peers' work and the ability to give and receive constructive criticism.
6. Conduct critiques, peer reviews, and self-evaluations using rubrics.

OPTIONAL UNITS/ NOT REQUIRED SKILLS IN DIGITAL ART AND DESIGN

CREATING 2-D ANIMATIONS

Effective professionals demonstrate appropriate 2-D animation skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Define animation and its relationship to time.
2. Create a storyboard of proposed animation.
3. Create a simple frame-based/key frame animation.
4. Demonstrate use of controller palettes to review, loop, and play back animation.
5. Create a layer-based animation.
6. Animate a project using motion tweening.

WEB DESIGN

Effective professionals demonstrate appropriate web design skills, as needed in their role. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Analyze existing Web sites for style and content.
2. Compare and contrast preferred formats for various page elements.
3. Analyze and design Web sites for aesthetic appeal.
4. Create a basic site architecture.
5. Plan a Web page design with thumbnail sketches, rough layouts, and site map.
6. Create a functional and esthetic interface.
7. Organize, optimize, and collect images and content for Web site design.
8. Create consistency between Web design and existing marketing materials.
9. Describe the delivery of prototype to client and receipt of feedback from client.

10. Define file management and illustrate examples of root/folder management.
11. Execute final Web pages from a Web authoring program.
12. Manage various asset folders.
13. Optimize photos and illustrations.
14. Identify Web color and resolution.
15. Create components to be used on a Web page (rollovers, buttons, banners, etc.).

Course Materials and Resources

Course Academic Standards and Indicators