South Carolina CTE

Digital Art & Design 3 (2024)

INTERMEDIATE/ADVANCED DRAWING SKILLS AND RENDERING

Professionals demonstrate appropriate drawing skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Create line drawings. A.1

2 Design compositions that demonstrate the design principles (e.g. balance, proportion, unity.) A.2

3 Render artwork using appropriate medium (e.g., ink, charcoal, pencil, digital tablet). A.3

4 Apply color theory and harmony to layouts. A.4

5 Create thumbnails and rough sketches. A.5

6 Prepare photos and artwork for reproduction. A.6

7 Prepare compositional layout. A.7

8 Prepare electronic proofs. A.8

9 Apply principles of visual hierarchy. A.9

TYPOGRAPHY

Professionals demonstrate appropriate typography skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Demonstrate the appropriate use of forms and styles of typography. B.1

2 Demonstrate the understanding and appropriate use of the anatomy of type (e.g., baseline, ascenders, descenders, serifs, and leading.) B.2

3 Demonstrate the appropriate use caps, lowercase, uppercase, small caps, and ligatures. B.3

4 Define dingbats, bullets, rules, glyphs, and symbols, plus their uses in publications. B.4

5 Organize page information utilizing visual hierarchy. B.5

6 List the major typefaces/font families and their uses, including web and chromatic fonts. B.6

7 Apply letter spacing, tracking, kerning, leading, baseline shift, and horizontal scale. B.7

Demonstrate the type arrangements: flush left–ragged right, flush right– ragged left, centered, justified, force justified, and widows and orphans. B.8

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PRE-PRODUCTION PRACTICES

Professionals demonstrate appropriate pre-production practices. 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). C.1

2 Demonstrate skills used when meeting with clients. C.2

3 Demonstrate project management skills to estimate costs and establish a budget. C.3

4 List practices used to schedule project workflow. C.4

5 State the importance of obtaining approval/sign-off. C.5

6 Demonstrate best practices in concept development including layout and copy. C.6

7 Effectively use the elements of design: line, shape, form, space, texture, value, and color. C.7

8 Effectively use the principles of design: contrast, unity, repetition, rhythm, balance, emphasis, and proportion in a layout. C.8

9 Produce a design concept based on customer need and target audience. C.9

10 Create a clear message using color, typography, imagery, and layout. C.10

11 Demonstrate an understanding of corporate identity including how branding affects consumer recognition. C.11

12 Implement color theory as it applies to design: additive, subtractive, CMYK, RGB, Hex, Pantone. C.12

13 Use a color blindness simulator to recognize and accommodate the needs of color-blind users when making color choices in a design. C.13

14 Demonstrate appropriate use of space (positive vs. negative; size and proportion). C.14

PRODUCTION PRACTICES

Professionals demonstrate appropriate production practices. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Demonstrate the ability to design within the constraints of various direct mail and digital publication requirements. D.1

2 Describe techniques used to monitor, review, and adjust production schedule as necessary to meet quality standards Level 3) D.2

3 Choose appropriate design software applications to create art for end use. D.3

4 Create original production pieces while serving client needs, meeting a deadline, and implementing the design elements and principles. D.4

5 Identify and utilize appropriate editing, proofing (spelling/grammar), and journalism skills. D.5

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Maintain a working portfolio. D.6

7 Demonstrate procedures to prepare work for presentation – digital portfolio, mounting, craftsmanship. D.7

8 Critique a layout based on project requirements. D.8

9 Collaborate with others to design and produce a finished project. D.9

10 Utilize the iterative design process to achieve project goals. D.10

11 Critique the work of others, drawing on design principles and project goals, to provide clear, specific, and constructive feedback. D.11

12 Calculate the appropriate scale of a layout for a given output size & format. D.12

13 Recognize and utilize size, weight, type, and amount of paper necessary for fulfilling project goals. D.13

DOCUMENT LAYOUT: ADOBE INDESIGN

Professionals demonstrate appropriate document layout skills. 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). E.1

2 Import copy and format in a page layout program. E.2

3 Set text with appropriate margins, alignment, formatting, gutters, and leading. E.3

4 Design and produce a document using desired fonts, styles, margins, indents, tabs, pagination, and colors. E.4

5 Create multiple page documents using text blocks, graphics, frames, and headings using drop caps and text wraps. E.5

6 Create documents using grids, templates, master pages, paragraph style sheets, and character style sheets. E.6

7 Determine appropriate size, resolution, and format of images before placing, embedding, and/or linking into a document. E.7

8 Perform pre-flight, package, and compress files for export. Resolve problems that may occur including image resolution, overset text, missing fonts, missing graphics, number of inks, etc. E.8

9 Export print-ready Portable Document Format (PDF). E.9

10 Identify trim size, bleed size, and live area of a project. E.10

11 Create a dummy mockup or comp of a multipage document that demonstrates planned page layout and imposed pages based on production method (conventional or digital printing). E.11

12 Demonstrate the ability to create an ad to size. E.12

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. E.13

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14 Perform image/file conversions as appropriate (e.g. CMYK, RGB, and various color matching systems). E.14

15 Demonstrate knowledge of spell check and proofreaders' marks in order to proofread, edit, and make corrections/adjustments to copy. E.15

16 Produce digital files using appropriate resolution. E.16

17 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). E.17

18 Publish/export a digital document to streamline content sharing and editing. E.18

IMAGE CREATION AND MANIPULATION: ADOBE PHOTOSHOP

Professionals demonstrate appropriate image creation and manipulation skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Demonstrate proficiency with various photo editing tools such as, modify, correct image options and palettes, including but not limited to cropping, resizing, retouching, making selections, and using layers. F.1

2 Demonstrate non-destructive and destructive editing techniques including adjustment layers, masks, and smart objects. F.2

3 Recognize the affiliation between the vector tools in Photoshop and those of Illustrator. (e.g. the Pen, Freeform Pen, Curvature Pen, Add Anchor Point, Delete Anchor Point, Convert Point, Rectangle, Rounded Rectangle, Ellipse tool, etc.) F.3

4 Demonstrate how to publish your image in a different format, rather than a working format. F.4

5 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. F.5

6 Identify and apply the ethical principles and values for the responsible use of Generative AI tools in applications such as Adobe Photoshop. F.6

7 Demonstrate an efficient workflow using keyboard shortcuts. F.7

8 Adjust basic reconstruction and retouching techniques. F.8

9 Create precise selections using tools like the Lasso Tools, Pen Tool, Magic Wand, Quick Selection Tool and Object Selection Tool. F.9

10 Apply layer masks effectively. F.10

11 Apply advanced typographic settings, such as match font, and adjusting character and paragraph styles. F.11

12 Demonstrate advanced retouching and restoration using techniques like frequency separation. F.12

13 Apply the use of the Clone Source panel for precise cloning. F.13

14 Organize projects with a well-structured layer and folder hierarchy. F.14

15 Demonstrate the application of layer styles and effects to modify design elements. F.15

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16 Demonstrate the importing of assets and the exporting of designs/imagery. F.16

17 Demonstrate automation tasks such as using actions to create various effects. F.17

18 Integrate Photoshop into Creative Cloud design and production workflow to manipulate and update images. F.18

VECTOR ILLUSTRATION: ADOBE ILLUSTRATOR

Professionals demonstrate appropriate vector illustration skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Use vector graphics appropriately. G.1

2 Compare and contrast differences and appropriate applications of vector-based and raster images. G.2

3 Use typography as a design element. G.3

4 Set type on a path and within a shape. G.4

5 Create outlines from text. G.5

6 Demonstrate the application of patterns, textures, and gradients to objects. G.6

7 Demonstrate assigning fill and stroke to objects. G.7

8 Demonstrate the application of attributes, styles, and effects. G.8

9 Demonstrate proficiency in transforming objects. G.9

10 Demonstrate the use of layers for the organization of artwork. G.10

11 Demonstrate the use of proper settings when saving or importing/exporting graphics. G.11

12 Identify settings for the optimal image tracing results. G.12

13 Create custom paths using an appropriate tool. G.13

14 Demonstrate the ability to apply color swatches in order to match for print. G.14

15 Develop color schemes. G.15

16 Demonstrate the use of 3D tools and effects to enhance text and objects. G.16

17 Demonstrate the use of color in ways which allow for adequate color contrast for visually impaired or color blind. G.17

18 Define bezier curve and other design-related terms. G.18

19 Demonstrate the use of visual and typographical hierarchy. G.19

20 Demonstrate use and importance of rulers, guides and grids. G.20

21 Demonstrate proficiency in using the pen tool for image creation. G.21

22 Demonstrate the use of libraries for asset management and distribution. G.22

23 Prepare for Adobe Illustrator certification test. (Adobe Certified Professional in Graphic Design and Illustration using Adobe Illustrator). G.23

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Professionals prepare for careers in the Digital Art and Design industry. The ...llowing accountability criteria are considered essential for students in the Digital ...d Art Design program of study.

1. Prepare materials for interaction with industries and organizations that require design skills (resume, digital and print portfolio, social media presence, etc.) H.1
2. Refine and promote a digital or print portfolio. H.2
3. Receive and provide constructive feedback through client and peer critiques. H.3
4. Apply the ethical principles and values that guide the responsible use of digital tools and techniques in digital art and design, such as honesty, integrity, and respect, including the use of emerging technologies such as AI. H.4
5. Investigate and address ethical issues that arise from the creation, manipulation, and dissemination of digital artworks, such as authenticity, plagiarism, attribution, consent, and privacy. H.5

EMERGING TECHNOLOGIES

Professionals explore emerging technologies to enhance and improve their existing skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Identify and describe an emerging technology, whether technical, software, or hardware- based and its application in the digital art world. I.1
2. Use appropriate technical, software, or hardware tools to create an original digital artwork which integrates an identified emerging technology (e.g., virtual reality, augmented reality, or 3D printing). I.2

DIGITAL SCULPTING: ZBRUSH

Professionals demonstrate appropriate character and concept development skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1. Demonstrate efficient navigation of the Zbrush interface (e.g., gizmo, camera). J.1
2. Block out organic shapes. J.2
3. Use primitives and DynaMesh basics to work efficiently (e.g., sculpting, combining, imperfections). J.3
4. Demonstrate the use of various types of brushes and tools. (e.g., brushes, symmetry, smoothing). J.4
5. Demonstrate how to properly prepare a model for compositing in Photoshop or other appropriate application. J.5
6. Utilize Zspheres to block out a design. J.6
7. Demonstrate the use of polypainting to develop a model (e.g., nanomesh, fibermesh). J.7
8. Experiment with lighting in the scene. J.8

MOTION GRAPHICS: CINEMA 4D

Professionals demonstrate appropriate animation and motion graphics skills using Cinema 4D. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

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1. Create and edit 3D models, animations, and simulations using Cinema 4D. K.1
2. Demonstrate the manipulation of objects. K.2

3 Demonstrate the application of materials. K.3

4 Demonstrate the use of MoGraph to create dynamic animations. K.4

5 Demonstrate the use of fields to control elements. K.5

6 Apply the elements and principles of design to compose effective 3D designs. K.6

7 Demonstrate effective use of cameras, lighting, and rendering tools to create a desired effect. K.7

8 Demonstrate effective typographical design and animation. K.8

9 Demonstrate how to prepare a design for export into another application. K.9

10 Demonstrate the use of Redshift renderer to create advanced lighting and material designs. K.10

MOTION GRAPHICS: ADOBE AFTER EFFECTS

Professionals demonstrate appropriate animation and motion graphics skills using Adobe After Effects. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Create, import, and organize assets in a project. L.1

2 Use folders and labels to organize and document their project. L.2

3 Create, modify, and arrange compositions and layers. L.3

4 Use precomps (precomposing), nesting, and proxies to optimize and simplify their workflow. L.4

5 Use blending modes, track mattes, masks, and alpha channels to control the visibility and transparency of layers L.5

6 Use keyframes, expressions, and graphs to animate the properties and attributes of layers L.6

7 Demonstrate the application of effects and presets to enhance the appearance and functionality of layers. L.7

8 Create, edit, and animate text and shape layers. L.8

9 Demonstrate the application of text animators, text presets, shape tools, and shape modifiers to create dynamic typography and graphics. L.9

10 Render and export their compositions for publication to the desired output format. L.10

PHOTOGRAPHIC PRINCIPLES

Proficient professionals demonstrate appropriate photography skills. The following accountability criteria are considered essential for students in the Digital Art and Design program of study.

1 Demonstrate a RAW photography workflow. M.1

2 Capture digital images using a scanner and other digital devices. M.2

3 Demonstrate appropriate scanner/program operations. M.3

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Demonstrate the application of focus, aperture, shutter, and ISO to achieve a properly exposed image, and to achieve the desired effect. M.4

5 Demonstrate the use and operation of studio flash units to create and control artificial light sources. M.5

6 Demonstrate the use of a camera and flash modifiers such as umbrellas, reflectors, or gels to alter the light and shadow created by the flash unit. M.6

7 Demonstrate advanced use of composition elements and techniques by composing simple and balanced shots using the rule of thirds, framing, leading lines, and perspective. M.7

8 Demonstrate basic editing by performing basic cropping, rotation, and exposure adjustments using simple editing tools. M.8

9 Demonstrate and identify the application of visual storytelling through photography. M.9

10 Demonstrate post-processing skills by utilizing more advanced editing software for photo enhancement. M.10

11 Provide and receive constructive feedback on photographs by participating in critiques. M.11

CREATING ANIMATIONS

Proficient professionals demonstrate appropriate animation skills. 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. N.1

2 Create a storyboard of proposed animation. N.2

3 Create a simple frame-based/key frame animation. N.3

4 Demonstrate use of controller palettes to review, loop, and play back animation. N.4

5 Create a layer-based animation. N.5

6 Animate a project using motion tweening. N.6

WEB DESIGN

Proficient professionals demonstrate appropriate web design skills. 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. O.1

2 Compare and contrast preferred formats for various page elements. O.2

3 Analyze and design websites for functionality and visual appeal. O.3

4 Evaluate the user interface and enhance the user experience through web design best practices. O.4

5 Plan a web page design with thumbnail sketches, wireframe, and site map. O.5

6 Create a functional plan for a user interface in the form of a mockup. O.6

7 Organize, optimize, and collect images and content for website design. O.7

Integrate client or individual brand identity and standards into web design. O.8

Edit and refine design based on client feedback. O.9

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SAFETY	**Proficient professionals know the academic subject matter, including safety as required for proficiency within their area. 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.
STUDENT ORGANIZATIONS	**Proficient professionals know the academic subject matter, including professional development required for proficiency within their area. 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.
LEGAL REQUIREMENTS AND ETHICAL CONSIDERATIONS	**Proficient professionals know the academic subject matter, including the ethical use of technology. 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.

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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.

PERSONAL QUALITIES AND EMPLOYABILITY SKILLS

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

1 Demonstrate creativity and innovation.

2 Demonstrate critical thinking and problem-solving skills.

3 Demonstrate initiative and self-direction.

4 Demonstrate integrity.

5 Demonstrate work ethic.

6 Demonstrate conflict resolution skills.

7 Demonstrate listening and speaking skills.

8 Demonstrate respect for diversity.

9 Demonstrate customer service orientation.

10 Demonstrate teamwork.

PROFESSIONAL KNOWLEDGE

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

1 Demonstrate global or “big picture” thinking.

2 Demonstrate career and life management skills and goal-making.

3 Demonstrate continuous learning and adaptability skills to changing job requirements.

4 Demonstrate time and resource management skills.

5 Demonstrates information literacy skills.

6 Demonstrates information security skills.

7 Demonstrates information technology skills.

8 Demonstrates knowledge and use of job-specific tools and technologies.

Demonstrate job-specific mathematics skills.

) Demonstrates professionalism in the workplace.

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11 Demonstrate reading and writing skills.

12 Demonstrate workplace safety.