Tennessee CTE

Digital Arts & Design III

Safety

1 **Demonstrate the ability to comply with personal and environmental safety practices associated with art and design applications: the use of adhesives; hand tools; machines; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.** 1

- A Inspect, maintain, and employ safe operating procedures with tools and equipment. 1.1A
- B Adhere to responsibilities, regulations, and Occupational Safety & Health Administration (OSHA) policies regarding reporting of accidents and observed hazards, and regarding emergency response procedures. 1.1B
- C Complete a safety test with 100 percent accuracy. For equipment used in the course, complete equipment examinations with 100 percent accuracy in which the student performs an operational checkout by the instructor. Maintain a record of safety examinations and equipment examinations. 1.1C

Professionalism and Ethics

1 **Collaboratively develop a professionalism rubric for professional attributes required within art and design professions. Research job descriptions, career information, and online job boards to determine general employability skills and character traits most often mentioned or desired for digital art and design professionals. For each item on the rubric, define the characteristic, state why it is important for professionals working in these fields, and list performance indicators for the skill. Possible skills include:** 2.1

- A Creative design skills 2.1A
- B Ethical business practices 2.1B
- C Honesty 2.1C
- D Respect 2.1D
- E Communication 2.1E
- F Responsibility 2.1F

2 **Examine current and emerging ethical and legal issues related to the digital art and design industry (e.g., copyright, font licensing, piracy, photo manipulation, sustainability). Choose one such issue and develop a claim about its impact on society and the responsibility of the digital art and design professional.** 2.2

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esearch the range of credentials one can earn with advanced study of art and lesign at the postsecondary level (i.e., technical certification, BA, BS, MFA, etc.). nvestigate both in-state and out-of-state postsecondary programs in a variety of

	digital art and design fields, including but not limited to graphic design, photography, industrial design, digital media, animation, and more. Synthesize research conducted in previous Digital Arts & Design courses to update the portfolio career plan to achieve post-high school goals. 3.1
Multimedia	**1 Drawing on research from industry journals and similar publications, analyze how the principles of design converge with digital technology and imagery in motion graphics and multimedia. Select a multimedia product and explain how the principles of design work in harmony with technical skills such as creating visual layouts, illustrations, and photographs to achieve the final product.** 4.1
	2 Apply the design process to complete advanced multimedia projects of increasing complexity for a range of applications such as print, web, film, and marketing communications. Demonstrate the ability to select and use the appropriate tools and procedures to accomplish project goals. Gather and arrange image, audio, and media for incorporation into comprehensive media projects. For example, create an interactive presentation that a client could use as a marketing and educational tool for potential customers. 4.2
Web Applications	**7 Research design constraints affecting the design of graphics and layouts for web devices, including computers and mobile devices. Describe how design processes for the web differ from design processes for print or product creation. Evaluate and critique webpages based on the principles and elements of design and other considerations related to user friendliness and navigability.** 7
	8 Apply illustration, photography, and layout skills to create interactive media for use on the web. For example, create a navigation bar, logo, or banner to incorporate in a web page. 8
	9 Describe the steps involved in creating webpages. Use a content management system or web design software to create a simple informative webpage. Apply the principles of design and composition. Prepare images and illustrations in the proper format for use on the web. For example, as part of a design package for a client, create a mock-up of a webpage incorporating color schemes and graphics that coordinate with the design package. 9
Three-Dimensional Graphics	**10 Research and compile examples of digital three-dimensional modeling and graphics created by design professionals in a range of industries, such as entertainment, health sciences, architecture, engineering, aerospace, advertising, and graphic design. In a visual display such as an infographic, evaluate examples from at least five industries, citing the sources used.** 10
	11 Perform multistep procedures in industry software to create three-dimensional models of increasing complexity. Apply design principles, mathematical concepts, and software tools to develop the design, including but not limited to: 11
	A Applying surface materials 11A

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B Creating a background environment 11B

C Adding lighting features to create shading and shadow effects 11C

D Calculating area, diameter, circumference, and volume for two- and three-dimensional objects employing related geometric terminology 11D

E Positioning cameras to set up scenes 11E

F Rendering the models to create finished products 11F

G Generating videos of three-dimensional models such as walkthroughs or flyovers 11G

Animation

12 Synthesize research from informational texts, including industry magazines and online resources, to create an annotated timeline or visual graphic emphasizing significant time periods, technological advances, and key figures in animation. 12

13 Research and report on the principles of animation. Examine movies, cartoons, or other animations to identify applications of the principles of animation. As a class, create, review, and revise a presentation explaining the principles of animation by citing resources and identifying examples in works of animation. 13

14 Describe the animation process, outlining the steps involved in planning, creating, and editing an animation. Drawing on research, perform multistep procedures to develop a three-dimensional animation. Steps should include: 14

A Brainstorming to develop an idea 14A

B Conducting research to determine the target audience 14B

C Conducting research to develop visual ideas 14C

D Producing sketches of the presentation 14D

E Creating an environment for the animation 14E

F Applying the principles of animation toward the completion of a working animation 14F

15 Create a storyboard to develop animation concepts. The storyboard should present visual elements of the animation, illustrations of the sequence of actions, and major themes and ideas. Present the storyboard to peers for evaluation. Revise and refine the storyboards based on constructive feedback. 15

16 Apply three-dimensional modeling skills to create the elements of an animation, including creating, modifying, and manipulating polygonal objects and creating and applying surface textures. 16

17 Compare and contrast the properties and uses of different types of lighting for an animation scene, including three point lighting, animated lighting, indirect and direct lighting, and environmental lighting. Use software tools to apply

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	appropriate lighting to the scene, utilizing the principles of design and animation. 17
	18 Follow multistep procedures to use cameras, including animated cameras, to create animations. Demonstrate the ability to bring conceptual ideas from the storyboards to fruition. 18
	19 Utilize animation software to understand and apply the mechanics of animation. Apply basic software techniques to create animations. For example, utilize software tools to simulate a mechanical cycle such as a ball dropping and bouncing. Techniques include the following: 19 A Create and modify key frames and poses 19A B Change an objects state or position over time 19B C Establish an object's speed 19C D Move an object along a path 19D E Apply basic rigging to a model 19E
	20 Apply various animation effects when working on animation projects, including particle systems, environmental simulation (wind, gravity, time), and other effects. Use appropriate rendering settings to render a sequence of frames. Save the file in appropriate formats for given applications and explain why a particular format is most acceptable for the selected application and audience, such as the use of a .swf file on a webpage. 20
Research Project	**21 In preparation for a design project, perform in-depth research to investigate the context of the project's use and the potential users of the project. Create an informative essay describing the context of the design, citing both qualitative and quantitative research. For example, for a three-dimensional animation of a product's design, make a claim for the targeted audience and the environment in which the product will be used, citing specific textual evidence to support the claim.** 21
Design Projects	**22 Apply the design process to complete projects of increasing complexity, combining multiple media to communicate, market, or advertise across different platforms, including print, web, film, and other digital forums, in order to maximize audience reach and reinforce message. Describe why multiple media are needed to accomplish project goals; specifically, justify why a web-based format is appropriate for one audience whereas a print format is more appropriate for another. Demonstrate the ability to select and use the appropriate tools, procedures, and project management techniques to accomplish project goals. Prepare a persuasive narrative to explain the project to a client, communicating the project in such a way that is understandable to the audience.** 22
	Utilize the critique and refinement strategy as part of the design process to achieve project goals. As part of a design project, present preliminary design

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		ideas in a way that is understandable to an audience using both visual and verbal explanations. Note constructive criticism received and use it to influence design refinement. Similarly, evaluate the work of others, drawing on design principles and project goals to provide clear, specific, and constructive feedback. 23
	24	**Complete a project using multiple software applications. Determine the appropriate software for each specific task and efficiently manage file content. Convert and export files as needed for the given application. For example, import photographs and illustrations into three-dimensional modeling software by appropriately linking the files.** 24
Business Management	**25**	**Analyze the components of a professional design proposal. Write an informative text describing the purpose of each element of a proposal. Include strategies for the designer to use to generate the information contained in each section.** 25
	26	**Use an online editing tool to develop a professional proposal for a specific project. Use a variety of sources to gather data, cite each source, and briefly describe why the chosen source is reliable.** 26
Portfolio	**27**	**Update the digital portfolio to reflect the cumulative total of all projects undertaken across the program of study. Compile information, sketches, photographs, illustrations, layouts, and design projects from each course. Include artifacts that demonstrate ability to use industry-specific technology. Select projects from course work that showcase qualifications as a design student. Upon completion of this course, the following artifacts should reside in the student portfolio:** 27 A Career plan 27A B Professionalism rubric 27B C Example designs showing best work from each course 27C