Kentucky CTE

Media Arts: Virtual Design 480904 (2026–2027)

Demonstrate personal growth and personal style through a professional portfolio. 1	**1 Demonstrate personal growth and personal style through a professional portfolio.** 1
Demonstrate a proficient level of compositional theory, principles, and elements of design animations and gaming using diverse media. 2	**2 Demonstrate a proficient level of compositional theory, principles, and elements of design animations and gaming using diverse media.** 2
Make development decisions based on your analysis and interpretation of animation and game design specifications. 3	**3 Make development decisions based on your analysis and interpretation of animation and game design specifications.** 3
Demonstrates knowledge of flowcharts, storyboards, and wireframes to create animations and games. 4	**4 Demonstrates knowledge of flowcharts, storyboards, and wireframes to create animations and games.** 4
Conduct visual research to provide references for a project. 5	**5 Conduct visual research to provide references for a project.** 5
Conceptualize and utilize virtual 3D space. 6	**6 Conceptualize and utilize virtual 3D space.** 6
Co mo Skip to main content	**ompare and contrast modeling methodologies (for example, polygons, NURBS, plines).** 7

methodologies (for example, polygons, NURBS, splines). 7

Explain the application of low polygon and high polygon construction. 8

8 Explain the application of low polygon and high polygon construction. 8

Modify and manipulate polygonal and NURBS objects. 9

9 Modify and manipulate polygonal and NURBS objects. 9

Modify and apply surface attributes. 10

10 Modify and apply surface attributes. 10

Create an original texture and animate textures over time. 11

11 Create an original texture and animate textures over time. 11

Identify UVW mapping coordinates. 12

12 Identify UVW mapping coordinates. 12

Create normal maps and explain various mapping techniques. 13

13 Create normal maps and explain various mapping techniques. 13

Describe the difference between forward and inverse kinematics. 14

14 Describe the difference between forward and inverse kinematics. 14

Create a parent/child hierarchy. 15

15 Create a parent/child hierarchy. 15

Create a joint/bone chain and apply rotational limits. 16

16 Create a joint/bone chain and apply rotational limits. 16

Practice skinning models. 17

17 Practice skinning models. 17

Apply and adjust weight maps. 18

18 Apply and adjust weight maps. 18

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Demonstrate and explain the use of constraints to animate objects. 19

constraints to animate objects. 19	
Explain the properties and uses of different types of lights. 20	20 Explain the properties and uses of different types of lights. 20
Use three-point lighting in a project. 21	21 Use three-point lighting in a project. 21
Compare and contrast indirect lighting and direct lighting. 22	22 Compare and contrast indirect lighting and direct lighting. 22
Create environmental lighting and animated lighting. 23	23 Create environmental lighting and animated lighting. 23
Describe the use of final gather and global illumination. 24	24 Describe the use of final gather and global illumination. 24
Demonstrate and apply the 12 basic principles of animation to animated sequences. 25	25 Demonstrate and apply the 12 basic principles of animation to animated sequences. 25
Explain the role of visual language in an animation project. 26	26 Explain the role of visual language in an animation project. 26
Illustrate actions with sequential panels. 27	27 Illustrate actions with sequential panels. 27
Evaluate, Revise and refine storyboards for effectiveness and feasibility. 28	28 Evaluate, Revise and refine storyboards for effectiveness and feasibility. 28
Describe the appropriate shop composition for desired results. 29	29 Describe the appropriate shop composition for desired results. 29
Co ty	Skip to main content Compare and contrast types of camera movements. 30

movements. 30

Create and modify key frames and key poses. 31	31 Create and modify key frames and key poses. 31
Change an object's state of position over time and establish an object's relative speed. 32	32 Change an object's state of position over time and establish an object's relative speed. 32
Demonstrate an object following a path. 33	33 Demonstrate an object following a path. 33
Simulate a naturally occurring or mechanical cycle such as walking. 34	34 Simulate a naturally occurring or mechanical cycle such as walking. 34
Apply various animation techniques such as pose-to-pose and straight-ahead. 35	35 Apply various animation techniques such as pose-to-pose and straight-ahead. 35
Identify rendering types and purposes. 36	36 Identify rendering types and purposes. 36
Apply appropriate rendering settings for a period and render a sequence of frames. 37	37 Apply appropriate rendering settings for a period and render a sequence of frames. 37
Create a particle system. 38	38 Create a particle system. 38
Create atmospheric effects. 39	39 Create atmospheric effects. 39
Adjust the dynamic properties such as gravity and wind speed. 40	40 Adjust the dynamic properties such as gravity and wind speed. 40
Sir su	Simulate soft dynamics such as fabric. 41

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Simulate rigid body dynamics such as shattering walls and breaking glass. 42	**42 Simulate rigid body dynamics such as shattering walls and breaking glass.** 42
Create animated cameras. 43	**43 Create animated cameras.** 43
Use multiple cameras in a scene. 44	**44 Use multiple cameras in a scene.** 44
Evaluate and select camera settings to achieve desired results. 45	**45 Evaluate and select camera settings to achieve desired results.** 45
Place cameras to match an existing storyboard. 46	**46 Place cameras to match an existing storyboard.** 46
Demonstrate editing techniques. 47	**47 Demonstrate editing techniques.** 47
Manipulate and apply audio to an animation project. 48	**48 Manipulate and apply audio to an animation project.** 48
Select the appropriate distribution format. 49	**49 Select the appropriate distribution format.** 49
Render for distribution. 50	**50 Render for distribution.** 50
Demonstrate compositing by using a variety of techniques. 51	**51 Demonstrate compositing by using a variety of techniques.** 51
Demonstrate knowledge of how to organize and plan a video sequence. 52	**52 Demonstrate knowledge of how to organize and plan a video sequence.** 52
De of th Skip to main content	**Demonstrate knowledge of visual techniques and the use of still images to enhance video content.** 53

enhance video content. 53	
Demonstrate knowledge of using audio to enhance video content and manage sound in a video sequence. 54	54 Demonstrate knowledge of using audio to enhance video content and manage sound in a video sequence. 54
Identify elements of the Video Editing Software interface. 55	55 Identify elements of the Video Editing Software interface. 55
Identify the functions of Video Editing Software interface elements. 56	56 Identify the functions of Video Editing Software interface elements. 56
Organize and customize the Video Editing Software workspaces. 57	57 Organize and customize the Video Editing Software workspaces. 57
Import media assets (video, image, and audio files). 58	58 Import media assets (video, image, and audio files). 58
Trim clips. 59	59 Trim clips. 59
Organize, trim and manage video clips and sound in a sequence. 60	60 Organize, trim and manage video clips and sound in a sequence. 60
Manage superimposed text and shapes in a video sequence. 61	61 Manage superimposed text and shapes in a video sequence. 61
Add and manage effects and transitions in a video sequence. 62	62 Add and manage effects and transitions in a video sequence. 62
Demonstrate knowledge of export options for video and of how to export video from video ed	63 Demonstrate knowledge of export options for video and of how to export video from video editing software. 63

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Produce designs that work equally well on various operating systems, browser versions/configurations, and devices. 64	**64 Produce designs that work equally well on various operating systems, browser versions/configurations, and devices.** 64
Design interfaces that communicate appropriate design information using the principles of human-computer interactions. 65	**65 Design interfaces that communicate appropriate design information using the principles of human-computer interactions.** 65
Apply the concepts of probability and statistics to various aspects of design systems and the environment. 66	**66 Apply the concepts of probability and statistics to various aspects of design systems and the environment.** 66
Acquire mastery of advanced programming concepts as needed to complete design projects. 67	**67 Acquire mastery of advanced programming concepts as needed to complete design projects.** 67
Collaboratively and individually demonstrate a proficient understanding of marketing concepts, product development, and distribution. 68	**68 Collaboratively and individually demonstrate a proficient understanding of marketing concepts, product development, and distribution.** 68

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