APTE 72 Course Outline as of Summer 2025

CATALOG INFORMATION

Dept and Nbr: APTE 72 Title: INTER 3D TEXTURES (RVPA)
Full Title: Intermediate Textures for 3D (RVPA)
Last Reviewed: 1/22/2024

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	APTECH 72

Catalog Description:
Students learn industry techniques to enhance 3D objects, environments, and characters using three-dimensional (3D) sculpting and painting tools. Topics include texture painting; manipulating digital images; texture mapping; lighting techniques; camera controls; applying principles of art and design to 3D imagery; and rendering images for creative industries such as video games, cinema, animations, augmented reality (AR), and/or print.

This is a Regional Virtual Production Academy (RVPA) course that is not offered at SRJC but is available through one or more of the other five participating colleges of the RVPA collaborative program. Learn more about the RVPA at https://cs.santarosa.edu/vp

Prerequisites/Corequisites:

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:

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Prerequisites/Corequisites:
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 2024	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Demonstrate proficiency using 3D software to apply texture mapping techniques.
2. Demonstrate proficiency using digital software and two-dimensional (2D) paint software to create unique custom textures and to manipulate digital images.

Objectives:
At the conclusion of this course, the student should be able to:
1. Design 3D assets that convey visual theme, atmosphere, and emotional tone.
2. Apply art concepts and techniques to create 3D imagery for onscreen medium.
3. Identify and analyze 3D imagery in the creative industry.

Topics and Scope:

I. Basics of Digital Painting Programs
   A. Mouse and graphics tablets
   B. Color and filter effects
   C. Alpha channels and layers

1. Practice sketching using a stylus
2. Create and apply colors, layers, and filters

II. Basics of 3D Mapping
A. Mapping techniques: planar, cylindrical, and other projection mapping techniques
B. Mapping coordinates: understanding the use of UVW mapping for 3D objects
C. General techniques for texture mapping objects and environments - apply 3D mapping using the different mapping techniques introduced during lecture

III. Pre-Production
A. The basics of pre-production: developing concepts, sketching, brainstorming, researching, and creating proposals
B. Creating 3D imagery that communicates an idea
C. Parameters of a project deadline
1. Apply pre-production techniques for visual development versus previsualization
2. Research and brainstorm an idea
3. Create a proposal

IV. 3D Imagery and Art Concepts
A. Learning and applying the elements of art and design: line, form or shape, texture, color, value, and the illusion of space
B. Learning and applying the principles of art and design: balance, unity, emphasis, scale, balance, and rhythm
1. Apply art concepts to 3D objects
2. Develop custom bitmaps and use them to map 3D objects
3. Build image and texture libraries

V. Images for Texture Mapping
A. Acquiring photo images for texture using the scanner and digital camera
B. Photo and graphic image manipulation techniques
C. Compositing and layering with alpha channels and color blending modes
1. Acquiring images for texture mapping
2. Manipulate images by using alpha channels and blending modes

VI. Cameras, Lights, Shadows, Color, and Intensity
A. Techniques to illuminate 3D scenes
B. Three-point lighting: key light, fill light, and backlight
C. Simple lighting types: Spot, Omni, Directional, and Flood
1. Create cameras and lights, and practice using different lighting types
2. Modify shadows, color, light intensity, and color intensity

VII. 3D Imagery
A. Color schemes and themes
B. Seamless tileable textures
C. Different style concepts, such as realistic and abstract
1. Create tileable textures
2. Apply different style concepts to produce textures

VIII. Final Composition and Staging
A. Camera positions, applying different types of shots and camera angles
B. Framing the scene: rule of thirds, positive and negative space, and balance
C. Rendering the scene: producing images for printing and online presentations
1. Creating compositions by using the concepts of framing, rule of thirds, and camera shots/angles
2. Render images for printing and online presentations

Assignment:

1. Reading Assignments - Assigned reading from various online articles, software tutorials, and

review of class lecture content and lecture notes.
2. Projects, Activities, and other Assignments
A. Midterm project - Conceptualize, previsualize, create, and map 3D objects using different painting techniques discussed in class.
B. Final Project - Create an original 3D character for onscreen presentations by using materials, shaders, textures, lights, and virtual cameras.
C. Oral presentation of the final project.
D. Peer and self-critiques of presentations through collaborative dialogue.
3. Writing Assignments - Proposals for midterm and final projects, including drawings and text; projects generally are chosen by the individual student so that the student will maintain enthusiasm for working on a project that requires a lot of homework and open lab time.
4. Final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Proposals for Midterm and Final projects	Writing 10 - 25%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Midterm and final projects	Problem solving 15 - 45%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Midterm and final projects	Skill Demonstrations 25 - 60%

Exams: All forms of formal testing, other than skill performance exams.

Final exam	Exams 5 - 25%

Other: Includes any assessment tools that do not logically fit into the above categories.

Peer and self-critiques of presentations	Other Category 0 - 5%

Representative Textbooks and Materials:
Instructor prepared materials