APTECH 43 Course Outline as of Summer 2017

CATALOG INFORMATION

Dept and Nbr: APTECH 43 Title: COMPUTER ANIMATION Full Title: Computer Modeling and Animation with 3D Studio Max Last Reviewed: 1/25/2021

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	8	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

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 53

Catalog Description:

Three-Dimensional (3D) modeling, rendering, and animation using the windows-based, 3D Studio Max Software program. The student will create professional quality 3D models, photo-realistic still images and film quality animation at the personal computer. Topics include: creating 3D objects and scenes, assigning and editing bitmap materials, creating and setting light sources and camera, casting shadows, and describing movement of: objects, camera, and lights to produce desired results within computer animations.

Prerequisites/Corequisites:

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:

Description: Three-Dimensional (3D) modeling, rendering, and animation using the windowsbased,

3D Studio Max Software program. The student will create professional quality 3D models,

photo-realistic still images and film quality animation at the personal computer. Topics include: creating 3D objects and scenes, assigning and editing bitmap materials, creating and setting light sources and camera, casting shadows, and describing movement of: objects, camera, and lights to produce desired results within computer animations. (Grade Only) Prerequisites/Corequisites: Recommended: Limits on Enrollment: Transfer Credit: CSU;UC. Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree: CSU GE:	Area Transfer Area			Effective: Effective:	Inactive: Inactive:
IGETC:	Transfer Area		Effective:	Inactive:	
CSU Transfer:	Transferable	Effective:	Fall 1998	Inactive:	
UC Transfer:	Transferable	Effective:	Fall 2013	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. Utilize the 3D Studio Max software program to produce broadcast quality animations of 3 dimensional (3D) models and scenes.

2. Create photo-realistic renderings of 3D scenes within 3D Studio Max.

Objectives:

At the conclusion of this course the student will be able to:

- 1. Comprehend 3D Animation's role and usage in today's society
- 2. Effectively interface with the 3D Studio Max software program
- 3. Analyze pre-existing models and scenes
- 4. Create and edit 3D models and scenes
- 5. Assign bitmap and procedural materials to 3D objects
- 6. Set and adjust lighting and shadows
- 7. Establish and control environmental factors within 3D scenes
- 8. Describe and create movement of objects, lights, and cameras
- 9. Create photo-realistic renderings of 3D scenes
- 10. Produce broadcast quality animations

Topics and Scope:

- 1. Overview of the 3D animation industry
 - A. Gaming

- **B.** Motion Pictures
- C. Architecture/Construction/Engineering
- D. Advertising
- 2. The 3D Studio Max software interface
 - A. Viewport navigation
 - B. Command panels
 - C. Time controls
 - D. Menus and toolbars
- 3. Analysis of pre-existing models and scenes
 - A. Component identification
 - B. Critique
- C. Evaluation
- 4. Create and edit 3D models and scenes
 - A. Polygonal modeling
 - B. Surface modeling
 - C. Model deformation
- 5. Bitmap and procedural material assignment
 - A. The material editor
- B. Mapping coordinates and parameters
- 6. Lighting and shadow creation and adjustment
 - A. Omni, spot, and direct lighting
 - B. Free and target lighting
 - C. Ray traced and shadow maps
- 7. Environmental factors at 3D scenes
 - A. Environment maps
 - B. Environmental effects
 - C. Exposure control
- 8. Movement of objects, lights, and cameras within animations
- 9. Photo-realistic renderings of 3D scenes
 - A. Image adjustments and capture
 - **B.** Rendering
- 10. Produce broadcast quality animations
- A. Save working and rendered animation files
- B. Compression of animation files

Assignment:

- 1. Reading, approximately 20 30 pages per week
- 2. Weekly animation exercises in lab

3. Homework: five (5) computer generated animations (to illustrate mastery of topics and techniques covered in class)

- 4. Objective and performance-based quizzes (3-4)5. Final exam: objective and performance based

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.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

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

Animation exercises

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

Performance quizzes and exam, Animations

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

Multiple choice, True/false, Matching items, Completion, Computer generated animations

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

None

Representative Textbooks and Materials:

Autodesk 3ds Max 2015: A Comprehensive Guide Sham Tickoo Autodesk Press 2014

Instructor prepared materials

Wri	ting
0 -	0%

Problem solving 10 - 20%

Skill Demonstrations 50 - 60%

Exams 20 - 30%

Other Category 0 - 0%