APTECH 43 Course Outline as of Fall 2015

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 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. (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:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	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

Outcomes and 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.	Writing 0 - 0%

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

Animation exercises	Problem solving 10 - 20%

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

Performance quizzes and exam, Animations	Skill Demonstrations 50 - 60%

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

Multiple choice, True/false, Matching items, Completion, Computer generated animations	Exams 20 - 30%

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

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Autodesk 3ds Max 2015: A Comprehensive Guide
Sham Tickoo
Autodesk Press 2014

Instructor prepared materials