ORIGINATOR: Omid Pourzanjani  
FORMERLY KNOWN AS:

CROSS LISTED COURSE:

SEMESTER UNITS: 4.0
HRS LEC: 54.0  HRS LAB: 54.0  HRS OTHER: 0.0
CONTACT HRS TOTAL: 108.0
STUDY NON-CONTACT HRS RECOMMENDED: 108.0

CATALOG DESCRIPTION:
This course is a study in the process of computer game artwork and animation. Students will be introduced to the basic building blocks of 3D game artwork and the process of its creation. Concepts of graphics objects, rendering, shading, alpha blending, texture mapping, and materials will be discussed. Students will learn hands on 3D computer modeling techniques as well as texture map creation using a digital imaging software and UV mapping tools.

ADVISORY: Computer Science G130

JUSTIFICATION FOR COURSE:

PREREQUISITES:

COREQUISITES:

ADVISORIES:

ASSIGNED DISCIPLINES:
  Art
  Computer science

MATERIAL FEE: Yes [ ] No [X] Amount: $3.00

CREDIT STATUS: Noncredit [ ] Credit - Degree Applicable [X] Credit - Not Degree Applicable [ ]

GRADING POLICY: Pass/No Pass [X] Standard Letter [X] Not Graded [ ] Satisfactory Progress [ ]

OPEN ENTRY/OPEN EXIT: Yes [ ] No [X]

TRANSFER STATUS: CSU Transferable[X] UC/CSU Transferable[ ] Not Transferable[ ]

BASIC SKILLS STATUS: Yes [ ] No [X] LEVELS BELOW TRANSFER: Not Applicable

CALIFORNIA CLASSIFICATION CODES: Y - Not Applicable

NON CREDIT COURSE CATEGORY: Y - Not applicable, Credit Course

OCCUPATIONAL (SAM) CODE: C

REPEATABLE ACCORDING TO STATE GUIDELINES: No [X] Yes [ ] NUMBER REPEATS:

REQUIRED FOR DEGREE OR CERTIFICATE: No [ ] Yes [X]

Video Game Development(Associate in Arts)
Video Game Development(Certificate of Achievement)

GE AND TRANSFER REQUIREMENTS MET:

COURSE LEVEL STUDENT LEARNING OUTCOME(S) Supported by this course:
1. apply material to objects and create specialized material effects
2. integrate 3D artwork with game engines
3. develop 3D polygon objects
4. demonstrate understanding of 3D game engines
5. create and apply object textures
6. demonstrate knowledge of texture and alpha mapping
7. apply transparencies and shading

COURSE OBJECTIVES:
1. Develop 3D polygon objects.
2. Demonstrate understanding of 3D game engines.
3. Create and apply object textures.
4. Demonstrate knowledge of texture and alpha mapping.
5. Apply transparencies and shading.
6. Apply material to objects and create specialized material effects.
7. Integrate 3D artwork with game engines.

COURSE CONTENT:

LECTURE CONTENT:

A. Overview
   1. Introduction to 3D interactive game theory
   2. Study off-the-shelf game artwork styles
   3. Study application of artwork in commercial games
B. Tools Review
   1. Introduction to 3D modeling tools such as 3D Studio Max and Maya
   2. Introduction to digital photo editing tools such as Photoshop
C. Static Artwork
   1. Artwork development techniques related to 3D concepts
   2. Game artwork rendering
D. Model Development
   1. Creating object model and texture
   2. Effects of MIP mapping, lighting, and other engine effects on game artwork
   3. Mesh development
   4. Alpha blending and shading
E. Model Animation
   1. Bones and skeletons
   2. Model animation
   3. Animation efficiency
F. Game Data and Databases
G. Process shortcuts and tuning
H. Integrating 3D artwork with game engines

LABORATORY CONTENT:

METHODS OF INSTRUCTION:

A. Lecture:
B. Lab:
C. Independent Study:

INSTRUCTIONAL TECHNIQUES:
COURSE ASSIGNMENTS:
Reading Assignments
- Multiple chapters from the required textbook
- External material will be made known to students to encourage further studies into specific topics.
- Online material found on the Internet
- Various current (up-to-date) handouts will be made available to students on the subjects of 3D games, game artwork, and multimedia.

Out-of-class Assignments

Writing Assignments
- 1 3D games/artwork research paper
- 4 3D artwork assignments including modeling and texturing
- 1 individual or group term-project

METHODS OF STUDENT EVALUATION:
- Midterm Exam
- Final Exam
- Short Quizzes
- Written Assignments
- Essay Examinations
- Objective Examinations
- Report
- Projects (ind/group)
- Problem Solving Exercises
- Oral Presentations
- Skills Demonstration

Demonstration of Critical Thinking:
- Artwork assignments will be presented to the students as development tasks given to them in the form of 2D concept artwork. The students will be asked to create 3D objects and textures to the likeness of the concept artwork.
- Also, students will be given various artwork samples to study and analyze.

Required Writing, Problem Solving, Skills Demonstration:
- Students will be required to complete the following assignments during the lecture/lab:
  - 1 3D games/artwork research paper
  - 4 3D artwork assignments including modeling and texturing
  - 1 individual or group term-project

TEXTS, READINGS, AND RESOURCES:
- TextBooks:

LIBRARY:
- Adequate library resources include:

Comments:

Attachments:
- Attached Files