COURSE OUTLINE OF RECORD

Number: DART G230  TITLE: 3d Computer Modeling

ORIGINATOR: Coast Coast  EFF TERM: Fall 2009
FORMERLY KNOWN AS:
CROSS LISTED COURSE:

DATE OF OUTLINE/REVIEW:
TOP NO: 0614.40
CID:

SEMESTER UNITS: 3.0
HRS LEC: 36.0  HRS LAB: 36.0  HRS OTHER: 0.0
CONTACT HRS TOTAL: 72.0
STUDY NON-CONTACT HRS RECOMMENDED: 72.0

CATALOG DESCRIPTION:
Using a 3D Modeling program, this course is an introduction to the design and planning of objects and lettering to be built into the wire frame components of computer animation. The student will create the parts that will combine to form such complex forms as wire frame objects, feature characters or title lettering. The objects will then be covered with surface material and rendered as a single frame 3D object for desktop publishing or put into an animated sequence to become a segment in a computer animation project.

JUSTIFICATION FOR COURSE:

PREREQUISITES:

ADVISORIES:
- DART G103: Digital 2D Design

ASSIGNED DISCIPLINES:
- Art
- Commercial art (sign making, lettering, packaging, rendering)
- Graphic arts (desktop publishing)
- Multimedia

MATERIAL FEE: Yes [ ] No [X] Amount: $9.00
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

REPEATABLE ACCORDING TO STATE GUIDELINES: No [X]  Yes [ ]  NUMBER REPEATS:
REQUIRED FOR DEGREE OR CERTIFICATE: No [ ] Yes [X]
Biotechnology Media Design(Certificate of Specialization)

GE AND TRANSFER REQUIREMENTS MET:

COURSE LEVEL STUDENT LEARNING OUTCOME(S) Supported by this course:
DART G230-3d Computer Modeling

1. Be able to use a 3D animation program to form and build complicated wire frame objects where many parts are used to construct the whole.

2. Have the understanding and ability to cover a wire framed object with a surface texture.

3. Be able to set lighting, camera actions and effects to enhance animation or complete a one frame still.

4. Save all the computer functions to the proper file within a disk storage unit.

5. Be able to set up a rendering of the object suitable to transfer the image to a desktop publishing program.

6. Animate and render that animation into a Quick Time movie featuring created objects, characters or lettering.

COURSE OBJECTIVES:

1. use a 3D animation program to form and build complicated wire frame objects where many parts are used to construct the whole.

2. have the understanding and ability to cover a wire framed object with a surface texture.

3. set up a rendering of the object suitable to transfer the image to a desktop publishing program.

4. set lighting, camera actions and effects to enhance animation or complete a one frame still.

5. animate and render that animation into a Quick Time movie featuring created objects, characters or lettering.

6. save all the computer functions to the proper file within a disk storage unit.

COURSE CONTENT:

LECTURE CONTENT:

A. Learn the layout of the work area and the function and use of tools and pallets
   1. The four window view of the project
   2. Using the x axis, the y axis and the z axis
   3. The quality factor vs. the memory requirement
   4. The choice and use of surface textures and colors

B. Pre-set shapes and objects
   1. Using the grid to place objects in space
   2. Practice the stacking block technique to get correct position
   3. Relationships between different shaped objects

C. The choice and positioning of camera and camera target
   1. Choosing the camera view for final rendering
   2. Positioning the camera target to stay steady on an object or move object from off camera view to on camera view
   3. Camera moves: Pan, truck, zoom in, zoom out, lock on to object

D. Lighting of the view object
   1. Choice of lights: Direct, spot, dish, tube, bright center, indirect, ambient, or central
   2. Main light vs. indirect
   3. Reflective lighting for special results
   4. Multiple special effect lighting

E. Creating an object
   1. Lathing from given shape or by manual construction
   2. Extrusion from a given footprint as created in Illustrator
   3. Combination of multiple objects to create a complex object

F. Adding the surface texture and color
   1. Choosing a solid or a transparent color
   2. Mixing a custom color
   3. Creating a decal for an object wrap
4. Saving and naming custom colors, patterns, or textures

G. Mother and child objects for linkage
   1. Naming each object, light, target and camera
   2. sequencer to link and align objects
   3. Super linkage and/or unlinking
   4. Duplicating parts and objects
   5. Scale up or down

H. Animation techniques
   1. Built in pre-set moves
   2. Timing of animated sequence
   3. Manual move planning and preview
   4. Special effects additions for glow, splash, separates, and duplicates
   5. Rendering the animation sequence
   6. Saving and filing the animation sequence

I. Advanced tools and timing
   1. Adding smoothing anchor points
   2. Re-directing the movement pattern
   3. Spinning accessories
   4. Multiple lighting techniques
   5. Timing vs. memory

J. 3D Projects
   1. Stacked boxes
   2. Gazebo for the back yard
   3. Jet fighter with accessories
   4. TV title badge
   5. Consumer product design
   6. 3D model vehicle for letterhead
   7. Stone tower keep with circling letters
   8. Spinning object with counter spinning name letters
   9. Turning, twisting flying object
   10. Character introduction

LABORATORY CONTENT:

METHODS OF INSTRUCTION:

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

INSTRUCTIONAL TECHNIQUES:

COURSE ASSIGNMENTS:

Reading Assignments

1. Class handouts featuring techniques, terms, explanations and examples
2. Assigned readings form library hold desk
3. Research topics in trade journals, text books and magazines
4. Collected material from reference file

Out-of-class Assignments

1. Written reviews of animation projects now in use in the real world
2. Written report of animation schools, courses, workshops and self-help CDs
3. In class presentation of animation results and reviews
4. Time and material chart production for billing and planning

Writing Assignments

1. Break down of complex object into simple parts to be produced and re-combined
2. Design of letter forms to be built and assembled into title project
3. Color combinations for patterns and custom surface application
4. Animation timing and planning according to storage capacity
5. Story boarding
6. Overall project planning skills

METHODS OF STUDENT EVALUATION:
Midterm Exam
Projects (ind/group)
Problem Solving Exercises
Oral Presentations

Demonstration of Critical Thinking:
1. Match plan to end result within time and memory capabilities
2. Plan and execute object with lighting and movement effects
3. Analyze content to project need
4. Solve the more is less vs. everything counts problem
5. Be aware of time and material vs. computer abilities and client need

Required Writing, Problem Solving, Skills Demonstration:
1. Break down of complex object into simple parts to be produced and re-combined
2. Design of letter forms to be built and assembled into title project
3. Color combinations for patterns and custom surface application
4. Animation timing and planning according to storage capacity
5. Story boarding
6. Overall project planning skills

TEXTS, READINGS, AND RESOURCES:

LIBRARY:
Adequate library resources include:

Comments:

Attachments:
Attached Files