

## I. CATALOG DESCRIPTION

### Department Information

Division: Humanities  
Department: Art  
Course ID: ART 181  
Course Title: Intermediate Computer Animation  
Units: 3  
Lecture: 2  
Laboratory: 3  
Prerequisite: ART 180.

**A. CATALOG DESCRIPTION:** Focus on computer animation, rendering and modeling. Included are such skills as complex construction of 3 dimensional models and complex movement control of multiple moving parts.

**B. SCHEDULE DESCRIPTION:** Focus on computer animation, rendering and modeling. Included are such skills as complex construction of 3 dimensional models and complex movement control of multiple moving parts.

## II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: one

## III. EXPECTED OUTCOMES FOR STUDENTS:

Upon successful completion of the course, the student will be able to:

- A. Set up a multi -view construction window for composing 3-dimensional models.
- B. Use primitive (basic) tools to construct simple objects.
- C. Demonstrate the ability to distort and warp basic objects to create unique shapes.
- D. Analyze, plan and construct complex objects.
- E. Construct complex objects using boolean properties.
- F. Construct hierarchical objects using parent - child linking tools.
- G. Demonstrate the ability to animate complex objects with moving parts on a motion path.
- H. Demonstrate the ability to animate linked object on a motion path.
- I. Apply inverse kinetics.
- J. Demonstrate the ability to render QuickTime movies with an alpha channel.

## IV. CONTENT

- A. The concept of 3 dimensional modeling and animation.
  1. A 3 dimensional object in a 2 dimensional space.
  2. Animation - Turning and moving 3 dimensional object in a 2 dimensional space.
- B. Basic tools for Strata Studio Pro
  1. Creating 3 dimensional models
  2. Animation module
  3. Rendering module
- C. Setting up a window to compose 3- dimensional objects.
  1. Modeling views
  2. Grids
  3. Backdrops
  4. Modeling tools
    - a. Lathe
    - b. Extrude
- D. Transformations
  1. Textures
    - a. Using existing textures
    - b. Creating new textures

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2. Reshaping objects
3. Lighting
  - a. Global lighting
  - b. Spot lighting
- E. Setting up animations
  1. Making timelines
  2. Key framing
  3. Making paths
  4. Altering paths
- F. Rendering options
  1. Preview renderings
  2. Phong rendering
  3. Raytrace renderings

#### **V. METHODS OF INSTRUCTION**

- A. Computer demonstrations
- B. Individual assistance
- C. Lectures
- D. Customized video tutorials
- E. Textbook and workbook assignments
- F. Supervised projects

#### **VI. TYPICAL ASSIGNMENTS:** Two examples of individual assisted, supervised projects.

- A. Building an object
  1. Make a drawing of the object that you wish to create.
  2. On graph paper break this object down to individual shapes that can be assembled into the object.
  3. On graph paper, further refine each shape.
    - a. By size in relation to the whole
    - b. By 2 dimensional profile
    - c. Include notes for yourself as to what tools to use to make these parts of the object
  4. Make 2 dimensional profiles in Adobe Illustrator and import them into Studio Pro
  5. In Studio Pro, lathe the profiles into a 3 dimensional shape
  6. Convert the lathed shape for the reshape mode
  7. Make alteration in the reshape mode to conform to your drawing
  8. Assemble all your shapes into the object
    - a. By grouping all parts for a stationary object
    - b. By boolean grouping for a complex stationary object.
    - c. By linking parent-child shapes to restrict movement during animation.

#### **B. Animating an object with an alpha channel.**

The alpha channel will be keyed to transparent in a film assembly program so that it can be combined with other QuickTime movies.

1. When you have completed your object, go to your background palette and choose a solid color that does not appear in your animation. You should choose cyan (blue screen) or lime green. You will not see the background until the animation is rendered.
2. Set the length of your animation, using the timeline.
3. Set the keyframes. Keyframes are where something begins to change. Set only as many as you need. If you set more than you need it will add more complexity to the file unnecessarily.
4. Move your object and change your texture or lighting at the position of your pointer.
5. Continue step 4 until the end of the length of your animation.
6. This object will then be combined with a background animation in Premiere and the background color will be "keyed" out and will become transparent. Only your object will show against your background.

## **VII. EVALUATION**

### **A. Methods of evaluation**

#### **1. Objective evaluation: written tests**

Typical test questions:

- a. There is a rule that states: Model simple and render complex.  
Give two example of the advantage of following this rule.
- b. What is the difference between lathed and extruded shapes?

#### **2. Subjective evaluation: Completion of 3 projects.**

Projects will be accompanied by creative material such as object, drawings and storyboards used to complete the project.

Projects will be evaluated on the following criteria:

1. Originality of the model
2. The clarity of storyboard description
3. Steps executed to complete the projects.
4. Success in achieving the original idea
5. Complexity of the work attempted

### **B. Frequency of evaluation**

#### **1. Two tests**

- a. Mid-term
- b. Final

#### **2. Completion of 3 projects**

5 weeks will be allowed for each project

## **VIII. TYPICAL TEXT(s)**

A. Strata Inc., Strata Studio Pro User Manual Macintosh and Windows, UT: 1200,

B. Strata Inc., Strata Studio Pro Reference Manual Macintosh and Windows, UT: 2000

C. Don & Melora Foley, Animation Tip and Tricks for Windows & Macintosh, CA: PeachPit Press 1998,

## **IX. OTHER SUPPLIES REQUIRED OF STUDENTS:**

One Zip disk, one blank CD-R