ANIMATION
CID 2001

Class Hours: 3.0       Credit Hours: 4.0
Laboratory Hours: 3.0   Date Revised: Summer 01

Catalog Course Description:
Using animation, this class will address a broad range of applications such as Interior Design, Graphic
Design, Video Production, Industrial Design and architectural presentations. Students will use 3D Studio
MAX to create 3 dimensional models, create light schemes, apply lights, create and apply materials, place
and manipulate cameras, and animate objects.

Entry Level Standards:
An understanding of 3D coordinate systems is required. Students are expected to think critically and
analytically and should have sufficient computer skills to be efficient in using several different software
programs (IBM or MAC based). They should be prepared to perform the required assignments and explore
all aspects of 3D Studio MAX.

Prerequisites:
15 hours in major or professional experience

Textbook(s) and Other Reference Materials Basic to the Course:

Textbooks:
3D Studio MAX Tutorials from the Masters, Michele Bousquet (Autodesk Press).

Reference:
Harnessing AutoCAD Release 14, Thomas A. Stellman and G. V. Krishnan, International Thomson

I. Week/Unit/Topic Basis:

<table>
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<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Overview of MS NT Windows environment, viewing and navigating 3D space</td>
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<tr>
<td>2</td>
<td>Selecting objects and using transforms</td>
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<td>3</td>
<td>Precision, drawing aids, and basics of creating objects; Modifying objects</td>
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<td>4</td>
<td>Creating copies, arrays, and splines shapes</td>
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<td>5</td>
<td>Creating lofts, NURBS, and editing NURBS models</td>
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<td>6</td>
<td>Creating patch surfaces and editing meshes</td>
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</table>
Creating compound objects and modeling particle systems

Creating space warps and systems

Lighting your scene and setting up cameras

Adjusting normals and smoothing; designing basic materials

Designing mapped and compound materials; Animation concepts and methods

Building hierarchies and using inverse Kinematics

Basic track view use, function curve, and trajectory editing

Working with controllers; animating dynamic simulations

Rendering scenes and animations

Using video post

II. Course Objectives*:

A. Create objects using various processes for animation. II, V

B. Edit objects. II

C. Understand use of lighting and placing of cameras II, III, V

D. Create and use materials II, V, VIII

E. Understand the hierarchies and use of Kinematics. VIII

F. Render scenes, animations and convert to video post. VIII

*Roman numerals after course objectives reference goals of the CID program.

III. Instructional Processes*:

Students will:

1. Use critical thinking to solve problems dealing with animations and class projects. Communication Outcome, Problem Solving and Decision Making Outcome, Information Literacy Outcome, Active Learning Strategy

2. Use 3D Studio MAX to develop animations. Communication Outcome, Problem Solving and Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Information Literacy Outcome, Transitional Strategy

*Strategies and outcomes listed after instructional processes reference Pellissippi State’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

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

1. Create objects to use in animations. A
2. Modify objects for animations. A
3. Create compound objects. A
4. Edit objects at sub-object level. B
5. Clone objects. B
6. Edit meshes. B
7. Create light objects. C
8. Position lights. C
9. Set light color and intensity. C
10. Set ambient and global light values. C
11. Adjust light beams. C
12. Cast shadows. C
13. Animate lights. C
14. Place cameras in a scene. C
15. Adjust cameras. C
16. View the horizon. C
17. Animate cameras. C
18. Design basic materials. D
19. Manage materials in a scene. D
20. Choose shading type. D
21. Choose colors for realism. D
22. Design natural, manufactured, and metallic materials. D
23. Set the shininess and create transparent materials. D
24. Build, understand, and manipulate hierarchies. E
25. Build hierarchies with bones. E
26. View, select, and deselect hierarchies. E
27. Use dummies and adjust pivots. E
28. Animation hierarchies. E
29. Use Inverse Kinematics. E
30. Use track view. F
31. Use function curves. F
32. Work with controllers. F
33. Dynamic simulation. F
34. Create environments and atmospheres. F
35. Render scenes and animations. F
36. Use video post. F

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Grade Breakdown:

Students are evaluated on the correctness of their assignments (75%) and a final animation of their own design (25%). Class assignments will include exercises, reports, final project, and presentation of the project.

B. Grading Scale:

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F <60

VI. Policies:

Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines may have requirements that are more stringent.