ANIMATION W/LAB
CID 2004 (formerly CID 2005)

Class Hours: 3.0   **Credit Hours: 3.0**

Laboratory Hours: **Revised: Spring 05**
1.0

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:

CID 1100 or consent of instructor

Textbook(s) and Other Course Materials:

Textbooks:
3D Studio MAX Tutorials from the Masters, Michele Bousquet (Autodesk Press).
Reference:
Harnessing AutoCAD 2004, Thomas A. Stellman and G. V. Krishnan, International Thomson Publishing, Albany, New York, 2005.
3D Studio MAX R2 Users Guide, Autodesk, 2005.

I. Week/Unit/Topic Basis:

Week	Topic
1-14	Over the 14-week semester, the following topics will be covered:
	Overview of MS NT Windows environment, viewing and navigating 3D space
	Selecting objects and using transforms
	Precision, drawing aids, and basics of creating objects; Modifying objects
	Creating copies, arrays, and splines shapes
	Creating lofts, NURBS, and editing NURBS models
	Creating patch surfaces and editing meshes
	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

15   Final Exam Period

II. Course Objectives*:

A.   Create objects using various processes for animation. (a, b, c, d, e, f, g, h, k)

B.   Edit objects. (a, b, c, d, g)

C.   Understand use of lighting and placing of cameras (a, b, c, d, f, g)

D.   Create and use materials (a, b, c, d, f, g)

E   Understand the hierarchies and use of Kinematics. (a, b, c, d, e, f, g)

F.   Render scenes, animations and convert to video post. (a, b, c, d, e, f, g, h, k)

*Letters (a-k) reference the CID Program Outcomes (as required by ABET).

III. Instructional Processes*:

Students will:

1.   Use critical thinking to solve problems dealing with animations and class projects. *Communication Outcome, Technological Literacy Outcome, Transitional Strategies, Active Learning Strategy*

2.   Use 3D Studio MAX to develop animations. *Communication Outcome, Problem Solving and Communication Outcome, Mathematics Outcome, Technological Literacy Outcome, Transitional Strategies, Active Learning Strategy*

*Strategies and outcomes listed after instructional processes reference TBR'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+   85-89%
B   80-84%
C+   75-79%
C   70-74%
D   60-69%
F   59% and below

VI. Policies:

A. 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.

B. Academic Misconduct:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices: Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments. In addition to other possible disciplinary sanctions that may be imposed as a result of academic misconduct, the instructor has the authority to assign either (1) an F or zero for the assignment or (2) an F for the course.
Note: It is expected and desirable that CID students assist other students. However, students may only submit work completed individually.

D. Accommodations for disabilities:

If you need accommodation because of a disability, if you have an emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately (privately after class for in the instructor's office).

To request accommodations, students must register with Services for Students with Disabilities' Office located in J.L.GoinsAdministrationBuilding Room 127 or 131 or by phone: (865) 539-7153 or (865) 694-6751 Voice/TTD.

C. Equipment:

Students are expected to take utmost care when using equipment provided by PellissippiState. No tobacco use, eating, drinking will be allowed in labs. Students are not to load unauthorized software

on the computers. Do not use floppy disks for CAD drawings in any other computers other than in CID labs. Students are responsible for maintaining current copies of drawings on their disks. Do not relocate computers, monitors, digitizers or keyboards without supervision by an instructor. Do not copy, delete or move files without instruction by an instructor.