

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE  
MASTER SYLLABUS

**3-D MODELING**  
**CGT 2160**

**Class Hours: 3.0**

**Credit Hours: 3.0**

**Laboratory Hours: 0.0**

**Date Revised: Summer  
01**

NOTE: This course is not designed for transfer credit.

**Catalog Course Description:**

A study of advanced three-dimensional decision and construction. Exhibition, package design, and digital modeling techniques will be emphasized.

**Entry Level Standards:**

Student should exhibit proficiency with basic graphic design software for Macintosh.

**Prerequisite:**

CGT 1100 and 2040 or consent of instructor

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

Required Text:

*The Cinema 4D Reference Manual and the User Manual.* Both these manuals are available in the Cinema 4D folder on each Macintosh located in rooms ERC 312A, ERC 312B, or GN 225i. Students are required to print these two manuals and have them bound.

Materials:

Two Macintosh formatted Iomega Zip cartridges, two CD-R discs, matboard as specified by instructor.

**I. Week/Unit/Topic Basis:**

<b>Week</b>	<b>Topic</b>
1	Introductions and expectations, materials; Introduction to 3D Modeling; Introduction to the Cinema 4D application: the menus, the palettes, and other features.
2	Cinema 4D Menus: File Menu, Edit Menu, Selection Menu, Modeling Menu, Rendering Menu, Windows Menu.
3	Cinema 4D Palettes: Tool Palette, Extension Tool Palette, Resource Palette, Environment Palette, Object Properties Palette, Statistics Palette. Cinema 4D Other Features: Feedback Area, Button Bar, and Show/Hide Buttons.
4	Quiz #1: Menus, Palettes, and Buttons; Cinema 4D Windows: Modeling Window, Project Window, Camera Window, Spotlight Window, Shape Window, Rendering Window, Image Window; Managing Files: Creating New Models, Loading Models, Saving Models.

- 5 Managing Projects; Modeling Fundamentals; Refining Your Objects; Using Tools and Modelers.
- 6 Cinema 4D Shapes: The Shapes Tab, Shapes vs. Objects, Shapes Tutorial, Shapes Hierarchy Tutorial.
- 7 Cinema 4D Textures: Texture Tab Basics, Making and Editing Textures, Texture Tutorial 1 (Melting Ooze), Texture Exercise 2 (Wine Bottle); Project #1 Assignment.
- 8 Project #1 development. Cinema 4D Lighting: Basic Lighting Tutorial, Using Spotlights and Point Lights.
- 9 Cinema 4D Effects: The FX Tab, Fog, Haze, Mist.
- 10 Cinema 4D Rendering: Environmental Effects, Cameras, Rendering the Image, Choosing the Right Renderer, Rendering Windows, QTVR. Quiz #2: Shapes, Textures, Lighting.
- 11 Cinema 4D Animation: Animation Fundamentals, Convert to Path, Dropping a Curve, Align to Path, Cycling Animations, Using Event Markers, Boolean Rendering. Project #2 Assignment. Project #2 development.
- 12 Project #2 development.
- 13 Project #3 Assignment. Project #3 development.
- 14 Project #3 development.
- 15 Project #3 development; Final Exam review.
- 16 Final Exam – written and practical

\*This syllabus is subject to modification by instructor to best meet the educational progression of the students in this course.

## II. Course Objectives\*:

- A. Use 3D modeling software in creating, editing, rendering, and animating 3D objects. I, II, IV
- B. Understand techniques used to managing 3D projects. I, II, IV
- C. Use shapes, textures, effects, and lighting to create realistic 3D models. I, II, IV
- D. Use cameras to control 3D model views. I, II, IV
- E. Use paths and curves and event markers to animate a 3D model. I, II, IV
- F. Use renderers in creating realistic 3D models. I, II, IV
- G. Model presentation techniques. I, II, IV

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

## III. Instructional Processes\*:

Students will:

1. Select, research, illustrate, model, and render a consumer product using 3D modeling software. *Problem Solving / Decision Making Outcome, Technological Literacy Outcome, Active Learning Strategies*
2. Use 3D modeling software to digitally fabricate, model, and render a tool or device with external moving parts. *Problem Solving / Decision Making Outcome, Technological Literacy Outcome, Active Learning Strategies*
3. Create a motion graphics sequence involving the animation of a digitally modeled item. *Problem Solving / Decision Making Outcome, Technological Literacy Outcome, Active Learning Strategies, Transitional Strategies*
4. Prepare a short demonstration of a 3D modeling software skill to teach to the class. *Communication Outcome, Problem Solving / Decision Making Outcome, Technological Literacy Outcome, Active Learning Strategies*

\*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. Understand the functioning of 3D software menus, windows, palettes, and tools. A, B, D
2. Apply the functioning of 3D software menus, windows, palettes, and tools to the creation of 3D models. A, B, D
3. Manage 3D modeling files. A, B
4. Use the 3D modeling software tools to draw 3D objects. A, C, G
5. Apply textures, lighting, and effects to a 3D object. A, C, D
6. Select the appropriate renderer, and render a 3D model. A, F
7. Animate a 3D model. A, E, D, G

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

#### **V. Evaluation:**

A. Testing Procedures: 40% of grade

Two Quizzes (10% each): 20%

Final written /practical exam: 20%

Students will be tested on material from reading assignments, lectures, class handouts, etc. (Missed tests and quizzes may not be made up without instructor approval.)

B. Laboratory Expectations:

Students will find it necessary to spend additional time in the Macintosh lab in order to successfully complete assignments.

C. Field Work:

N/A

D. Other Evaluation Methods: 60% of grade

Project Portfolio: 50%

Attendance/Participation: 10% (Refer to IV Policies, CGT Program)

E. Grading Scale:

A	90—100
B+	86—89
B	80—85
C+	76—79
C	70—75
D	60—69
F	Below 60

**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 (Pellissippi State Catalog). Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.

B. Other Policies:

Roll - Roll will be taken at the beginning of the class period. Three tardies will count as one absence. In the event that you are late, be sure to have the instructor mark you present. Leaving class early without prior approval from the instructor is not acceptable.

Make-up Work - In the event of an absence, students must use their own initiative to secure lecture notes, assignments, and other information that might have been covered during the class period.