

**COURSE SYLLABUS**  
Southeast Missouri State University

Department of Industrial and Engineering Technology

Course No.: **TG 380**

Title of Course: **3D Product Modeling & Animation**

**New, Fall 2005**

**I. Catalog Description and Credit Hours of Course:**

This course will introduce students to applied three-dimensional modeling and animation by addressing parametric assembly modeling, time and motion study, surface texture mapping, lighting, and color as required in the production of computer animations for use in marketing and manufacturing. (3 Credit hours; Contact hours - 1 hour lecture, 4 hours laboratory).

**II. Prerequisite (s):** TG 220 (C or better) & TG 280

**III. Course Objectives:**

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

- A. Communicate using terminology relevant to product modeling and animation
- B. Use 3D software to create surface and parametric solid models for industrial applications
- C. Apply maps and materials to 3D models and meshes
- D. Set up a 3D scene including cameras and lights
- E. Render 3D scenes and animations
- F. Develop and manage basic project documentation

**IV. Expectations of Students:**

- A. Class attendance and participation are required, both lecture and lab.
- B. Students are required to read the assigned chapters for discussion and lab.
- C. Assignments are designed to be completed in class. The instructor reserves the right to refuse completed work if student's attendance is inadequate to insure originality of work.
- D. Assignments will only be accepted on the due dates provided unless previous arrangements are made or student provides a written medical doctor's excuse.
- E. Students are expected to complete all assignments.
- F. Student work will be completed in accordance with Code of Student Conduct (<http://www6.semo.edu/judaffairs/code.html>).
- G. Assignments may not be turned in to department secretary.
- H. No assignments are to be turned in Finals' Week.
- I. Cell phones, pagers, etc. must be turned off in class.
- J. In a professional environment, work areas are kept clean. In keeping with a professional attitude toward fellow students, always clean your area before leaving.
- K. Headsets are not allowed during class time including lab time, unless approved by the instructor.
- L. Students are responsible for removing their personal work from the computers each day.

## V. Course Content or Outline:

### Topics Addressed in Course

	Time on Topic
A. Polygons, curves and surfaces	3 wks
B. Basic NURBS modeling techniques [revolve, loft, extrude]	3 wks
C. Basic maps and materials	1 wk
D. Advanced maps and materials	2 wks
E. Groups, hierarchies, Boolean operations	1wk
F. Basic lighting, camera placement and rendering	3 wks
G. Intro to project management and documentation	2 wks

## VI. Textbook(s) and/or Other Required Materials or Equipment:

- A. Dutton, Paicius & Doran (2005). Autodesk 3ds Max 8 Revealed. Course Technology, Inc.
- B. CD-R disk (2) and a flash/jump drive

## VII. Basis for Student Evaluation:

Students will be evaluated based on the following:

- A. Projects – 50%  
Student projects will include the design and development of components used in the development of an industrial/commercial quality animations as well as a full-scale product animation similar to those used at trade shows and in kiosks.
- B. Midterm Exam/Quizzes – 20%  
A midterm exam and frequent quizzes will be given to assess whether students are attending to the assigned readings and properly processing all material presented via lecture/demonstration.
- C. Final Exam/Project – 30%  
The final exam will be given during the final class meeting and will be cumulative in nature. The final project will be completed over the course of 4 weeks and will include both the design and development of an animation as well as documentation used for successful project management.
- D. Evaluation is based on a total cumulation of points earned on all assignments and reflected as a percentage of 100.

### Grading Scale

- A= 100 - 90%
- B= 89 - 80%
- C= 79 - 70%
- D= 69 - 60%
- F= Below 60%