

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

PARAMETRIC MODELING W/LAB
CID 2235 (formerly CID 2230)

Class Hours: 3.0

Credit Hours: 3.0

Laboratory Hours:
1.0

Revised: Spring 05

Catalog Course Description:

An advanced course using parametric modeling and solid modeling applications such as Pro/ENGINEER and Inventor. Students create parametric, feature-based, three-dimensional solid models. This covers assemblies, rendering and detailing engineering drawings. May be repeated for up to 6 hours of credit.

Entry Level Standards:

The student should be able to effectively communicate with instructor and peers, complete assignments according to instructor specifications, and read and write at the required level.

Prerequisite:

CID 1100 and 1105 or consent of instructor

Textbook(s) and Other Course Materials:

Textbook:

Inside Pro/ENGINEER Wildfire. Dennis L. Steffen and Gary Graham. Delmar Press, 2004 for the ProE course

Or

AutoDesk Inventor. James M. Leake, McGraw Hill, 2004 for the Inventor course.

Reference:

Principles of Technical Drawing. Gieseche, Mitchel, Spencer, Hill, Dygdon & Novak. MacMillan, 11th Edition.

I. Week/Unit/Topic Basis:

Week	Topic
1-14	Over the 14-week semester, the following topics will be covered: Introduction to Pro/ENGINEER Environment Sketcher Tools Modeling Tools Modifying Parts Assembly Operations Part and Feature Management 2-D dimensioned drawings, sections and assemblies
15	Final Exam Period; Final Project

II. Course Objectives*:

- A. Creation and use of seed/prototype files. (a, b, f, g)
- B. Use of Pro/ENGINEER/Inventor drawing/sketching commands to define basic geometry. (a, b, c, d, f, g)
- C. Use parametric, feature-based modeling system to define model. (a, b, c, d, e, f)
- D. Link model files. (a, b, c)
- E. Use parametric model to generate 2D drawings. (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 drawings and class projects. *Communication Outcome, Mathematics Outcome, Technological Literacy Outcome*
2. Use software to constrain and modify the geometry of mechanical part/parts. *Mathematics Outcome, Technological Literacy Outcome*
3. Use software to produce professional sets of drawings. *Communication Outcome*
4. Use Microsoft Word to generate a report documenting one or more Pro/ENGINEER/Inventor commands and what improvements might be made in future releases. *Technological Literacy Outcome*
5. Participate in open discussions regarding the strengths and weaknesses of Pro/ENGINEER/Inventor commands and what improvements might be made in future releases. *Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies*
6. Use the Internet and electronic mail to communicate effectively between the instructor and other students. *Communication Outcome*
7. Locate and use desired ISO and ANSI standards to produce professional drawings. *Communication Outcome*

*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. Set software and environment variable to create a seed file/project. A
2. Utilize a text editor to edit the file. A
3. Test the newly created seed file/files to evaluate the accuracy of the code. A
4. Optimize file that will result with the most efficient execution. A
5. Create 3-dimensional models of mechanical parts. B

6. Produce 2-dimensional drawings from the models. B
7. Utilize the 3-dimensional model to reference individual parts to create an assembly drawing. B
8. Determine if a new menu item needs to be added or if an existing menu item needs modification. C
9. Utilize a text editor to add or modify menu items. C
10. Test and evaluate the new or modified menu items. C
11. Create 3D parametric, feature-based drawings. B, D
12. Delete, suppress, resume, reorder, modify, and redefine features. D

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

V. Evaluation:

A. Testing Procedures:

Formal tests and quizzes will be given at the discretion of the instructor.

B. Laboratory Expectations: 75% of grade

Students will be evaluated on the correctness of their drawings.

C. Field Work: 25% of grade

Students will be graded on a final set of working drawings of a project that includes three-dimensional solid model and all orthographic drawings as required to sufficiently describe the part/parts for manufacturing.

D. 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 (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. Labs are considered instructional activities, and attendance is required.

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 by themselves.

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have 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 or in the instructor's office). To request accommodations, students must register with Services for Students with Disabilities Office located in J.L. Goins Administration Building, Room 127 or 131 or by phone: (865) 539-7153 or (865) 694-6751 Voice/TTD.

D. Equipment:

Students are expected to take utmost care when using equipment provided by Pellissippi State. 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.