ENT 235 COMP  
Course Number Title Credit Hours

DESCRIPTION:
An introduction to feature based, parametric, solid modeling using the Solid Edge© computer software. Solid model part databases are created of mechanical type component parts and used to construct third-angle, orthographic projection type drawings to which dimensions and annotations are added. Various part databases are inserted and constrained to create multipart assemblies and assembly drawings. Exploded assembly views are created as bitmap files and inserted into multi-view assembly drawings. Solid model assemblies of mechanical mechanisms are animated using the Dynamic Designer© computer software. Dynamic force analyses and measurements are produced.

PERIODS PER WEEK: 2 Lecture 1 Lab

PREREQUISITES: ENT 135, MTH 125 or equivalent

TEXT:
No Text Book is required for the course. Computer software, Power Point© presentations, and written handouts will be provided.

METHOD OF PRESENTATION:
Class room discussions, individual tutorial sessions, computer laboratory assignments, and final examination

METHOD OF EVALUATION:
Computer Laboratory Assignments 70%
Portfolio 10%
Final Examination 20%

OBJECTIVES:
Upon Completion of this course, students will be able to:
(1) Demonstrate the ability to create multiple view detail drawings of parts and assemblies.
(2) Demonstrate proficiency in solid modeling using Solid Edge® (EDS Solutions Inc.) software to facilitate engineering problem solving.

COURSE ASSESSMENT CRITERIA:
Outcome 1 “Knowledge of modern engineering computer aided design methods and techniques used in the graphical representation of mechanical components.”

COURSE ASSESSMENT TOOLS:
Employer Surveys
Graduate Surveys
Student Evaluations
Lab Project and Test Outcomes from ENT 235
Instructor Course Evaluation Form from ENT 235

TOPICAL OUTLINE AND PROJECT ASSIGNMENTS:
1. Introduction and Practice With Part Tutorials (assignment #1)
2. 2D Sketching and Drawing Techniques (assignment #2)
3. Sketch/Drawing Constraints and Reference Planes (assignment #3)
4. Modeling Parts With Inclined and Oblique Surfaces (assignment #4)
5. Modeling Parts With Curved Surfaces (assignment #5). Also review assignment #1.
6. Practice With Assembly Tutorials (assignment #6)
7. Creation of Multiple View Detail Drawings Of Parts And Assemblies. (assignment #7)
8. Use of Dynamic Designer To Animate Assembly Model of A Mechanical Mechanism And Measure Associated Dynamic Forces. This Is The Design Project (assignment #8)
9. Final Exam – In Class Creation of a Mechanical Part and Multiple View Drawing of the Part.
There are a total of eight (8) projects that must be submitted for grading. The projects must be submitted in printed copy on 8 ½ x 11 inch paper as well as electronic files on a floppy or a CD each week on the due date. The completed drawings must be placed in a 3 ring binder which will be collected at the end of the course and graded (10% of your final grade).

MIAMI UNIVERSITY LEARNING COMMUNITY:
Miami University is committed to fostering a supportive learning environment for all students irrespective of individual differences in gender, race, national origin, religion, handicapping conditions, sexual preferences, or age. Students should expect, and help create, a learning environment free from all prejudice. Disparaging comments, sexist or racist humor, or questioning the academic commitment of students based upon these individual differences is behavior that undermines our learning community. If such behaviors occur in class, please seek the assistance of your instructor or department chair.

Students with disabilities are encouraged to register with the Disability Service Office in order that academic accommodations can be made.

Prepared by: Professor Gary Drigel, May 12, 2005