DRFT 2332

Division: Career and Technical Education
Department: Drafting Technology
Course: DRFT 2332
Title: Mechanical CAD Drafting
Catalog Description:

The course will introduce the student to the 3D modeling process and 3D parametric modeling. It will present a process-based approach to mechanical drafting using solid modeling commands, options, and techniques. Students will experience the power of solid modeling with a parametric modeling program, as they complete parts, assemblies and working drawings.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 4; Lecture: 3; Lab: 3
Clock/Hour Requirements: 90
Offered for Non-Credit: No
Prerequisites: DRFT 1310 or DRFT 1312

Corequisites: None

Justification:

This course is approved by the program advisory committee and corresponds to SLCC course EDDT 2600.

Student Learning Outcomes:

Upon successful completion of this course, students will be able to:

- understand the basic underlying principles of solid modeling
- apply the principles of sketching, profiling, extruding, and revolving
- apply the process of drawing constraints
- understand the principle of parametric modeling as it applies to drawing modes
- apply the process of constructing types of solid features
- apply the sketch plane theory
- apply the work axis, work point, and work plane procedure
- apply the work plane theory
- apply annotation to drawings
- use assemblies and part analysis
- understand and apply parts lists and bill of materials
- apply the solid modeling procedures to presentation applications.

Content:

Course objectives will be achieved by providing students with instructional and hands-on experiences in the

following areas:

- basic principles of:
    - assembly modeling
    - 2D drawing layouts
    - the solid modeling user interface
- extruding solids
- profiling sketches
- power dimensioning
- applying constraints to geometry features
- moving between model mode and the drawing mode
- applying 3D features to models
- using design variables
- adding and working with the sketch planes
- adding and working with work points, work axes, and work planes
- editing and annotating drawings
- building and analyzing assemblies
- creating parts lists and bill of materials
- using solid modeling techniques to create scenes for presentations.

General Education Outcomes:

2) Write clearly, informatively, and persuasively.
Students are required to complete descriptive term-sheets which provide information about the vocabulary and terminology used in this specific area. The descriptions are reviewed, graded, and returned to students for critique and improvement.

6) Apply computational skills to a variety of contexts.
The field of drafting requires the combination of basic math, geometry, and algebra skills. Students will utilize these skills when producing drawings, cost estimates, and material lists.

Applied Education Outcomes:

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.
Students are required to complete the required course objectives. The objectives are discussed in class and the students then apply drafting procedures to accomplish the objectives.

- Students are informed of what employment opportunities are available if they succeed in this course.

Key Performance Indicators:

In class:

- Students will demonstrate mastery of course competencies by completing assignments/projects, tests, and quizzes. Assignments/projects are worth 75%, tests are worth 15%, and quizzes are worth 10% of the final grade.
- Percentages are approximate.

Following class:

- The knowledge and skills required in this course will be demonstrated in subsequent courses and in subsequent employment using CAD applications.

Representative Text and/or Supplies:

- Texts will be selected as appropriate to the architectural CAD system currently in operation.

Optimum Class Size: 12
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

Craig Conder, ,

I hereby find this course consistent with the goals and resources of the Drafting Technology Department:

Craig Conder, , , Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)