



## DRFT 2330

**Division:** Career and Technical Education

**Department:** Drafting Technology

**Course:** DRFT 2330

**Title:** Mechanical Desktop

**Catalog Description:**

The course will introduce the student to the 3-D modeling process and 3-D parametric modeling. It will present a process-based approach to the Mechanical Desktop (MDT) commands, options, and techniques. Students will experience the power of MDT as they complete parts, assemblies, and working drawings.

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 4; Lecture: 2; Lab: 4

**Clock/Hour Requirements:** 90

**Offered for Non-Credit:** No

**Prerequisites:** DRFT 1310

**Corequisites:** None

**Justification:**

This course is recommended 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 MDT
- apply the principles of sketching, profiling, extruding, and revolving
- apply the process of 2D constraints
- explain the difference between drawing mode and parts mode
- apply the process of constructing different types of holes
- apply the sketch plane theory
- apply the work axis and work point procedure
- apply the work plane theory
- apply annotation to drawings
- apply assembly and part analysis
- understand the parts lists and the bill of materials
- apply the MDT scene theory.

**Content:**

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

- basic principles of:
  - assembly modeling
  - 2-D drawing layouts
  - the MDT user interface
- extruding solids
- profiling sketches
- power dimensioning
- using constraints to constrain geometry
- moving between model mode and the drawing mode
- constructing different types of holes in a project
- using design variables
- working with the sketch planes
- working with the work planes
- editing and annotating drawings
- building assemblies
- analysis of the parts
- creating parts lists and bill of materials
- creating and viewing scenes.

### **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 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.

9) Respond with informed sensitivity to an artistic work or experience.

In both mechanical and architectural drafting, the final product must be presented to the client. At this point in the process, students must recognize quality artistic efforts in order to be able to produce their own final presentation drawings.

### **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.

#### **Following class:**

- The knowledge and skill required in this course will be demonstrated in subsequent courses and in subsequent employment using Computer Aided Drafting (CAD) applications.

- *Learning Mechanical Desktop*, current edition, Autodesk.

**Optimum Class Size:** 10

**Maximum Class Size:** 18

**Signatures:**

I hereby submit this course syllabus:

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Craig Conder, ,

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

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Craig Conder, , Chair

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

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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:

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

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)