



## DRFT 1312

**Division:** Career and Technical Education

**Department:** Drafting Technology

**Course:** DRFT 1312

**Title:** Advanced CAD

**Catalog Description:**

This is a course in advanced CAD operations to include advanced dimensioning and tolerancing concepts, sectioning, creating symbols and symbol libraries, using external files, and creating bills of materials with appropriate documentation. Also included is the creation of isometric drawings, the use of advanced CAD applications and customizing systems, and an introduction to three-dimensional drawings.

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 4; Lecture: 2; Lab: 5

**Clock/Hour Requirements:** 105

**Offered for Non-Credit:** No

**Prerequisites:** DRFT 1300 or DRFT 1302

**Corequisites:** None

**Justification:**

This course is approved by the program advisory committee and corresponds to similar courses being developed by UVSC, SLCC, CEU, and SUU.

**Student Learning Outcomes:**

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

- apply advanced geometric dimensioning and tolerancing methods to improve drawings
- understand and apply sectioning and graphic patterns to add detail to drawings
- know what symbols are, create symbol libraries, and apply symbols to increase drawing productivity
- know how to use external references in multiview layouts in drawings
- know how to create a bill of materials and assign appropriate documentation to enhance drawing capabilities
- create isometric drawings with associated dimensioning
- know the basic principles for three-dimensional drawings
- understand and apply external commands, and apply customizing techniques to enhance drawing capabilities
- have a basic understanding of the Windows file manager as it applies to CAD operations.

**Content:**

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

following areas:

- advanced geometric dimensioning and tolerancing
- drawing section views and graphic patterns
- creating symbols and libraries for multiple use
- using external files and multiview drawings
- assigning attributes and generating a bill of materials
- introduction to three-dimensional drawings
- external commands, system customization, and advanced drawing techniques
- using the Windows file manager.

### **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.

4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media.

Students will research information (i.e. styles, layouts, mechanical parts, connectors, fasteners, etc.) through the Internet, written manuals, journals, and other publications. This information is used to complete projects and assignments throughout the program.

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 objects are discussed in class and the students then apply drafting procedures to accomplish the objectives.

- Students will create a project portfolio with drawings that meet these standards.
- Students will be offered the opportunity to take the state CTE certification test.

### **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 acquired in this course will be demonstrated in subsequent courses. Students will also be able to demonstrate the skills necessary to be productive in occupations requiring

the application of Computer Aided Drafting (CAD).

**Representative Text and/or Supplies:**

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

**Optimum Class Size:** 12

**Maximum Class Size:** 20

**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)