DRFT 1200

Division: Career and Technical Education
Department: Drafting Technology
Course: DRFT 1200
Title: Mechanical Drafting/Assembly Drawings
Catalog Description:

The emphasis of this course is the application of fundamental drafting techniques in making mechanical detail and assembly drawings. Topics include advanced dimensioning and tolerancing, precision fits, threads and fasteners, detail, and assembly drawings. Traditional and computer assisted drafting will be used for assignments.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 5
Clock/Hour Requirements: 120
Offered for Non-Credit: No
Prerequisites: DRFT 1010, DRFT 1300

Corequisites: None

Justification:

This course is approved by the program advisory committee and corresponds to SLCC course EDDT 1200, WSU course DG 2650, and UVSC course DT 1200.

Student Learning Outcomes:

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

- use conventional dimensioning techniques to determine size and shade accurately on an engineering drawing
- apply finish symbols and notes to a drawing
- read and create limit dimensions
- describe the nominal size, tolerance, limits, and allowance of two mating parts
- identify a clearance fit, interference fit, and transition fit
- describe the basic hole and basic shaft systems
- describe the classes of fit and give examples of each
- draw geometric tolerancing symbols
- specify position and geometric tolerances
- define and label the parts of a screw thread
- identify various screw thread forms and screw head types
- draw detailed, schematic, and simplified threads in section and elevation
- define typical thread specifications

- identify various fasteners and describe their use
- draw springs in elevation using break conventions
- define the characteristics of a spur gear, worm gear, and bevel gear
- calculate the gear ratio and rotations per minute (RPM) of two mating gears, given the pitch diameters
- define the principal spur gear terms
- draw a spur gear
- describe the relationship between a Computer Aided Manufacturing (CAM) profile and a displacement diagram
- draw a CAM profile, given a displacement profile drawing
- list the types of CAM followers
- identify the elements of a detail drawing and create a simple detail drawing
- list the common elements of a title block and record strip
- create a typical drawing sequence of numbers
- describe the process for revising drawings
- list the parts of an assembly drawing
- describe the special requirements of a patent drawing.

Content:

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

- mating dimensions, machine-pattern-forging dimensions
- terminology and process of tolerancing
- types of fits used in tolerancing
- basic hole and basic shaft systems
- geometric tolerancing and the symbols used
- terminology and symbols used in threads and thread forms
- process of drawing threads and fasteners using: detail, simplified, and schematic processes
- different type of fasteners and their uses
- proper way to draw or represent the fasteners on a drawing
- different types of springs and how to draw or represent them on an engineered drawing
- proper layouts of detail and assemble drawings
- different components that go on a detail or assembly type drawing
- patent drawing.

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.

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.

5) Apply a cultural and historical awareness to a variety of phenomena.
Students must understand the historical aspects of architectural styles and the methods utilized in the drafting field. This historical perspective is addressed in lecture and students are required to identify styles through exams and projects.

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.

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:

- Upon completion of the course, competency will be demonstrated in subsequent courses and on customer projects.

Representative Text and/or Supplies:

- *Technical Drawing,* current edition, Prentice Hall, Inc.

Optimum Class Size: 12
Maximum Class Size: 15

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)