Course Number and Title: EDD 142 Engineering Drafting and Design II

Campus Location:
Stanton

Effective Date:
2019-51

Prerequisite:
EDD 141, SSC 100 or concurrent

Co-Requisites:
none

Course Credits and Hours:
3.00 credits
2.00 lecture hours/week
2.00 lab hours/week

Course Description:
In this course, students focus on advanced drafting practices. Topics explored include the study of primary and secondary auxiliary views as well as an in-depth study of all American National Standards Institute/American Society of Mechanical Engineers (ANSI/ASME) dimensioning practices along with tolerances, fits, and surface texture. Threaded and miscellaneous fasteners are also discussed.

Required Text(s):
Obtain current textbook information by viewing the campus bookstore - https://www.dtcc.edu/bookstores online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:
None

Schedule Type:
Classroom Course

Disclaimer:
None

Core Course Performance Objectives (CCPOs):

1. Interpret and develop primary and secondary auxiliary views for shop fabrication drawings. (CCC 1, 2, 5, 6; PGC 1, 3, 4, 5)
2. Interpret and apply dimensioning techniques to various engineering drawings using different dimensioning methods. (CCC 1, 2, 5, 6; PGC 1, 3, 4, 5)
3. Apply required fits and tolerances to various shop drawings. (CCC 1, 2, 5, 6; PGC 1, 3, 4, 5)
4. Interpret and specify surface textures and related notes to different engineering drawings. (CCC 1, 2, 5, 6; PGC 1, 3, 4, 5)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):
Upon completion of this course, the student will:

1. Interpret and develop primary and secondary auxiliary views for shop fabrication drawings.
    1. Describe the purpose of an auxiliary view.
    2. Explain how an auxiliary view is projected.
    3. Discuss and draw viewing-plane lines related to auxiliary views.
    4. Solve for the true shape of an angled surface using an auxiliary view.
2. Interpret and apply dimensioning techniques to various engineering drawings using different dimensioning methods.
    1. Identify and use common dimensioning systems.
    2. Apply proper specific notes for manufactured features.
    3. Place proper local and general notes on a drawing.
    4. Apply angular, callout, overall, limited length, and area dimensions.
    5. Dimension and recognize standard symbols for curved features.
    6. Define and dimension chamfers, threads, drills, tapers, knurling, and keyways.
    7. Apply tabular, arrowless, rectangular coordinate, and polar dimensioning.
3. Apply required fits and tolerances to various shop drawings.
    1. Analyze part features in terms of integral geometric shapes to facilitate concise dimensioning within prescribed tolerances.
    2. Solve tolerance problems, including limits and fits.
    3. Prepare completely dimensioned multi-view drawings with tolerances.
4. Interpret and specify surface textures and related notes to different engineering drawings.
    1. Recognize finish marks, general symbols and notes, and ANSI basic surface texture symbols.
    2. Identify the differences of surface roughness on real mechanical pieces.
    3. Accurately draw surface finish symbols and related notes on drawings.

Evaluation Criteria/Policies:
Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	**–**	**100**	**=**	**A**
83	**–**	**91**	**=**	**B**
75	**–**	**82**	**=**	**C**
0	**–**	**74**	**=**	**F**

Students should refer to the Student Handbook - https://www.dtcc.edu/handbook for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Final Course Grade:
Calculated using the following weighted average

Evaluation Measure	Percentage of final grade
Drawing Exercises (Formative)	40%
Exams (Summative) (Equally Weighted)	50%
Group Project (Summative)	10%
TOTAL	100%

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

1. Prepare detailed mechanical, machine, architectural, structural, HVAC, industrial piping, and electrical/electronics drawings for light commercial, manufacturing, and industrial companies.
2. Perform routine structural design calculations required to size steel beams, columns, and decking materials in accordance to AISC standards and reinforced concrete slabs and foundation footings in accordance to ACI standards.
3. Support manufacturing office administration activities with the ability to read and interpret drawings and specifications, prepare technically accurate drawings using both manual and CAD techniques, perform quantity surveys and organize cost data for cost estimating functions, prepare or check shop drawings, assist in the planning or coordinating of manufacturing activities, assist designers, and coordinate the preparation and review of bid packages.
4. Provide meaningful and innovative assistance to supervising engineers or designers by developing layout design solutions to manufacturing problems, recommending alternate material substitutions or methods of production, and applying reference resources to collect, organize, and analyze required research data.
5. Collect, organize, and analyze data for manufacturing machine parts, and prepare plans for department and/or client approval.

Disabilities Support Statement:
The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the disabilities services - https://www.dtcc.edu/disabilitysupport web page or visit the campus Advising Center.