DELAWARE TECHNICAL & COMMUNITY COLLEGE

Course Number and Title: EDD 161 Introduction to CAD using Microstation

Campus Location:
Stanton

Effective Date:
2021-51

Prerequisite:
AET 123 or AET 125 or CET 125 or 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 introductory computer-aided drafting (CAD) course, students use MicroStation software to create quality 2D designs, manipulate and modify elements, assemble project data, and create printed output.

Required Text(s):
Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](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. Initiate CAD drawings with appropriate values for all settings. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 3, 4, 5)
2. Demonstrate the use of fundamental CAD drawings and editing commands. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 3, 4, 5)
3. Make basic 2D drawings of mechanical, architectural, civil, and other engineering   applications, complete with the necessary views, dimensions, and notes. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 3, 4, 5)
4. Use both the printer and plotter to make hard copies of drawings. (CCC 1, 2, 3, 4, 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. Initiate CAD drawings with appropriate values for all settings.
    1. Set up drawing files with correct units, limits, snap, grid, layers, file names, and other settings.
    2. Manage and back up files for safekeeping.
    3. Organize toolbars and other screen settings for drafting efficiency.
2. Demonstrate the use of fundamental CAD drawings and editing commands.
    1. Use drawing commands such as line, circle, rectangle, polygon, and others.
    2. Use edit commands such as offset, array, mirror, trim, extend, and others.
3. Make basic 2D drawings of mechanical, architectural, civil, and other engineering applications, complete with the necessary views, dimensions, and notes.
    1. Accurately draft a variety of basic engineering drawings using CAD software.
    2. Apply dimensions to drawings in appropriate industry formats.
    3. Use text command tool to set up, write, and edit text.
    4. Add notes, line types, hatch patterns, cells, and other graphic elements to drawings.
    5. Interpret and use CAD terminology and techniques.
4. Use both the printer and plotter to make hard copies of drawings.
    1. Prepare various title blocks for different paper, printer, and scale options.
    2. Use accepted industry standards for printing and plotting single and multi-view drawings.
    3. Use software settings to print and plot drawings with a variety of graphic elements, including line types, line weights, color, and others as needed for drafting clarity.

Evaluation Criteria/Policies:
The grade will be determined using the Delaware Tech grading system:

90	–	100	=	A
80	–	89	=	B
70	–	79	=	C
0	–	69	=	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%
Bentley Microstation online exams (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.