



## Course Number and Title: EDD 246 Engineering Drafting (Structural)

**Campus Location:**

Stanton

**Effective Date:**

2021-51

**Prerequisite:**

EDD 142 and EDD 271 or EDD 171 and CET 125

**Co-Requisites:**

none

**Course Credits and Hours:**

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

**Course Description:**

In this advanced drafting course, students develop structural steel and architectural drawings. The American Institute of Steel Construction (AISC) and American Concrete Institute (ACI) references are used.

**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. Identify structural steel components, and define related terminology. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4, 5)
2. Define and prepare structural steel framing and section drawings. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4, 5)
3. Define and prepare structural steel fabrication and connection detail drawings. (CCC 1, 2, 3, 4, 5, 6; PGC 1, 2, 3, 4, 5)
4. Identify residential architectural components, and define related terminology. (CCC 1, 4, 5, 6; PGC 1, 2, 3, 4, 5)
5. Define and prepare floor and foundation plan drawings. (CCC 1, 4, 5, 6; PGC 1, 2, 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. Identify structural steel components, and define related terminology.
  1. Describe structural drafting.
  2. Identify the different types of structural drawings.
  3. Explain the drawing, checking, correcting, and revising process in structural drafting.
  4. Explain the product fabrication processes for structural steel.
2. Define and prepare structural steel framing and section drawings.
  1. Distinguish between engineering drawings and shop drawings.
  2. Describe, designate, and illustrate the various structural steel products used in framing plans.
  3. Properly use the *American Institute of Steel Construction's Manual of Steel Construction* for determining structural steel product designations and dimensions.
  4. Construct structural steel framing plans according to engineering specifications.
  5. Describe structural steel sections.
  6. Prepare structural steel full, partial, and offset sections.
3. Define and prepare structural steel fabrication and connection detail drawings.
  1. Prepare complete structural steel baseplate, framed, and seated connections.
  2. Describe structural steel shop and fabrication detail drawings.
  3. Construct fabrication details for structural steel columns and beams.
4. Identify residential architectural components and define related terminology.
  1. Describe architectural drafting.
  2. Describe basic construction drawings used to build a structure.
  3. Explain primary considerations when planning a dwelling.
5. Define and prepare floor and foundation plan drawings.
  1. List the information required on a typical floor plan.
  2. Draw a residential floor plan using accepted symbols and techniques.
  3. Identify the features included in a foundation plan.
  4. Draw a foundation plan for a residential structure.

**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](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%
Student Portfolio (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](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.