

Course Number and Title: AET 232 Contracts and Specifications

Campus Location:

Georgetown, Dover, Stanton

Effective Date:

2022-51

Prerequisite:

ENG 102, CET 135

Co-Requisites:

None

Course Credits and Hours:

3.00 credits

3.00 lecture hours/week

0.00 lab hours/week

Course Description:

This course presents principles, procedures and processes related to construction documents and project delivery with an emphasis on construction specification writing that incorporates the standards of the Construction Specifications Institute (CSI) Masterformat.

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. Describe the organization and formatting of construction documents. (CCC 2, 4, 5; PGC 5)
2. Identify the differences among the four major methods of specifying: descriptive, performance, proprietary, and reference standard. (CCC 2, 4, 5; PGC 5)
3. Define the purpose of the major components of a construction contract, and describe the documents that are prepared for each component. (CCC 2, 4, 5, 6; PGC 5)
4. Identify major project phases, and describe the preparation of specifications through all project phases and appropriate documentation forms for each phase. (CCC 2, 4, 5; PGC 5)
5. Identify substitutions, alternates, allowances, unit prices, value engineering and their uses in construction contracts. (CCC 2, 4, 5, 6; PGC 5)
6. Describe bidding procedures, bidding documents, and activities of project professionals in the bidding phase of a construction project. (CCC 2, 4, 5, 6; PGC 5)
7. Describe construction administration procedures, including methods of payment, the activities of project professionals, and the types of documentation used in the construction administration phase of a construction project. (CCC 2, 4, 5, 6; PGC 5)
8. Identify project participants and the various contractual relationships between parties based on different methods of project delivery. (CCC 2, 4; PGC 1, 6)
9. Complete technical product research and selection using standard industry references and other information resources. (CCC 2, 4, 5; PGC 5)
10. Prepare construction specifications using the CSI 3-Part Section Format and CSI conventions of language and style. (CCC 2, 4, 5; PGC 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. Describe the organization and formatting of construction documents.
 1. Describe the organization of construction documents.
 2. Identify the parts of a project manual.
 3. Describe the organization and basic components of a construction contract.
 4. Summarize the two major formats used to organize construction information: UniFormat and the Construction Specifications Institute (CSI) MasterFormat.
 5. Describe the organization of the CSI 50-Division Format.
 6. Explain the CSI 3-Part Section Format.
2. Identify the differences among the four major methods of specifying: descriptive, performance, proprietary, and reference standard.
 1. Identify the differences among the four major methods of specifying; descriptive, performance, proprietary, and reference standard.
 2. Explain the difference between restrictive and non-restrictive specifying.
 3. Summarize the difference between long and short forms' specifications.
3. Define the purpose of the major components of a construction contract, and describe the documents that are prepared for each component.
 1. Explain the definitions, purpose, and relationship of construction drawings versus specification.
 2. Identify the purpose of each of the major components of a construction contract: bidding documents, contract forms, general conditions, supplementary conditions, specification, construction drawings, addenda, and contract modifications.
 3. Define the beginning and end of the contract time.
 4. Explain the terms substantial completion, retainage, and liquidated damages.
 5. Summarize the purpose of the performance bond and the labor and materials payment bond.
4. Identify major project phases, and describe the preparation of specifications through all project phases and appropriate documentation forms for each phase.
 1. Define the major project phases of a construction project, the activities in each phase, and the types of documentation use for communication between the parties.
 2. Identify the different documents used in the preparation of specifications such as outline specifications and preliminary project descriptions (PPDs), and describe their appropriate use.
5. Identify substitutions, alternates, allowances, unit prices, value engineering and their uses in construction contracts.
 1. Identify the recommended CSI practice of product approval standards for using substitutions in specifications.
 2. Define the basic types of alternates, allowances, and unit prices, and explain their uses in construction contracts, including cash and contingency allowances.
6. Describe bidding procedures, bidding documents, and activities of project professionals in the bidding phase of a construction project.
 1. Describe the requirements for establishing contractor qualifications for bidding.
 2. Define the purpose of the solicitation to bid, instructions to bidders, and bid form.
 3. Summarize the accepted methods of providing bid security.
 4. Define responsive bid and responsible bid.
 5. Explain the purpose of the letter of intent and the notice to proceed.
7. Describe construction administration procedures, including methods of payment, the activities of project professionals, and the types of documentation used in construction administration phase of a construction project.
 1. Describe the major methods of payment in construction contracts: stipulated sum, cost-plus-fee, and unit prices.
 2. Summarize submittal procedures for shop drawings and samples.
 3. Explain the uses of field reports, field orders, and requests for information.
 4. Explain the uses and sequence for the various types of documentation in contract modification: addendum, change order request, construction change directive, and change order.
 5. Define value engineering and its impact on the construction contract.
 6. Define the responsibilities of the architect/engineer and the prime contractor according to the general conditions for the contract for construction.
8. Identify project participants and the various contractual relationships between parties based on different methods of project delivery.
 1. Describe the major methods of project delivery: traditional-design, bid, build; multiple contract, fast track, design-build, construction management, and owner-builder.
 2. Delineate the contractual relationships between the parties in each method of project delivery.
 3. Explain the purpose of mechanics' liens.
9. Complete technical product research and selection using standard industry references and other information resources.
 1. Locate resources available for specification writers to use in technical research.
 2. Use both printed text and electronic media in the preparation of specifications.
10. Prepare construction specifications using the CSI 3-Part Section Format and CSI conventions of language and style.
 1. Prepare a complete specification section.
 2. Organize specification text information into the CSI 3-Part Section Format.
 3. Write a specification, including the scope of work and descriptive specification of product information, and specify workmanship.
 4. Modify published master specifications to assist in the preparation of a specification section.
 5. Write and edit specification text to conform to the CSI conventions of language and style.
 6. Follow Consider a standard page format to prepare a specification section.

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 |
|----------------------------------------------------------------------------------------------|---------------------------|
| Formative: Homework (Quizzes, Journals, Participation, Career Expo, etc.) (weighted equally) | 20% |
| Formative: Assessments (Mini-reports, research assignments, etc.) (weighted equally) | 25% |
| Summative: Semester Project | 30% |
| Summative: 3-4 Exams (weighted equally) Tests (Summative) | 25% |
| 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. Research and analyze existing site conditions.
2. Apply principles of sustainability to the built environment.
3. Employ the architectural design process.
4. Interpret and apply building codes.
5. Create technical drawings and presentation graphics.
6. Demonstrate a commitment to quality, timeliness, professional development, and continuous improvement.

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.