



Course Number and Title: CMT 235 Advanced Cost Estimating/Planning

Campus Location:

Georgetown, Dover, Stanton

Effective Date:

2018-52

Prerequisite:

CMT 234

Co-Requisites:

none

Course Credits and Hours:

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

Course Description:

This course provides an in-depth analysis of commercial construction costs, bid preparation, and value engineering with regard to budgetary constraints. Different methods of estimating using productivity software are presented.

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:

See supplemental course information.

Schedule Type:

Classroom Course

Web Conferencing

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Perform the necessary steps for estimating the direct and indirect costs of a commercial construction project. (CCC 1, 2, 4, 6; PGC 1, 2)
2. Create a cost proposal that includes methods of procurement and value engineering. (CCC 1, 2, 4, 6; PGC 1, 2)
3. Apply professional ethics when preparing a cost estimate. (CCC 2, 4, 6; PGC 1, 4, 5)
4. Predict impacts of site, economic, and weather conditions on preparing construction estimates and schedules. (CCC 1, 2, 4, 6; PGC 1, 2, 3, 5)
5. Calculate items of site work, excavation, and landscaping. (CCC 2, 4, 6; PGC 1, 2, 4, 5)
6. Analyze and calculate material quantities using the Construction Specification Institute (CSI) MasterFormat. (CCC 2, 6; PGC 1, 2, 4)
7. Use standard industry references, information resources, and software to prepare cost estimates and schedules. (CCC 1, 2, 4, 5, 6; PGC 1, 2, 3, 5)
8. Demonstrate professional and ethical conduct as expected in industry. (CCC 1, 2, 3, 4, 5, 6; PGC 3, 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. Perform the necessary steps for estimating the direct costs of a commercial construction project.
 1. Explain contracts, bonds, and insurance.
 2. Read and interpret the specifications and contract drawings.
 3. Calculate overhead, contingencies, labor, and equipment costs.
 4. Determine safety issues and the general requirements of the construction site.
2. Create a cost proposal that includes methods of procurement and value engineering.
 1. Define *value engineering*.
 2. Explain construction accounting, including fixed and variable costs.
 3. Determine best cost estimating methods.
 4. Assemble all pertinent components required for a bid proposal.
3. Apply professional ethics when preparing a cost estimate.
 1. Summarize the purpose of equipment and labor mark up and prevailing wages.
 2. Identify and give examples of indirect costs, overhead, and profit.
 3. Describe best procurement practices.
4. Predict impacts of site, economic, and weather conditions on preparing construction estimates and schedules.
 1. List and describe methods to prepare rough cost estimates.
 2. Identify and give examples of methods to prepare approximate cost estimates.
 3. Name and summarize methods to prepare detailed estimates for bids.
 4. Calculate contingencies for estimates and bids.
5. Calculate items of site work, excavation, foundation, and landscaping.
 1. Summarize the purpose of equipment and labor mark up and prevailing wages, impact construction costs, planning, scheduling, and financing.
 2. Identify and give examples of indirect costs, overhead, and profit.
 3. Explain the impacts of construction costs, planning, scheduling, and financing.
6. Analyze and calculate material quantities using the Construction Specification Institute (CSI) MasterFormat.
 1. Use standard industry references to determine costs for materials, time, and cost estimates for labor and equipment.
 2. Select websites, publications, books, periodicals, catalogues, and other industry sources to research materials, labor, and equipment.
 3. Use productivity software to prepare a cost estimate and construction schedule for a typical wood-frame building.
7. Use standard industry references, information resources, and software to prepare cost estimates and schedules.
 1. Use standard industry references to determine costs for materials, time, and cost estimates for labor and equipment.
 2. Employ websites, publications, books, periodicals, catalogues, and other industry sources to research materials, labor and equipment.
 3. Use productivity software to prepare a cost estimate and construction schedule for a typical commercial building.
8. Demonstrate professional and ethical conduct as expected in industry.
 1. Identify the need for self-discipline and time management in technical industries.
 2. Communicate and function effectively as a member of a team.

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](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
Course Project (summative)	50%
Course Test (summative)	25%
Exercises and Mini Reports (formative)	20%
Participation (formative)	5%
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. Estimate material quantities for technical projects.
2. Interpret and compile construction drawings and project manual.
3. Employ project management skills as they relate to construction projects.
4. Use productivity software to develop a project record.
5. 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.