

CM 3420 – Construction Estimating & Bid Preparation

College of Architecture & Construction Management

Term: Spring 2019

Prerequisite: CM 3410

Class Meeting time: (M/W From 2:30 to 4:10 PM)

Course Website: <http://d2l.kennesaw.edu>

Class Location: H339

Class instruction methodology: 100% in classroom; Lecture discussion and lab work sessions

Instructor: Zuhair El-Itr, Ph.D. CCE

Office Location & Hours:

Office is located in Room # H337

M/W 4:00-5:00 PM and 7:00-8:00 pm; Other Office Hours can be scheduled by appointment only by calling my cellular phone number below or by sending an e-mail to zuhairitr@gmail.com. (Office Hour Procedure: Please schedule your office consultation by sending an e-mail or by calling in advance to guarantee service).

Course Communications: Email /Phone: zelitr@kennesaw.edu; 470-915-5517 Cell (as last resort) 404-886-6047

Preferred method of contact: email always first, phone second, and Cellular last

Required Text/ISBN Number:

No Required Textbook

Recommended Reference Manual Walker's Building Estimator's Reference Book Latest Edition ISBN 0-911592-24-5

Recommended Reference book: R.S. Means Building Construction Cost Data Latest Edition ISBN 978-1-936-35-56-5

COURSE SYLLABUS

Construction Management Faculty are involved in the development of knowledge, understanding, and application in an environment where we monitor, manage, and facilitate the learning process. Instructor strives to provide a rich learning environment that allows for a range of individual learning styles. The following syllabus provides specific topics for the course through various forms of teaching and discovery based on a selection of reading materials and other resources.

Course Catalog Description:

The continued study of the estimating process emphasizing pricing the general contractor's work including: estimating procedures, development of direct and indirect unit costs, evaluation of subcontractor's bids, bidding strategy, and bid opening. The completion of an estimate, bid submission, and development of a schedule of values are required. Also included is an introduction to conceptual estimating.

Purpose of Course:

Educate student on how to prepare a detailed construction cost estimate on a commercial project.

Course Goals, Objectives & Expectations:

Provide a sound and practical method for preparing a detailed cost estimate for a commercial project from a general contractor perspective, build the basic skill for preparing a bid package, explore the various aspects of estimating and hard bidding on a commercial job, introduce State of the art Estimating Software, models, and assemblies technique used in the industry to price a job

How This Course Relates to the Student Learning Outcomes in the Construction Management Program:

Student will be able to Estimate construction project implementation costs
Student will be able to analyze ethical responsibility of construction professional

Student Learning Outcomes Covered in this Course

SLO 1 – Create written communications appropriate to the construction discipline.

SLO 4 – Create construction project cost estimates.

SLO 6 – Analyze professional decisions based on ethical principles.

SLO 12 – Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.

Course Learning Outcomes:

By the end of the class Student should have:

- CLO 1: The ability to prepare a skeleton detailed estimate for a commercial construction project
- CLO 2: The ability to prepare a detailed General Condition Estimate (CSI Div 1)
- CLO 3: The ability to prepare an Order of magnitude estimate with Location, Inflation, and Size Adjustment.
- CLO 4: The ability to estimate Unit Prices based on wage rates and crew productivities
- CLO 5: Discussion on Ethics during the Bid Process
- CLO 6: The ability to prepare and present a cost proposal with write up, a schedule, and a cost proposal
- CLO 7: Improve Presentation and discussion skill while presenting Ethics

Purpose of this course:

All courses in the Construction Management program contribute to the body of knowledge required to complete the Capstone project necessary for graduation. Each course in the Construction Management program provides the student with an opportunity to attain knowledge, skills, and abilities in one or more of the 20 Student Learning Outcomes (SLO) set forth by the American Council for Construction Education (ACCE). The student's level of achievement of SLO is measured through one or more Course Learning Outcomes (CLO). The mapping of CLOs with SLOs for the course is shown in the table below followed by the table that presents the mapping of CLO with assessment tools.

COURSE POLICIES

Attendance Policy:

Students are required to attend every class. However if they have to miss a class for any reason it is their responsibility to catch up with the class material, scheduled exam or any announcement.

- No make-up test will be given.
- No Handout will be redistributed: it is the student responsibility to keep up with the covered material.
- The student will always get the three best scores of the four scheduled exams

Quiz / Exam Policy:

Tests will be announced in the class one week before they are scheduled. Two tests will be given and the grades will be used in computing the final grade. Grades will be returned after 10 working Days from the scheduled exam. During a test: it is the student responsibility to be punctual: Important information is typically covered in the first Five minutes. Each student is expected to have his or her own: Calculator, Reference material, etc. Otherwise won't be accepted in the classroom. After Grades are turned to the whole class a student has a total of 7 Calendar Days to contest his or her grade. After a Month from the date of the test: Exams will be thrown away.

Make-up Policy:

No make-up test will be given except in extreme condition or prior approval of a legitimate reason

Assignment Policy:

After discussing a topical content, Homework will be given in order to enforce and apply the knowledge that was presented during the lecture. The homework will be a numerical application in which student are encouraged to work in a group in order to solve the problem. Afterwards a Class discussion and solution will be presented.

Course Technology: N/A

Evaluation & Grading:

Midterm and a Final Exam (2@ 37.5%) Project (1@25%) (No makeup tests). Student will be given five equal opportunities to represent his/her mastering of the class material. Historical records show that the class will typically average a 78/100 with the following grade distribution 30% A, 40% B, 25% C and 5% D

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F = Below 60

UNIVERSITY POLICIES: Statement of Student Rights and Responsibilities KSU Student Code of Conduct

Plagiarism and Cheating:

No student shall receive, attempt to receive, knowingly give or attempt to give unauthorized assistance in the preparation of any work required to be submitted for credit (including examinations, laboratory reports, essays, themes, term papers, etc.). Unless specifically authorized, the presence and/or use of electronic devices during an examination, quiz, or other class assignment is considered cheating. Engaging in any behavior which a professor prohibits as academic misconduct in the syllabus or in class discussion is cheating. When direct quotations are used, they should be indicated, and when the ideas, theories, data, figures, graphs, programs, electronic based information or illustrations of someone other than the student are incorporated into a paper or used in a project, they should be duly acknowledged. No student may submit the same, or substantially the same, paper or other assignment for credit in more than one class without the prior permission of the current professor(s).

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the KSU Student Academic Integrity Policy at http://kennesaw.edu/handbooks/faculty/section2_13.php

University Policy on Accommodating Students with Disabilities:

Students requesting accommodation for disabilities must first register with the Office of Disabled Student Support Services at http://www.kennesaw.edu/stu_dev/dsss/dsss.html. The Office of Disabled Student Support Services will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

****Netiquette: Communication Courtesy:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.

<http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

Electronic Recording & Social Media Policy

Electronic recording performed without the consent of the people being recorded chills the free exchange of ideas. Academic freedom, free inquiry, and freedom of expression should not be limited by the fear that one's brainstorming, polemic discourse, speculative inquiry, or any other kind of expressed curiosity made within the space of a university classroom will be made public without one's consent. This fear is unacceptable regardless of whether one is in an online, hybrid, or face-to-face classroom setting.

Accordingly, no person shall electronically record any class discussion without the written permission of the instructor. No person shall publish online or elsewhere any electronic recording of a class discussion without the written permission of the instructor and any other persons who were recorded. This policy is not intended to discourage electronic recording in the classroom or the use of social media when such actions are performed with the written consent of the instructor and any other persons who were/will be recorded. Faculty accommodate all reasonable requests to electronically record a class discussion; these requests must be documented by the DisAbled Student Support Services available at:

http://www.kennesaw.edu/stu_dev/dsss/prospect.shtml

GETTING HELP

For issues with technical difficulties, please contact the Student Helpdesk:

1. Fill out a service form <http://uits.kennesaw.edu/support/formselect.php?s=tech>
2. Email: studenthelpdesk@kennesaw.edu
3. Call: 770-499-3555

Getting Started With Technology Services <http://uits.kennesaw.edu/>

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from ITS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Additional Technology Resources

1. Student Service Desk and Help Center studenthelpdesk@kennesaw.edu
2. Browser Checker
https://usg.desire2learn.com/d2l/tools/system_check/systemcheck.asp?ou=6606
3. USG Desire2Learn Help Center <https://d2lhelp.view.usg.edu/>
4. D2L Training Options & Resources for Students
<https://web.kennesaw.edu/acs/pages/desire2learn/student-resources-d2l>
5. Computertrain Online Courses <http://www.kennesaw.edu/dlc/FacultyResources/>
6. ITS Documentation Center
http://uits.kennesaw.edu/docs/netaccess/guides/windows7_wifi_instructions.pdf
7. Check Service Outages <http://status.usg.edu/>
8. Maintenance Schedule <https://usg.desire2learn.com>

Academic Resources

1. Academic Tutoring Services http://www.kennesaw.edu/stu_dev/alp/academic.shtml
2. Disability Resources http://www.kennesaw.edu/stu_dev/dsss/dsss.html
3. ESL Study and Tutorial Center <http://www.kennesaw.edu/us/programs/esl.php>
4. Library <http://www.kennesaw.edu/library/>
5. Supplemental Instruction <http://www.kennesaw.edu/us/programs/si.php>
6. The Writing Center <http://www.kennesaw.edu/writingcenter/index.php>
7. Math Lab <http://mathlab.kennesaw.edu/>

Student Support and Wellness Resources

1. Career Services Center <https://careerctr.kennesaw.edu/>
2. Counseling and Psychological Services <http://sss.kennesaw.edu/cps/>
3. Center for Health, Promotion and Wellness http://www.kennesaw.edu/col_hhs/wellness/
4. Student Health Clinic <http://studenthealth.kennesawstateauxiliary.com/>

KSU desires to resolve student grievances, complaints and concerns in an expeditious, fair and amicable manner. The Complaints and Appeals Page was developed to assist current and prospective students in submitting complaints and appeals and to direct them to the most effective venue for accurate information and resolution. The resources on the page will direct students to the specific venue to appropriately address related student complaint. http://www.kennesaw.edu/complaints_appeals.shtml

Complaints for online students are resolved following the same general procedures for students who attend classes on campus. However, for any process that requires that a student appear in person, the university may make other arrangements. For processes that cannot be completed via telephone, e-mail, or written correspondence, the university may set up a two way Video conference site in place of a meeting on the KSU campus.

KSU Writing Center

The KSU Writing Center helps students in all majors improve their writing. Experienced, friendly writing assistants help with topic development, revision, research, documentation, grammar, and more. For more information or to make an appointment, visit writingcenter.kennesaw.edu or stop by English Building, Room 242 (Kennesaw campus) or Building A, Room 184 (Marietta campus)."

CM 3420 COURSE SCHEDULE

Class	Date	Subject of Lecture/Lab	Assignments Due	
1		Introduction to Cost Estimating		
2		Order of Magnitude Estimates/Square Foot Estimating		
3		Detail Cost Estimates. Data Base: Unit Price Development and Productivity		
4		Material Cost, Labor Cost, and Equipment Cost. Preparation of a Bid		
5		Concrete Pricing		
6		Order of Magnitude, Square Foot Pricing, Pricing a Concrete Subcontract		
7		Subcontractor's Work, Subcontractor Selection, Div 5-7-15-16		
8		Masonry Estimate (Div 4); Ethics in Bidding and Estimating-Homework		
9		Doors Windows (Div 8) Rough Carpentry (Div 6)		
10		Finishes (Div 9) Specialties (Div 10)		
11		Site work Estimating Site work Subcontracting		
12		Midterm		
13		General Conditions, Overhead, Profit, Bonding and Insurance		
14		Bid Preparation and Revision, Closing the Bid. Discussion on Ethics		
15		Change Order Estimate, Preparing a Schedule		

		of Value Using Standard Forms Ethics Presentation		
16		Computer Applications/Computer Software /Unit Price Data Base		
17		Pricing Plumbing, HVAC, Sprinkler System, and Electrical Systems		
18		Value Engineering Studies, Establishing Company Objectives		
19		Bid Date Exercise		
20		Test #2		
21		International Market Challenges-Bidding International Projects		
22		Presentation #1,2		
23		Presentation #3,4		
24		Presentation #5,6		
25		Presentation #7,8		
26		Presentation #9,10		
27		Planning Profit Objective-Break even analysis		
28		Strategic Bidding		
29		Class Evaluation/Revue, lesson learned		
30		Project Due-Bid Simulation		

STUDENT LEARNING OUTCOMES

Upon graduation from an accredited ACCE 4-year program a graduate shall be able to:

ACCE SLO	TARGET
SLO 1 – Create written communications appropriate to the construction discipline.	
SLO 2 – Create oral presentations appropriate to the construction discipline.	
SLO 3 – Create a construction project safety plan.	
SLO 4 – Create construction project cost estimates.	
SLO 5 – Create construction project schedules.	
SLO 6 – Analyze professional decisions based on ethical principles.	
SLO 7 – Analyze construction documents for planning and management of construction processes.	
SLO 8 – Analyze methods, materials, and equipment used to construct projects.	
SLO 9 – Apply construction management skills as a member of a multi-disciplinary team.	
SLO 10 – Apply electronic-based technology to manage the construction process.	
SLO 11 – Apply basic surveying techniques for construction layout and control.	
SLO 12 – Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	
SLO 13 – Understand construction risk management.	
SLO 14 – Understand construction accounting and cost control.	
SLO 15 – Understand construction quality assurance and control.	
SLO 16 – Understand construction project control processes.	
SLO 17 – Understand the legal implications of contract, common, and regulatory law to manage a construction project.	
SLO 18 – Understand the basic principles of sustainable construction.	
SLO 19 – Understand the basic principles of structural behavior.	
SLO 20 – Understand the basic principles of mechanical, electrical and piping systems.	