

Course syllabus

CMG 4223 – Construction Cost Estimating

Term: Spring 2026

Course Time: Monday, Wednesday and Friday, 11:00 am - 11:50 am

Classroom: Klehm Hall 3115

Course Dates: Jan. 12- May 08, 2026

Faculty: Dr. Reachsak Ly

Email: rlly@eiu.edu (Preferred communication method)

Office: Klehm Hall 4014

Teaching Method: Lecture

Office Hours:

Monday, Wednesday and Friday (10:00 AM to 11:00 AM)

Tuesday and Thursday (11:30 AM to 12:30 PM)

Communication Response Time: Within 2 days

Required Textbooks and Readings

- Fundamentals of Construction Estimating, 4th Edition, David Pratt (2019)
- Peterson, S.J. (2012). Construction estimating using Excel. 2nd ed. Pearson Education, Inc., Prentice Hall, Upper Saddle River, NJ.

Course description:

Principles of construction and cost estimating of materials, labor, and equipment. Conventional cost estimating methods to be applied to a wide variety of residential and commercial projects.

Course Objective: The course objective is to prepare students to demonstrate sound engineering and managerial judgment in the application of cost estimating to improve decision-making and optimize the use of available resources.

Student Learning outcome:

Upon completion of this course, students will be able to:

1. Demonstrate an understanding of the fundamental principles of construction estimating.
2. Perform material quantity take off by using construction documents: working drawings and specifications, from earthwork to finish.
3. Demonstrate the ability to use Excel spreadsheets to assemble, organize, and perform accurate estimates of the various phases of construction.
4. Demonstrate the ability to assess the various costs associated with construction projects, including materials, equipment, and labor costs.

Graded Course Requirements Information

Grading Structure

Content	Percentage
Attendance and Participation	10%
Homework assignment	30%
Group Project	10%
Quiz	10%
Exam 1	10%
Exam 2	10%
Exam 3	20%
Total	100%

Grading Scale:

Individual grade items and your final grade will be assessed as follows:

A = 100- 90%

B = 89- 80%

C = 79-70%

D = 69-60%

F = less than 60%

Course Requirements:

1. Students will need to have a laptop and bring it to class with them at every class meeting.
2. Specific instruction will be given for creating estimates using typical/common Excel operations and formulae.
3. Login to Course in D2L **every day** and complete all tasks assigned- completely and on time.
4. Independent study of the textbook and other relevant material is required.

Course outline

* The course schedule is subject to change throughout the semester. Revisions will be noted in class.

The instructor reserves the right to make changes to the topics or sequence of topics, schedule, assignments, grading plan, and content of the course. Assignments and schedule may be altered as well.

Week	Date	Topics	Readings / Assignments / Quizzes (Tentative)
1	12 - Jan 14 - Jan 16 - Jan	Course Introduction What is an Estimate? Type of estimates The Estimating Process	Chapter 1
2	19 - Jan 21 - Jan 23 - Jan	The Bid Process and Preliminary Procedures	Chapter 2
3	26 - Jan 28 - Jan 30 - Jan	Reading And Understanding Plans Calculating Area and Volume The Specifications General Requirements Site Work Measuring Quantities Generally, Calculating Area and Volume, The Specifications Measuring Sitework, Excavation, and Piling	Chapter 3 and 4

4	2 - Feb 4 - Feb 6 - Feb	Concrete Measuring Concrete Work Concrete – Concrete Materials Measuring Reinforcing Forms, Reinforcing RSMeans Examples	Chapter 5
5	9 - Feb 11 - Feb 13 - Feb	Masonry Measuring Masonry Work– CMU, Brick, Ties, Mortar Measuring Utility Work RSMeans Examples	Chapter 6
6	16 - Feb 18 - Feb 20 - Feb	Catching up and review session Exam Review Exam 1	
7	23 - Feb 25 - Feb 27 - Feb	Measuring carpentry and miscellaneous items. Woods & Composites	Chapter 7
8	2 - Mar 4 - Mar 6 - Mar	Pricing generally Pricing Construction Equipment Cost of work Material Pricing Labor Rates Equipment Costs Crew Rates Subcontractor Pricing Markups Pricing Extensions Avoiding Errors in Estimates	Chapter 8 and 9
9	9 - Mar 11 - Mar 13 - Mar	Pricing Excavation and Backfilling Pricing Concrete work	Chapter 10 and Chapter 11
10	16 - Mar 18 - Mar 20 - Mar	Spring Break No class	
11	23 - Mar 25 - Mar 27 - Mar	Catching up and review session Exam 2 Pricing Masonry and Carpentry Pricing Subcontractors	Chapter 12 and Chapter 13
12	30 - Mar 1 - April 3 - April	Pricing General Expenses Closing the bid	Chapter 14 and Chapter 15

13	6 - April 8 - April 10 - April	Cost Control Earn Value Management	
14	13 - April 15 - April 17 - April	Bluebeam Revu RSMMeans Excel Structural Steel	
15	20 - April 22 - April 24 - April	5D Estimating system (BIM)	
16	27 - April 29 - April 1 - May	Final Exam Review Exam 3	

Note: This is a tentative schedule, and subject to change as necessary. The instructor reserves the right to make changes to the topics or sequence of topics, schedule, assignments, grading plan, and content of the course.

Academic Integrity:

Students are expected to maintain the principles of academic integrity and conduct as defined in EIU's Code of Conduct (<http://www.eiu.edu/judicial/studentconductcode.php>). Violations will be reported to the Office of Student Standards. In this class, students may assist each other in accomplishing a homework assignment, but the submitted work must be the student's own original work. **Copying work or plagiarism will not be tolerated. Students may not collaborate on tests or quizzes. Cheating or plagiarism will, at least, result in a zero on the assignment or exam.**

- *AI and Academic Integrity:* Students are not allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT, Grammarly, or Dall-E 2) on assignments in this course. Each student is expected to complete each assignment without substantive assistance from others, including automated tools.

Students with Disabilities:

If you are a student with a documented disability in need of accommodations to fully participate in this class, please contact the Office of Student Disability Services (OSDS). All accommodations must be approved through OSDS. Please stop by Ninth Street Hall, Room 2006, or call 217-581-6583 to make an appointment

Emergency Preparedness Plan:

Instructions regarding procedures to follow in the event of an emergency are posted in all classrooms. Students are responsible for acquainting themselves with these instructions so that they are prepared in the event of an emergency.

The Academic Success Center:

Students who are having difficulty achieving their academic goals are encouraged to contact the Academic Success Center (www.eiu.edu/~success) for assistance with time management, test taking, note taking, avoiding procrastination, setting goals, and other skills to support academic achievement. The Center provides individualized consultations. To make an appointment, call 217-581-6696 or go to 9th Street Hall, Room 1302.