

Civil Engineering Estimating

CCE 4015

Class Periods: Tue & Thu, Time: TBD

Location: TBD

Academic Term: Spring 2021

Instructor:

Dr. Denise R. Simmons, PhD, PE, M.ASCE, PMP

www.denisersimmons.com

(352) 294-6967 (office)

Office Hours: TBD at 460D Weil Hall

Teaching Assistants: TBD

Course Description

Design of systems for estimating and cost control of man-machine productivity for civil engineering projects. Analysis of cost factors required for optimization of engineering-investment efficiency.

3 Credit Hours

Course Pre-Requisites / Co-Requisites

CCE 4204 and 3EG classification.

Course Objectives

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

1. Demonstrate **fundamental knowledge of estimating** the cost of projects to be constructed.
2. Define and compare **types of cost estimations** during the project life-cycle.
3. Implement **cost analysis methods** to review and evaluate each element of a cost estimate.
4. Evaluate a client's conceptual design and provide broad, **conceptual cost estimates** commensurate with the level of detail available.
5. Generalize **parametric estimate** that measure individual tasks within the project to get a highly accurate cost.
6. Determine the cost of work crews by analyzing **labor, material and equipment** rates and develop detailed estimates based on crew costs and crew productions.
7. Measure **earthwork and excavation** work and recognize the principle activities involved.
8. Develop cost estimate for **concrete and steel structures**.
9. Appraise **risks and changes** of cost estimation during the construction project.

In addition to the learning objectives, students completing the course will develop skills in **collaboration, preparing a written report and giving an oral/visual presentation.**

Materials and Supply Fees

None

Required Textbooks and Software

- **Estimating Construction Costs, sixth edition**
 - by **Robert Peurifoy, Garold Oberlender**
 - published by **McGraw-Hill Higher Education.**
 - ISBN: **0-07-253626-8**

Course Schedule (subject to change)

Week 1:	Introduction to Instructor, Course & Terminology Introduction and History of Cost Estimation
Week 2:	Introduction to Estimating Reading and Interpreting Blueprints and Specifications 1
Week 3:	Reading and Interpreting Blueprints and Specifications 2 Cost Analysis
Week 4:	Conceptual Estimation Conceptual Cost Estimation using Historical Data
Week 5:	Review, Test 1
Week 6:	Labor and Productivity Analysis Cost of Equipment
Week 7:	Earthwork and Excavation Concrete Structures 1
Week 8:	Concrete Structures 2 Steel Structures 1
Week 9:	Steel Structures 2 Ethics in Construction Cost Estimation
Week 10:	Review, Test 2
Week 11:	Introduce to the Final Project
Week 12:	Finalizing an Estimate - Cost to Price
Week 13:	Contract and Bidding
Week 14:	Risk Management
Week 15:	Review, Test 3
Week 16:	Final Project Presentations

Instructional Approach

Learning is expected to occur by four processes:

1. Lectures/exercises in the classroom
2. Assignments from an integrated case studies on management and a project's lifecycle
3. Professional seminars (includes those offered for extra credit)
4. Reading assignments from the text and supplementary materials.

Classes will be divided into three parts:

5. Lecture
6. Activity
7. Facilitation of Discussion or Debriefing

Participation Grade

Participation will constitute 10% of your grade and mainly fall into two categories:

1. Class attendance & involvement
I will always take attendance in the class. There will be a signup sheet which will be circulated in the class in every session. Please sign in front of your name. **YOU SHALL NOT SIGN FOR ANYONE ELSE.** Doing so would be a violation of the honor code. Involvement in class is highly encouraged and is considered towards the grade for participation.
2. Unannounced "timeliness" quizzes
There will be several unannounced "timeliness" 5-minute quizzes. These will be given at the start of a session; the questions posed will be quite simple; these quizzes are designed to encourage 100% attendance and on-time arrival.

On-Line Quizzes

On-line quizzes will be administered through Canvas and will relate to the reading assignments. On-line quizzes occur for readings with a "Q#" in the "On-line Quiz" column of the Schedule of Sessions (See Canvas). These quizzes will be available from 8:00 AM the day prior to the scheduled session until 12:00 PM noon on the due date/scheduled session. For example, an on-line quiz noted as being due on February 5, will be available starting at 8 AM on February 4 and will remain available until noon on February 5. These quizzes should take no more than several minutes to complete if you have completed the assigned readings.

Electronic Submission of Assignments

You should electronically turn-in assignments when they are due. We will use Canvas for electronic submission of assignments. Late assignments will be penalized according to the following system:

1. 0-24 hours late – deduct 50%.
2. More than 24 hours late – deduct 100%.

NOTE: For homework, you may have a one time, 24 hour, no penalty submission. Please mark the assignment "24hr Grace".

Final Project

The final project will allow you to apply a number of the skills and concepts learned throughout the semester. The project may require you to independently define it in part or in whole and perhaps require that you meet with others (e.g. your former internship employer, university personnel). Additional information will be provided during the final project briefing.

Extra Credit

You have the opportunity to earn credit that will count towards your Assignment grade. For example, participating in the three Ask Me Anything (AMA) webinars of the National Academy of Construction (NAC) <https://www.colorado.edu/cem/nac-ama> and submit your writing on Canvas. While additional opportunities for extra credit may be announced, no extra credit will be negotiated with students individually or collectively.

Evaluation of Grades (subject to change)

Assignments	30%
Participation	10%
Quizzes	10%
Exam	20%
Final Project	30%
Total	100%

→

Assignments	Grading Percentage
Homework	20%
In class activities	10%

Grading Policy

All work will be evaluated and assigned a grade on the "A" to "F" scale with final grades computed on a plus and minus scale. No rounding of final grades will occur in this course. An explanation of the grade ranges follows:

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 - 83.9	B	3.00

78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 - 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. I welcome such a disclosure during the first week of class so that I have time to properly accommodate your needs.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://gatorevals.aa.ufl.edu/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:

<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Diversity Statement

The Herbert Wertheim College of Engineering (HWCOE) values a diverse and inclusive community. It is integral to success in every area of our college. Therefore, the College is committed to non-discrimination with respect to all areas of human differences, including but not limited to national and ethnic origin, race, age, sex, sexual orientation, gender identity and expression, beliefs and opinions, religion and faiths, culture, socio-economic background, level of physical or mental ability, and veteran's status. This commitment applies in all areas – to students, faculty, and staff and intends to reflect the College's belief that educational and employment decisions and access to University activities should be based on an individual's abilities and qualifications.

The HWCOE values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. We aspire to educate students to become future leaders capable of creating diverse and inclusive work cultures wherever their careers may take them.

Campus Resources:

Health and Wellness

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.