

CE 556 Project Controls – Budgeting and Estimating (32 units — DEN)

2010 Fall Semester — Course Syllabus

Course Details and Contact Information

Time: Monday, 3:30-6:10 p.m.
Location: OHE 100C
Instructor: John Kuprenas
Office Hours: By appointment, or online at <http://www.uscden.net>
Email: kuprenas@usc.edu
Contact: (213) 923-2515 (Vanir Construction Management)

Course Textbooks

Required:

Holm, Schaufelberger, Griffin, and Cole, *Construction Cost Estimating: Process and Practices*, Pearson Education, Inc. 2005, ISBN 0-13-049665-0; Readings for this text designated on the Class Schedule by **HSGG**.

Free:

Hendrickson, Chris, *Project Management for Construction*, ISBN 0-13-731266-0; available **free** online at <http://www.ce.cmu.edu/pmbook/>; Readings for this text designated on the Class Schedule by **FREE**

Introduction and Purpose

Fundamental principles and practices of cost estimating, budgeting, and cost control of construction projects. Case studies and software exercises based on project data. Duplicates credit in the former CE-556a.

Course Requirements and Grades

Graduate standing in engineering, architecture, business or urban planning required. Grading is based on four items as follows:

Homework (8 assignments)	24%	Term Project	20%
Midterm Exam	21%	Final Exam	30%
In-class work	5%		

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2010 Fall Semester — Course Syllabus

Course Requirements and Grades (continued)

All examinations are closed book and closed notes, unless otherwise specified during the course. The final examination will be comprehensive of all course material. Make up examinations will not be allowed. Examination format will be short answer case study type questions combining questions of management action and project cost control calculations given a particular project scenario. Sample examination questions will be provided prior to each exam.

Laboratory / homework assignments must be handed in to the instructor by the date listed on the assignment. Late assignments are rarely accepted, but the instructor may allow exceptions for extreme circumstances. This class requires computer laboratory work. No previous computer estimating experience is needed. Although class time will be spent in the computer lab, it is likely that additional computer time (either at home or in the lab) will be required to complete your work. Reading assignments are identified on the course agenda. Assignments will be from the course text book or from reading material handed out by the instructor. It is important to complete readings prior to the date listed, since they will form the basis for classroom discussions

As part of the requirements for the course, each student will be required to submit a complete a term project that will be a detailed WinEst based project estimate on an actual local construction project (you will receive plans and specifications). You are encouraged to work on your term project estimate within a team of two or three persons. However, individual submittals will also be accepted.

Dates of assignment and due dates for all assignments, exams, and the term project are shown on the course agenda

Return of course assignments

Returned paperwork, unclaimed by a student, will be discarded after 4 weeks and hence, will not be available should a grade appeal be pursued following receipt of his/her grade.

Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. Your letter must be specific as to the nature of any accommodations granted. DSP is located in STU 301 and is open 8:30 am to 5:00 pm, Monday through Friday. The telephone number for DSP is (213) 740-0776.

CE 556 Project Controls – Budgeting and Estimating (32 units — DEN)

2010 Fall Semester — Course Syllabus

Academic Integrity

The University, as an instrument of learning, is predicated on the existence of an environment of integrity. As members of the academic community, faculty, students, and administrative officials share the responsibility for maintaining this environment. Faculty have the primary responsibility for establishing and maintaining an atmosphere and attitude of academic integrity such that the enterprise may flourish in an open and honest way. Students share this responsibility for maintaining standards of academic performance and classroom behavior conducive to the learning process. Administrative officials are responsible for the establishment and maintenance of procedures to support and enforce those academic standards. Thus, the entire University community bears the responsibility for maintaining an environment of integrity and for taking appropriate action to sanction individuals involved in any violation. When there is a clear indication that such individuals are unwilling or unable to support these standards, they should not be allowed to remain in the University.” (Faculty Handbook, 1994: 20)

Academic dishonesty includes: (Faculty Handbook, 1994: 21-22)

- Examination behavior - any use of external assistance during an examination shall be considered academically dishonest unless expressly permitted by the teacher.
- Fabrication - any intentional falsification or invention of data or citation in an academic exercise will be considered a violation of academic integrity.
- Plagiarism - the appropriation and subsequent passing off of another’s ideas or words as one’s own. If the words or ideas of another are used, acknowledgment of the original source must be made through recognized referencing practices.
- Other Types of Academic Dishonesty - submitting a paper written by or obtained from another, using a paper or essay in more than one class without the teacher’s express permission, obtaining a copy of an examination in advance without the knowledge and consent of the teacher, changing academic records outside of normal procedures and/or petitions, using another person to complete homework assignments or take-home exams without the knowledge or consent of the teacher.

The use of unauthorized material, communication with fellow students for course assignments, or during a mid-term examination, attempting to benefit from work of another student, past or present, and similar behavior that defeats the intent of an assignment or mid-term examination is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tensions accompanying examinations. Where a clear violation has occurred, however, the instructor may disqualify the student’s work as unacceptable and assign a failing mark on the paper.

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2010 Fall Semester — Course Syllabus

Course References

- American Society of Civil Engineers, *Journal of Management in Engineering* (TA190 J687) <http://www.asce.org/>
- American Society of Civil Engineers, *Journal of Construction Engineering and Management* (TA1 A47 C6) <http://www.asce.org/>
- Project Management Institute, *Project Management Journal* (HD 69 P75 P76) <http://www.pmi.org/>
- E & FN Spon, *Construction Management and Economics* (HD 9715 A1 C667) <http://www.tandf.co.uk/journals/frame loader.html?http://www.tandf.co.uk/journals/routledge/01446193.html> and <http://www.rdg.ac.uk/~kcshuwil/cme/intro.html>
- Blackwell Science, *Engineering, Construction, and Architectural Management* (HD9715 A1 E54) <http://www.blackwell-science.com/~cgilib/jnlpage.bin?Journal=ecam&File=ecam&Page=aims>
- International Project Management Association / Pergamon, *International Journal of Project Management* (T56.8 I537) <http://www.elsevier.nl/inca/publications/store/3/0/4/3/5/>
- AACE International, *Cost Engineering* (TA183 A6) and *Transactions* (HD47A197) <http://www.aacei.org/>
- IEEE, *Engineering Management Review* (TA190 I577) <http://www.ieee.org/products/periodicals.html>
- American Society for Quality (ASQ), *Congress Proceedings* (TS 155 A1 A5) <http://www.asq.org/>
- Construction Industry Institute (the largest Construction research group in the United States) <http://construction-institute.org/>
- Lean Construction Institute <http://www.vtt.fi/rte/lean/>
- General Services Administration: 3D-4D Building Information Modeling http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=20917
- *Building Information Modeling (BIM): Transforming Design and Construction to Achieve Greater Industry Productivity* (by McGraw Hill) http://construction.ecnext.com/mcgraw_hill/includes/BIM2008.pdf
- AIA Document on Integrated Project Delivery (IPD) <http://www.aia.org/contractdocs/AIAS077630>

CE 556 Project Controls – Budgeting and Estimating (32 units — DEN)

2010 Fall Semester — Course Syllabus

Course Agenda

<i>Session</i>	<i>Date</i>	<i>Topics</i>	<i>Reading</i>	<i>Assignment</i>
1	23-Aug	Course Introduction	Syllabus	None
2	30-Aug	Background on the Industry Organizations and Delivery Budgeting	HSGC, Ch. 1 and 2 Package on BB	Homework 1 assigned
NA	6-Sep	Labor Day - No Session	NA	NA
3	13-Sep	Budget Estimating Tools Reading Prints	HSGC, Ch. 3 FREE, Ch. 5	Homework 1 due Homework 2 assigned
4	20-Sep	Detailed Estimating I Winest Intro	HSGC, Ch. 6-8	Homework 3 assigned Homework 2 due
5	27-Sep	Site Visit	None	None
6	4-Oct	Detailed Estimating II Winest In-class practice Term Project Assignment	None	Term Project Assigned Homework 4 assigned
7	11-Oct	Completing the Estimate	HSGC, Ch. 10-12 FREE, Ch. 8	Homework 4 due Homework 5 assigned
8	18-Oct	Bidding and Change Orders	HSGC, Ch. 13-15	
9	25-Oct	Tracking Costs BIM integration Midterm review	HSGC, Ch. 11 - 15	Homework 5 due Homework 6 assigned
10	1-Nov	Midterm Exam	None	None
11	8-Nov	Productivity	HSGC, Ch. 22	Homework 6 due
12	15-Nov	Earned Value	Extra Package 1 FREE Ch. 12	Homework 7 assigned
13	22-Nov	Forecasting Costs	Extra Package 2	Homework 8 assigned Homework 7 due
14	29-Nov	Term Project Presentations	None	Term Project turned in Homework 8 due
-	13-Dec	Final Exam (2:00 to 4:00)	NA	