BCN 4612

Estimating II - Semester Course Outline
Course Syllabus

Prerequisites: BCN 3611, Senior Standing 3 Credits

COURSE DESCRIPTION:

Analysis of determination of the cost of construction operations including labor, materials, subcontractor costs, and the associated indirect and overhead costs and profit. Parametric estimating and conceptual estimating is introduced and used as a tool to review a project's feasibility, initiate value engineering analysis and establish budgets. **EXTENSIVE** analysis of material supplier, subcontractor and labor quotes for each technical section. Bid simulation using estimating software. Post bid issues including change orders, schedule of values, contract modifications are discussed. Bidding strategy technique is also included.

COURSE CONTENT:

The student will be able to determine labor and equipment costs considering productivity factors; prepare and use construction cost data bases; solicit quotations and bids for procurement of products and services, develop the evaluation criteria, and select a source; accurately estimate the probable cost of construction projects including direct and indirect costs; prepare a complete and concise report of the estimated costs of a project and submit a formal bid package; use estimating software to assist in the preparation of the estimate; and be aware of the ethical questions that arise in construction bidding and procurement. The student will be able to identify the duties, responsibilities, and risks associated with construction estimating, and will have the skills and confidences needed to understand and accurately estimate and bid construction projects via ethical means in a competitive bid environment.

COURSE LEARNING OUTCOMES:

Upon completion of the course students will be able to demonstrate their ability to:

1. Determine labor and equipment costs. (SACS 2, ACCE 4)
2. Prepare and use construction cost data bases. (SACS 2, ACCE 4)
3. Use computer to assist in estimate preparation. (SACS 2, ACCE 4, 10)
4. Estimate the probable cost of construction. (SACS 2, ACCE 4, 13)
5. Solicit quotations and bids for materials and subcontractors. (SACS 2, ACCE 4)
6. Analyze markup as a bidding strategy (SACS 2, ACCE 4)
7. Prepare a construction cost estimate and submit a proposal/bid package. (SACS 2, ACCE 4, 9)
8. Be aware of the ethical questions that arise in bidding and procurement. (SACS 2, ACCE 4, 6)

SACS = Southern Association of Colleges and Schools
ACCE = American Council for Construction Education
SLO = Student Learning Outcome

SACS 2: Survey and quantify building components to estimate project costs, analyze progress and control expenditures.
ACCE SLO 4: Create construction project cost estimates.
ACCE SLO 6: Analyze professional decisions based on ethical principles.
ACCE SLO 9: Apply construction management skills as an effective member of a multi-disciplinary team.
ACCE SLO 10: Apply electronic-based technology to manage the construction process.
ACCE SLO 13: Understand construction risk management.

ASSESSMENT METHODS

Assessment	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6	SLO 7	SLO 8
Semester Exams	#1	#1		#1	#2	#3		#3
Bid Simulation			X				X	

Targets: Three In-Class Exams: At least 80% of class score B- or above
Bid simulation: At least 80% of class score B- or above

METHOD:

Two each 1 hour lectures and one each 2 hour lab per week.

REQUIRED TEXTBOOK:

Means Building Construction Cost Data, **latest edition**, R.S. Means Co., Inc., Kingston, MA, 1995.

HONOR CODE

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

TENTATIVE COURSE SCHEDULE

WEEK	SCHEDULED ACTIVITY (subject to modification)
1	Course introduction and the role of estimating in the construction industry. Plan reading review, Organization of the specifications and introduction to MEANS CONSTRUCTION COST DATA (MEANS) manual.
2	Conceptual estimating using the MEANS manual.
3/4	Conceptual estimating using to accepted and recognized techniques. EXAMINATION #1 CONCEPTUAL ESTIMATING.
4	Division 3 – Concrete takeoff and pricing. Scope of work issues. MEANS REVIEW Analysis of sample concrete subcontractor proposals and concrete supplier proposals. Ethical Responsibilities.
5	Continue with Division 3 analysis of subcontractor bid proposals and scope of work issues. Spreadsheet layout and organization. Analysis of Division 2 -Sitework subcontractor proposals. Ethical responsibilities. Scope of work issues and spreadsheet layout. (MEANS REVIEW)
6	Division 4 – Masonry quantity takeoff and pricing. Scope of work issues. Analysis of sample masonry subcontractor proposals and masonry supplier proposals. Ethical responsibilities. Layout of spreadsheet to aid in analysis of masonry proposals. (MEANS REVIEW)
7	Continue with Division 4 analysis of subcontractor bid proposals and scope of work issues. EXAMINATION #2 DIVISIONS 2, 3,4,5.
8	Division 5 – Structural Steel quantity takeoff and pricing. Scope of work issues. Analysis of division 5 sample structural steel subcontractor and supplier proposals. Ethical Responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW)
9	Division 6 – Wood and Plastic quantity takeoff and pricing. Scope of work issues. Analysis of sample division 6 material prices. Spreadsheet application to organize supplier proposals for analysis. (MEANS REVIEW)
	Division 7 – Thermal and Moisture Protection quantity takeoff and pricing. Scope of work issues. Analysis of division

7 sample subcontractor and supplier proposals. Ethical responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW)

10 Division 8 – Doors and Windows quantity takeoff and takeoff and pricing. Scope of work issues. Analysis of division 8 sample doors and windows subcontractor and material supplier proposals. Ethical responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW)

Issue Timberline estimating software. Students are expected to PRACTICE using Timberline on their own due to the amount of other material to be covered in the course. Instruction will be provide to establish the scope of responsibility as applied to the level of competence when using Timberline. Exercises in the use of Timberline included.

11 Division 9 – Finishes quantity takeoff and pricing. Scope of work issues. Analysis of division 9 sample finishes subcontractor proposals. Ethical Responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW) Development of bid simulation estimate.

12 Division 10 – Specialties quantity takeoff and pricing. Scope of work issues. Analysis of division 10 sample specialties subcontractor and material supplier proposals. Ethical Responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW) Introduction to Bid Simulation. Development of bid simulation estimate. EXAMINATION #3 DIVISIONS 6, 7, 8, 9 AND 10.

13 Division 11 – Equipment, 12 – Furnishings, 13 – Special Construction, 14 – Conveying Systems discussion. Scope of work issues. Analysis of divisions 11 – 14 subcontractor and material supplier proposals. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW) Continued review and discussion of Timberline software. Development of bid simulation estimate.

Division 15 – Mechanical Systems quantity takeoff and pricing. Scope of work issues. Analysis of Section 15400 Plumbing and Section 15400 – HVAC sample subcontractor proposals. Ethical responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW)

14 Division 16 – Electrical Systems quantity takeoff and pricing. Scope of work issues. Analysis of division 16 sample

	subcontractor proposals. Ethical responsibilities. Spreadsheet application to organize proposals for analysis. (MEANS REVIEW) Division 01 – General Requirements quantity takeoff and pricing. Scope of work issues. Analysis of division 01 sample line items. Development of bid simulation estimate.
15	Bid Simulation. Preparation of the bid package. Factors affecting and impacting the bidding process. Logistics issues and bidding philosophies. Setting up and fine tuning Timberline and preparing for bid day! Bidding Strategies. EXAMINATION #4
15/16	Continued preparation for bid day simulation and estimate development.
Final Exam/Bid Simulation	See Final Exam Schedule

GRADING POLICY

Be advised that success in this course is **HEAVILY** dependant upon class attendance and participation; mere presence is not sufficient to earn the maximum points available. Students will have 3 calendar days to appeal any grade after the exam is returned. Interpretation of an ambiguous term, word or phrase shall be narrowly construed in favor of a professional level of conduct.

The student is expected to be in their respective seat ready to begin the class at the start time of the class. Lateness is not acceptable. Cell phones turned off! Credit For attendance will NOT be recorded.

Absence without prior notice is not acceptable. TIMELY NOTICE IS REQUIRED. Whatever material covered the day of the absence is the sole responsibility of the student. If a quiz or test or exam or any activity which carries with it a point value is given, those points shall be lost WITHOUT RECOURSE; no exceptions. The STUDENT is responsible for retaining all tests, exams, quizzes or any material that impacts the grade received. Only exams will be returned. **The student is expected to schedule all outside activities of any nature around the course requirements. To do otherwise shall be at the students own risk.**

	Points	%
EXAMS 100 pts per each @ 2 each.	200	17
BIDDING STRATEGY 100 Pts	100	8
BID SIMULATION 750 pts +/-	750	62

QUIZZES/ATTENDANCE/School Activities	200 Pts +/-	200	17
TOTAL POINTS		1250 +/-	100

GRADING SCALE: (%) 100 – 91 A, 90 - 86 B+, 85 - 81 B, 80 - 76 C+, 75 - 71 C
70 - 66 D+, 65 - 62 D, 61 - Below E

The University's STUDENT CODE OF CONDUCT and the STUDENT HONOR CODE Policy are in full force and affect.

Contact Information: Office # 273-1156, Cell # 214-0860, E-mail zekecook@ufl.edu

Office Location: 314 Rinker Hall Office Hours: One (1) Hour before class, or by Appointment.

Final Exam/Simulation: See Final Exam Schedule