

**Construction Management Department
California State University, Chico**

**CMGT 458 – Heavy Construction Estimating
Course Syllabus**

A. Prerequisites

CMGT 335 – Construction Equipment

B. Meeting Time & Location

CMGT 458-1/2	M/W	9:00AM – 10:50 AM	Langdon 204
CMGT 458-3/4	M/W	11:00 AM – 1:50 PM	Langdon 204

C. Instructor

Rich Holman rholman@csuchico.edu (530) 519-7424 (cell)

Office Hours: Monday and Wednesday 2:00 PM – 3:50 PM

Office Location: O’Connell Technology Center, Room 328

Office Phone: 530-898-5669 – recommend cell phone (see above)

D. Catalog Description:

Rationale and technique of analysis of the work operations required for heavy construction work as distinct from residential and building construction. Format and preparation of competent heavy construction cost estimates with an emphasis on computer applications. Problems of project selection and preparation of competitive bids for the firm-price heavy construction project.

E. Course Learning Outcomes (CLO):

Upon successful completion of this course, the student will:

1. Understand what a Bid Item is and the difference between Building Estimating and Heavy-Construction cost estimating.
2. Understand what makes up the various cost types in an estimate **(Reinforce – SLO #13)**.
3. Understand the difference between direct and indirect costs.
4. Be able to decide what type of equipment to use for a given situation **(Reinforce – SLO #8)**.
5. Understand what Interest Expense is and why it is applied to a cost estimate.
6. Be able to calculate markup using three different methodologies.
7. Be able to perform an earthwork quantity take-off using the average end area method. **(Reinforce – SLO #11)**
8. Be able to perform a concrete quantity take-off.
9. Be able to create an Earthwork Cost Estimate **(Direct Assess - SLO #4)**.
10. Be able to create a Concrete Cost Estimate.
11. Understand what a Mass Diagram and how it pertains to an earthmoving operation.
12. Be able to input cost estimating data into a commercially available cost estimating computer program **(Reinforce – SLO #10)**.
13. Understand how an estimate becomes a budget **(Reinforce – SLO #14)**.

Student Learning Outcomes (SLO):

The American Council for Construction Education (ACCE) prescribes 20 Student Learning Outcomes (SLO) as Educational Objectives for an undergraduate degree program in Construction Management. For a list of these 20 SLOs visit the Chico State Department of Construction Management website www.csuchico.edu/cm and the SLO link under the ACCE Accreditation drop down menu.

The following SLOs are supported by this course in the form of I=Introduction, R=Reinforced, or DA=Direct Assessment:

- SLO 4 – Create construction project cost estimates (DA).
- SLO 8 – Analyze methods, materials, and equipment used to construct projects (R).
- SLO 10 – Apply electronic-based technology to manage the construction process (R).
- SLO 11 – Apply basic surveying techniques for construction layout and control (R).
- SLO 13 – Understand construction risk management (R).
- SLO 14 – Understand construction accounting and cost control (R)

ACCE Assessment Mapping:

<u>SLO</u>	<u>CLO</u>	<u>Assessment Type</u>	<u>Target</u>
4	9	Activity 11 – Create a Cost Estimate	70% will earn a 70% or better

F. Course Resource Materials Requirements:

Textbook: There is no required textbook for this class. Reading material will be presented for the student, as required.

Laptop Computer: A computer will be required for assigned activity work. There are no university provided computers.

HCSS HeavyBid does not work on Mac based computer operating systems. You will be responsible to have a PC based laptop or install a windows operating system on your Mac computer.

G. Course Requirements:

Honesty in the Classroom

You are expected to be familiar with the University's policy on academic integrity. As such, there will be no tolerance for dishonesty, sharing of work, or copied work. Ethical standards as established by the university will be strictly upheld as defined in the University Catalog.

Tobacco Products

The use of any type of tobacco product (smokeless, chewable or otherwise) is not permitted in any building at California State University, Chico. If you chew tobacco products, please refrain during class time.

Electronic Devices

The use of phones, and other electronic devices (excluding laptops) is not permitted in class. If you must take a call (work or emergency), please EXIT the classroom before answering the call.

H. Instructional Methods:

This course is designed around the following methods of presenting material to the student:

1. Class discussions (lecture) and assigned readings.
2. Activities to be started in class (finished outside of class time as necessary), which are designed to reinforce the students learning process of heavy construction estimating.
3. Quizzes to confirm the learning process.

I. Assignments:

Activities

There will be weekly activities assigned to reinforce your understanding of the current classroom discussion material. These activities are intended to build your skills in heavy construction estimating, and continue your development in using common industry software.

Group Work

You are encouraged to study and work in groups, however all submitted work must be your own original work.

J. Assessments:

Assessments are the basis of determining your ability to create, analyze, apply, and understand the Course Learning Outcomes (CLO) and Student Learning Outcomes (SLO) provided by ACCE. Instructional target goals have been established (as noted above) and the results of the assessment in these areas will be used to determine the success of the student and instructor for this course.

Quizzes

Quizzes will be given based upon the class discussion, assigned readings, and construction terms presented.

There will be NO make-up quizzes, unless prior arrangements have been made.

Exams

There will be one mid-term exam. Normally there will not be a make-up for anyone missing an exam. *If a student is unable to take an exam due to an emergency or illness, or is entitle to special dispensation the instructor should be notified in advance.* Non-excused absences will yield a score of zero. No makeup exams will be given, except for a serious and compelling reason as outlined by the University Catalog.

Participation, Attitude, and Attendance

A portion of your course grade will be based on participation, attitude and attendance.

K. Grading/Evaluation:

All point totals shown are approximate and subject to revision during the course of the semester.

Evaluation Criteria	Weighting
Activities	40%
Midterms	50%
Attendance	5%
Quizzes	5%

Grades are generally assigned by the following distribution, although the professor reserves the right to modify the distribution.

A	=	94 -100% (Exceptional)	C+	=	77 – 79% (Above Average)
A	=	90 – 93% (Excellent)	C	=	73 – 76% (Average)
B+	=	87 – 89% (Very Good)	C-	=	70 – 72% (Below Average)
B	=	83 – 86% (Good)	D	=	60 – 69% (Inadequate)
B-	=	80 – 82% (Adequate)	F	=	< 60% (Failing)

L. Topical Outline

To be provided

M. University Policies and Campus Resources

Academic integrity

Students are expected to be familiar with the University's Academic Integrity Policy. Be familiar with the University's policy on academic honesty. I take this issue very seriously, and will not tolerate any form of dishonesty such as plagiarism or cheating. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at: <http://www.csuchico.edu/sjd/sja.shtml>

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Students with disabilities requesting accommodations must register with the ARC Office (Accessibility Resource Center).

Special accommodations for exams require ample notice to the testing office and must be submitted to the instructor well in advance of the exam date.

Student Computing

Computer labs for student use are available <http://www.csuchico.edu/stcp> located on the 1st floor of the Merriam Library Rm 116 and 450, Tehama Hall Rm.131 and the BMU Rm 301.

Student Learning Center

The mission of the Student Learning Center (SLC) is to provide services that will assist CSU, Chico students to become independent learners. The SLC prepares and supports students in their college course work by offering a variety of programs and resources to meet student needs. The SLC facilitates the academic transition and retention of students from high schools and community colleges by providing study strategy information, content subject tutoring, and supplemental instruction. The SLC is online at <http://www.csuchico.edu/slc/>. The University Writing Center has been combined with the Student Learning Center.

N. Other

Disruptive Behavior

Students are required to adhere to the behavior standards articulated in the Campus Policies and Code of Student Conduct, and to refrain from disrupting classes and other academic settings. "Disruptive behavior" means conduct that materially and substantially interferes with or obstructs the teaching or learning process in the context of a classroom or educational setting. Disruptive behavior includes conduct that distracts or intimidates others in a manner that interferes with instructional activities, fails to adhere to an instructor's appropriate classroom rules or instructions, or interferes with the normal operations of the University.

Disruption in the classroom may include:

- Persistent speaking without permission
- Side conversations
- Excessive talking
- Engaging in activities not related to the class, or other overt inattentiveness including but not limited to sleeping, talking to others, doing work for another class, checking e-mail, and exploring the Internet
- Ringing cell phones or using a cell phone
- Using mobile devices or laptop computers in the classroom for non-course related purposes
- Eating/drinking in class without permission
- Monopolizing class discussion and refusing to defer to instructor, or listen to others; persisting when the instructor has indicated that the student's remarks are off topic and it is time to move on
- Chronically entering late/leaving early, moving about the classroom when not appropriate for the classroom activity
- Filming, photographing, or taping the class without the instructor's prior permission
- Disputing authority or arguing with faculty and other students
- Yelling, arguing, swearing, bullying, or other harassing or intimidating behavior
- Inappropriate, disrespectful, or uncivil responses to the comments, opinions, presentations, etc. of others in the classroom
- Physically or verbally abusive conduct
- Failure to adhere to the instructor's rules or instructions
- Vulgar or obscene language, slurs or other forms of intimidation
- Threats of any kind
- Improper use of equipment, materials or resources
- Destruction of property

- Coming to class under the influence of alcohol or another controlled substance
- Bringing individuals to class who are not enrolled, including infants/children
- Any behavior that puts the health or safety of the instructor or other students in the classroom in jeopardy