

# **COURSE SYLLABUS – CE 434/634 CONSTRUCTION ESTIMATING AND PROJECT CONTROLS**

*Fall 2014*

## **INSTRUCTOR:**

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## **COURSE HOURS:**

T, Th: 9:30-10:45AM, 100 Lowry Hall; you can leave the room if the instructor is late by more than 15 minutes. Students are encouraged to attend all the classes.

## **OFFICE HOURS:**

Tue 10:50AM-12:00PM, 310 Lowry Hall  
Thu 3:20-5:00PM, 310 Lowry Hall

Also available by appointment; Just send me an email giving me times you can meet.

## **INSTRUCTOR BIO:**

Dr. Kalyan Piratla is an assistant professor in the Glenn Department of Civil Engineering in the College of Engineering and Science at Clemson University. He has a bachelors and masters in Civil Engineering from the Indian Institute of Technology (IIT) Madras, India. He got his PhD in Construction Management from Arizona State University. His research interests lie in the area of sustainable and resilient underground infrastructure systems with focus on design, construction and management aspects.

## **PRE-REQUISITE COURSES:**

Basic Engineering Drawing Course, CE331 (Construction Engineering and Management)

## **CATALOG DESCRIPTION:**

Specifications, contracts, and bidding strategies; purchasing and subcontracting policies; accounting for materials, supplies, subcontracts, and labor; procedural details for estimating earthwork, reinforced concrete, steel, and masonry; overhead and profit items.

## **COURSE OUTCOMES:**

Within a limited amount of class time, I developed realistic expectations for how much knowledge you will gain from this course. I do not expect you to become an Estimator just by taking this course; it takes years of practice to become one. The expectations from this course are that you understand the fundamentals of construction estimating and appreciate the importance of estimating in the construction industry. You should be able to comfortably do the following by the end of this course:

1. Understand and learn project control techniques
2. Understand the role of an estimator in the construction industry and appreciate the importance of it.

3. Understand clearly the construction drawings and specifications.
4. Organize and perform quantity takeoff based on construction drawings and specifications.
5. Understand how costs are assigned to various construction tasks.
6. Understand bidding process and the parameters such as the overhead and markups.

**TEXTBOOKS:**

The following text books are recommended as references for this course.

1. David Pratt, Fundamentals of Construction Estimating, 3<sup>rd</sup> Edition, Delmar Cengage Learning, 2011.
2. Peurifoy and Oberlender, Estimating Construction Costs, 5<sup>th</sup> Edition, McGraw-Hill, 2002.

**CLASS WEBSITE:**

The class website is located at <https://bb.clemson.edu> under the name kpiratl-EstimatingF14. The site will contain class lecture notes, reading material, announcements, and laboratory materials. The student is responsible for checking this site frequently for any latest updates.

**WEIGHTING OF GRADES:**

**Project – 20%**

There will be a semester project that will include a complete estimate with cost breakout analysis and a report.

**Exams – 50%**

Exam #1 – (15%); Exam #2 – (15%)

Final Exam – (20%)

**Assignments – 30%**

There will be 10 assignments throughout the semester. Some will be done in class but there will be work outside of class and group work. Graduate students will have to work on additional assignments for receiving full 25% credit.

**GRADING SCALE:**

There will be numerous assignments, potential pop quizzes, a multi-phase project, and two exams. Your final grade will be based on how many points you have received out of the total possible. The grade range indicated below will be followed for this semester. “X” represents your final average out of 100.

<b>Range</b>	<b>Grade</b>
$90 \leq X < 100$	A
$80 \leq X < 90$	B
$70 \leq X < 80$	C
$60 \leq X < 70$	D
$0 \leq X < 59$	F

## **STUDENT WORK:**

You must come to class prepared – that is, with pens, pencils, highlighters, take-off tools, scales (both engineering and architectural), textbook, plans, etc., etc. You need an engineering calculator for this course. “Borrowing” from others will be allowed for laboratory period but not on exams. The following calculators are accepted in this class: All Casio fx-115 models, HP 33s, HP 35s, TI-30X, and TI-36X models.

## **ACADEMIC INTEGRITY:**

Students are expected to perform class activities in keeping with standards outlined in the Clemson University Statement on Academic Integrity. All the lab submittals must reflect the individual student’s efforts. Plagiarism will not be tolerated. Further, students are not allowed to provide or take any assistance during exams. Appropriate action will be taken towards any student suspected of violation of the following statement:

*“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a ‘high seminary of learning.’ Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.”*

*“When, in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member **shall** make a formal written charge of academic dishonesty, including a description of the misconduct, to the Associate Dean of Undergraduate Services. At the same time, the faculty member may, but is not required to, inform each involved student privately of the nature of the alleged charge.”*

Please refer to the Academic Integrity Policy on the Clemson University website for additional information: <http://www.clemson.edu/academics/academic-integrity/>

## **GRADUATE REQUIREMENTS:**

Graduate students need to work on the following assignments in addition to the normal class assignment work.

- Construction Estimator Job Shadowing (due on 09/16)
- Graduate Research Paper (due on 10/30)

## **ASSIGNMENT POLICY:**

All work will be turned in on time, by the end of period that it is due. A **25% penalty** will be applied once the work is submitted late. Messy work or solutions will not be graded. The bottom line is that work must be submitted on time and be professional – *just like in industry*.

## **MAKE-UP POLICY:**

Prior notice, when possible, will be given to the instructor when a class will be missed. Only under the most extreme circumstances, supported by written documentation, will a make-up quiz or test be given. The final decision rests with the instructor. When a class is missed, it is the student's responsibility to obtain notes and assignments from fellow classmates.

## **COURSE TOPICS:**

1. Introduction to Construction and Construction Estimating
2. Project Management: Project Controls
3. Project Delivery Methods, Contracts, Bonds, and Insurance
4. Specifications
5. Types of Estimates
6. Quantity Takeoff: Measuring Quantities
7. Labor, Equipment, Overhead & Contingencies
8. Detailed Estimating Techniques: Takeoff and Pricing
  - a. Earthwork/Site work
  - b. Concrete
  - c. Masonry
  - d. Steel
  - e. Doors & Windows/Finishes
9. Closing the Bid

## **STUDENT DISABILITY SERVICE**

Students with disabilities who need accommodations should make an appointment with Arlene Stewart, Director of Student Disability Services, to discuss specific needs within the first month of classes. Students should present a Faculty Accommodation Letter from Student Disabilities Services when they meet with instructors. Student Disability Services is located in G-20 Redfern (telephone number: 656-6848; email: [sds-l@clemsun.edu](mailto:sds-l@clemsun.edu)). Please be aware that accommodations are not retroactive and new Faculty Accommodation Letters must be presented each semester.

## **IMPORTANT RULES:**

1. No use of personal electronics in the class except calculators when required
2. No eating and drinking in classroom, please!
3. Please cooperate for creating a great learning environment in the classroom

***Good Luck!!!***