Tennessee Technological University
Department of Civil & Environmental Engineering
CEE 4500 (5500) – Construction Engineering Management
Elective
Spring Semester 2008

2007 Catalog Data:	CEE 4500 (5550). Construction Engineering Management. Lecture 3. Credit 3. The design and management of the construction phase of a project: scheduling, estimating, contracts, laws, financing, and safety. Prerequisite: Within two semesters of graduation.
Textbook:	Schexnayder, C.J. and R.E. Mayo, Construction Management Fundamentals, McGraw-Hill
Reference:	None
Coordinator:	L.J. Weathers, Associate Professor of Civil Engineering
Goal:	The goal of CEE 4500 "Construction Engineering Management" is to introduce the students to the steps taken to initiate and complete the construction phase of a project.

Course learning objectives:

1. The student is to understand the various contractual relationships that are required for a typical construction project.
2. The student is to become familiar with the typical layout of construction contract documents.
3. The student is to learn the approach taken by a typical construction contractor in the preparation of a project estimate and schedule.
4. The student is to develop the ability to analyze a project's scope and how to determine what functional changes may be incorporated to reduce to project cost.
5. The student is to become familiar with a project team environment.

Course measurable outcomes:

Students will be expected to:

1. identify the parties involved in a construction project;
2. know how the A/E firm initiates a construction project;
3. answer questions about the *AIA A201 General Conditions* and the *AIA Contract document Between the Owner and Contractor;*
4. know the CSI master-format for specifications;
5. become familiar with typical project drawings with the ability to make a detailed materials take-off on all phases of the project, except electrical and mechanical;
6. become familiar with the application of Means Estimating Manuals for both site-work and building tasks;
7. prepare a detailed estimate for a construction project;
8. become familiar with a commercial scheduling program and apply it to a specific construction project; and
9. work productively within a team environment.

Topics covered: (Two lecture classes per week, 80 minutes each)

1. Construction Administration (3 classes)
2. Specifications and Drawings (3 classes)
3. Estimating (4 classes)
4. Construction Safety (1 class)
5. Project Meetings (1class)
6. Scheduling (3 classes)
7. Measurement and Payment (1 class)

8. Business Organization (1 class)
9. Licensing (1 class)
10. Project Close-Out (1 class)
11. Team Project (6 classes)
12. Field Trips (3 classes)

Contribution of the course to meeting professional component:

This course is a part of engineering topics of the curriculum and is an elective.

ABET category content as estimated by faculty member who prepared this course description:

Engineering Science: 3 credits or 100%
Engineering Design: 0 credits or 0%

Relation of course to program outcomes:

Outcome 1: The graduates will have a broad understanding of relevant principles of mathematics, science, and engineering.
Outcome 2: The graduates will have a general comprehension of four technical areas appropriate to civil engineering.
Outcome 5: The graduates will have effective communication skills.
Outcome 6: The graduates will be capable of functioning on multi-disciplinary teams.
Outcome 8: The graduates will have the ability to use techniques, skills, and modern engineering tools needed for engineering practice.
Outcome 12: The graduates will have an understanding of fundamental principles and key concepts in engineering management, business, public policy, and leadership.

Relation of course to ABET Criteria:

General Criteria		Bloom's Level of Achievement
(3a)	Knowledge of math, science, engineering	2
(3d)	Multidisciplinary teams	3
(3e)	Identify, formulate, and solve engineering problems	3
(3g)	Effective communication	2
(3k)	Techniques, skills, modern tools for engineering practice	3

Program Criteria		Bloom's Level of Achievement
1.	Apply knowledge of math and sciences	2
2.	Apply knowledge of four technical areas appropriate to civil engineering	3
3.	Explain basic concepts in management, business, public policy, and leadership	2

Computer usage:

1. Spreadsheet, Word processor, and Scheduling (Microsoft Project)

Laboratory projects: None

Prepared by: L.J. Weathers Date: September 2007