

ABET Course Syllabus

Course Information, Textbook and Supplementary Materials

Capstone Course

Course Description: An examination of the legal, financial and ethical issues regularly considered by all practicing engineers and construction project managers.

Capstone Course for: BSCE and BSCE Structural

Required for: BSCE-ENE and BSENE

Prerequisite: Upper division or graduate standing or permission of the instructor. The course is not limited to civil engineering majors. The course will be very demanding in the nature and amount of the material covered.

Co-Requisites: None

Required Textbook: BASICS of Engineering Economy by Blank and Tarquin, 2011 (BEE)
Handout materials distributed on Blackboard

Reference: Optional: Friedman, *Hidden Order, the Economics of Everyday Life*, 1996 (Harper Business)

Topics Covered	Learning Outcomes
<p>The legal context in which all firms must operate, contract principles, liability principles and risk management, as well as the principles of economics and finance utilized by engineers.</p> <p>Ethical issues in engineering and business practice.</p> <p><i>Note: The course material includes information necessary to pass the National Fundamentals of Engineering Examination.</i></p>	<p>Students will have an understanding of the topics and how it applies to a professional engineering practice:</p> <ol style="list-style-type: none"> 1. Introduction to the legal environment of engineering, sources of law regulating engineers including the legislative, judicial and regulatory systems H/O 2. The legal system and legislative, judicial and administrative systems, criminal and civil law, etc.; Introduction to Engineering Ethics H/O 3. Contract intro: principles of contract formation, parties, contract forms and purposes, effect of illegality H/O 4. Contracts: performance, mistake and fraud, remedies for breach of contract, assignment and delegation of obligations H/O 5. (Wed) AGC SYMPOSIUM – Attend for extra credit 6. Negligence and Strict Liability, Insurance and Bonds H/O 7. Public protection, licensing and regulation of engineers; US v. NSPE H/O 8. Understanding Financial Statements 9. Interest Rate and Economic Equivalence 10. Present Worth Analysis 11. Cost Concepts 12. Project Risk and Uncertainty

Lecture and Lab Schedule			
Lecture		Lab	
Sessions per Week	Duration per Session	Sessions per Week	Duration per Session
1	3 hours	n/a	

Relation of Course Objectives to Program Outcomes

The Civil Engineering program is designed to teach beyond the technical content of the curriculum and prepare the students to utilize what they learn in a professional setting.

This course contributes to the program outcomes as outlined in the adjacent table.

Course Contribution to Program Outcomes (a-k)	✓ Key
f. An understanding of professional and ethical responsibility.	✓
g. An ability to communicate effectively.	
j. Knowledge of contemporary issues.	

Prepared by: Dana Sherman, JD, Senior Lecturer
Civil and Environmental Engineering

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