Fall 2013
COURSE SYLLABUS

The University of Texas at Arlington

College of Engineering

Department of Civil Engineering

CE 3310 – Construction & Value Engineering

(3 Credit Hours)

Class Time: M, W, F 8:00-8:50 A.M. NH 202

Name of Instructor: Mostafa Ghandehari

Office Number: NH248C

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Office Hours: M, W 3:00-5:300 p.m. Tuesday 3:00-5:00 p.m. and by appointment

Description of Course Content: This course covers the principles of construction engineering and decision making processes, review of the U.S. construction industry, quantity takeoff and cost estimating, scheduling and project controls, simple and compound interest calculations, equivalence, present worth, uniform annual cost, rate of return, equipment depreciation and replacement, plus competing projects.

Student Learning Outcomes: Upon completion of the course, the student will:

An ability to analyze and Interpret data for analysis of engineering economy alternatives and Construction scheduling data. This outcome will be explicitly tested in Quiz1 and quiz2 as well as Well as homework problems.

An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. In particular economical, analysis is covered in the course, construction safety and a Presentation on sustainability will be given.

- Understand the dynamic nature of the U.S. construction industry and its impact on the U.S. economy.
- Recognize the principles of construction engineering and their effect on the construction decision making process.
- Know the principles of engineering decision making and how they interface with construction methodology.
- Comprehend the construction process and product delivery methods through the study of project controls, construction documents, cost estimating, bidding, construction agreements, scheduling and construction administration.
- Develop critical thinking skills and analytical judgment related to construction economics through the application of interest calculations, present worth, equivalence, uniform annual cost, rate of return, depreciation and equipment replacement costs.
- Analyze the purpose, structure and importance of value engineering in the design, construction and facility management processes, and develop critical thinking skills regarding the evaluation of alternative materials, equipment and methods involved in construction.
- Grasp the intent and purpose of building codes and green building initiatives.
- Develop insight into the practical applications of engineering principles through presentations by local professionals in the engineering, architecture and legal fields.

Techniques, Skills and Modern Engineering Tools Used in the course: The software PRIMAVERA is used for scheduling of construction in teaching computer lab.

Specific Course Objectives:

- Demonstrate the interaction and influences of engineering principles and decision making with the

construction process and product delivery.

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- Present the Value Engineering Process and the interfacing of construction economic principles leading to life cycle costing decisions.
- Present financial aspects of engineering projects and the decision making process.

Requirements: Grade of C or better in CE 2313; grade of C or better in either CE 3301 or IE 3301, or concurrent enrollment.

Required Textbooks and Other Course Materials: Engineering Economic Analysis, by D. G. Newnan, T.G. Eschenbach, J. P. Lavalle, Oxford Univ. Press, Eleventh Edition, 2012. Other course materials will be given as handouts and on reserve.

Descriptions of major assignments and examinations: There will be three exams (two during the semester and one final which will be comprehensive), homework assignments and 2 quizzes.

Grading Policy: Grades will be determined according to the following scale (the grading scale may be lowered at the discretion of the instructor, but will not be raised):

Grade	% Required
A	90 -100
B	80-89
C	70-79
D	60-69
F	Less than 60

Students will be required to accumulate points from the following:

Homework Assignments		10%
Class Attendance & Participation	10%	
Quiz (2)	20%	
Hourly Exam (2)		30%
Final Exam (Comprehensive)	30%	
Total	100%	

Attendance Policy: Students are expected to attend all classes. For total professional development, class participation and oral discussions will be encouraged. Everyone is asked to arrive on time and be seated promptly for duration of class to minimize the disruption to others.

Drop Policy: Students need to consult UTA Web site for information on the university drop policy.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Academic Integrity: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Series 50101, Section 2.2)

Student Support Services Available: The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.
Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. Classes are held as scheduled during this week and lectures and presentations may be given.

Librarian to Contact:
E-Culture Policy: The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email.

All students are assigned an email account and information about activating and using it is available at www.uta.edu/email. New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

Laptop use in the classroom: In order to minimize distraction, the use of laptop in the classroom is NOT allowed.

Cell Phone Policy: All cell phones must be off in class and no texting allowed during class.

Grade Grievance Policy: Refer to UTA Catalog.

Assignment Policy:
Homework and/or class assignments, class attendance, quizzes, exams and the project are important segments of this course. **Homework and/or class assignments are taken at the beginning of the class and due at the stated date on the course outline.** Points will be subtracted for late assignments. No credit after the solution is given or maximum one week late of any assignments.

- Students, who copy homework, will receive a grade of zero (0) for those assignments and will not make good grades on the tests.
- For full or partial credit, you need to show all calculations in an organized, logical, and orderly manner. Please **write legibly, draw diagrams and underline your answers**. Type the questions and the answers for essay questions. Specify problem statements (information given), what is required, and the solution for each problem. Draw the necessary diagram(s). Show all the units during your calculations and with your answers. No partial or full credit if you do not show all of your work.
- Fold your assignment in half and put your name, course number, assignment #, date submitted and Problem #'s on the back.

- Use good quality paper, such as engineering graph paper with no spiral edges.
- Write on only one side of the paper.
- Either pen or pencil is acceptable.
- Include your name, section, and page number (e.g. 1/3 means Page 1 of 3 Pages) on each sheet.
- Staple all pages together in the upper left corner.
- Neatly box all answers, and include appropriate units for numerical answers.
- Show all work (e.g. no work means no credit will be given).

NOTE: If the above guidelines are not followed, the Grader will either reject the assignment outright, for extreme cases, or deduct points for items that do not conform to the specifications.

Exam Policy

- Students, who talk during the exam or quiz, look at each other's papers, or exchange materials, their exam and quiz paper will be marked and their file will be submitted to the Office of Dean of Engineering for appropriate action.
- You need to organize all their course notes, graded homework and lab assignments, and previous exams in a binder for a fast and quick reference.
- Periodic class exercises and/or quizzes may be given in the lecture period. You should bring the text, a calculator and engineering paper to every class period.
- During the exams and quizzes, you need to be AT LEAST one seat apart.