

MSE300 – Construction Technology Economy (3 units)

CSUN – Summer 2023, Ticket 10327 – Online / Tuesday: 8:00 am. – 11:40 am

Instructor Ghassan “Gus” H. Elias: BS/MS; Industrial/Manufacturing Systems Engineering.
-Expertise: Engineering Consulting, Decision-Making/Risk Analysis and Facility Planning. Industrial Safety & Material Control - global certification programs for commissioning electronic & pneumatic devices in General (Non-Hazardous) Locations, Hazardous ‘Classified’ Areas & Potentially Explosive Atmospheres.
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TEXTBOOKS: 1- “**Construction Accounting & Financial Management**” – 4th edition.

Author: **Steven J. Peterson, ISBN-10: 013523287-2 / ISBN-13: 978013523287-3**

2- ‘**Engineering Economy**’ – 8th Edition (selected lecture material will be posted on CANVAS) --- ***There is no need to purchase this textbook.***

Authors: Leland T. Blank & Anthony J. Tarquin. McGraw-Hill - **ISBN-10: 0073523437**

C.S.U.N. CATALOG - COURSE DESCRIPTION:

- ***Prerequisite:*** a passing grade in **ACCT 220; BLAW 280; ECON 160.**
- Material: Applications of engineering economy and capital investment analyses for construction management technology. Evaluation of project cash flows incorporating effective interest rates, inflation, price and wage rate changes, and uncertainty and risk. Considerations of national fiscal and monetary policy impact on project planning and analysis.

COURSE OBJECTIVES:

This course is designed to enhance the student’s knowledge of and ability to apply:

1. Identification, formulating and solving engineering problems.
2. Time-money relationships, cash flows, and effects of inflation.
3. Present worth (PW) method, annual worth (AW) method.
4. Depreciation schedules, labor costs, and after-tax analysis.
5. Analysis of financial statements, profit margins, and company financing needs.
6. Engineering economy principles in conjunction with the Fundamentals of Professional Engineering Examination and Registration Process.

***** This course syllabus is your contract with the CECS, MSEM and the instructor. Students must read the syllabus thoroughly and adhere fully to ALL of the stated terms and listed guidelines. No Exceptions! *****

NOTE #1: Activate **and** use your CSUN email address for ALL academic correspondences. Do not use your personal email address to communicate with the instructor. Messages from non-CSUN email addresses will **NOT** be acknowledged. Instructor will only utilize SOLAR’s email database to communicate with class members.

NOTE #2: Review CSUN policies pertaining to dropping the course. Students must initiate this process; **not** faculty. Failure to formally drop a course will result in a “**WU**” grade (equivalent to “**F**” on your transcript) thus affecting your GPA detrimentally.

STANDARD OPERATING PROCEDURES:

1. Class members are expected to maintain personal and professional standards consistent with the Code of Ethics of the national Society of Professional Engineers, the Preamble and Fundamental Canons of which are as follows:

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct. Engineers, in the fulfillment of their professional duties, shall:

- *Hold paramount the safety, health and welfare of the public.*
 - *Perform services only in areas of their competence.*
 - *Issue public statements only in an objective and truthful manner.*
 - *Act for each employer or client as faithful agents or trustees.*
 - *Avoid deceptive acts.*
 - *Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.*
2. Students must take **ORIGINAL NOTES** and submit **ORIGINAL WORK** only.
 3. Class members are expected to **attend ALL class sessions, promptly & entirely.**
 4. Class members are **responsible** for the course material, reading assignments, class presentations, discussions, and practice problems.
 5. ***Tardy/Late submissions are unacceptable.....NO EXCEPTIONS!***
 6. Class members **will** always be **considerate & respectful** to their colleagues.
 7. Pagers, Cellular Phones, Alarms, etc...***MUST BE TURNED OFF*** during class.
 8. **IMPORTANT:** The use of PC laptops, mobile phones, video recorders, cameras and/or internet-ready devices during the exams, quizzes and class lecture sessions is strictly prohibited. The exchange of notes, calculators and/or textbooks during the exams and quizzes is also prohibited. Violation of this policy will result in the student's dismissal from the class and the issuance of an "F" grade for the course. **No EXCEPTIONS!!**

EVALUATION & GRADING: (plus/minus grading will be used – Refer to Page 5)

10% - Homework

20% - Weekly Quizzes (15-20 minutes) - a **combination** of **open & closed** book & notes given at the **beginning** of the lecture. **No make-up quizzes!**

30% - Midterm Exam: Selected material --- open book & notes, calculator.

40% - Final Exam: ***Comprehensive*** -- open book & notes, calculator.

ONLY ORIGINAL WORK/NOTES IS ALLOWED!

Letter-Grade Scale:

$A \geq 90$	$88 \leq A- < 90$	$85 \leq B+ < 88$
$80 \leq B < 85$	$78 \leq B- < 80$	$75 \leq C+ < 78$
$70 \leq C < 75$	$68 \leq C- < 70$	$60 \leq D < 68$
		$F < 60$

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COURSE SCHEDULE

This is **TENTATIVE**. Depending on the progress of the course material, the syllabus (dates, topics, assignments & exams) *may change* if deemed necessary. Assigned H.W. problems will be posted on CANVAS and the solution is due the following week.

Note 1: Several random quizzes will be given throughout the semester (**must use Engineering Paper**)
Make-up attempts will **NOT** be granted for missed quizzes. **You miss it, you lose it!**

Note 2: The PowerPoint presentations for each chapter are available on CANVAS as well as on my CSUN web-page: <http://www.csun.edu/~ghe59995/courses.html#MSE300>

So that you take “helpful” notes during the class lectures, you may wish to print the assigned modules and have the slide handy before the class session starts.

Note 3: Several topics on Engineering Economics (**MSE304**) will be lectured throughout the semester.

Date	Topics	
Week 1	-Foundations of Engineering Economy (B&T-1) -Construction Financial Management (P-1)	Course Introduction
Week 2	-Construction Accounting Systems (P-2) -Interest Factors (B&T-2)	-Accounting Transactions (P-3)
Week 3	-Combining Interest Factors (B&T-3) -Depreciation (P-5)	-Depreciation (B&T-16)
Week 4	-Analysis of Financial Statements (P-6)	-Present Worth Analysis (B&T-5)
Week 5	-Managing Costs (PT-7)	-Present Worth Analysis (B&T-5)
<i>Midterm Exam Review</i>		
Week 6	MIDTERM EXAM (30%) OPEN BOOK/NOTES Chp: P: 1-3, 5-7 /// B&T 1-3 & 5 ALL STUDENTS MUST BE ON A ZOOM LIVE FEED CAMERA DURING THE EXAM.	
Week 7	Midterm Exam Evaluated & Graded -Determining Labor Burden (P-8) -Managing General Overhead Costs (P-9)	
Week 8	-Cash Flows / Construction Projects (P-12)	-Annual Worth Analysis (B&T-6)
Week 9	-Projecting Income Taxes (P-13)	-Annual Worth Analysis (B&T-6)
Week 10	-Time Value of Money (P-15)	Review Chapters 1, 2, 3, 5, 6 (B&T)
Week 11	-Time Value of Money (P-15)	Review Chapters 1, 2, 3, 5, 6 (B&T)
Course Review & Wrap-up		
Week 12	FINAL EXAM (40% - COMPREHENSIVE) 8:00-10:00 p.m. OPEN BOOK/NOTES ALL STUDENTS MUST BE ON A ZOOM LIVE FEED CAMERA DURING THE EXAM.	

For Your Information: Grade Evaluation Criterion

* 'A' grade range (A to A-) is reserved for work that is exceptional. This means that it (1) is professional and reflects the writer's/s' careful consideration of audience and purpose; (2) shows perfect to near-perfect understanding of the necessary concepts and analytical tasks; (3) where appropriate, it shows the capacity to think creatively or to see implications beyond the immediate scope of the question; (4) contains all necessary information (invention); (5) is arranged in a logical manner (6), is memorable; (7) delivery is visually appealing; and (8) is free of mechanical errors and is formatted as specified. Work must be flawless to attain an A/A-. Work with minor flaws that is nonetheless excellent in other ways will earn an A-.

* A grade in the B range means that the work is acceptable at the graduate level (B- range) to very good (B/B+). This work satisfies all (B+) or most (B/B-) of the requirements of the question & research tasks, shows the capability to think beyond the task by relating it to other areas of knowledge in or outside of the course; is neatly presented and shows above-average use of academic English. If the work is decently written, is formatted basically correctly, and covers most of the required content, but has several minor flaws or one major flaw, the grade is B-.

* A grade in the C range means that the work, while covering much of the required ground, does not show graduate-level analytic and expressive ability. That is, major and minor items may be missing or incorrect; and while the language may communicate most points adequately, it does not qualify as above-average academic work.

* A grade in the D range shows that the work does not, overall, achieve an acceptable level of coverage of the requirements AND/OR the language is insufficient to make the writer's points understandable to the reader. The content may be either incorrect to an unacceptable degree, or very incomplete.

* A grade of F indicates that so little of the required content is covered that grading the paper is an exercise in futility. It may mean that very major points have clearly not been grasped or have been misunderstood by the student. An F may also indicate that the ideas are expressed in such a way that they are not at all understandable to the reader. A grade of F is also awarded when assigned work is not handed in, or not handed in by the set deadline.