MSE304 – Engineering Economy Analysis (3 units)
CSUN – Fall 2018, Ticket 16745, Mon./Wed. 5:00p.m.–6:15p.m., Room: JD-1593

Instructor
Ghassan “Gus” H. Elias: BS/MS; Industrial/Manufacturing Systems Engineering.
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C.S.U.N. CATALOG - COURSE DESCRIPTION:
- Prerequisite: a passing grade in Math 150B.
- Material: The systematic evaluation of the economic benefits and costs of projects involving engineering design and analysis. Economic decision-making in an environment of limited resources and uncertainty. Present economy, the economy of multi-year projects, selection among competing alternatives, sensitivity of outcomes to input parameters, before-and after-tax analysis, replacement economy, inflation, and estimation of future events.

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 flow, and effects of inflation.
3. Present worth (PW) method, annual worth (AW) method, rate of return (ROR) method, benefit/cost ratio (B/C) method, and incremental rate of return analysis.
4. Depreciation schedules, replacement analysis, and after-tax analysis.
5. 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 solely 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: The last day to drop classes is 14-Sep-2018. Students must initiate this process; not faculty. Failure to formally drop a course will result in a “WU” grade which is equivalent to “F”, affecting detrimentally your GPA. Instructors’ grades are to be posted on SOLAR by 24-Dec-2018, the latest.
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 6)

17.5% - Exam #1: Chapters 1-4, open book & ORIGINAL notes, calculator.
17.5% - Exam #2: Chapters 5-7 & 9, open book & ORIGINAL notes, calculator.
20% - Random Weekly Quizzes (15-20 minutes) - a combination of open & closed book & notes given at the beginning of the lecture. No make-up quizzes!
45% - Final Exam (Comprehensive): open book / open notes, calculator.
       ONLY ORIGINAL WORK/NOTES ARE ALLOWED!

Letter-Grade Scale – “NO CURVING!”:

\[
\begin{align*}
A & \geq 90 & 88 \leq A- < 90 & 85 \leq B+ < 88 \\
80 \leq B < 85 & 78 \leq B- < 80 & 75 \leq C+ < 78 \\
70 \leq C < 75 & 60 \leq D < 70 & F < 60 \\
\end{align*}
\]
**COURSE SCHEDULE**

This is a *TENTATIVE* syllabus. Depending on the progress of the course material, the syllabus (dates, topics, assignments & exams) *may change* if deemed necessary. Sample problems will be solved during lectures. Assigned H.W. problems are due the following week.

Solution to H.W. problems will be provided on the date of submittal.

**Note 1:** Several random quizzes will be given throughout the semester. 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 my CSUN web-page: http://www.csun.edu/~ghe59995/

So that you take “helpful” notes during the class lectures, please print the assigned modules and have the slides handy during the lecture session throughout the semester.

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<th>Chapters</th>
<th>Homework Assignments</th>
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<td>Wk. 2</td>
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<td>4,9,15,16,20, 25,30,34,42,44, 46,48,51,56,59</td>
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<td>Wk. 5</td>
<td>Solution to Chapter 4 H.W. Problems &amp; Exam #1 Review</td>
<td>Exam #1: 26-Sep-2018 -- Chapters 1-4 (open book &amp; notes), worth 17.5% of the course grade.</td>
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<td>Wk. 6</td>
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<td>Review Test Solution</td>
<td>7, 11, 15, 18, 22, 26, 29, 31, 33, 37, 39, 40</td>
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<td>Wk. 8</td>
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<td>Wk. 10</td>
<td>Solution to Chapter 9 H.W. Problems &amp; Exam #2 Review</td>
<td>Exam #2: 31-Oct-2018 -- Chapters 5-7,9 (open book &amp; notes), worth 17.5% of the course grade.</td>
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<td>Wk. 11</td>
<td>Exam #2 Graded &amp;Returned Replacement Analysis</td>
<td>Review Test Solution</td>
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<td>Wk. 12</td>
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<td>Wk. 13</td>
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<td><strong>Course Review &amp; Wrap-up</strong></td>
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<td>Wk. 17</td>
<td><strong>FINAL EXAM (40% - COMPREHENSIVE)</strong></td>
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<td><strong>OPEN BOOK/NOTES</strong></td>
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<td><strong>Wednesday, Dec 12th, 5:30-7:30 p.m.</strong></td>
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**HOMEWORK GUIDELINES & ASSIGNMENTS:**

**H.W. solutions should be typed (MS-Word).** Hand-written submittals are accepted when using 8.5”x11” light-green ‘engineering’ paper. No spiral notebook fringes. Use only single side of paper and staple pages together in upper-left-hand corner. Note the name and course number on each page. Write legibly and show all procedures & the methodology used in solving the problems. **Numerate** all the problems and present them sequentially. Indicate the beginning and the end of each problem. Limit of 2-3 problems **maximum** per page. All problems assigned from the same chapter are graded equally.

Homework is collected at the **start** of the session due. **Late submission is not allowed! Students who are not doing the H.W. assignment may be asked to leave the class & miss the lecture. H.W. must be taken very seriously!!!.**

**Submissions that do not conform to the above format will not be accepted.**
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.