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Lectures: Tue/Thu 10:00 – 11:15 AM	Room:
Instructor:	
Office Hours:	Room:
TA: TBD	
Office Hours: TBD	Room: TBD

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Course Description:

Engineering economics deals with economic analysis and evaluation for planning, design and operation of engineering systems or projects. It involves the incorporation of the effect of the time-value of money in the evaluation of lifecycle benefits and costs associated with engineering projects in order to determine their economic feasibility and in comparing between project alternatives. The course will also include several day-to-day real-life examples that make use of the engineering economic concepts.

Prerequisite: Students are expected to have completed MAT 181 or equivalent, an introductory engineering course, and working knowledge of EXCEL spreadsheet software.

Required Text Book: Sullivan, Wicks and Koelling, *Engineering Economy*, Sixteenth Edition, Pearson, 2015 (Custom Edition for UNLV). Purchase of the textbook comes with access to the online coursed website “MyEngineeringLab”, which is the course website maintained by the book publishers.

Course Websites:

Webcampus: UNLV-maintained course website. It contains primary lecture notes and other course materials and announcements. It also maintains your course grade. ***You should download and print the lecture notes immediately and you should always bring them to class for reference and updates during lectures.***

MyEngineeringLab: This is a website maintained by the textbook publishers. It supplements the textbook and has several other course learning resources. ***Most homework assignments and quizzes will be assigned through this website. You should register immediately*** (use Course ID .... ).

Course Learning Objectives

By the end of the course, the student will be able to:

1. Define various cost terminologies, such fixed and variable costs; overhead and indirect costs; recurring and non-recurring costs; opportunity cost, etc.
2. Calculate the optimal level of production for given cost and demand functions
3. Correctly use interest rates in determination of the time-value of money
4. Calculate the present worth, future worth, annual worth, and internal rate of return for a given set of life-cycle cash flows, interest rate and other related data
5. Discuss the various techniques of making economic comparisons between alternative projects or investments
6. Describe asset depreciation and taxes are computed and incorporated in economic analysis
7. Account for inflation in economic analysis
8. Use spreadsheets for economic analysis.

**Topics Covered:** (and corresponding chapters #s from textbook)

*Handouts for each topic are posted on webcampus. Students are responsible for downloading and bringing the handouts to class. The handouts are designed to supplement the material in the textbook, not to replace it.*

Topic 1:	Introduction to Engineering Economics	(Chapter 1)
Topic 2:	Cost Concepts and Economic Environment	(Chapter 2)
Topic 3:	Principles of the Time-Value of Money	(Chapter 4)
Topic 4:	Economic Analysis and Evaluation of Alternatives	(Chapters 5, 6, 10)
Topic 5:	Analysis Using the EXCEL Spreadsheet	
Topic 6:	Incorporating Uncertainty in Economic Analysis	(Chapters 11, 12)
Topic 7:	Consideration of Asset Depreciation	(Chapter 7)
Topic 8:	Income Tax and After-Tax Economic Analysis	(Chapter 7)
Topic 9:	Consideration of Inflation and Price Changes	(Chapter 8)
Topic 10:	Replacement Analysis of Capital Assets	(Chapter 9)
Topic 11:	Analysis and Evaluation of Public Projects	(Chapter 10)

**Grading:**

1. Homeworks 15% (Approximately 10 to 11 homeworks)
2. Quizzes 15% (A few online quizzes in “MyEngineeringLab”)
3. Midterm Exams 45% (Three exams in approximately weeks 5, 9 and 13; closed book/notes)
4. Final Exam 25% (Comprehensive; closed book/notes; Tuesday, Dec 13, 2016 10:10 am – 12:10 pm)

**Class Attendance:**

You are expected to attend all the lectures. Please notify the instructor whenever you are not able to attend a class. *If you get more than 3 un-excused absences, points may be deducted from your final grade in proportion to the number of un-excused absences.*

**Homework Policy:**

Most homework assignments will be assigned and have to be completed in the “MyEngineeringLab” website. They have to be completed by the appropriate due dates. Any late completion will be subject to penalty, or if very late, will not be accepted. Students are strongly encouraged to discuss homework problems with other students. Of course, you are also strongly encouraged to consult the instructor and/or the TA whenever you have additional questions.

**Quizzes Policy:**

Most quizzes will be assigned and have to be completed in the “MyEngineeringLab” website. Each quiz will have to be completed ***in one sitting*** within a specified time limit. Quizzes have to be done individually without any help from other students or from any other person. Any violation of this policy is considered as “cheating” and appropriate steps will be taken in case of any evidence of such cheating.

**Exams Policy:**

All exams will be done in class on the appropriate dates. You cannot bring and refer to any course material during the exams. The only course material allowed are the relevant pages of the FE handbook which will be supplied to you by the instructor during the exams. Additional formulas and tables may also be supplied by the instructor as needed.

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#### UNIVERSITY POLICIES and RESOURCES:

**Academic Misconduct**—Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the *Student Academic Misconduct Policy* (approved December 9, 2005) located at: <https://www.unlv.edu/studentconduct/student-conduct>.

**Copyright**—The University requires all members of the University Community to familiarize themselves **with** and to follow copyright and fair use requirements. **You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

**Disability Resource Center (DRC)**—The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

**Religious Holidays Policy**—Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or within the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

**Transparency in Learning and Teaching**—The University encourages application of the transparency method of constructing assignments for student success. Please see these two links for further information:

<https://www.unlv.edu/provost/teachingandlearning>  
<https://www.unlv.edu/provost/transparency>

**Incomplete Grades**—The grade of I—Incomplete—can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving "I" grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

**Tutoring and Coaching**—The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call 702-895-3177. The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of the SSC (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TEB second floor.

**Library Resources**

Students may consult with a librarian on research needs. For this class, the subject librarian is Sue Wainscott. ([https://www.library.unlv.edu/contact/librarians\\_by\\_subject](https://www.library.unlv.edu/contact/librarians_by_subject)). UNLV Libraries provides resources to support students' access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu>.

**UNLV Writing Center**—One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>.

**Rebelmail**—By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always [@unlv.nevada.edu](mailto:@unlv.nevada.edu). **Emailing within WebCampus is acceptable.**

**Final Examinations**—The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.