

IE 5304 – 004, Advanced Economics for Engineers
Fall 2014
MW 5:30 – 6:50 am, WH 221

Instructor: Aera Kim LeBoulluec, Ph.D.

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Office Hours: W/F 1:50 –3:50 pm, by appointment.

Faculty Profile: <https://www.uta.edu/profiles/leboulluec-aera>

Teaching Assistant: Joyita Mostafa [joyita.mostafa@mavs.uta.edu]
Office Hours: M 3:20 - 5:20 pm & Th 12:30 - 2:30 pm.

Required Text: Economic Analysis of Capital Expenditures for Managers & Engineers, G.T. Stevens, Jr., 1994

Description of Course Content: The course focuses on methods used for determining the comparative financial desirability of engineering alternatives. The student is introduced to the concept of the time value of money and basic engineering economy techniques.

Student Learning Outcomes:

Students will be able to determine the equivalent value of money at a specified time given the timing of deposits and interest value.

- Students will be able to select the most attractive interest rate in various compound and simple interest forms.
- Students will be able to determine if an independent investment opportunity is economically attractive.
- Students will be able to determine the least-cost alternative of multiple solutions in a cost comparison scenario.
- Students will be able to identify the best project(s) to perform from a set of potential projects that are independently economically attractive.

Topics Covered:

- Introduction to engineering economy
- Interest factors and equivalence
- Depreciation and depreciation models
- Tax considerations
- Evaluation of a single investment (including internal rate of return, net present value, cash flows)
- Revenue requirements
- Capital budgeting
- Break-even models (linear and nonlinear)
- Cost comparisons
- Replacement analysis (may or may not cover depending on available time)

Grading and Course Evaluation: Typical grade scoring: A = 90, B = 80, C = 70, D = 60, F = below 60.

- Exams: 84% (28% for each exam)
- Projects: 16% (8% for each project)
- Bonus assignment and quizzes: 2% (optional)

Note that there is 102% available. Students can earn additional points by performing bonus assignments and quizzes. Points earned on bonus assignments and quizzes will be scaled to 2% and added to the class score. The bonus assignment will typically be related to the projects and is due by the specified due date and time specified by the instructor. A quiz is due within the timeframe identified by the instructor and must be individually worked

by students. The quizzes are intended to ensure that students are keeping up with lecture material. There is no makeup for missing a bonus assignment or quiz.

Exam/Project Schedule Dates (tentative):

Sept 29	Exam 1 (Ch 1-4)
Oct 13	Project 1 Due, Hand out Project 2 Assignment
Oct 27	Exam 2 (Ch 5-7)
Nov 19	Project 2 Assignment Due
Dec 8 (5:30 – 8:00 pm)	Exam 3 (Ch 8, 9, 10) – not comprehensive

Course Policies / Expectations:

- **Expectations for Out-of-Class Study:** Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 6 hours per week of their own time in course-related activities, including reviewing lecture content, reading required materials, completing assignments, etc.
- **Descriptions of Major Assignments and Examinations:** There are three exams and two projects. All exams are closed book and closed notes. The exams include a set of questions and problems in the form of fill-in-the-blank, multiple choice, true/false, short answer, diagrams, and short calculations as well as more complex problems that may require the application of multiple equations learned in the course. Additional information about the exams will be covered in the syllabus section " **Test/Quiz Policy** " and will be discussed by the instructor prior to each exam. Project 1 will be a paper analysis on a course topic. Project 2 is a net present value analysis. Students are required to meet project requirements including uploading projects using the specified electronic format to the identified Blackboard location. Detailed requirements related to each of the projects will be handed out later in the semester. Additional information related to projects is discussed in the syllabus section "**Project Policies**".
- **Exam/Quiz Policy:** All exams and quizzes are closed book and closed notes. Students are only allowed to use pens, pencils, erasers, calculators and documentation provided by instructor at the exam. Any needed exam documentation will be provided at the time of the exam. The equation sheet as well as interest factor tables (if required) will be provided as part of the exam. In order to prepare for exams, students are strongly encouraged to work the example problems available on Blackboard, rework the problems worked by the instructor in class, review the presentation slides, and participate in class. Students must work alone on tests and quizzes. No sharing of any materials may occur during tests and quizzes including book, calculator, formula sheet, etc. Please bring your **UTA ID** card to all tests. Cell phones calculators **CANNOT** be used for an exam and quiz.

After an exam: Once graded, the exams will be handed out and reviewed in class. **The exams must be turned in when requested.** If the exam is not provided back to the instructor or the GTA leaves the room without the exam, the student will receive a grade of zero for the exam. Students who wish to see their graded exams, after the review in class, must come during the instructor's office hours. Copies of the exams are not allowed or provided. The instructor highly encourages students who perform poorly on exams to come and discuss results with the instructor during office hours.

- **Project Policies:** Project 1 and Project 2 must be uploaded to the identified location in Blackboard prior to their due date & time. The Blackboard timestamp will be used to identify when the student submitted the assignment. Students who do not upload their project to the designated location in Blackboard will receive a grade of zero for the assignment. A hardcopy of the project will not be accepted. The assignment must also be in the format specified by the instructor in the detailed project requirements. Students are expected to submit their projects to the identified location in Blackboard in advance of the identified due date & time. Assignments that come in after the class's identified due date & start time will have a minimum of 20% docked. Late projects will receive a grade of zero if not received within Blackboard within 24 hours of the listed due date & time. There is no makeup for missed projects. Copying (including from past students' projects) is not permitted.
- **Makeup Policy:** **There will be no make-up test**, unless the student provides legitimate written document proving an illness or emergency. If necessary, I may request additional information to verify the validity of your documentation. Any make-up exam may be given on the second to last or last week of class and may be comprehensive. If an exam is missed without reason, the student will get 0 for the exam.

- If you require an accommodation based on disability, please meet with me in the privacy of my office during the first week of the semester to make sure you are properly accommodated.
- All cell phones must be off or silenced (not on vibrate) when class begins.
- Be on time; when you are tardy you will disturb the class when you enter. Let's avoid this entirely.
- Remain in class until you have been dismissed.

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Aera K LeBoulluec.

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have decided that attendance at class meetings is not required but strongly encouraged. (<http://www.tgslc.org/pdf/Program-integrity-R2T4-Taking-Attendance.pdf>.)

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after

graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

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 syllabus. 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. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located down the stairs across the hall from the classroom. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities. <https://www.uta.edu/policy/procedure/7-6>).

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Inclement Weather Policy: If the University is closed, this class will not meet. Any scheduled assignments or examinations will be rescheduled to the next class period that the class meets. You can get information by dialing 972-601-2049 or checking the main website at www.uta.edu.

<p>Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911.</p>
