**Instructor(s):** Ronald E. Cross

**Office Number:** ERB 549

**Office Telephone Number:** (817) 272-1728

**Email Address:** recross@uta.edu

**Faculty Profile: R.E. Cross -** https://mentis.uta.edu/public/#profile/profile/edit/id/16499/category/1

**Office Hours:** Tuesday/Thursday from 12:30 to 1:30pm, or by appointment

**Section Information:** IE 5304, Sections 001, 002, 003, 004, 006

**Time and Place of Class Meetings:**

Section 001 - Building: Monday/Wednesday, Woolf Hall, Rm 402, Time 4:00 to 5:20pm

Section 002: Distant Learning – Web

Section 003: Distant Learning – Web

Section 004: Building: Monday/Wednesday, Nedderman Hall, Rm 108, Time 5:30 to 6:50pm

Section 006: Building: Monday/Wednesday, Nedderman Hall, Rm 108, Time 5:30 to 6:50pm

**Section Information:**

Information in this syllabus is relevant for IE 5304 section 001, 004, and 006 for the in-class session and 002 & 003 for the distance learning sessions.

**Course Description from University Catalog:**

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.

**Course Objective**: The course coverage will include, but not be limited to, the following topics:

* 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
* Depreciation
* Break-even models (linear and nonlinear)
* Cost comparisons
* Replacement analysis, Inflation (may or may not cover depending on available time)

**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.

**Student Learning Assessment:** For each of the above topics, students will learn the basics and practice them via assignments/project. Students' knowledge will be tested via appropriate exam, quizzes, case studies and/or assignment questions. There will be an end of class project used to seat the understanding of the time value of money.

**Required Textbook & Other Course Materials:** Principles Of Engineering Economic Analysis, 6th Edition by White, Case & Pratt ; John Wiley & Sons.

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**Major Assignments:**

* Exams (3)        100 points each
* Pop Quizzes (3 to 5) 30 points each
* Case Studies (2) 50 points each
* Individual Net Present Worth Project 100 points
* Homework (3 to 5) 20 points each
* Extra Credit Assignment (1) 15 points

Final Grade is based upon Total Points Earned/Total Points Possible \*100%

**Grade Policy:** A = 100 - 90, B = 89 - 80, C = 79 - 70, D = 69-60, F = 59 and

Note: Final Average for assigning letter grade will be rounded to the unit (Examples: 89.5 = 90, 89.4999 = 89)

Total Points System will be used where exams will be weighted more than individual assignments. Students not completing one or more of these requirements may receive an Incomplete grade (I) in the course. Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels; see “Student Support Services,” below.

**EXAMINATIONS:**

There will be three non-comprehensive exams given during this semester. An optional comprehensive final examination may be taken. This comprehensive final may be used to replace your lowest regular exam score. If you choose to take the comprehensive exam, it will replace your lowest exam score no matter if it is higher or lower. See the lecture schedule for the dates. Examinations/Quizzes will be open book and closed notes. No make-up exams will be given without documented critical and unavoidable reasons.

In order to prepare for exams, students are strongly encouraged to work the example problems available on Blackboard, end of chapter problems, rework the problems worked by the instructor in class, review the presentation slides, and participate in class. Students must work alone on tests, quizzes, case studies (unless otherwise specified), individual projects and homework. 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. Exams will make use of scantron cards, so please bring one for each exam.

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.

**ASSIGNMENT & HOMEWORK:**

Assignments and Homework will be scheduled throughout the semester. Late submittals will not be accepted without documented critical and unavoidable reasons.

**POP QUIZZES:**

Pop quizzes may be given at various times during the semester to gauge your understanding of the lecture and reading materials. No make-up quizzes will be given without documented critical and unavoidable reasons.

**Attendance:** At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. 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. However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients “begin attendance in a course.” UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

* Please note late arrivals are disruptive; because of this the classroom doors may be locked with no further entry allowed 10 minutes after start of class.
* Also be aware that anything said by me or your classmates that is of note and not in the lecture notes is fair content for quizzes and exams.
* Missing a class does not alleviate you from the responsibility of meeting any verbal directions or guidance given out in that class.
* If you miss a class it is recommended you have a classmate take notes for you.

**General Policies:**

* Please use “IE 5304” in the Subject line of all e-mail correspondence PLUS the section number. Include your student number and name at the end of each email. There are more of you than there are of me. I need to be able to locate you in the landscape of classes and sections. If these are not included I will not be obliged to respond.
* Any homework or project assigned is due at the ***beginning of the class*** on the due date.
* All homework will be turned in with a physical copy unless otherwise notified/allowed by the professor or TA.
* Exams and Quizzes will be open book (physical book only, no e-books).
* The instructor reserves the right to modify the policies, calendar, assignments, slides or due dates if necessary.
* Faculty are required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate because of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

**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 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

**Grade Grievances**: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

<http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>; for graduate courses, see <http://catalog.uta.edu/academicregulations/grades/#graduatetext>. For student complaints, see <http://www.uta.edu/deanofstudents/student-complaints/index.php>.

**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://wweb.uta.edu/aao/fao/>).

**Disability Accommodations:** UTArlington 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), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* 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 disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities (OSD).Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)** [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services, (CAPS)**: [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy**: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit[*uta.edu/eos*](http://www.uta.edu/hr/eos/index.php)*.*

**Title IX Policy:** The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on

the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](file:///C:\Users\gotcherxx\Downloads\jmhood@uta.edu).

**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 in their courses by 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. Additional information is available at <https://www.uta.edu/conduct/>.

**Lab Safety Training:** Note - Not applicable for this class since there is no lab requirement

**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>.

1. The professor of this class will not answer emails sent from accounts other than the student’s assigned university email
2. Always include in the “Subject” line the class name and section number
3. Be specific as to your question and use professional language/academic language

**Class BlackBoard** – You are responsible for checking the class’s blackboard several times during the week (once per day is recommended). I do make announcements from time to time and also post material to the blackboard that is relevant to the class. Please note I may make changes to the class schedule based upon the progress of the class and available of speakers.

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

**Student Feedback Survey:** At the end of each term, students enrolled in face-to-face and online classes categorized as “lecture,” “seminar,” or “laboratory” are 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 via the SFS database is aggregated with that of other students enrolled in the course. Students’ anonymity will be protected to the extent that the law allows. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** for semester-long courses**,** 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. Note: Since the comprehensive final is optional, Exam III may be scheduled in the last week of regular class.

**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 to your right as you exit the class room around the corner and them immediately left down the stairs. 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.

You are encouraged to subscribe to the MavAlert system that will send information in case of an emergency to directly to your cell phones or email accounts. Anyone can subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.php>

**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](http://www.uta.edu/universitycollege/current/academic-support/learning-center/tutoring/index.php), [major-based learning centers](http://www.uta.edu/universitycollege/resources/college-based-clinics-labs.php), developmental education, [advising and mentoring](http://www.uta.edu/universitycollege/resources/advising.php), personal counseling, and [federally funded programs](http://www.uta.edu/universitycollege/current/academic-support/mcnair/index.php). 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](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

**The IDEAS Center** (2nd Floor of Central Library) offers free tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email [IDEAS@uta.edu](mailto:IDEAS@uta.edu) or call (817) 272-6593.

**The English Writing Center (411LIBR):** The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at http://uta.mywconline.com. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information on all our programs and services.

The Library’s 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library’s hours of operation. <http://library.uta.edu/academic-plaza>

**Librarian to Contact: Contact information** – look up here: <http://www.uta.edu/library/help/subject-librarians.php> [See the end of this document for additional information about library links that might be embedded in your syllabus or other course materials.]

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**Course Schedule**

*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. – R. E. Cross.*

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| **Class Date** | **Class #** | **Class Activities/Lecture** | **Recommended Homework &**  **Assignment Due Dates** |
| Week 1: 8/29 | 1 | Syllabus  Chapter 1: Time Value of Money, Discounted Cash Flow Rules, Systematic Economic Analysis Technique (SEAT) | Reading: 1.1-1.6  Problems: FE-Like Problems and 1, 4, 6, 12, 16, 22, 28, 30 |
| Week 2: 8/31/2016 | 2 |
| Week 2: 9/5/2016 | 3 | Labor Day Holiday |  |
| Week 3: 9/7/2016 | 4 | Chapter 2: Cash Flow Diagrams, Simple and Compound Interest, Compound Interest Calculations, Nominal & Effective Interest Rates | Reading: 2.1-2.6; 2.8  Problems: FE-Like Problems and 2, 4, 6, 10, 14, 16, 20, 22, 26, 28, 50, 54, 60, 64, 70, 84, 94, 100, 124, 150, 164 |
| Week 3: 9/12/2016 | 5 |
| Week 4: 9/14/2016 | 6 |
| Week 4: 9/19/2016 | 7 | Chapter 3: Loans  Equivalence and Indifference  Variable Interest Rates | Reading: 3.1-3.3; 3.5; 3.7; 3.9-3.10  Problems: FE-Like Problems and 2, 26, 28, 40, 44, 58, 60 |
| Week 5: 9/21/2016 | 8 |
| Week 5: 9/26/2016 | 9 | Exam #1 | Chapters 1-3 plus any in-class material presented |
| Week 6: 9/28/2016 | 10 | Exam #1 Review: Chapter 4: Planning Horizon Minimum Attractive Rate of Return | Reading: 4.1-4.4  Problems: FE-Like Problems and 6, 8, 10, 20, 26, 30 |
| Week 6: 10/3/2016 | 11 |
| Week 7: 10/5/2016 | 12 | Chapter 5: Present Worth | Reading: 5.1-5.10; 6.1-6.2, 7.1-7.7  Problems: Chapter 5 - FE-Like Problems and 4, 12, 14, 24, 28, 30, 62, 66, 70, 72, 80; |
| Week 7: 10/10/2016 | 13 |
| Week 8: 10/12/2016 | 14 | Chapter 6: Future Worth | Chapter 6 – FE-Like Problems and 4, 6, 14; **Case Study #1 Due 10/12/16** |
| Week 8: 10/17/2016 | 15 |
| Week 9: 10/19/2016 | 16 | Chapter 7: Annual Worth | Reading: 7.1-7.7 Problems: FE-Like Problems and 4, 12, 20, 26, 28, 42, 52, 54, 58, 60 |
| Week 9: 10/24/2016 | 17 |

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| --- | --- | --- | --- |
| **Class Date** | **Class #** | **Class Activities/Lecture** | **Recommended Homework & Assignment Due Dates** |
| Week 10: 10/26/2016 | 18 | Chapter 8: Internal Rates of Return, External Rates of Return | Reading: 8.1-8.7  Problems: FE-Like Problems and 4, 8, 12, 30, 34, 36, 52, 58, 62, 66 |
| Week 10: 10/31/2016 | 19 |
| Week 11: 11/2/2016 | 20 | Exam #2 | Chapters 4-8, plus any in-class material presented |
| Week 11: 11/7/2016 | 21 | Review of Exam #2, Chapter 9: Depreciation Methods  Modified Accelerated Cost Recovery System (MACRS); | 9.1-9.8  Problems: FE-Like Problems and 4, 8, 10, 26, 32, 40, 44 |
| Week 12: 11/9/2016 | 22 |
| Week 12: 11/14/2016 | 23 | Chapter 10 Corporate Income Taxes | Reading: 10.1-10.6  Problems: FE-Like Problems and 6, 10, 12, 14, 20, 28, 34, 38, 44 |
| Week 13: 11/16/2016 | 24 |
| Week 13: 11/21/2016 | 25 | Chapter 13 After Tax Cash Flows Breakeven Analysis  Sensitivity Analysis | Reading: 13.1-13.5  Problems: FE-Like Problems and 6, 8, 14, 18, 20, 26, 30, 34, **Case Study #2 Due 11/21/2016** |
| Week 14: 11/23/2016 | 26 |
| Week 14: 11/28/2016 | 27 | Inflation Lecture | **Extra Credit Assignment due 11/30/16** |
| Week 15: 11/30/2016 | 28 |
| Week 15: 12/1/2016 | 29 | Exam #3 | Chapters 9, 10, 13, & Inflation, plus any in-class material presented |
| Week 16: 12/5/2016 | 30 | Review of Exam #3, Problem Working Session, Review for Comprehensive Exam | **Student Projects Due 12/5/2016** |
| Week 17: 12/7/2016 | 31 |
| Comprehensive Finals Week – please not this information does not replace the academic final exam schedule. If there is a conflict the academic final exam schedule takes precedence |  | Distant Learning Sections: 002 & 003 see note in adjacent cell | Note: All distant learning students must take comprehensive exam in class unless approval has been granted for a proctored exam. All Distant Learning Students must have exam Taken by 12/14/16 9:00 pm if exam is not taken in class. |
| 12/12/16 (Monday) | M | Section 004 | NH 108: 5:30 to 8:00pm |
| 12/14/16 (Wednesday) | W | Section 001 | WH 402: 2:00 to 4:30pm |
| 12/14/16 (Wednesday) | W | Section 006 | NH 108: 8:15 to 10:45pm |

**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. Non-emergency number 817-272-3381

**Library Home Page**[**library.uta.edu**](http://library.uta.edu/)

**Resources for Students** & **Academic Help**

Academic Plaza Consultation Services [library.uta.edu/academic-plaza](http://library.uta.edu/academic-plaza)

Ask Us [ask.uta.edu/](http://ask.uta.edu/)

Library Tutorials [library.uta.edu/how-to](http://library.uta.edu/how-to)

Subject and Course Research Guides [libguides.uta.edu](http://libguides.uta.edu/)

Subject Librarians [library.uta.edu/subject-librarians](http://library.uta.edu/subject-librarians)

**Resources**

A to Z List of Library Databases [libguides.uta.edu/az.php](http://libguides.uta.edu/az.php)

Course Reserves [pulse.uta.edu/vwebv/enterCourseReserve.do](http://pulse.uta.edu/vwebv/enterCourseReserve.do)

FabLab [fablab.uta.edu/](http://fablab.uta.edu/)

Special Collections [library.uta.edu/special-collections](http://library.uta.edu/special-collections)

Study Room Reservations [openroom.uta.edu/](http://openroom.uta.edu/)