**Instructor:**  Ronald Cross

**E-Mail:** recross@uta.edu

**Phone:** (817) 272-1728

**Office Location**: ERB 549

**Office Hours:** Monday, Wednesday & Friday’s 11:00am to 12:00 noon or by appointment

**TA:** TBD

**E-Mail:** TBD

**Office:** WH401

**Office Hours**:

**Course Time & Location:**

Section 001: WH308 – Monday & Wednesday from 7:00 to 8:20pm (Distant Learning Included in this Section)

**Section Information:**

Information in this syllabus is relevant for IE 5304 section 001, 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
* Capital budgeting
* 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.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Major Assignments:**

* Exams (3)        75% of Final Grade
* Pop Quizzes, Case Studies 10% of Final Grade
* Individual Net Present Worth Project 15% of Final Grade
* Homework 2% Extra Credit

Note: There is an opportunity to make 102% out of 100% with the extra-credit

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

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

Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the TA first then the instructor) if their performance drops below satisfactory levels; see “Student Support Services,” below.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**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. Given this I have instructed the TA to take attendance for each of the first 2 weeks of class. After that time attendance will not be taken.

* 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.
* Word of warning - if you miss a class and an assignment was due that day or a pop quiz was given late work will not be accepted nor will any make up quiz be given. Be advised missed assignments (0’s) may have a detrimental affect your final grade.
* 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 2308” 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. No Make-up work will be accepted and no exceptions.
* All homework will be turned in with a physical copy unless otherwise notified/allowed by the professor.
* No make-up quizzes, exams or assignments will be given.
* An Optional Comprehensive Final will be given during Finals Week. The Comprehensive Final Exam grade **percentage** may be substituted for any 1 of the 3 exams previously given. If you miss any of the 3 regular exams the comprehensive exam may be used to replace the missed exam. Or if choosing to substitute for lowest previous exam, it will replace that score **no matter if higher or lower** - be advised there is upside opportunity and a down side risk.
* For any essay type assignments or assignments requiring verbiage as a part of the answer the student is expected to use academic/professional language. These assignments will be graded as such. It is recommended students to seek advice at least once this semester from the Student Writing Center.
* All exams are closed book.
* 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.

**Exam/Quiz Policy:**

All exams and quizzes are closed book and closed notes. Students are only allowed to use pencils, erasers, and calculators. 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, 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.

**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, for graduate courses, see the following link: <http://catalog.uta.edu/academicregulations/grades/#graduatetext>.

**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: UT** 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), 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).** 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.

**Counseling and Psychological Services, (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671.

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](http://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 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). For information regarding Title IX, visit [www.uta.edu/titleIX](http://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>.

**Blackboard:** The Blackboard will be used in this class. The student is required to check the Blackboard at least once per day for announcements and updates that may be pertinent to the class. All lecture notes, project instructions, formats, schedules, and syllabus will be posted to Blackboard. <https://elearn.uta.edu>

**Blackboard Help:** Richard Zercher ([zercher@uta.edu](mailto:zercher@uta.edu))

For problems viewing ClassRev (Echo360) recordings contact [classroomsupport@uta.edu](mailto:classroomsupport@uta.edu).

**Other Requirements:** Lectures are recorded for the distance sections during the in-class section (001). The instructor asks that noise be minimized to ensure a quality and positive classroom experience for all students. This includes silencing cell phones/other audible devices before class and no whispering and discussions during class unless you are asking the instructor a question.

**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 (Discussions during first class will be held as to where nearest exits are). 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.

**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](mailto:resources@uta.edu), or view the information at http://www.uta.edu/universitycollege/resources/index.php

**The English Writing Center (411LIBR):** Hours are 9 am to 8 pm Mondays-Thursdays, 9 am to 3 pm Fridays and Noon to 5 pm Saturdays and Sundays. Walk In Quick Hits sessions during all open hours Mon-Thurs. Register and make appointments online at [http://uta.mywconline.com](http://uta.mywconline.com/). Classroom Visits, Workshops, and advanced services for graduate students and faculty are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information.

**Class 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.” – Ron Cross*

| **Week** | **Date** | **Topics** | **Student Readings and**  **Self Study Problems** |
| --- | --- | --- | --- |
| 1 | 1/20/16 | Syllabus  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 |
| 2 | 1/25/16 | Cash Flow Diagrams  Simple and Compound Interest  Compound Interest Calculations | 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 |
| 3 | 2/1/16 | **Practice Exam (Ch. 1-2)** |  |
| 4 | 2/8/16 | 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 |
| 5 | 2/15/15 | Planning Horizon  Minimum Attractive Rate of Return | Reading: 4.1-4.4  Problems: FE-Like Problems and 6, 8, 10, 20, 26, 30 |
| 6 | 2/22/15 | **Exam 1 (Ch. 1-4)** |  |
| 7 | 2/29/15 | Present Worth Analysis  Discounted Payback Period  Capitalized Worth  Future Worth Analysis | Reading: 5.1-5.10; 6.1-6.2  Problems: Chapter 5 - FE-Like Problems and 4, 12, 14, 24, 28, 30, 62, 66, 70, 72, 80; Chapter 6 – FE-Like Problems and 4, 6, 14 |
| 8 | 3/7/15 | Annual Worth Analysis | Reading: 7.1-7.7  Problems: FE-Like Problems and 4, 12, 20, 26, 28, 42, 52, 54, 58, 60 |
| 9 | 3/14/15 | Spring Break |  |
| 10 | 3/21/15 | Internal Rate of Return  External Rate of Return | Reading: 8.1-8.7  Problems: FE-Like Problems and 4, 8, 12, 30, 34, 36, 52, 58, 62, 66, 72 |
| 11 | 3/28/15 | **Exam 2 (Ch. 5-8)** |  |
| 12 | 4/4/15 | Depreciation Methods  Modified Accelerated Cost Recovery System (MACRS) | Reading: 9.1-9.8  Problems: FE-Like Problems and 4, 8, 10, 26, 32, 40, 44 |
| 13 | 4/11/15 | Corporate Income Taxes  After Tax Cash Flows | Reading: 10.1-10.6  Problems: FE-Like Problems and 6, 10, 12, 14, 20, 28, 34, 38, 44 |
| 14 | 4/18/15 | Breakeven Analysis  Sensitivity Analysis  Risk Analysis (Optional) | Reading: 13.1-13.5  Problems: FE-Like Problems and 6, 8, 14, 18, 20, 26, 30, 34 |
| 15 | 4/25/15 | **Exam 3 (Ch. 9, 10, 13)** |  |
| 16 | 5/2/15 | Wrap Up & Special Topics (Inflation, Replacement Analysis) | Final Review Week, **PW** **Projects Due** |
| 17 | 5/11/15 | **Final Exam** | Wednesday 8:15 to 10:45pm |

**Note: The Authority for Final Exams is the Spring 2016 Academic Schedule, dates and times provided above are notional only.**

Please refer to University Final Exam Schedule for the Spring 2016 term on UTA Website to Confirm the above date and time.

**Home Work Assignments:** There may be homework assigned that will be taken up for grading as extra-credit. This will be specified in class. All Homework assigned to be turned in are to be completed and handed in on dates specified by the instructor. No late homework will be accepted. All work is to be the individual student’s effort.

All homework to be turned in will have the following single spaced at the top of the page and left justified – Date Due, Student Name, Course Number and Section, Assignment Name (Chapter & Problem Numbers), see immediately below:

**9/29/15**

**Name of Student**

**IE 5304 Section 002 (Use appropriate section number)**

**Chapter 5, Problems 1,7 & 9**

Note: Two Points will be counted off on any assignment, quiz, and exam that is handed in without the above properly located or filled in if blank lines are provided (as on exams & quizzes). The exception to this is for the PW Analysis Project where the student will need to use a title page. See the specific instructions for more information on this particular assignment.

Also, each student will be required to “cut & paste” and sign The UTA Honor’s Code (see above) to each submittal for grade (Homework, Case Studies, Project, etc). This should be the last page of each submittal.

**Project/Case Study Presentations:** If student presentations related to the project/case studies are required, the presentation shall be limited to 5 to 7 minutes in total depending on the number of presentations to be given. As an advisement presentations may be required to be given as a group based upon class time limitations. For this class (Spring 2016) there are no presentations.

**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 Support:**

Library Home Page <http://www.uta.edu/library>

Subject Guides <http://libguides.uta.edu>

Subject Librarians <http://www.uta.edu/library/help/subject-librarians.php>

Database List <http://www.uta.edu/library/databases/index.php>

Course Reserves <http://pulse.uta.edu/vwebv/enterCourseReserve.do>

Library Tutorials <http://www.uta.edu/library/help/tutorials.php>

Connecting from Off- Campus <http://libguides.uta.edu/offcampus>

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

The following URL houses a page where we have gathered many commonly used resources needed by students in online courses: <http://www.uta.edu/library/services/distance.php>.