

Syllabus Fall 2022

Economy for Engineers & Scientists - CE 2326 – 002 **M-W**

CRN 12147; Aug 22, 2022 – Dec 1, 2022; In Class and Online Sync/Asynchronous

Instructor: L.G. Perez, Ph.D.
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 Office Hours: MW 30 minutes after class or by appointment
 Class Hours: MW 4:20 pm – 4:50
 Classroom: UGLC 346

Course Description

This course covers the basics of economic analysis from an engineering perspective. Because cost is such an important component in decision-making, various techniques for comparing alternatives on an economic basis are presented. Other topics include depreciation, inflation considerations, cost estimating, and sensitivity analysis. After completing the course, the student should be able to identify which alternative should be selected from two or more mutually exclusive alternatives on the basis of economic considerations.

Objective

Understand basic economic concepts (e.g., time value of money, present worth, rate of return, cost estimation, inflation, etc.) and their application in engineering.

Identify which alternative should be selected on the basis of economic considerations.

Textbook Information

Required Text: Basics of Engineering Economy, 3rd ed, 2021
 Authors: Leland Blank and Anthony Tarquin

Organization and Method of Instruction

The course will be taught using two venues (in the classroom, on-line Sync/ Asynchronous). Refer to the syllabus as a guide of how lectures will be delivered (at UTEP or BB Zoom) Use of Blackboard, archived presentations and web-based instruction may be used.

Grade Determination

| | | |
|-----------|-------|---|
| ≥ 90 | ----- | A |
| 80 - < 90 | ----- | B |
| 70 - < 80 | ----- | C |
| 60 - < 70 | ----- | D |
| <60 | ----- | F |

| | Exams | Quizzes | Journal Checks | Homework Checks | Participation | Final | Total |
|--------|-------|---------|----------------|-----------------|---------------|-------|-------|
| Number | 4 | 1 | 1-2 | 1-2 | 1 | 1 | |
| Points | 12 | 4 | 6 each | 4 each | 4 | 24 | |
| Total | 48 | 04 | 12 | 08 | 04 | 24 | 100 |

Class Policy

Attendance is mandatory. You will be on your honor as future engineers. All exams, quizzes and the final are closed book. Note cards or other resources are NOT allowed. You will need to bring a 10% interest table with you to all exams, quizzes and the final. All communication devices including calculators with a communications capability are disallowed during exams.

All devices with a communications capability will need to be stowed away during exams.

Students are required to take exams in the classroom and will not be allowed to leave the room once the exam has started. A failing grade will be assigned to the student's exam for any student that takes the exam other than in the classroom or leaves the room during an exam. Please attend to bathroom requirements before start of an exam. Once you begin the exam, quiz or survey, you must complete it.

Prior to leaving from an exam, students must show their grade to the instructor. A Final Exam grade of less than 30 will result in a final course grade of no higher than a 69.

Grading appeals must be submitted to the instructor, in writing via email, no more than two weeks after the grade is returned or made available to the student. **Do not miss exams. Make-up exams will not be given.** Excuses such as weddings (other than your own) or quinceneras will **NOT** be valid excuses to miss a test or the final exam. In the event of a pre-mediated absence from an exam for such reasons as university sponsored activity, severe family emergencies or hospitalization, the instructor must be notified as early as possible **before** the date of the exam via email with documentation.

Academic Integrity

Academic regulations and procedures are governed by university policy. Students must abide by university rules on Academic Integrity and Scholastic Dishonesty. All students must do their own work on quizzes and exams. Any student **warned and/or suspected** of cheating will not be eligible for extra credit and participation points will be deducted. Students found cheating will face severe consequences. If any one student is found cheating, all extra credit is void for the entire class.

Special Accommodations

The University of Texas at El Paso provides, upon request, appropriate academic accommodation for students with disabilities. Please coordinate with the Center for Accommodations and Support Services instructor and the instructor early to ensure accommodations are provided in a timely manner. For more information, contact the Center for Accommodations and Support Services (<http://sa.utep.edu/cass/>).

COVID-19 PRECAUTION STATEMENT

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office

can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is still available in the El Paso area. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.

| | | | | | M - W | FALL 2022 LECTURE SCHEDULE | 8/15/2022 |
|-------------|-------------|--------------|--------------------------|---|-----------------|-----------------------------------|-----------|
| week | Date | Where | Topic and Section | | Sections | | |
| 1 | Mon | 8/22/2021 | UGLC 346 / Zoom | Chap 1 Introduction, Foundations of Engineering Economy | | 10 | |
| | Wed | 8/24/2021 | UGLC 346 / Zoom | Chap 2 Factors: How Time and Interest Affect Money | | 5 | |
| 2 | Mon | 8/29/2021 | UGLC 346 / Zoom | | | | |
| | Wed | 8/31/2021 | UGLC 346 / Zoom | | | | |
| 3 | Mon | 9/5/2021 | UGLC 346 / Zoom | Holiday EXAM 0 Chap 1-2 | | | |
| | Wed | 9/7/2021 | UGLC 346 / Zoom | Chap 3 Nominal and Effective Interest Rates | | 8 | |
| 4 | Mon | 9/12/2021 | UGLC 346 / Zoom | | | | |
| | Wed | 9/14/2021 | UGLC 346 / Zoom | | | | |
| 5 | Mon | 9/19/2021 | UGLC 346 / Zoom | Exam 1 Chap 1, 2 and 3 | | | |
| | Wed | 9/21/2021 | UGLC 346 / Zoom | Chap 4 Present Worth Analysis | | 6 | |
| 6 | Mon | 9/26/2021 | UGLC 346 / Zoom | | | | |
| | Wed | 9/28/2021 | UGLC 346 / Zoom | Chap 5 Annual Worth Analysis | | 4 | |
| 7 | Mon | 10/3/2021 | UGLC 346 / Zoom | Chap 6 Rate of Return Analysis | | 8 | |
| | Wed | 10/5/2021 | UGLC 346 / Zoom | | | | |
| 8 | Mon | 10/10/2021 | UGLC 346 / Zoom | Exam 2 Chap 4, 5, 6 | | | |
| | Wed | 10/12/2021 | UGLC 346 / Zoom | | | | |
| 9 | Mon | 10/17/2021 | UGLC 346 / Zoom | Chap 7 Benefit / Cost Analysis and PS Projects | | 5 | |
| | Wed | 10/19/2021 | UGLC 346 / Zoom | | | | |
| 10 | Mon | 10/24/2021 | UGLC 346 / Zoom | Chap 8 Breakeven, Payback, Sensitivity, and Risk Analysis | | 6 | |
| | Wed | 10/26/2021 | UGLC 346 / Zoom | | | | |
| 11 | Mon | 10/31/2021 | UGLC 346 / Zoom | Chap 9 Replacement and Retention Decisions | | | |
| | Wed | 11/2/2021 | UGLC 346 / Zoom | Exam 3 Chap 7 - 9 | | | |
| 12 | Mon | 11/7/2021 | UGLC 346 / Zoom | Chap 10 Effects of Inflation | | 5 | |
| | Wed | 11/9/2021 | UGLC 346 / Zoom | Chap 11 Cost Estimation and Allocation | | 6 | |
| 13 | Mon | 11/14/2021 | UGLC 346 / Zoom | | | | |
| | Wed | 11/16/2021 | UGLC 346 / Zoom | Chap 12 Depreciation Methods | | 4 | |
| 14 | Mon | 11/21/2021 | UGLC 346 / Zoom | | | | |

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|----|------------|------------|------------------------|--|--|
| | Wed | 11/23/2021 | UGLC 346 / Zoom | Final Homework, Journal Review | |
| 15 | Mon | 11/28/2021 | UGLC 346 / Zoom | Exam 4 Chap 10 - 13 | |
| | Wed | 11/30/2021 | UGLC 346 / Zoom | | |
| | Thu | 12/1/2021 | UGLC 346 / Zoom | LAST DAY OF CLASSES | |
| 16 | Mon | 12/5/22 | UGLC 346 / Zoom | FINAL EXAM 1 – 3:45pm in UGLC 346 | |