

The Hong Kong University of Science & Technology
Department of Industrial Engineering & Decision Analytics

IEDA 3230 Engineering Economics and Accounting

Semester: Fall 2023

Instructor

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Consultation hours: Friday 14:00-15:00 (by appointment)

Teaching Assistants

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Consultation hours: by appointment

Class Schedule

Time: Monday (13:30-14:50) & Friday (9:00-10:20)

Venue: Room 4621

Course descriptions

To realize practical and affordable engineering designs, projects, and solutions, engineers must be equipped with the proficiency to make economically sound decisions. This course will cover the basic concepts and techniques useful for economic decision-making. The goal is to build a framework to systematically analyze the economic aspects of engineering solutions and to evaluate alternative designs by considering notions such as time value of money, economic equivalence, depreciation, and tax.

Key Learning Outcomes

After completing the course, you should be able to:

1. understand basic cost concepts, terminology, and methods to estimate and optimize cost of design projects.
2. understand time value of money and apply this knowledge through various methods to evaluate alternative projects.
3. apply the techniques to account for depreciation, tax, and inflation in the evaluation of engineering projects.
4. apply the techniques to deal with uncertainty in decision making.

Course Assessment

Assignments (4 in total. Count the highest 3)	20%
Midterm Exam	25%
Final Exam	35%
Project	20%

Learning Resources

Textbook:

Engineering Economy, by William G. Sullivan, Elin M. Wicks, and C. Patrick Koelling, 17th edition, Pearson Education Limited 2020. (15th or newer editions are also okay.)

Notes and reading materials are available for download from Canvas course site.

List of Topics (tentative)

1. Introduction to Engineering Economy
2. Cost Concepts and Design Economics
3. Cost Estimation Techniques
4. The Time Value of Money
5. Evaluating a Single Project
6. Comparison and Selection among Alternatives
7. Depreciation and Income Taxes
8. Price Changes and Exchange Rates
9. Dealing with Uncertainty
10. Portfolio Management