ECE472H1 F

Engineering Economic Analysis & Entrepreneurship

Fall 2024 Syllabus

Course Meetings

ECE472H1 F

Section	Day & Time	Delivery Mode & Location
LEC0101	Tuesday, 4:00 PM - 5:00 PM Wednesday, 4:00 PM - 5:00 PM Friday, 4:00 PM - 5:00 PM	In Person: GB 119 In Person: GB 119 In Person: GB 119
LEC0102	Tuesday, 2:00 PM - 3:00 PM Wednesday, 2:00 PM - 3:00 PM Friday, 2:00 PM - 3:00 PM	In Person: GB 120 In Person: ES B142 In Person: GB 120
TUT0101	Tuesday, 3:00 PM - 4:00 PM Friday, 3:00 PM - 4:00 PM	In Person: GB 119 In Person: BA 1240
TUT0102	Tuesday, 3:00 PM - 4:00 PM Friday, 3:00 PM - 4:00 PM	In Person: GB 304 In Person: WB 219
TUT0103	Monday, 2:00 PM - 3:00 PM Friday, 3:00 PM - 4:00 PM	In Person: GB 119 In Person: BA 2195
TUT0104	Monday, 2:00 PM - 3:00 PM Friday, 3:00 PM - 4:00 PM	In Person: HA 410 In Person: BA 2175

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Instructor: Mike Xue
Email: yu.xue@mail.utoronto.ca
Office Hours and Location: In Person: BA7133, by appointments

Course Overview

The economic evaluation and justification of engineering projects and investment proposals are discussed. Cost concepts; financial and cost accounting; depreciation; the time value of money and compound interest; inflation; capital budgeting; equity, bond and loan financing; income tax and after-tax cash flow in engineering project proposals; measures of economic merit in the public sector; sensitivity and risk analysis. Applications: evaluations of competing engineering project alternatives; replacement analysis; economic life of assets; lease versus buy decisions;

break-even and sensitivity analysis. Entrepreneurship and the Canadian business environment will be discussed.

Course Learning Outcomes

By the end of the course, students will be able to apply engineering economics principles to make informed economic decisions related to engineering projects and real-world financial investments.

Prerequisites: None
Corequisites: None
Exclusions: None
Recommended Preparation: None
Credit Value: 0.5
Graduate Attributes:

- 11A. Economics and Project Management: Demonstrate ability to estimate the life-cycle economic and financial costs and benefits for relevant engineering activities. [Introduced]
- 11B. Economics and Project Management: Demonstrate ability to evaluate the economic and financial performance of an engineering activity and compare alternative proposals on the basis of these measures. [Introduced]
- 11C. Economics and Project Management: Demonstrate ability to read and understand financial statements for engineering activities. [Introduced]
- 11D. Economics and Project Management: Demonstrate ability to plan and manage engineering activities to be within time and budget constraints. [Introduced]
- 9B. Impact of Engineering on Society and the Environment: Demonstrate the ability to identify and choose alternative ways to mitigate or prevent adverse social, environmental, human health and safety impacts. [Introduced]
- 10A. Ethics and Equity: Demonstrate the ability to recognize ethical and equity based dilemma. [Introduced]

Course Materials

Szonyi, A. J., Fenton, R.G., et al., *Principles of Engineering Economic Analysis,* (Revised Canadian Edition), Wall & Emerson (2000).

Marking Scheme

Assessment	Percent		Due Date
Quiz 1	15%		2024-09-27
Quiz 2	15%		2024-10-25
Quiz 3	15%		2024-11-22
Final Exam	55%		Final Exam Period

Course Schedule

Week	Description
Week 1	Introduction
Week 2	Cost Concepts
Week 3	Corporate Finance
Week 4	Time Value of Money Operations
Week 5	Time Value of Money Operations
Week 6	Comparison of Alternatives
Week 7	Comparison of Alternatives
Week 8	Basic Accounting Principles
Week 9	Basic Accounting Principles
Week 10	Income Tax & Engineering Projects
Week 11	Comparison of Alternatives II – Private Sector
Week 12	Comparison of Alternatives III – Public Sector

Policies & Statements

University Land Acknowledgement

I wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Learn more about Canada's relationship with Indigenous Peoples here.

Indigenous Students' Supports

If you are an Indigenous engineering student, you are invited to join a private Discord channel to meet other Indigenous students, professors, and staff, chat about scholarships, awards, work opportunities, Indigenous-related events, and receive mentorship. Email Professor Bazylak if you are interested.

Indigenous students at U of T are also invited to visit Nations House's (FNH) Indigenous Student Services for culturally relevant programs and services. If you want more information on how to apply for Indigenous specific funding opportunities, cultural programs, traditional medicines, academic support, monthly social events or receive the weekly newsletter, go to the FNH website, email or follow FNH on social media: Facebook, Instagram, or TikTok. A full event calendar is on the CLNX platform. Check CLNX often to see what new events are added!

Wellness and Mental Health Support

Your personal wellness and mental health are important. The University of Toronto and the Faculty of Applied Science & Engineering offer a wide range of free and confidential services that can support your well-being.

As a U of T Engineering student, you have a Departmental Undergraduate Advisor or a Departmental Graduate Administrator who can support you by advising on personal matters that impact your academics. Other resources that you may find helpful are listed on the U of T Engineering Mental Health & Wellness webpage, and a small selection are also included here:

- U of T Engineering's Student & Community Wellness Coordinator
- Health & Wellness and the On-Location Engineering Wellness Counsellor
- Health & Wellness Peer Support Program
- Accessibility Services & the On-Location Advisor
- Graduate Engineering Council of Students' Mental Wellness Commission
- SKULE™ Mental Wellness
- U of T Engineering's Learning Strategist and Centre for Learning Strategy Support
- Registrar's Office and Scholarships & Financial Aid Office & Advisor

We encourage you to access these resources as soon as you feel you need support; no issue is too small. You may reach out to the counsellors at U of T Telus Health Student Support for 24/7 free and confidential counselling support.

If you find yourself feeling distressed and in need of more immediate support visit uoft.me/feelingdistressed or U of T Engineering's Urgent Support – Talk to Someone Right Now.

Accommodations

The University of Toronto supports accommodations for students with diverse learning needs, which may be associated with mental health conditions, learning disabilities, autism spectrum, ADHD, mobility impairments, functional/fine motor impairments, concussion or head injury, visual impairments, chronic health conditions, addictions, D/deaf, deafened or hard of hearing, communication disorders and/or temporary disabilities, such as fractures and severe sprains, or recovery from an operation

If you have a learning need requiring an accommodation the University of Toronto recommends that students register with Accessibility Services as soon as possible.

We know that many students may be hesitant to reach out to Accessibility Services for accommodations. The process of accommodation is private; we will not share details of your needs or condition with any instructor.

If you feel hesitant to register with us, we encourage you to reach out for further information and resources on how we can support. It may feel difficult to ask for help, but it can make all the difference during your time here.

Phone: 416-978-8060
Email: accessibility.services@utoronto.ca

Equity, Diversity and Inclusion

Looking for community? Feeling isolated? Not being understood or heard?

You are not alone. You can talk to anyone in the Faculty that you feel comfortable approaching, anytime – professors, instructors, teaching assistants, first-year or upper years academic advisors, student leaders or the Assistant Dean of Diversity, Inclusion and Professionalism.

You belong here. In this class, the participation and perspectives of everyone is invited and encouraged. The broad range of identities and the intersections of those identities are valued and create an inclusive team environment that will help you achieve academic success. You can read the evidence for this approach here.

You have rights. The University Code of Student Conduct and the Ontario Human Rights Code protect you against all forms of harassment or discrimination, including but not limited to acts of racism, sexism, Islamophobia, antisemitism, homophobia, transphobia, ableism, classism and ageism. Engineering denounces unprofessionalism or intolerance in language, actions or interactions, in person or online, on- or off-campus. Engineering takes these concerns extremely seriously and you can confidentially disclose directly to the Assistant Dean for help here.

Resource List:

- Engineering Equity, Diversity & Inclusion Groups, Initiatives & Student Resources
- Engineering Positive Space Resources
- Request a religious-based accommodation here
- Email Marisa Sterling, P.Eng, the Assistant Dean, Diversity, Inclusion & Professionalism here
- Make a confidential disclosure of harassment, discrimination or unprofessionalism here or email engineering@utoronto.ca or call 416.946.3986
- Email the Engineering Society Equity & Inclusivity Director here
- U of T Equity Offices & First Nations House Resources

Academic Integrity

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism representing someone else's work as your own or submitting work that you have previously submitted for marks in another class or program is a serious offence that can result in sanctions. Speak to me or your TA for advice on anything that you find unclear. To learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see the U of T Academic Integrity website.