



ECON 180 A01
Introduction to Economics and Financial Project Evaluation
CRN: 30373

Summer Session: 2022 – Term 01 (May 4 – July 29)

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Office Hours (in person): Thursday 3-5 PM at the sessional office and by the appointment, BEC 314.

Office: BEC 314

Course Website: [Brightspace](#)

Course Content [From the Academic Calendar]

A concentrated introduction to principles of economics, project management, and financial project evaluation and selection for Engineering students. Economics topics include supply and demand, multipliers and tax incidence. Financial project evaluation topics include discounted cash flow, benefit-cost analysis, financial accounting, and decision-making considering depreciation, inflation, taxes and risk. Project management topics include work breakdown structures, the critical path method and crashing. Assumes competency in calculus, algebra and familiarity with computer spreadsheet software.

What You Will (Hopefully) Take Away from This Course

In my view this course serves two broad purposes:

1. **To introduce engineering students to the principles of economics.** As a working engineer there is a good chance you will work with at least one trained economist during your career, and you may find it useful to be able to communicate with them¹. All joking aside, a basic+ understanding of economic principles will in no doubt come in handy on the job, in the boardroom, while reading and evaluating the news you consume, and while making important (and unimportant) life decisions.
2. **To teach you the skills you need to analyze the financial and economic aspects of engineering projects.** Upon (successful) completion of this course you should understand the time value of money and be able to use discount factors to determine measures such as the *Net Present Value* or *Annual Worth* of given projects. Using these values, and others we will investigate, you should also be able to compare competing projects of different scales and timescales and determine which are worth pursuing.

Textbooks (REQUIRED)

Fraser, N. & Jewkes, E. (2016). Engineering Economics: Financial Decision Making for Engineers (6th Edition). Pearson Canada.

- ISBN 978-0-13-340553-8
- Readings and practice problems will be posted on Brightspace and discussed in class.
- Use of earlier editions is discouraged as page and question numbers will not match.
- Text answer guide is riddled with errors—an errata file with known errors can be found on Brightspace.

Bauman, Y., (2010). Stand-Up Economics: The Micro Textbook *with Calculus*.

- Available for free online here: <http://www.standupeconomist.com/pdf/books/microcalc.pdf>

¹ This is only a partial joke. If you get to know an economist, you will realize we really do have our own lingo.

Besanko, D., Braeutigam, R. (2004). Microeconomics (2nd Edition). Wiley

- Available for free online here:
<https://bcs.wiley.com/he-bcs/Books?action=index&bcsId=2164&itemId=0471457698>
- We will be using chapter 2, 6, 7, and 8.

Throughout the course you will be given readings from the above texts (and possibly one more free online text) and published academic papers. You will also be given many **optional** readings to further your understanding of the material.

I would also like to point out that we will be making extensive use of Excel this term. Make sure you have access to Excel—as a UVic student it comes free with tuition.

Office Hours

Lectures are not videotaped and office hours will be held in person. If you have any questions, concerns, or suggestions feel free to email the instructor or drop by office hours. The instructor will also take questions after class.

Grading

This semester you will be evaluated in three ways: 11 online quizzes, 4 projects, and a final exam.

Quizzes (20% of final grade)

- The online quizzes are administered through Brightspace and will be available until the day before the final exam.
- Each quiz will draw two random questions from a question bank and is scored out of two.
- You have three attempts at each quiz—your highest score will be recorded in the grade book.
- After submission you will see your score, the correct answers, and (sometimes) a fully worked solution.
- Students are expected to do relatively well in this component of the course.

Projects (4 projects x 15% per project = 60% of final grade)

- In these projects you will apply what you have learned in class to an *almost* real-world situation.
- These projects are designed to be relevant to you and in them you will be analyzing a problem facing typical engineering students: what to move, work, and live after completing your degree.
- Among other things, you will be asked to gather data online (and cite it properly!), make determinations, and discuss shortcomings with your analysis.
- Projects are to be submitted via Brightspace in .pdf and/or .xlsx formats.

Final Exam (20% of final grade)

- You are **not required** to write or pass the final exam to pass the course. If you choose not to write it, the highest possible grade you can achieve is 80%.
- Will be a two-hour examination. Some formulae will be provided.

As there are a lot of you (160+ students are currently registered) and three TAs to grade your projects and exams, questions will be set up in such a way to evaluate (1) your understanding of the basic material, (2) your mastery of the material, and (3) your ability to communicate. To do this, each question will have a 'regular' component worth a total of 75 marks. You may only achieve a mark of 0, 45, 55, 65, or 75 on this component of the question. TAs will be told before marking to assume a grade of 65 and adjust up/down given the merits of your answer.²

² I would like to thank and acknowledge Dr. Chris Wilmore (the former Econ 180 instructor) for developing this ingenious grading scheme which I am adopting and adapting this term.

From the UVic Undergraduate Grading Scale:

- 0 (F): Missing or completely irrelevant work.
- 45 (F): An effort was made, but one showing an unsatisfactory understanding of course material.
- 55 (D): Shows “minimal command of the course materials”.
- 65 (C+): This is “earned by work that indicates an adequate comprehension of the course material and [...] indicates the student has met the basic requirements for completing assigned work.”
- 75 (B): “earned by work that indicates a good comprehension of the course material, a good command of the skills needed to work with the course material, and the student’s full engagement with the course requirements and activities. A B represents a more complex understanding and/or application of the course material.” The mark earned by ‘good’ work.
- 85 (A): “[W]ork which is technically superior [and] shows mastery of the subject matter”.
- 100 (A+): For work that “offers original insight and/or goes beyond course expectations.”

Grading Scale:

A+	A	A-	B+	B	B-	C+	C	D	F or N
90-100	85-89	80-84	77-79	73-76	70-72	65-69	60-64	50-59	0-49

Students should review the University’s more detailed [summary of grading](#).

Each ‘regular’ question will be accompanied by an optional ‘challenge’ question—either a more difficult version of the ‘regular’ question or an additional question designed to test for mastery of the material.

Challenge questions, therefore, either replace regular questions and worth a total of 85 marks (if this is the case, choose to do either the regular question **or** the challenge question) **or** are a question you can choose to attempt in addition to the regular question worth a total of 10 marks (and can achieve any integer grade 0-10).

For each question you will also be given a communication mark. This communication mark corresponds not only to how well you word your answers, but also your work in general (are your solutions elegant?, is it easy to follow your work?, are your tables or charts easy to read and explained?) If your pre-communication mark is below 80, the communication mark is out of 8. A mark of 0 corresponds to failure to communicate your answers (right or wrong). A mark of 1-4 is typical for a native English speaker putting in minimal effort. Marks of 5-7 correspond to well worded responses that effectively and accurately communicate your thoughts/solutions/conclusions/etc. **and/or** providing easy to follow work and solutions to quantitative problems. Marks of 8 correspond to answer guide quality solutions. If your pre-communication mark is 80 or above, your communication mark is out of 15. Why? You have put in more effort to solve the challenge problem (and you have largely succeeded in doing so) and this generally requires more careful and nuanced communication—not to mention much more work in general.

Challenge problems are meant to be difficult—they will often take considerably more effort—I don’t expect you to attempt them all. If you are a good communicator, it is entirely possible to achieve an A- in this course without attempting one challenge question.

Long story short: as long as you keep up with this course (attend lectures, do online quizzes, work on practice problems, do projects, study when needed, don’t cheat or plagiarize, etc.) it is very difficult to fail. However, it is also quite difficult to achieve a grade of A+ as well.

Final exam: Summer exam timetable is posted in mid-June.

Course Schedule

This following is a breakdown of the material we will cover and a *rough* idea of when we will cover what. Also shown are the estimated project due dates. These are subject to change.

Month	Day	Class	Topic	Project Due
May	5	1	Introduction; Benefit-Cost Analysis	
	9	2	Time Value of Money, the MARR, and Shadow Prices	
	12	3	Interest Rate Conversation; DCFA 1	
	16	4	DCFA 2: Gradients	
	19	5	Net Present Value	
	23	---	HOLIDAY - VICTORIA DAY	1
	26	6	Present and Annual Worth	
	30	7	Replacement Decisions: Equivalent Annual Cost	
June	2	8	The Internal Rate of Return	
	6	9	The External Rate of Return	
	9	10	Supply and Demand; Elasticity	
	13	11	Taxes; Price Controls	2
	16	12	Measuring and Adjusting for Inflation	
	20	13	One-sided Sensitivity Analysis	
	23	13	Switching Values; Decision Trees	
	27	14	Probabilistic Sensitivity Analysis: Monte Carlo	
	30	15	Financial Accounting Basics	
	4	---	READING BREAK	
July	7	16	Taxes	3
	11	17	Capital Cost Allowance	
	14	18	Work Break Down Structures	
	18	19	Gantt Charts	
	21	20	Critical Path	
	25	21	A Crashing Example	
	29	22	Multipliers	4

Expectations

It is expected you attend all lectures, complete the required readings, do all online quizzes, work on the practice problems provided, and keep up with the material in general. Make sure you prioritize your mental health and other aspects of your life when deciding on whether to attempt challenge questions, do optional readings, etc. You are to work on and complete multiple choice quizzes alone.

Due dates will be enforced and late assignments will not be accepted unless accompanied by a doctor's note. It is strongly suggested to submit the assignments early to prevent issues arising due to electronic submission (i.e., my motherboard blew up and I couldn't submit it on time, etc.).

This course will require the use of a word processing system (such as Word) and the spreadsheet software Excel. These programs are free for all students.

If you have a question, concern, or want to chat about something (at least tangentially course related) please email the instructor or drop by during office hours.

It is important that students treat each other calmly, fairly, and with compassion. Violence, hurtful language, and discrimination will not be tolerated. Be nice to others and they will be nice to you. Most of the time.

Course Policies

This course adheres to the [Undergraduate Course Policies](#) of the Department of Economics that deal with the following issues:

- Academic concessions
- Academic integrity (plagiarism and cheating)
- Attendance
- Grading
- Inclusivity and diversity
- Late adds
- Late assignments
- Repeating courses
- Review of an assigned grade
- Sexualized violence prevention and response
- Students with a disability
- Term assignments and debarment from examinations
- Travel plans
- Waitlists

The following policies are explicitly included because of their importance.

Examinations

Participation (in-person & online) for all scheduled examinations is mandatory. Consideration for missed examinations will be given only on the basis of documented illness, accident or family affliction, and for no other reasons. In the event of a missed final examination, students are advised to follow the procedures outlined in the [University Calendar](#).

Students are advised not to make work or travel plans until after the examination timetable has been finalized. Students who wish to finalize their travel plans at an earlier date should book flights that depart after the end of the examination period. There will be no special accommodation if travel plans conflict with the examination.

Waitlist Policies

- Instructors have no discretion to admit waitlisted students or raise the cap on the course.
- Students on the waitlist should discuss with the instructor how to ensure they are not behind with coursework in the event they are admitted.
- Registered students who do not participate as specified in this outline during the first 7 calendar days for Term One, or the first 2 class meetings for Term Two and Three courses, may be dropped from the course.
- Registered students who decide not to take the course are responsible for dropping the course and are urged to do so promptly out of courtesy toward waitlisted students.
- Waitlist offers cease after the last date for adding courses irrespective of published waitlists.

Academic Integrity

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Students are expected to observe the same standards of scholarly integrity as their academic and professional counterparts. A student who is found to have engaged in unethical academic behaviour, including the practices described in the [Policy on Academic Integrity](#) in the University Calendar, is subject to penalty by the University.

What is plagiarism? *[From the Academic Calendar; what is **MOST** relevant for Econ 180]*

A student commits plagiarism when he or she [or they]:

- submits the work of another person in whole or in part as original work
- gives inadequate attribution to an author or creator whose work is incorporated into the student's work, including failing to indicate clearly (through accepted practices within the discipline, such as footnotes, internal references and the crediting of all verbatim passages through indentations of longer passages or the use of quotation marks) the inclusion of another individual's work
- paraphrases material from a source without sufficient acknowledgment as described above

What is the penalty for plagiarism? *[From the Academic Calendar; what is **MOST** relevant for Econ 180]*

- Single or multiple instances of inadequate attribution of sources should result in a failing grade for the work. A largely or fully plagiarized piece of work should result in a grade of F for the course.
- Any instance of impersonation of a student during an exam should result in a grade of F for the course for the student being impersonated, and disciplinary probation for the impersonator (if he or she is a student). Isolated instances of copying the work of another student during an exam should result in a grade of zero for the exam. Systematic copying of the work of another student (or any other person with access to the exam questions) should result in a grade of F for the course. Any instance of bringing unauthorized equipment or material into an exam should result in a grade of zero for the exam. Sharing information or answers for take-home assignments and tests when this is clearly prohibited in written instructions should result in a grade of zero for the assignment when such sharing covers a minor part of the work, and a grade of F for the course when such sharing covers a substantial part of the work.

What does this mean for you, a typical Econ 180 student?

The purpose of this course is for you to learn the material. You will know to know (most of, if not all) this stuff as a practicing engineer. Most students find working with classmates to be beneficial and I encourage this kind of behavior, within reason. Discussing the material with classmates and working through questions together can foster long term learning and better understanding, however, you have to be careful.

- Don't copy someone's answers (**ALWAYS** a no-no).
- When you're stuck and working with someone, ask them for guidance on the method you are using, or ask them to clarify something you don't fully understand. **Don't** just ask them for the answer or look at their answer and copy down it down in your own hand. (**This is plagiarism**)
- Always cite your sources correctly and give appropriate attribution (APA or IEEE is preferred, however, marks will not be taken off if you use MLA or Chicago Style).
- If you are unsure of something, refer the [Policy on Academic Integrity](#) in the University Calendar. If this does not address your concern, talk to the instructor.

Student Code of Conduct

The Humanities, Science, and Social Sciences Faculties have adopted this [Student code of conduct](#). Please, review.

University Policy on Human Rights, Equity and Fairness

The University is committed to promoting, providing and protecting a positive, supportive and safe learning and working environment for all its members.

See [General University Policies](#)

Accessibility & Health Resources

[Centre for Accessible Learning](#)

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, you are free to approach me; however, you must register with the [Centre for Accessible Learning](#) (CAL) for formal arrangements to be made. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

[Health Services](#) - University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives.

[Support Connect](#) - a 24/7 mental health support service for students

- Toll-free (calls from North America): 1-844-773-1427
- International collect calls: 1-250-999-7621

[Counselling Services](#) - Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.

[Elders' Voices](#) - The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being.

Brightspace

- *Brightspace* is used extensively for the course. All students are expected to be fully functional with the system.
- Lecture notes, practice problems, online quizzes, readings, and everything else will be found here.
- Projects are submitted electronically here.
- All announcements will be posted here. Students are advised to check it frequently.

Course Experience Survey (CES)

I value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future.

When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to the [CES log-in](#). You will use your UVic NetLink ID to access the survey, which can be completed on your laptop, tablet or mobile device. I will remind you nearer the time, but please be thinking about this important activity, especially the following three questions, during the course.

- What strengths did your **instructor** demonstrate that helped you learn in this course?
- Please provide specific suggestions as to how the **instructor** could have helped you learn more effectively.
- Please provide specific suggestions as to how this **course** could be improved.

E-mail correspondence

Emails should be limited to critical matters, such as inability to attend class, an exam, or prolonged illness, and should include the course name and number in the subject line. Questions on course material should be asked during office hours or in class.³ The standard format for writing a letter must be used. This means it should begin with a salutation (e.g. Dear....), include full sentences and it must conclude with a signature that includes your **full name and V#**. Text message lingo should not be used—I don't understand it.

Electronic devices

Do not disturb anyone with your electronic devices during class (computers, cell phones, etc.). I strongly discourage the use of smartphones in class.

Sexualized Violence Prevention & Response

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. Students are encouraged to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Contact svpcoordinator@uvic.ca.

³ If you have a question about the material and for some reason it cannot wait until office hours, you may email the instructor. However, the instructor may not respond back promptly.

UVic Land Acknowledgement

We acknowledge with respect the Lekwungen peoples on whose traditional territory the University of Victoria stands, and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.