ECON 180

Introduction to Principles of Microeconomics and Financial Project Evaluation

Lecture 1: Apples and Oranges

September 7, 2022

Version 1.02 (Sep 7) – Fixed typos on Slide 10.

Required Reading

Required readings are required. The course assumes you have completed and understood them.

- Course Outline (Syllabus), available on Brightspace

Learning Objectives

- Understand the meaning of the word ‘economics’.
- Gain a basic understanding of what the study of engineering economics will allow you to do.
- Understand how the course is organized, and that the live lectures, required readings, lecture notes and assessments are complements, not substitutes.
- Be aware of how student performance is evaluated.
- Become familiar with course expectations, and in particular that understanding basic principles at an intuitive level is more important than memorizing equations.
- Be aware of the various resources available for students who need help understanding course concepts, including practice material and asking questions of the instructor.

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

As some of us may not physically be in Victoria for this talk, I encourage you to visit https://native-land.ca/ to discover more about the traditional territories in your area, wherever in the world you may be.

Image and acknowledgment text source: uvic.ca

What is economics?

- We have limited stuff (time, water, Pokéballs)
- We have unlimited needs and wants
- Economics studies what happens when those two realities bump into each other. Of particular interest:
- How do you *choose* among competing uses of the same resources?

Economics studies the allocation of limited resources among unlimited needs and wants.

- (Not an exact quote, but close to AmosWEB's definition.)

It’s Greek to me!

Economics = Oikos (οἶκος) *Household* + Nomos (νόμος) *Law, Management*

= 

+ 

+ Windows, Linux, FreeBSD, Mac OS, redhat, solaris, Sun Cobalt

Apples or oranges?

(frankieleon via Creative Commons License)

(ca.sunkist.com)

Valeur nutritive
Nutrition Facts

Portion 1 Orange Navel (140 g)
Serving Size 1 Navel Orange (140 g)

Teneur par portion / Amount Per Serving	
Calories / Calories 70 (293 kJ)	
Calories des lipides / Calories from fat 0	
Calories de lipides saturés et trans 0 / Calories from Saturated + Trans 0	
	%valeur quotidienne / %Daily Value*
Lipides / Total Fat 0 g	**0 %**
saturés / Saturated 0 g trans / + Trans 0 g	**0 %**
Cholestérol / Cholesterol 0 mg	**0 %**
Sodium / Sodium 0 mg	**0 %**
Potassium / Potassium 230 mg	**7 %**
Glucides / Total Carbohydrate 18 g	**6 %**
Fibres alimentaires / Dietary Fibre 4 g	**16 %**
Sucres / Sugars 13 g	
Protéines / Protein 1 g	
Vitamine A / Vitamin A	0 %
Vitamine C / Vitamin C	140 %
Calcium / Calcium	6 %
Fer / Iron	2 %

(grapplefruits.com)

Nutrition Facts
Valeur nutritive

Per 1 medium apple (182 g/6.4 oz)
pour 1 pomme (182 g/6.4 oz)

Amount Teneur	% Daily Value % valuer quotidienne
Calories /Calories 95	
Fat/Lipides	**0 %**
Saturates/saturés 0 g	**0 %**
+ Trans/trans 0 g	**0 %**
Cholesterol/Cholestérol 0 mg	**0 %**
Sodium/Sodium 0 mg	**0 %**
Carbohydrate/Glucides 25 g	**8 %**
Fiber / Fibres 4 g	**18 %**
Sugars/Sucres 19 g	
Protein/Protéines 0 g	
Vitamin A/Vitamine A	**2 %**
Vitamin C/Vitamine C	**14 %**
Calcium/Calcium	**1 %**
Iron/Fer	**1 %**

Before Economics

After Economics

Show me the Marking!

- We'll go over each of these in detail, but briefly…

- 10% Quizzes
- 90% Projects (6 projects, 15% each)

Quizzes (10%)

- **Multiple-choice** quizzes on **Brightspace**.
- **Two questions** per quiz, drawn at **random** from a collection.
- There are 11 quizzes, and all of them are already up: you can work at your own pace.
- Quizzes stay open until December 5, at 11:59 PM Victoria, B.C. time.
- You may try each quiz **up to five times**, before that.
- You will see the right answers, and often a long-form solution, after each attempt.
- Your mark on an assignment is the ***highest*** **mark** out of all your attempts on that assignment.
- **(Yes, students are expected to do very well on this component!)**
- **Each lecture has relevant solved problems listed, from *Engineering Economics, 6th edition,* that you can practice with. Publisher solutions to textbook problems are available on Brightspace, as well as an Errata file with corrections to the publisher's solutions.**
- **If you think you spot an error in the publisher solutions, check the Errata file first! Chances are it's a known issue, and a correction has already been posted.**

Projects (90%)

- 6 of them, with tentative due dates of Sep 20, Oct 5, Oct 21, Nov 8 & the December exam period.
- (“Tentative” because in the past I’ve adjusted these due dates to better suit a specific class.)
- Each worth 15%.
- Submitted via Brightspace; files must be PDF or MS Office (Excel, Word).
- Ask you to apply course concepts to a stylized real-world situation: where to live & work once you’ve completing an engineering degree, how often to replace a car, etc.
- There are 6 of them in response to student feedback where students said they would like shorter, more frequent assessments. The 6 projects cover about what 4 projects covered in other terms.
- Small planned additions: questions that let you give back to the community (e.g. answer a top-rated Reddit question on personal finance) and better understand the inflation we’re currently going through.

Late policy: Late submissions get zero

- Quizzes are due the very last minute of term (Dec 5, 11:59 PM). No extensions are possible.
- In order to receive a non-zero mark for a project, you must submit it before the deadline. No exceptions.
- Brightspace will keep ALL submissions you make. Only the most recent submission before the deadline will be marked.
- →It's a good idea to submit partially completed assignments, etc. as 'insurance'.
- e.g. The morning of the deadline you submit what you have, which is most of the assignment except for one question.
- That evening, you lose track of time, and you submit your completed assignment three minutes after the 11:59 PM deadline.
- Your three-minute-late submission will NOT be marked, but because you had another submission made before the deadline, the earlier, incomplete submission will be marked, meaning you don't lose all the marks.
- It IS possible to get an extension in some cases: you still need to submit your assignment before the due date, but the due date is extended for you.

Getting an extension

- ‘Mental health voucher’: All students start with a voucher good for a one-time extension of up to 3 days. (This ‘voucher’ is just an entry on the grading spreadsheet.)
- This is the ONLY extension you can use after a due date. As long as your assignment/project is 3 days (72 hours) late or less, write ‘I’m using my voucher’ in the comment section of the submission, AND e-mail me at willmore@uvic.ca so I can let the TA know. This is a one-time extension, and the entire ‘voucher’ is used up, even if you only needed four extra hours.
- For other extensions, you need to e-mail me at willmore@uvic.ca **BEFORE the assignment/project is due**. Two main types:
- Overwork: Have two midterms & another project due at the same time as a 321 thing? Ask me for an extension, & send evidence of the other due dates (forwarded announcements, screen shots, etc.).
- Personal crisis, mental or physical health, etc.: E-mail me a brief description of the situation (no need for private info) and request an extension.
- The length of the extension granted will vary by student: I need to make sure that it is appropriate to the specific situation, AND fair to all other students in the course, present and future.

Marks and the projects

- *Regular* questions, worth at most 75 marks.
- Marking is granular: only marks of 0,25,45,55,65,75 available for each regular question (trading off precision for accuracy).
- *Challenge* questions, worth up to an additional 15 marks.
- A *communication* bonus out of 10. 0 = communicates at the minimum level expected in a 100-level university course. 1-5 = 'good' communication at the native speaker level, 6-8 = very good, 9-10 = masterful; reads like a published, polished piece.
- The *regular* questions are designed to let you show me that you have a *good* understanding of the course material, with as little frustration as possible. It is *not* designed to test for *mastery* of the material/skills.
- The *challenge* questions ARE designed to test for mastery.

Why is it done this way?

- Some traditional courses: ask extremely difficult questions you need mastery to answer fully, & give marks based on how close you get to the right answer.
- Problem: reaching a ‘good understanding’ and achieving mastery are two very different paths… (think tennis, chess, etc.)
- Imagine going to a dentist who says, ‘Don’t worry, I always got 80% of my practice root canals in dental school correct!’ – Very worrying.
- Consider, instead: “I got full marks on all my basic root canal practical tests, but I skipped the advanced tests dealing with complicated cases. Your situation is very clearly a basic one.” – More comforting.
- Also, I respect your time & that some students just want to get the course over with as efficiently as possible. Separate Regular & Challenge questions allow you to do that, while not sacrificing pedagogy.

Grading at UVic

- Minimal Command: D
- Adequate Comprehension: C/C+
- Full Engagement: B-/B/B+
- Mastery: A-/A
- Beyond course expectations: A+

Types of Question:

- Regular question: Max. 75. Demonstrates full engagement. Plus Challenge question or condition: Goes up to Max 90. Demonstrates mastery.

Grade	Grade Point Value	Percentage*	Description
A+	9	90 - 100	An A+, A, or A- is earned by work which is technically superior, shows mastery of the subject matter, and in the case of an A+ offers original insight and/or goes beyond course expectations. Normally achieved by a minority of students.
A	8	85 - 89	
A-	7	80 - 84	
B+	6	77 - 79	A B+, B, or B- is 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.
B	5	73 - 76	
B-	4	70 - 72	
C+	3	65 - 69	A C+ or C is earned by work that indicates an adequate comprehension of the course material and the skills needed to work with the course material and that indicates the student has met the basic requirements for completing assigned work and/or participating in class activities.
C	2	60 - 64	
D	1	50 - 59	A D is earned by work that indicates minimal command of the course materials and/or minimal participation in class activities that is worthy of course credit toward the degree.

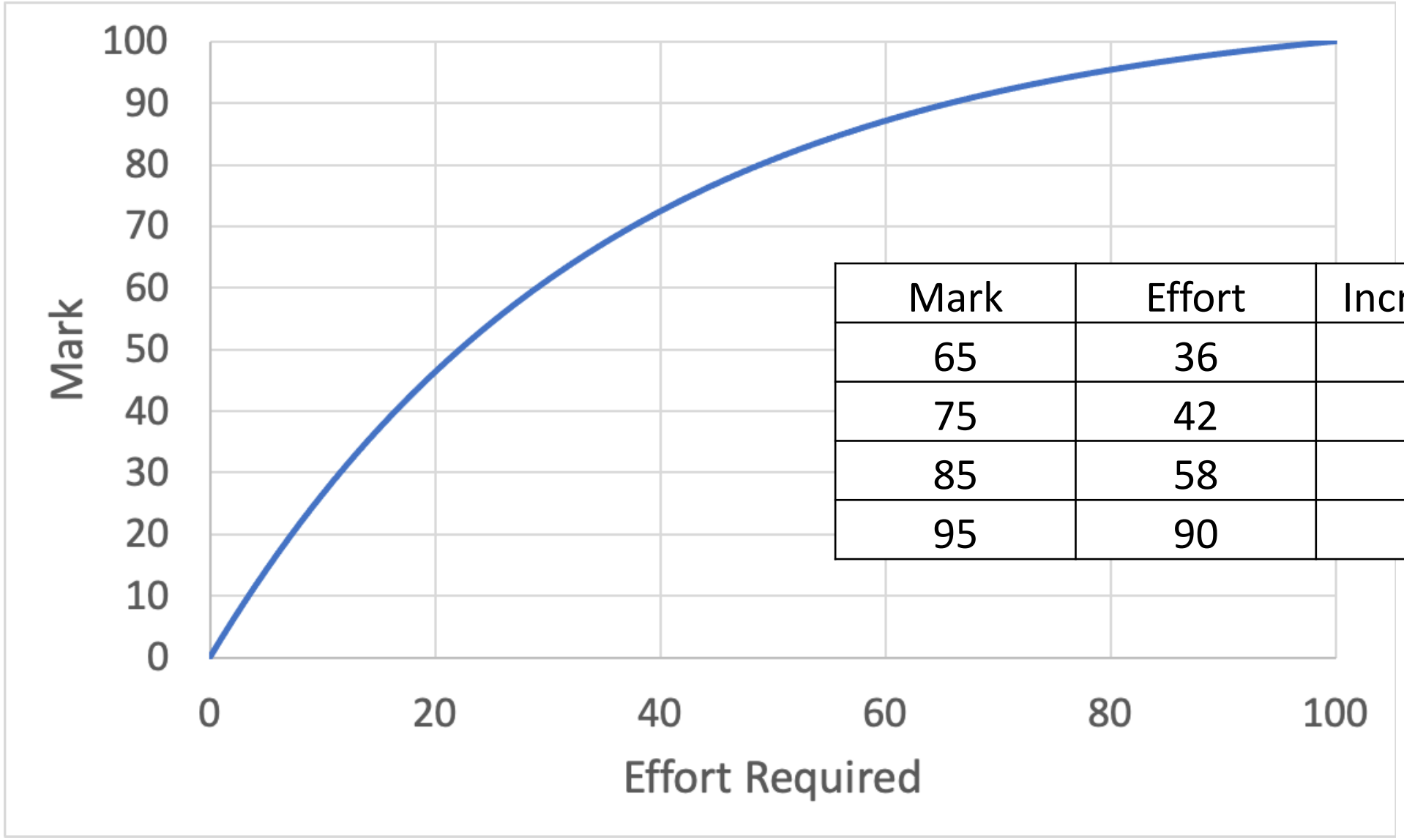
Source: UVic Calendar

Synchronization in Assassin's Creed IV: Black Flag

- Fulfil main objective: 80% synchronization
- 1 optional objective: 90% synchronization
- 2 optional objectives: 100% synchronization

Image source: ign.com

Mark Production Function (Rough Visualization)



Mark	Effort	Increment
65	36	
75	42	6
85	58	16
95	90	32

It’s okay to not be perfect.

- As students of engineering (and economics), you’ve been trained to recognize that to make good decisions, you need to strike a balance between the marginal effort and marginal benefit.
- Time you spend on an assignment is time you don’t spend resting, or socializing, or working, or helping your family, or on other courses.
- **It’s okay to leave a question blank now and then**. That just means that the time you save is more important than the marks you give up. Maybe you needed rest, for your mental health.
- In particular, **good students are expected to skip (or spend very little time on) some of the challenge questions**. If you CAN do them all, great! But don’t force yourself to.
- You (and your mental and physical health) are more important than any course.
- **It’s okay – in fact, it’s NORMAL - to not do your best on every question**. That’s why it’s called your ‘best’. You can’t work at that level all the time, or you’ll burnt out. A completely burnt-out student has a 0 GPA.
- **If you’re frustrated or confused with a question, it’s okay to ask for help**. Feel free to e-mail me at willmore@uvic.ca .
- **On purpose, this course is very difficult to fail if you give all course components an honest try**. I don’t want you to have to worry about passing, as long as you’re keeping up with material.
- Beyond that, **decide what amount of work it makes sense for you to put into the course, based on your goals, your mental health, and your life situation**.
- If you find some topics really interesting and exciting, maybe you’ll spend more time on related assignments, while if you find other topics not very interesting or useful to you, that could be a place to “slack off” a bit.
- A secret: **Learning is fun, when it’s your choice. And when you’re having fun, you’re probably also doing better work and getting better marks**.

Course Expectations

- **Attend lectures or keep up via the lecture recordings.**
- **Complete the required readings** within a week of the relevant lecture. (At least skim or flip through them so you're aware what's in them.)
- **Read or skim the projects within two days of their being posted**, so that you are forewarned of the content and the work involved.
- **Decide how much effort to put into the course, by weighing the work against the expected benefits. Your mental health is more important than any course** – it's fine (and expected) for good students to e.g. skip some of the challenge questions.
- If you're still stuck, **ask for help**. I'm happy to answer student questions via e-mail, and you may also ask anonymously during the weekly online office hours. (Lurkers welcome.)
- If you have **constructive criticism or feedback** about the course, don't save it until the end of term – **let me know early**, so the course may be adjusted if necessary. Many course features are the result of timely student feedback.
- Your mental and physical health are more important than any course. If you're feeling stressed, overwhelmed, frustrated or confused – that matters. Let me know, and I'll do my best to help out (while remaining fair to other students).

Lectures and Office Hours

- Lectures will be livestreamed &via Zoom at the scheduled times.
- The Zoom URL will be posted on Brightspace ahead of time, along with the lecture notes.
- **You do not need to attend the live lectures.**
- **All lectures will be recorded**. Audio and/or video recordings of the lecture will be posted on Brightspace as soon as possible after the lecture.
- In response to student feedback, questions during the lecture will be limited to text chat, & only open at specific times during the lecture.
- Online office hours will be held via IRC in #econ180 on the dal.net server. Instructions on how to join are in the course outline.
- Online office hours are from 1:00 PM to 3:00 PM Victoria time on Tuesdays. This may change (e.g. if there's a department meeting at that time). If it does, I'll notify the class via announcement.
- You don't have to wait for office hours – feel free to ask questions via e-mail!

Textbooks

- The **recommended** textbook is Engineering Economics, 6th edition (see syllabus for full bibliographic information).
- I've also recently bought a copy of the digital-only 7th edition, and will try to add references to sections and problems in it as we go along.
- A big chunk of this course's practice material assumes you can access the required textbook at will.
- Apart from that, it doesn't matter if that access is online, via a rented book, a used copy, a new copy, a copy you share with your friends, a library copy, etc. – as long as it's the correct edition (6th).
- **Using another edition will lock you out of most of the practice material in this course. Other editions are not supported by the course.**
- The 5th edition is available very cheaply online, and it's fine if you're only interested in reading the main text, but be aware that page numbers and (usually) problem numbers will not match, meaning you may not be able to use the provided end-of-chapter problem solutions, and may have to hunt around for the required reading.
- **All other required readings will be from sources that are free to UVic students and available online.**

We'll be using Excel a lot.

- I want you to spend your time on engineering economics concepts and techniques, NOT on basic arithmetic & algebra.
- Excel is a spreadsheet program. It'll make this course *much* easier to use it for calculations and organizing information.
- UVic students get Microsoft 365, which includes Excel, for free:
- https://www.uvic.ca/systems/support/computerssoftware/microsoft365/index.php
- When appropriate, I'll post video walkthroughs of how to use Excel to solve the types of problems we'll face in the course.
- Also available: pre-made interactive spreadsheet with common calculations.
- If you absolutely *can't* use Excel (e.g. your only computer runs on Linux), the course is still doable... but I strongly recommend another spreadsheet program, or at least a math program (Maple, MATLAB, etc.).

First principles vs memorizing equations

- There's a bit of a **culture clash** between engineering and first year economics…
- In many of your engineering courses, it may be vital to memorize equations and solution methods. Trying to work things out from basic principles won't help much.
- In some cases (e.g. advanced physics) the principles behind the concepts are so complicated that it's simply not wise or feasible to re-derive equations or solution methods from first principles.
- In first-year economics, the reverse is usually true: concepts and first principles are simple, and **trying to memorize solutions will often lead you astray**.
- Why? Economic problems vary a LOT; you need to stay adaptable, and be able to apply the basic concept to a wide variety of circumstances. Memorized formulas and solution methods tend to be too specific.

Why make the effort?

- **Everything in this course is practical**. If it's not useful to practicing engineers, it's out. (Feel free to call me on this!)
- In your careers, you'll have to make important choices under less-than-perfect, uncertain conditions.
- If you understand the basic ideas and principles behind the techniques in this course, you'll be able to deal with any curve balls…
- ... and perform back-of-the-envelope calculations in novel settings.
- If instead you spent most of your time memorizing specific solutions…
- ...that's not as useful, unless you're lucky enough to run into textbook situations on a daily basis.