University of Waterloo
Department of Economics
ECON 290
Models of Choice in Competitive Markets
Winter 2020

Instructor Information

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1. General Course Objective

Choice lies at the heart of all economic models. This course focuses on choice by consumers and firms. It explains the notion and use of utility functions and budgets and shows how their interaction allows economists to make predictions about behaviour. The constrained maximization techniques from ECON 211 are used extensively and extended to situations covering uncertainty (risk) and time. Profit maximization by firms is explored.

Learning Outcomes:

By the end of the course a student should be able to:

- Describe and explain key economic models of consumer and producer choice
- Demonstrate the implications of these economic models for predications about consumer and producer behaviour
- Analyze consumer and producer decision problems using graphs
- Use calculus to solve optimization problems faced by consumers and producers
- Explain how economic models of consumer and producer decisions help us make predictions about economic outcomes.

2. Course Materials

Recommended Text:

This course will be based on *'Intermediate Microeconomics: a Modern Approach' (9th edition) by Hal Varian, Norton 2014* (previous editions should work too).

However, the topics are all covered by standard intermediate microeconomics textbooks (that use calculus). You may want to read through the relevant sections of some such book because (a) it can provide a different perspective on material presented, (b) it has a more space devoted to

discussions and examples, and (c) it serves as a source of exercises and practice problems. Here is a list of such textbooks:

- Osborne, M.J., and Rubinstein A., Models in Microeconomic Theory (open source).
- Eaton, B.C., Eaton, D.F. and D.W. Allen, Microeconomics: Theory with Applications.
- Perloff, J.M., Microeconomics: Theory and Applications with Calculus.
- Mochrie, R., Intermediate Microeconomics.
- Serrano, R., and Feldman A.M., A Short Course in Intermediate Microeconomics with Calculus.
- Goolsbee A., Levitt, S., and Syverson, C., Microeconomics.

Readings Available on LEARN:

Lecture slides, lecture videos, YouTube links to the lecture videos, exercises and their solutions and/or answers, and assignment questions will be posted on LEARN.

3. Course Requirements and Assessment

Assessment	*Weighting*
Assignments	24%
Midterm 1	15%
Midterm 2	15%
Midterm 3	15%
Final Exam	31%
Total	100%

For any assessment, please remember that:

The University of Waterloo subscribes to the strictest interpretation of academic integrity. Faculty members and students bear joint responsibility in assuring that cheating on assignments or any examination is not tolerated.

Students who engage in academic dishonesty will be subject to disciplinary action under Policy 71.

All assessments are protected by copyright. Reproduction or dissemination of any assessment or the contents or format of the assessment in any manner whatsoever (e.g., sharing the content with other students), without the express permission of the instructor, is strictly prohibited.

By taking this course, every student affirms his/her/their agreement to the following statements:

- **I confirm that I will keep the content of any assessment confidential.**
- **I confirm that I have not received any unauthorized assistance in preparing for or writing of any assessment.**

- **I confirm that I will not access the Internet or any other unauthorized resource in the writing of any assessment.**
- **I confirm that I will use only my own lecture notes, textbooks, and any other document provided by the instructor in the writing of any assessment.**

Assignments:

Three assignments to be submitted through Dropbox on LEARN. You will have a problem set to solve. Each assignment worth 8% of the final grade.

A deduction of 5% per day will be applied to an assignment handed in late.

Students with a concern about the marking of an assignment must consult with me **within two weeks** of the date that it is returned to the class. After two weeks I will not make any adjustments to an assignment mark.

Assignments will be handed out one week in advance of the due date, while the material is covered in lectures.

	Due date
Assignment 1	February 26, Friday, 11:59 pm
Assignment 2	March 19, Friday, 11:59 pm
Assignment 3	April 14, Friday, 11:59 pm

Midterms:

Three midterms to be completed during the whole term through LEARN. You will have access to the midterm for 24 hours (from 12:01 am to 11:59pm) and once you start, you will have only one attempt and limited time. Details about the coverage of the midterms will be announced on LEARN.

	Due date
Midterm 1	February 8, Monday, 12:01 am – 11:59 pm
Midterm 2	March 8, Monday, 12:01 am – 11:59 pm
Midterm 3	April 5, Monday, 12:01 am – 11:59 pm

Final Exam:

The final exam is cumulative and will test all of the material in the course. You will have access to the final exam for 24 hours and once you start, you will have only one attempt and limited time. Note that the final will not be rescheduled under any circumstances if both midterms have been missed. You should by now be familiar with the deferred final exam policy of the department.

	Due date
Final Exam	TBA

Missing an Assessment:

The weight of a missed assignment for which a VIF is accepted will be moved to the other assignments, and the weight of a missed midterm for which a VIF is accepted will be moved to the other midterms in equal parts. If you happen to be sick for all midterms you should consider dropping the course.

4. Office Hours and Contacting the Instructor/TA

When sending email, please use your official UWaterloo account and have ECON 290 in the subject line. It is generally a good idea to also have a signature line that includes your full name and student ID. Please treat email correspondence as a somewhat formal venue of communication. Before sending an e-mail, please check the "Discussions" on LEARN.

If you need a virtual meeting, please ask for an appointment. Instructor and/or TA will give you an appointment (approximately 30 min per student). Please send your questions with your e-mail while asking an appointment. This will reduce the unnecessary time lost during the virtual meeting. Please be clear about your questions. Instructor/TA cannot re-explain the whole topic however can help you to understand the unclear points of the topic.

5. Weekly Course Schedule

Date	*Topic*	*Readings*	*Activities and Assignments (Due Date)*
Week 1 Jan 11-15	Introduction 1.1. The budget constraint and the budget set 1.2. How the budget line changes	Varian, H. Ch2. p. 20-26	Ex.Ch1 WO Ch1
Week 2 Jan 18-22	1.3. Taxes, subsidies, and rationing 2.1 Consumer preference and assumptions about preferences	Varian, H. Ch2. p. 26-31 Varian, H. Ch3. p. 33-36	Ex.Ch1&2 WO Ch1&2
Week 3 Jan 25-29	2.2. Indifference curves and examples of preferences 2.3. Well-behaved preference assumptions	Varian, H. Ch3. p. 36-48	Ex.Ch2 WO Ch2
Week 4 Feb 1-5	3.1. Utility function 3.2. Examples of utility functions 3.3. Marginal utility and marginal rate of substitution	Varian, H. Ch4. p. 48-67	Ex.Ch3 WO Ch3
Midterm 1 (February 8, Monday)			
Week 5 Feb 8-12	4.1. Optimal choice 4.2. Consumer demand 4.3. Lagrangian method in utility maximization	Varian, H. Ch5. p. 73-83 & 90-94	Ex.Ch4 WO Ch4
READING WEEK (Feb 13 – Feb 21)			
Week 6 Feb 22-26	5.1. Net and gross demands and budget constraint 5.2. Changing the endowment and prices	Varian, H. Ch9. p. 160-167	Ex.Ch5 WO Ch5

	Assignment 1 (due date: February 26, Friday)		
Week 7 Mar 1-5	6.1. Budget constraint, present and future value 6.2. Preferences for consumption and optimal choice	Varian, H. Ch10. p. 182-187	Ex.Ch6 WO Ch6
	Midterm 2 (March 8, Monday)		
Week 8 Mar 8-12	7.1. Insurance problem and budget constraint 7.2. Utility functions and probabilities	Varian, H. Ch12. p. 217-229	Ex.Ch7 WO Ch7
	SCHEDULED PAUSES (Mar 15 – Mar 16)		
Week 9 Mar 17-19	7.3. Expected utility and attitude toward risk 7.4. Choice under uncertainty	Varian, H. Ch12. p. 217-229	Ex.Ch7 WO Ch7
	Assignment 2 (due date: March 19, Friday)		
Week 10 Mar 22-26	8.1. Technological constraints and examples of technology 8.2. Marginal product, TRS, and Returns to scale	Varian, H. Ch19. p. 350-361	Ex.Ch8 WO Ch8
Week 11 Mar 29- Apr 1	9.1. Profits and short-run profit maximization 9.2. Long-run profit maximization 9.3. Lagrangian method in profit maximization	Varian, H. Ch20. P. 365-374 (except 366 and 367)	Ex.Ch9 WO Ch9
	Midterm 3 (April 5, Monday)		
Week 12 Apr 5-9	10.1. Cost minimization and tangent solution 10.2. Cost functions	Varian, Ch21. H. p. 382-395	Ex.Ch10 WO Ch10
Week 13 Apr 12-14	10.3. Lagrangian method in cost minimization 10.4. Cost Curves	Varian, H. Ch22. p. 396-409	Ass. 3 (Apr 14) Ex.Ch10 WO Ch10
	Assignment 3 (due date: April 14, Wednesday)		
	Apr 17 – 26, Final Exam Period		

6. Economics Department Deferred Final Exam Policy

Deferred Final Exam Policy found at https://uwaterloo.ca/economics/undergraduate/resources-and-policies/deferred-final-exam-policy

7. Academic Integrity

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See the UWaterloo Academic Integrity webpage and the Arts Academic Integrity webpage for more information.

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under

Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline. For typical penalties check Guidelines for the Assessment of Penalties.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4. When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Appeals: A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 - Student Appeals.

Accommodation for Students with Disabilities
Note for students with disabilities: The AccessAbility Services office, located on the first floor of the Needles Hall extension (1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

Territorial Acknowledgement

We acknowledge that we are living and working on the traditional territory of the Attawandaron (also known as Neutral), Anishinaabeg and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes six miles on each side of the Grand River.