

University of Waterloo
Department of Economics
Econ 391
Equilibrium in Market Economies
Fall 2021
remote delivery

Instructor Information

Instructor: Lutz-Alexander Busch
Email: lbusch@uwaterloo.ca
Office Hours: See LEARN announcements/schedule
TA: See LEARN for information

Notes on contacting the instructor

When sending email, please use your official uwaterloo account and have ECON 391 in the subject line. It is generally a good idea to also have a signature line for your email that includes your full name and student ID.

Course Description

Central to the study of economics is the concept of equilibrium. This is a situation in which the actions of individuals are not only individually optimal, but are also consistent with each other. This course introduces students to the notion of equilibrium for a single market and for a market economy. The properties of such equilibria are explored, both in terms of model logic (existence, uniqueness) as well as in terms of the desirability of the equilibrium outcomes (efficiency, welfare). General equilibrium (in all markets at once) is covered for models with endowments, production, uncertainty, and time. Prerequisite: ECON 290 Please note that Econ 290 material is an essential background for this course and is **assumed**. If you had struggles in 290 you may want to review that course material during the first week while doing assignment 1.

Course Goals and Learning Outcomes

The main objective of the course is for students to gain an understanding and appreciation of what an equilibrium in economic models entails. Students will be able to derive equilibria for simple example economies in the standard settings. Students will gain awareness of questions of uniqueness and existence of equilibria. Students will be able to explain welfare properties of equilibria and verify them.

Required Text

- Lecture notes are provided on the LEARN page for the course.
- No formal textbook required.

Most books with “Microeconomic Theory” in the title will cover many if not all of the topics discussed. However, many undergraduate texts do not employ mathematical techniques consistent with Econ 290 in the treatment of these topics, and they usually do not cover all of the topics we cover either – some being relegated to more advanced texts, others to texts in macro-economics. Nevertheless, any micro economics book can be a valuable alternate and supplementary view into the material we will cover.

Material Available on LEARN

- Lecture notes.
- Assignments and detailed assignment solutions.
- Video mini-lectures: I will post short videos explaining material that seems to generate particular questions/confusion.
- Supplementary handouts as needed.
- Discussion boards for asking/answering questions about the course material.

Course Requirements and Assessment

Assessment	Date of Evaluation (if known)	Weighting
Assignments: 6	Roughly every two weeks	18
LEARN quiz : best 5 of 6	Sep 17; Oct 1, 22; Nov 5,19; Dec 3	25
Midterm; 24 hr window take home	October 28	25
Final Exam; 24 hr window take home	December exam period	32
Total		100%

There will be no adjustments to the above grading scheme. Especially not for an individual student.

Assignments

Assignments will be due as announced on Learn, submitted to a dropbox. Late assignments are not accepted. Due to the extended time for completion, medical notes will usually not be accepted. Assignments will be marked on a 0-1-2-3 scale (missing, partially attempted, complete attempt, well done). Assignments will not be marked with detailed comments. Detailed answers to assignments are posted. Please work through the answers and then ask for further explanations as required.

Quiz

These are short timed tests of the material of the last couple of classes. Precise format to be determined and may vary depending on topics. Administered on LEARN as a time-limited one attempt Quiz. A VIF will only be accepted for a long term illness leading to multiple quizzes being missed – in which case it may be best to withdraw from the course.

Midterm and Final Exam

Open book, no other aids, type of exams with a 24 hour turn-around time. The final will be scheduled by the Registrar's office during the final examination period (December 9 to 23 inclusive.) Please note that this year Sunday December 12 is a potential date for Final examinations! You should by now be familiar with the deferred final exam policy of the department. Please also note that travel plans are NOT an acceptable ground for alternate final examination times.

Course Outline

Part	Topic	Topic Title
I		From Individual demand/supply to Market demand/supply
	1.	Properties of consumer demand/supply
	1.a	Price Effects
	1.b	Income Effects
	1.c	The Slutsky equation
	1.d	Welfare: Compensating and Equilibrating variation
	2.	Demand aggregation
	2.a	Market Demand
	2.b	Properties wrt price and income
	2.c	Welfare interpretation
	2.d	The representative consumer
	3	Firm Supply properties
	4	Firm Supply aggregation
II		Partial Equilibrium
	1	Definition
	2	Existence and Uniqueness
	3	Welfare – Pareto Optimality
III		General Equilibrium
	1.	Pure Exchange Economies
	1.a	Edgeworth Box
	1.b	Pareto Optimal Allocations
	1.c	Walrasian Equilibrium
	1.d	Solving for Equilibrium
	1.e	Existence and Welfare properties
	2.	Production Economies - Robinson Crusoe Economy
	3.	Incorporating Time and Uncertainty
	4.	Arrow-Debreu Equilibrium

Information on Plagiarism Detection

Assignments are meant as a learning opportunity. It is acceptable and sensible practice to work in study groups, and to discuss solution approaches. You can learn a lot from others – or by teaching others. However, assignments must be individually written and submitted. Obvious cases of “copying” will result in a zero grade. Assignments have to be handwritten in pen and scanned to a pdf file for submission. Assignment answers are obviously available on the internet --- I urge you to attempt to do the assignments. The answers are not actually important themselves, what is important is that you learn how to solve the problems.

Quiz, Midterm and Final exams are open book – you may consult the course notes and any study notes you have made. You may **not** consult other students or attempt to find solutions on the internet. Do not collaborate in facebook groups or via other methods. Exams have to be handwritten, in pen, and scanned to a pdf file.

Institutional-required statements for undergraduate course outlines

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community 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](#).

Note for Students with Disabilities

The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (NH 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.

Additional statements:

Intellectual Property

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo.

Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.

Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).

Chosen/Preferred First Name

Do you want professors and interviewers to call you by a different first name? Take a minute now to verify or tell us your chosen/preferred first name by logging into [WatIAM](#).

Why? Starting in winter 2020, your chosen/preferred first name listed in WatIAM will be used broadly across campus (e.g., LEARN, Quest, WaterlooWorks, WatCard, etc). Note: Your legal first name will always be used on certain official documents. For more details, visit [Updating Personal Information](#).

Important notes

- If you included a preferred name on your OUAC application, it will be used as your chosen/preferred name unless you make a change now.
- If you don't provide a chosen/preferred name, your legal first name will continue to be used.

Mental Health Support

All of us need a support system. The faculty and staff in Arts encourage students to seek out mental health support if they are needed.

On Campus

Due to COVID-19 and campus closures, services are available only online or by phone.

- Counselling Services: counselling.services@uwaterloo.ca / 519-888-4567 ext. 32655
- **MATES**: one-to-one peer support program offered by the Waterloo Undergraduate Student Association (WUSA) and Counselling Services

Off campus, 24/7

- A. **Good2Talk**: Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- B. Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-4300 ext. 6880
- C. **Here 24/7**: Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- D. **OK2BME**: set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Full details can be found online on the Faculty of Arts [website](#)

Download [UWaterloo and regional mental health resources \(PDF\)](#)

Download the [WatSafe app](#) to your phone to quickly access mental health support information.

Territorial Acknowledgement

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

For more information about the purpose of territorial acknowledgements, please see the [CAUT Guide to Acknowledging Traditional Territory](#).