University of Waterloo
Department of Economics
Econ 211 Section 1
Introduction to Mathematical Economics
Winter 2016
11:30-12:50 MW at EV3 3412

Instructor and T.A. Information

Instructor: Dr. Olivia Mesta
Office: HH 221
Office Phone: 519 888 4567 ext 36559. Please e-mail rather than leaving a voice mail for faster communication.
Office Hours: Mondays 10:00 –11:00 am and Mondays 2:30 – 3:30 pm or by appointment
Email: omesta@uwaterloo.ca

T.A.   TBA

I will be available in my office for the scheduled office hours. It is suggested that you come to office hours for your questions, due to time constraints I will not reply to questions about the course material via e-mail. If contacting me by e-mail, please, indicate ECON 211 on the subject line. I will check e-mails regularly during the day. You should not expect to hear from me evenings or weekends. Please, note that class attendance is essential for the successful completion of the course.

Prereq: ECON 101; one of MATH 104, 4U Advanced functions, 4U Calculus and Vectors; Not open to students in the Faculty of Mathematics.
Antireq: MATH 106/125, 109, 115, 116, 117, 118, 119, 128, 136, 138, 146, 148
Note that Math 104 or its equivalent is a pre-requisite.

Course Description
The course aims to connect mathematical tools and elementary economics analysis. Students are expected to learn the mathematical concepts which are required to tackle problems in economic analysis. The objective of this course is to provide the students with all the necessary mathematical tools that are required to follow 300 level courses in economics. The focus is on mathematics, but the different concepts will be taught using applications in economics.Topics include an introduction to matrix algebra, differentiation, partial derivatives, and optimization techniques including constrained optimization. Students are advised to refresh their knowledge on basic arithmetic and algebra, and sets, subsets and functions before proceeding to higher level topics in this course. The goal is to motivate students of economics to study appropriate mathematical tools by demonstrating their power to deal with economic problems.

REQUIRED TEXTBOOK

Mathematics for Economics,
3rd edition, Hoy, Livernois, McKenna, Rees, and Stengos, MIT Press, March 2011, ISBN-10: 0-262-01507-2, ISBN-13: 978-0-262-01507-3

Student's Solutions Manual, (recommended)
3rd edition, Hoy, Livernois, McKenna, Rees, and Stengos, MIT Press, April 2012 ISBN-10: 0-262-51794-9, ISBN-13: 978-0-262-51794-2

COURSE CONTENT

Review material (mainly mathematical concepts) short lecture notes will be provided; it is students' responsibility to expand on examples from the book

- Ch. 1. Algebra and arithmetic reviews: Student's Solutions Manual chapter 1 is very helpful to refresh your memory on basic algebra and arithmetic.

- Ch. 2. Review of fundamentals: Sets, subsets, functions: Textbook Ch 2.1 - 2.4 (pp 11 - 60)

Course material (focused more on economic applications of mathematics)

- Ch. 3. Sequences, series, and limits Textbook Ch 3.1 - 3.5 (pp 61-99)

- Ch. 4. Continuity of functions of one variable with economic applications: Textbook Ch 4.1 - 4.2 (pp 100-126)

- Ch. 5. Derivatives and differential for functions of one variable.

- External notes: Limit of functions and L'Hopital's rule (notes will be posted)

- Ch. 6. Optimization of functions of one variable.

- Ch. 7.   Systems of linear equations.

- Ch. 8. Matrices.

- Ch. 9. Determinants and the inverse matrix. (excluding pp 335-341 on Leontief Model)

- Ch. 10. Some advanced topics in linear algebra.

- Ch. 11. Calculus for functions of n-variables. (excluding pp. 460-463 on elasticity of substitution)

- Ch. 12. (Unconstrained) Optimization of functions of n-variable.

- Ch. 13. Constrained optimization of functions of n-variable (omit Dual consumer problem pp. 513 – 514, include the interpretation of λ , omit section 13.3 pp. 520-525)

- Please note that the schedule above is tentative. It is subject to change according to the pace of the lectures.

Evaluation

Homework sets	5 home work sets	15%
Exam 1	February 3, 2016	25%
Exam 2	March 16, 2016	25%
Final exam	(Cumulative)To be announced by the registrar	35%

Homework sets are due in class every 2 weeks:
HW 1 January 27, 2016
HW 2 February 10, 2016
HW 3 February 24, 2016
HW 4 March 9, 2016
HW 5 March 23, 2016

Weekly TA sessions will be held to practice on solving exercises from the text book. The location and the times will be announced on LEARN.

Policy on Missed Assignments and Tests

There will be no make-up tests or assignments. No additional assignments or work will be assigned to improve the marks. Students will receive a mark of zero on a missed test without UW verification of illness form. For students who submit the verification of illness form, the weight of the missed test will be shifted to the final examination. The UW verification of illness form must be obtained at the day of the exam and submitted within 3 days after the exam.

There is no make up for missed homework sets. Students are responsible from turning the assignments in during the class time at the due date. Assignments slipped under the office door or sent online will not be accepted. Late assignments are not accepted under any circumstance. The lowest homework score will not count to allow for poor performance and absences due to illness.

Institutional-required statements for undergraduate course outlines approved by Senate Undergraduate Council.

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

Cross-listed course
Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSCI cross-list will count in a Philosophy major average, even if the course was taken under the Political Science rubric.

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.

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 (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71)

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 (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70), Section 4.

Appeals: A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read Policy 72 - Student Appeals (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-72).

Other sources of information for students:
Academic Integrity website (Arts)
https://uwaterloo.ca/arts/current-undergraduates/student-support/ethical-behaviour
Academic Integrity Office (UWaterloo)
https://uwaterloo.ca/academic-integrity/

Accommodation for Students with Disabilities

Note for students with disabilities: The AccessAbility Services office (https://uwaterloo.ca/disability-services), 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.

I wish you a productive semester…
Olivia Mesta