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ECO 426: MARKET DESIGN

University of Toronto
Department of Economics

Winter 2021

COURSE DESCRIPTION AND LEARNING OBJECTIVES

Markets are everywhere... you may have heard that saying before. But what exactly is a market? How do markets work? And how can we analyze, improve and "design" them to better achieve certain desired objectives?

In this class we will discuss these questions and take a deeper dive into two types of markets: Auctions and Matching Markets. Auctions can be found in various settings and are used to determine prices for a wide variety of items ranging from diamonds, rare paintings to government debt and online ads. For matching markets, we will come across applications such as college admissions, the medical residency match, kidney exchange and yes – even the marriage market.

This course provides an introduction into the theory and practice of market design. The foundational knowledge and skills to identify, analyze and potentially design improvements of market situations will be valuable to a wide range of potential career paths.

The course assumes the knowledge of Microeconomic Theory (ECO200Y1/ECO204Y1/ECO206Y1), Game Theory (ECO316H1 or ECO326H1) as well as a strong background in math, especially calculus, linear algebra and probability theory.

LOGISTICS

Videos: Videos for the week will be posted by Friday to be watched and worked through before the in-class discussion and Q&A session (online)

Weekly class materials and videos will be posted on [Quercus](#)

Discussion session: In class Wed, 10 – 11 am (online, via zoom)

(zoom link is posted on [Quercus](#))

Teaching Assistants: Abdelrahman Amer (Abdo) and Mahmood Haddara

(*office hours to be determined via class survey*)

Course website: Quercus, at <https://q.utoronto.ca/courses/197789>

Students are responsible for reading course announcements, lecture notes, and other materials posted on the course website.

EMAIL POLICY

I have found email generally not to be the best communication format to address questions and concerns of students. I encourage you to attend the discussion/Q&A sessions, tutorial sessions (run by the TAs), as well as our office ours. Please use these for your questions and concerns.

I will do my best to respond to e-mail within 24 hours on a weekday, 48 hours on a weekend according to the following policy:

- a) I will only respond to e-mails posing questions that can be answered in a sentence or two. For detailed questions, please see me or the TA in office hours.
- b) I will not reply to e-mails that request information that can be found on the website or the syllabus, so you should check those places first.
- c) I will not reply to e-mails regarding the results of graded material – for that, please see me in office hours.

ASSESSMENT/GRADING

Your grade for this course will be¹

Test 1 (<i>Feb 24, 2021</i>)	15%
Test 2 (<i>April 7, 2021</i>)	15%
Group term project*: (<i>due: April 24, 2021 11:59pm</i>)	65%

Consisting of 50% group score + 15% individual score

Individual reports for group projects: due **April 18, 2021, 11:59pm**.

*Details on the group projects and steps will be explained in class and posted on Quercus

In addition, you can get a bonus of maximally 2% by participating in some voluntary course activities.

Term tests: Both term tests will be written online during the time of the tutorial (Wednesday 12 – 1pm). Details about the tests will be announced closer to the dates on which they occur (in class and on Quercus).

Problem sets: Will be posted on Quercus. The only way to learn market design is by applying the methods yourself and solving problems. Make sure to solve the problems yourself (or give it your best shot) and *write down the solutions before* solutions are posted or discussed in the tutorial.

¹ the weight of the best individual test score will be increased by 5%.

TEXTBOOKS

Market Design, Guillaume Haeringer, (2018), MIT Press

Auction Theory, Vijay Krishna, (2009), Academic Press.

Two-sided Matching Markets, Al Roth & Marilda Sotomayor, (2013), Cambridge University Press.

CLASS RULES

Academic integrity is considered one of the central values of this class. *In particular, any non-compliance with academic integrity or documented academic misconduct will result in automatic failure for the entire course.* This includes but is not limited to: **No communication between students or with outside sources is allowed during a class test.** Please familiarize yourself with the [code of behavior on academic matters](#).

Missing a test: Students who miss a test due to a medical issue must notify me (and cc the TAs) by email before the test begins. For 2020-21, the Verification of Illness (or “doctor's note”) is not required. If you are absent from academic participation for any reason and require consideration for missed academic work, you have to record your absence through the ACORN online absence declaration. If I find the documentation acceptable, students will be noticed on how to make-up for the missed test. Note that providing false or misleading information in support of a request for a make-up is a serious academic offence.

Accessibility/ Accommodation: If you have a disability that warrants accommodation, please contact me by e-mail as soon as possible. Attach to your e-mail the accommodation letter that you received from the Accessibility Service Office ([here](#)). The subject line of your e-mail should be: ECO426 VISA