

Faculty of Science Course Syllabus
Department of Economics
ECON 5427
Market Design
Fall 2018

Instructor:	Professor Norovsambuu Tumennasan (Norov for short)
E-mail:	norov@dal.ca
Office Address:	6206 University Ave. C11
Office hours:	By appointment
Lectures	TH 13.05-14.25 McCain 2116

IMPORTANT DATES

TBA

MIDTERM EXAM

Course Description

The course studies how the organization of centrally administered markets affects their performance. The students learn several mechanisms that are currently used and evaluate their properties. The course has a strong emphasis on applications, e.g., the allocation of students to public schools, interns to hospitals or organ donors to recipients.

Course Prerequisites

ECON 3700 or Math 2001 or by instructor's permission.

Maturity in mathematics is expected. This course has a minimum grade requirement of C for their prerequisite courses.

Course Objectives/Learning Outcomes

The students should be able to

- Identify the desirable properties (e.g., stability, efficiency, and strategy proofness) that the allocation mechanisms in a given market should satisfy
- Evaluate the importance of incentive issues in various markets
- Apply and use the mechanisms such as deferred acceptance, top trading cycles, serial dictatorship, and probabilistic serial dictatorship in appropriate settings
- Analyze and assess whether a given mechanism in a given market satisfies one or more desirable properties

Course Content

- Marriage Market --- One-to-one matching (Weeks 1-2)
- College Admissions Model --- Many-to-one Matching (Weeks 2-3)
- Housing Market (Weeks 4-5)
- School Choice Problem (Weeks 6)
- Kidney Exchange (Weeks 7,8)
- Dynamic matching markets (Weeks 10-11)
- Matching with Contracts (Week 12)

Course Materials

- Two Sided Matching by A.E. Roth & M. Sotomayor, Econometric Society Monographs, published by Cambridge University Press, 1990
- Lecture Notes supplemented by research articles. Please check the course website frequently for new announcements.

Course Assessment

Component	Weight (% of final grade)	Date
<i>Midterm</i>	<i>25%</i>	<i>Around October 10</i>
<i>Final exam</i>	<i>30%</i>	<i>Around December 11</i>
<i>Assignments</i>	<i>20%</i>	<i>TBA</i>
<i>Research Project</i>	<i>25%</i>	

The format for both final and midterm exams is written and closed-book. The midterm is 1 hour and 20 minutes long while the final is 2 hour long.

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)

A (85-89)

A- (80-84)

B+ (77-79)

B (73-76)

B- (70-72)

F (<70)

There will be four homework problem sets, and each of these is worth 5% of your grade. Assignments must be done individually and handed in before or on the due date. Only hard copy is acceptable. Each set will consist of four to five problems which require precise solutions. The sets will be graded on the scale of 100 points.

One of the main requirements of this course for **graduate students** is a research project which is not required for undergraduates. You need to find a real-life centralized market and describe the currently used mechanisms in the market (if there is one). Afterwards, you identify the designer's goals in the market of your choice and analyze if these are achieved by the currently used mechanisms. Furthermore, you need to suggest improvements over the current mechanisms. You will write a final report on your project which should consist of sections such as Introduction, Model, Analysis and Concluding Remarks. Your grade for the project will be based on the final report you submit. More detailed guidelines will be given as the course progresses, but no two projects will be the same. You are encouraged to follow your interests and decide on a course of action well suited to your project. The choice of topic is flexible, and creativity will be rewarded. The grading rubric for the project is attached at the end of this syllabus.

Course Policies

Policy on Missed Materials: Assignments will NOT be accepted after the due date, unless a valid reason. If a student miss midterm for a valid reason, all the weight of your midterm will be shifted to the final. If a student misses the final exam for a valid medical reason, you must notify the instructor immediately, provide appropriate medical documentation, and make arrangements to write a comprehensive exam as soon as health permits.

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IMPORTANT DATES

TBA
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MIDTERM EXAM
Final EXAM

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- Matching with Contracts

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Course Assessment

Component	Weight (% of final grade)	Date
<i>Midterm</i>	<i>30%</i>	<i>TBA</i>
<i>Final exam</i>	<i>50%</i>	<i>(Scheduled by Registrar)</i>
<i>Assignments</i>	<i>20%</i>	<i>TBA</i>

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (<50)
A- (80-84)	B- (70-72)	C- (55-59)	

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Market Design Project Grading Rubric
Student Name: _____ **B00:** _____

Rubric Criteria	Excellent	Good	Competent	Problematic	Score
Knowledge Gap/Topic (max 10 pts)	9 The student identifies a substantial knowledge gap, and the topic is clearly defined.	8 The student identifies a knowledge gap, and the topic is clearly defined.	6 The student identifies a knowledge gap, but under develops it, and the topic is not very clear.	5 Knowledge gap is vague or unclear, as the topic is not properly defined.	
Style; Writing and Structure (max 20 pts)	18 The student follows the style guidelines. Logical organization of facts and ideas with linear reasoning, and effective use of figures/tables. Conclusion summarizes/ Integrates/discusses findings.	15 The student mainly follows the style guidelines. Content is organized in sections, but transition between paragraphs is poorly executed; paragraphs mingle too many ideas. Conclusion offers a clear overview of the paper.	12 The student attempts to follow the style guidelines, but the content is not properly organized. Transition between paragraphs is poorly executed; paragraphs mingle too many ideas or repeat the same argument. The conclusion is not very clear.	10 The student does not follow the style guidelines, and has many errors. The content is not organized, and it has no flow. Poor conclusion. The student ignored comments on first draft.	
Motivation (max 10 pts)	9 The motivation is clearly and explicitly stated, and it grabs attention	8 The student provides a clear and explicit motivation.	6 The student attempts to provide a clear motivation.	5 There is no clear motivation.	
Background and Related Literature (max 10 pts)	9 The student provides a comprehensive and relevant literature review.	8 The student provides a large and relevant literature review.	6 The student attempts to provides a relevant literature review, but either omits important papers or cites irrelevant papers.	5 The student does not provide a proper literature review; incomplete and erroneous.	
Research Design and Analysis (max 50 pts)	44 The analysis is substantial enough for this stage of the research process.	38 Insufficient/weak analysis for this state of the research process.	30 The method is unsuitable to address the research question or the analysis is wrong, and the student ignored comments on first draft.	24 No apparent line of argument.	
Total (maximum 100 points)					