INSTRUCTOR: Professor Ilan Lobel
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KMC 8-71

TEXTBOOKS

The textbooks are recommended, but not required.
- Osborne and Rubinstein – A Course in Game Theory
- Krishna – Auction Theory

COURSE OBJECTIVES

The course has two objectives: teach doctoral students the fundamental concepts in game theory and mechanism design, and familiarize the students with how game-theoretical techniques are currently being used in operations management research.

COURSE CONTENTS

The course will cover solution concepts for normal form games (Nash Equilibria and rationalizability), dynamic games (Subgame Perfect Equilibria), incomplete information games (Bayes-Nash Equilibria) and dynamic games with incomplete information (Perfect Bayesian and Sequential Equilibria). It will also cover the folk theorems for repeated games, properties and applications of potential games and Nash bargaining. We will also cover mechanism design, including both social welfare and revenue maximization. Finally, we will go over recent papers using game theoretic concepts in OM applications such as supply chain contracting, queuing games and revenue management with strategic customers.

WEBSITE/COURSE MATERIALS

The Stern Blackboard system will be used as the main communication media, and materials will be posted in the system. This includes the lecture notes, the homework assignments, the in-class cases, and etc. To log in, you will need your Stern email account and the associated password.

GRADING

At NYU Stern we seek to teach challenging courses that allow students to demonstrate differential mastery of the subject matter. Assigning grades that reward excellence and reflect differences in performance is important to ensuring the integrity of our curriculum.

The distribution of grades for this course will depend solely on the performance of the students in the course.
RE-GRADING

In line with Grading Guidelines for the NYU Stern Undergraduate College, the process of assigning of grades is intended be one of unbiased evaluation. This means that students are encouraged to respect the integrity and authority of the professor’s grading system and discouraged from pursuing arbitrary challenges to it.

If a student feels that an inadvertent error has been made in the grading of an individual assignment or in assessing an overall course grade, a request to have that the grade be re-evaluated may be submitted. Students should submit such requests in writing to the professor within 7 days of receiving the grade, including a brief written statement of why he or she believes that an error in grading has been made.

CLASS PARTICIPATION

The professor will judge class participation on the extent to which you appear prepared, the relevance and depth of your comments, the degree to which you listen carefully and respond to your peers, and your willingness to take chances in order to further the educational experiences of others. Please notify your instructor by email two days in advance if you have to be late or leaving early from class. You can miss (or late for more than 15 minutes) up to three classes during the entire semester without incurring a grade penalty.

HOMEWORK

There are five homework assignments in total. All assignments will be posted on Blackboard and the class will be notified by email.

Late assignments will not be accepted unless due to documented serious illness or family emergency. Professor will make exceptions for religious observance or civic obligation only when the assignment cannot reasonably be completed prior to the due date and the student makes arrangements for late submission with the professor in advance. The assignments must be prepared individually in order to receive credit. Assistance obtained in preparing the assignment must be properly acknowledged.

TERM PROJECT

The Game Theory in Operations term project is fairly flexible in terms of the types of projects that are acceptable. You may come up with your own project topic or choose from a list of topics that will be given by the professor. In either case, the project topic should be approved by the professor. Each student is expected to (a) give a short presentation to the class reporting on his/her project and (b) submit a project report explaining the work performed.

Classroom Norms: Cell phones, laptops and other electronic devices are a disturbance to both students and professors. All electronic devices must be turned off prior to the start of each class meeting.

Academic Integrity: Integrity is critical to the learning process and to all that we do here at NYU Stern. All students are expected to abide by the NYU Stern Student Code of Conduct. A student’s responsibilities include, but are not limited to:
● A duty to acknowledge the work and efforts of others when submitting work as one’s own. Ideas, data, direct quotations, paraphrasing, creative expression, or any other incorporation of the work of others must be clearly referenced.

● A duty to exercise the utmost integrity when preparing for and completing examinations, including an obligation to report any observed violations.

Please see [www.stern.nyu.edu/uc/codeofconduct](http://www.stern.nyu.edu/uc/codeofconduct) for more information.

**Students with Disabilities:** Students whose class performance may be affected due to a disability should notify the professor early in the semester so that arrangements can be made, in consultation with the Henry and Lucy Moses Center for Students with Disabilities, to accommodate their need.