Time: Tuesday 6:30-9:20 pm  
Place: Umphrey Lee 242  
Instructor: Dr. Saltuk Ozerturk  
Office: Lee 301X  
Phone: 83 344  
E-Mail: ozerturk@smu.edu

Course Description

This course is an introduction to basic concepts and tools of game theory, which analyzes strategic interactions among individuals (or firms, political parties, countries, etc.). You will be able to develop your analytical reasoning skills and ability to think critically by applying formal and mathematical methods to strategic situations you face in daily life. We will also apply game theoretical methods to larger issues in economics, business, politics, law, etc. thereby integrating the knowledge gathered in this course with other areas of formal inquiry. We will illustrate how we can use game theory to understand evolution of social and ethical norms such as fairness, cooperation, altruism, and reciprocity.

Office Hours

Tuesday and Thursday 3:00 pm-5:00 pm or by appointment.

Textbook (Required): You will be responsible from all the material I cover or assign in class. The following textbook is useful in preparing for class as well as for after class reading

Game Theory for Applied Economists by Robert Gibbons
Publisher: Princeton University Press
ISBN-10: 0691003955
Attendance Policy:

Attendance is absolutely mandatory. **If you miss 7 or more classes, you will receive an automatic grade of F from the class.**

Grading

Your course grade will be determined as follows.

- 6 Homework Assignments: 25%
- Midterm Exam: 35%
- Final Exam: 40%

Homework Assignments

There will be SIX (6) regular homework assignments. Homework assignments are particularly important to facilitate your understanding of the materials and to prepare for the exams. Students should complete the homework assignment on their own.

Late homework assignments will not be accepted, and **there is no make up for any of the homework assignments.** To offer certain degree of flexibility, the lowest homework assignment score will be dropped from the calculation of your overall 25% assignment grade.

Exams

There will be two (in-class) written exams, a midterm exam and a (comprehensive) final exam. These exams scheduled as follows:

- **Midterm:** Tuesday March 22, 6:30pm - 9:20pm Lee 0242
- **Final:** Tuesday May 10, 6:30 pm to 9:00 pm at Lee 242

Make-Up Policy As mentioned before, late submissions of homework assignments will not be accepted. Schedule conflicts regarding the midterm should be reported to me immediately. There will be no make-up exams unless the circumstances are truly exceptional and can be substantiated (for example, death in the family or serious medical problems). If advanced notice is possible and not given, the make-up request may be refused.
Disability Accommodations

Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit http://www.smu.edu/Provost/ALEC/DASS to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

Religious Observance

Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities

Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)

Learning Outcomes

- Students will recognize real strategic situations to which game theory can be applied.
- Students will be able to model strategic situations as games.
- Students will be able to apply tools of game theory to gain insights about real life situations
- Students will be able to view and discuss social and economic issues from a completely new perspective
Tentative Course Outline

• An Introduction to Games

• Static Games of Complete Information
  o Normal-Form Games
  o Iterated Elimination of Strictly Dominated Strategies
  o Pure Strategy Nash Equilibrium
  o Mixed Strategy Nash Equilibrium
  o Applications: Cournot Model, Bertrand Model, Tragedy of the Commons, etc.

• Dynamic Games of Complete Information
  o Extensive-Form Games
  o Backwards Induction
  o Credibility and Subgame Perfect Nash Equilibrium
  o Applications (Stackelberg, Sequential Bargaining, Bank Runs and more)
  o Repeated Games
  o Two-Stage Repeated Games

Midterm (March 22 Tuesday)
  o Infinitely Repeated Games
  o Collusion between Cournot Duopolists
  o Time-Consistent Monetary Policy

• Static Games of Incomplete Information
  o Static Bayesian Games
  o Bayesian Nash Equilibrium
  o Applications (Auctions)

• Dynamic Games of Incomplete Information
  o Introduction to Perfect Bayesian Equilibrium
  o Signaling Games, Job-Market Signaling

Final Exam  May 10th Tuesday at 6:30 pm to 9:20 pm at Lee 242