

Econ 5360
Economic Analysis of Strategy
Fall 2017

Mondays 6:00-8:50 p.m. in TWC 355

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Office Hours

Location: SHB 237A

Tue/Thu 2:00-3:00 p.m.

or by appointment

Course Catalog Description: A study of game theoretical tools and their application to important real-world economic phenomena. Topics include: the organization of industry, labor and work-place economics, international trade policies, government and voting strategies, the role of legal institutions in the economy, and bargaining and bidding strategies.

Learning Objectives: This course is intended to expose students to the basics of game theory and strategic thinking. Upon completion of this course, you should be able to:

- understand the basic notions of game theory and its numerous applications to economics, business, politics, sports, and many other types of human interaction
- develop economic intuition and be able to explain the rationale behind commonly observed business strategies such as price discrimination, collusion, etc.
- clearly formulate problems and design optimal strategies in a variety of settings involving strategic interaction, all while understanding the strengths and limitations of game theory
- improve analytical, critical thinking, and problem solving skills that you can use beyond this course

Course Materials: We will use multiple reading sources throughout this course, although strictly speaking, there is no required textbook. I will however, frequently refer you to “The Art of Strategy” by Dixit and Nalebuff (ISBN: 978-0-393-33717-4) and to “Games of Strategy” by Dixit, Skeath, and Reiley (ISBN: 978-0-393-12444-6). There will also be a variety of notes and article links posted on Blackboard from time to time. It is also essential you take good notes during class. You will get virtually everything you need during lectures, but in a very concise form. Furthermore, you will be able to find plenty of online resources (notes, youtube videos, etc.) regarding most of these issues just by googling the terms we define and discuss in class. These should be used however only to supplement the more traditional course materials! As with everything else on the internet, occasionally you will run across wrong information disguised as pertinent information.

Requirements and Expectations:

- **BASIC MATH:** This course will not be math intensive, but occasionally we will use basic math like graphing, solving equations, and bits of calculus. Calculus will mainly be used as a clarifying tool for those familiar with it. Please don't hesitate to stop me and ask for clarifications if any math I use is not clear to you!
- **ELECTRONICS:** Basic calculators are allowed and recommended during exams and during classes. The use of cellphones during exams is completely prohibited.
- **MAKEUP POLICY:** In order to preserve fairness for everyone in the class, there will be **NO MAKEUP** exams or assignments, no exceptions. All assignments must be submitted on or before their due date. There will be no exception from this rule so please plan accordingly. You can always scan and email me your assignment if you cannot make it to class, but you must do so before the class starts (6pm) on the due date. The grading set-up allows you to miss one exam and some assignments without penalty, but please don't abuse this as it can hurt you in the end. More on this below, in the grading section.
- **ATTENDANCE:** Attendance during lectures is highly recommended. The material builds on itself and missed lectures can seriously affect your understanding of future material. I will take attendance at the beginning of each class, although I will not grade it directly. Keep in mind that if you miss class you forfeit any participation points offered that day.
- **CLASS PARTICIPATION:** Class participation is an extremely important component of your grade. There will be case studies and discussions, student presentations, and interactive games throughout the semester. Some of these will be directly graded, while some others will offer you the chance of earning extra credit.

Grading: There will be 3 midterm exams, 1 comprehensive final exam, a series of weekly assignments (some written, some online), and a term project. They will count towards your final grade as follows:

- Exams 60%
- Assignments 20%
- Term Project 20%

Notes:

All exams (including the final) have the same weight of 20%. You will be allowed to drop your lowest midterm grade or to makeup a missed midterm with the final. It is in your best interest not to miss any exam! Even if you feel you haven't studied that much, the practice can help you. The final is comprehensive and obligatory. If you miss the final, you will automatically forfeit 20% of your grade.

There will be two types of homework assignments during the semester. The first type will be short (1 page) written essays on topics or cases I will assign in class. I will grade them based on effort rather than complete accuracy. I want to see you spend time to think through an issue and provide a well-reasoned and clearly expressed thought (even if it is wrong). You will need to type, print, and deliver these on time. No handwriting nor late submissions will be accepted. If you can't make it to class, email it to me before class starts. The second type will be short sets (10-15 questions) of multiple choice questions I will assign through blackboard. These will be automatically graded by blackboard for accuracy. Under no circumstance I will reopen the assignments for you after the due date. Blackboard will automatically provide you with the correct answers the minute the due date has passed and so it would not be fair for me to allow you access afterwards. However, because stuff happens all the time, at the end of the semester I will drop your two lowest scores (or two misses) before computing their simple average (each individual assignment will be weighed the same).

For your term project, you will need to come up with an issue from the real world that involves strategy. You will need to prepare a short paper and an in-class presentation describing the issue and the strategic components involved. The issue can be from whatever field interests you as long as you can relate some game theoretic concepts to it in either an explanatory, predictive, or prescriptive way.

Final letter grades will be assigned based on the following scale:

A	90 – 100%
B	80 – 90
C	70 – 80
F	0 – 70%

Note: these are rigid thresholds! If you don't reach the threshold, you don't get a bump to the higher grade just by rounding up (89.9 is a B, not an A)! Also, in order to preserve fairness, there will be no individual extra credit. All the extra credit opportunities will be offered in class, during the semester, at the discretion of the instructor.

Email Communication: The preferred method of communication is email. I usually respond fairly quickly to non-abusive and considerate emails. Email me if you need to schedule a meeting outside of my office hours, but please do so in advance. Email is also the standard way that I will communicate things to you. Please check your campus mail on a regular basis and make sure your inbox is not full or you might miss important announcements regarding exams/assignments/etc.

Important Dates:

Midterm 1 – Monday, Oct 2nd
Midterm 2 – Monday, Oct 30th
Midterm 3 – Monday, Nov 20th

(all midterms will be given during regular class time, starting at 6:00 pm)

FINAL – Monday, Dec 4th 8:30-10:30 pm

TERM PROJECT DUE – Monday, Nov 27th (You will need to submit a paper, and deliver a short presentation during the last regular class of the semester. Details regarding this project will be provided during the semester.)

Tentative Course Outline:

Date	Topic	Readings
August 28th	Meet & Greet Introduction to Strategic Thinking	Ch. 1 - The Art of Strategy Ch. 1 - Games of Strategy
September 4th	LABOR DAY (No Class)	
September 11th	Basic Elements and Terminology in Game Theory Simultaneous Games	Ch. 2 - Games of Strategy Ch. 3, 4 - The Art of Strategy Ch. 4 - Games of Strategy
September 18th	Sequential Games	Ch. 2 and 6 - The Art of Strategy Ch. 3, 6, 9 - Games of Strategy
September 25th	Mixed Strategies Repeated Games	Ch. 5 - The Art of Strategy Ch. 7 - Games of Strategy Ch. 10 - Games of Strategy
October 2nd	FIRST MIDTERM	
October 9th	Games with Continuous Strategies Applications to Oligopoly Pricing	Ch. 5 - Games of Strategy Lecture Notes
October 16th October 23rd	Incomplete Information	Ch. 8, 13 - The Art of Strategy Ch. 8, 13 - Games of Strategy
October 30th	SECOND MIDTERM	
November 6th	Mechanism Design Applications to Price Discrimination and Signaling	Ch. 13 - Games of Strategy Lecture Notes
November 13th	Advanced Pricing Strategies	Lecture Notes
November 20th	THIRD MIDTERM	
November 27th	Term Projects & Presentations	
December 4th	FINAL EXAM	

Notes:

1. The listed readings are for reference purposes only. You will actually need to be aware of what was discussed in class to be able to connect with the book chapters. Feel free to read the entire chapters (for your own curiosity), but be aware that for some topics, only reading certain parts of a chapter will be sufficient. Learn how to use the books as a helpful reference, not just as a required reading! Hint: look at the subchapters titles and search for keywords in the index at the end of the book.

2. In addition, I will occasionally direct you to certain case studies/online readings. These are not required, but hopefully will give you a better feel on how many real-world phenomena can be analyzed and be better understood using the tools of game theory.

3. Not included in the above outline are the due dates for homework assignments. There will generally be at least one assignment a week (some of these will be written essays, some will be multiple questions administered through blackboard). Occasionally there will be one of each (two a week). Generally, I will assign these at the end of each class or shortly after. I will always email you when I assign a homework to let you know the specifics and due date/time. Make sure you check your campus email! The assignments won't be long, but they will force you to stay up to date with the material. These will count for your grade!

4. I will also post more difficult problem sets for you to practice before exams. These will not be graded, but it is important you try your hand at solving them and ask me for help if you can't do them. The quantitative portion of your exams will contain very similar problems. Exams will be a combination of multiple choice/true and false/fill in the blanks questions plus one or two quantitative problems.

And finally...remember that this is a graduate level class! I will treat you as mature adults who genuinely want to learn something. Understand the rules of the game and remember that your thirst for knowledge and seriousness will directly affect my state of mind, which in turn will affect your experience. My personal opinion is that game theory is the most "fun" part in Economics. It is not always easy, but with enough work it can be rewarding. Stay engaged and participate in discussions. Also open up your own discussion, whenever you think of an issue that you think is relevant. This is highly encouraged and very valuable to your experience in this course.

Other Disclaimers and University Policies:

Academic Integrity: All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

Absences on Religious Holy Days: Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Section 51.911 (a) (2) defines a religious holy day as: "a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20". A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/861001.pdf>

Students with Disabilities: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired. SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dotAsset/7ff819c3-39f3-491d-b688-db5a330ced92.pdf>

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

Student Evaluations: Student evaluations of this course play a crucial role in my delivery. This semester, all course evaluations will be administered online during the last two weeks of the course. You will receive an email with a link to the website with directions on how to access the survey. It is vitally important that you complete the survey as I use the results to modify the course and assess my teaching and the University uses the results to address technology and facility needs. You can be assured that your responses will be confidential as the results will be transmitted to me after the grading period and they will not include any identifying information.

Keys for Success:

- Know the rules! Count on the rules! There will be no deviation from the rules!
- Be serious! Set goals early and often, do your best to achieve them, and (if you fail) figure out why you failed!
- Work as much as YOU need to! There is no universal number of hours worked that will translate to success. It depends on your goals and each personal situation. Just be honest with yourself!
- Don't be afraid to ask for help! I'm here to facilitate your learning, but please understand that I'm only half of the equation. Do the work and let me know early if you're struggling.