Political Science W135 Game Theory in Social Sciences

Four (4) semester credits

Course Description

Social science deals with the behavior of individuals in settings of collective or group choice. The best course of action for any individual to take in such settings generally depends on the course of action taken by others with whom they interact. For instance, the best strategy by a candidate in an election campaign might depend on the strategy adopted by other candidates. The best approach for achieving gains in a peace settlement for one nation-state depends on how other nation-states will react. Game theory is the analysis of decision making in situations where one individual's best action depends on the actions taken by other individuals. This course provides a relatively non-technical introduction to game theory and its application in social science, especially political science.

The purposes of the course are to give students a sense of the field of game theory and how political scientists use it in making arguments about how government and politics work, to develop students' intuition about strategic situations in everyday life, and to develop students' analytical capabilities generally.

The course is highly cumulative. It becomes increasingly difficult to perform well in later weeks, if one has not mastered the earlier weeks, as the course moves on.

Prerequisites

Required background: The course requires (and helps develop) the ability to think abstractly and to read formal expressions. These abilities are often correlated with mathematical ability. That said, the actual level of mathematics required in the course is relatively light. Students must be conversant with high school algebra. Basic ideas in probability are helpful but not strictly required.

Course Objectives

Upon completion of the course, students will be able to:

- depict social situations as simple game theoretic models
- analyze those models to understand how the behaviors of the individuals involved are mutually reinforcing

Instructor Information, Contact, Office Hours, & Communication

Course Instructor
Prof. Sean Gailmard

Graduate Student Instructor (GSI)
Shinhye Choi

While the instructor will interact with the whole class and will oversee all activities and grading, as well as being available to resolve any issues that may arise, the GSI will be your main point of contact. Your GSI is responsible for assisting you directly with your questions about assignments and course requirements, as outlined in the Assignments and Calendar.

Office Hours

The course instructor and GSIs will offer office hours using the web conference software called Zoom. Refer to "Office Hours" page in the left navigation bar for more information about Zoom and detailed schedule. The session will be for one hour. However, if no one shows up in the first 15 minutes, then that office hour will be cancelled. No points are awarded for participation. You can attend any session.

Professor Gailmard will hold Office Hours on Mondays from 3-4

GSI Shinhye Choi will hold Office Hours on Wednesdays from 4:30-6:30

Course Mail

Make sure to check the Course Mail for messages from the instructor. You can access course email within the Learning Management System by clicking on the Inbox link on the Corner Help toolbar (see also Canvas Overview Video) or choose to have your course mail forwarded to your personal email account or your cell phone.

Question & Answer Forum

Please use this forum to post questions about the course material, assignments, the learning management system or online homework. The instructor/GSIs will monitor this forum, but you should also feel free to post answers to help other students. This helps to create a general FAQ so that all students in the course may benefit from the exchange.

Course Materials and Technical Requirements

Required Materials

Harrington, Joseph E. (2015). *Games, Strategies, and Decision Making 2nd ed*. Worth Publishers ISBN 978-1-4292-3996-7

Connect from off campus

If you connect to the Internet through the UC Berkeley network (in a campus office, dorm, etc. or via AirBears2), you should be able to access all library resources.

If you connect to the Internet through CalVisitor, you will not be able to access licensed library resources, use the Library Proxy Server, or use the campus VPN client to access licensed library resources.

If you are off campus, UC Berkeley students, faculty and staff may access UCB Only materials via:

Library Proxy Server
Configure a browser or iOS device to access licensed article databases, eBooks and eJournals. Android devices should be configured to use the campus VPN client.

VPN (Virtual Private Network)
Download the campus VPN client to access licensed article databases, eBooks and eJournals.

Technical Requirements

This course is built on a Learning Management system (LMS) called Canvas and you will need to meet these computer specifications to participate within this online platform.

Optional

Canvas allows you to record audio or video files of yourself and upload them in the course. Although doing so is not required for any of the activities, using these features will enhance your engagement in the course. If you would like to use these features, you will need to have a webcam and a microphone installed on your computer.

Technical Support

If you are having technical difficulties please alert one of the GSIs immediately. However, understand that neither the GSIs, nor the professor can assist you with technical problems. You must call or email tech support and make sure you resolve any issues immediately. Be sure to document (save emails and transaction numbers) for all interactions with tech support. Extensions and late submissions will not be accepted due to “technical difficulties”.

Learning Activities

You are expected to fully participate in all the course activities described here.

- Read the assigned textbook pages
- Watch and listen to the lecture presentations
- Read web-based announcements and postings during the course
- Complete assignments and Final Exam

Sequencing

The course is divided into "Weeks”, each covering specific topics in game theory. Each week is structured to help you understand a different part of the field of game theory and help you learn different skills in analyzing strategic situations. The course is highly cumulative. It becomes increasingly difficult to perform well in later weeks, if one has not mastered the earlier weeks, as the course moves on.

For an at-a-glance view of due dates and projects, refer to the course Calendar.

Reading Assignments

Each module includes assigned readings relevant to each topic covered in that module.

Multimedia Lectures

Recorded lectures support your readings and assignments but also contain additional material that may be included in the exams. Each lecture has been broken into sections. You are expected to take notes while viewing the lectures as you would in a regular classroom. You may also choose to print a handout of the slides that are provided in PDF format.

Quizzes

Each Week (except for Week 3) includes a quiz that must be completed and submitted by Sunday 11:59 pm (PDT). Refer to the calendar below for all due dates. You will be able to download the quiz in PDF format at the beginning of each Week. You are encouraged to think about the quiz contents as you watch the lectures. You may take each quiz only once. Late submission is not allowed.

* You are required to upload your answers as .pdf file. (There's no text entry box in the quiz page.) You can either a. Scan or take a picture of your hand-written answers on paper or b. Create a document digitally and save it as .pdf. We do this because some questions require you to write down complex game matrix or game tree.

There are several free smartphone apps to convert .jpg/.png to .pdf such as Genius Scan or PDF Converter Pro.

Practice Quizzes

Each Week include multiple Practice Quizzes. Practice quizzes are based on exercises from the textbook. Your answer is not going to be evaluated for its accuracy in detail. You will earn a participation point by submitting your answers, but no point will be awarded for the works that show obvious lack of reasonable effort (each question is attempted, and the appropriate analytical tool from the text/lecture is applied to answer it). Practice Quizzes are due on Thursday at 11:59 pm (PDT) in the week. You will not receive individual feedback but the answers will be posted on the Announcements page by Friday at 10am (PDT). You may take each Practice Quiz only once and late submission is not allowed.

* You are required to upload your answers as .pdf file. (There's no text entry box in the quiz page.) You can either a. Scan or take a picture of your hand-written answers on paper or b. Create a document digitally and save it as .pdf. We do this because some questions require you to write down complex game matrix or game tree.

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Final Exam

The exam format will be similar to that of the quizzes. It is comprehensive over all course material. You must pass the final exam with a score of at least 60% to pass the course. There will be no make-up exam. Students must take the final examination in person or possibly arrange to have the examination proctored if you cannot come to campus. Review the Proctor Info on the left navigation menu. Off-site proctor applications must be submitted prior to July 14th, 2017 11:59PM (PDT) .

This year's final exam will be held on Friday, August 11th 2017, from 1 to 4 pm (PDT) on campus. If you miss taking the final or try to take it in a manner for which you have not received permission, you will fail this class automatically.

Reminder: Your Course End Date

Your course will end on Friday, August 11th 2017 at 11:59 pm (PDT). As you work through the course, please keep the end date in mind, and if you want to save any commentary or assignments for future reference, please make sure to print or copy/paste those materials before your access ends.

Grading and Course Policies

Your final course grade will be calculated as follows:

Final Grade Percentages

Category	Percentage of Grade
Quiz (6)	60%
Final Exam	30%
Practice Quiz (18)	10%

It is important to note that not all components are graded online and included in the online course grade book. Because of this, the online course grade book will not display your overall course grade at any given time or your final grade. It should simply be used to assess your performance on the components that are included within it. Your final letter grade will be mailed to you by the registrar's office.

All the Quizzes and Final Exam will be scored on a 100 point scale. You must receive a score of at least 60% on the final exam in order to pass the course. No quizzes or assignments will be dropped from the final grade.

An A is 90% or above, B is 80% or above, C is 70% or above, D is 60% or above, and F is below 60%. A+ or A - designation is made for scores in the top and bottom 2% of each range, respectively. A+ is a possible grade but is reserved for students whose performance is all-around exceptional; thus the determination of A+ is not strictly numerical and it is possible to score 100% and not receive an A+. In practice about 1-2% of the class typically receives an A+.

Class participation grades are based on completion of practice quizzes. Practice quizzes are based on exercises from the textbook. The GSIs will check whether you completed the practice quizzes with reasonable effort or not. They will not evaluate answers to these questions for accuracy in detail. The share of the 10% participation score you earn for the class will be equal to the share of practice quizzes that you complete with a satisfactory mark.

Late Work Policy

Please note that late submission is not allowed in this course.

Course Policies

Promptness

Quizzes and Practice Quizzes have specific final due dates and times. You will not receive full credit if assignments are submitted after the indicated due date.

Further, each online activity must be submitted through the course website by the due date. Fax or mail submission will not be accepted. Students who wait until the final hours prior to a submission deadline risk having problems with their ISP, hardware, software, or various other site access difficulties. Therefore, it is advisable to submit assignments and tests through the course website early. Students should plan accordingly and get into the habit of checking the course website several times each week, and submitting and posting early.

Honor Code

The student community at UC Berkeley has adopted the following Honor Code: "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The expectation is that you will adhere to this code.

Collaboration and Independence

Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, homework assignments and the online exam are to be completed independently and materials submitted as homework should be the result of one's own independent work.

Cheating

Academic dishonesty of any kind, will not be tolerated. The professor has turned in a number of students for cheating on problem sets in the past. A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. Anyone caught cheating on a quiz or exam in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct. Exams are to be completed without the assistance of other people, and without reference to texts, notes, and other materials. The expectation is that you will be honest in the taking of exams.

Plagiarism

To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action.

Academic Integrity and Ethics

Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing - furthering knowledge for the benefit of humanity.

Students with Disabilities

Any students requiring course accommodations due to a physical, emotional, or learning disability must contact the Disabled Students' Program (DSP). They will review all requests on an individual basis.

Request your Disabled Student Program Specialist to send the instructor a formal request before the official course start date by email. In addition, notify the instructor and your Online Learning Support Specialist, which accommodations you would like to use.
Your Online Learning Support Specialist is Tracie Allen, contact her via email at: onlinesupport@berkeley.edu

End of Course Evaluation

Before your course end date, please take a few minutes to participate in our Course Evaluation to share your opinions about this course. You will be receiving the Course Evaluation via email. The evaluation does not request any personal information, and your responses will remain strictly confidential. You may only take the evaluation once. It will close August 11th, 2017 PST.