Course Syllabus
ECON 8311– Advanced Microeconomics II
Fall Semester, 2017
3.0 Credit Hours

Instructor: Carmen Astorino-Figari, PhD
Office: FCBE 427
Office Hours: By Appointment
E-mail: cmstrnfg@memphis.edu
Class: W 5:30 – 8:30 pm, at 264 FCB
Course URL: eCourseware (opens in new window)

Course Overview:
This class is a game theory course that covers simultaneous-move and sequential-move games, both in one-shot and repeated interactions, in in settings of complete and incomplete information. We will study the relevant equilibrium concepts, their corresponding equilibrium refinements, and their applications to microeconomic theory. For these topics, we will develop an intuitive and mathematical approach.

Pre-Requisites/Co-Requisites:
The course contains material and approaches targeted at those having substantial exposure to microeconomic theory. In particular, this course will build on the brief introduction to game theory developed in ECON 7300 (Economic Theory and Decisions). I will assume that everyone has a certain level of mathematical maturity, meaning that you are comfortable with (or willing to accommodate) mathematical notation and argument. We will employ tools of an undergraduate calculus sequence. It is crucial that if you lack such skills, you consult the instructor as soon as possible. It is also strongly suggested that students have taken ECON 6810 (Quantitative Economic Analysis) and ECON 7300 (Economic Theory and Decisions). See college catalog or Ph.D. handbook (opens in new window) for more information.

Recommended Texts (and Related Materials):
• Game Theory for Applied Economists by Robert Gibbons, ISBN 9780691003955
Location of Course Materials:

The primary source of material in this course will be your class notes. Problem sets, their solutions, as well as the grade book are located on the eCourseware website (opens in new window).

Course Objectives:

By successfully completing this course, students will be able to:

- Identify more complex strategic situations and represent them formally as games.
- Understand different types of strategies and their properties.
- Understand and implement solution concepts for one-shot games.
- Understand the notation and modelling of sequential games.
- Understand the difference between perfect information and imperfect information games and their representations.
- Understand and implement solution concepts for sequential games, and the relevant equilibrium refinements.
- Understand the modelling of finitely repeated games.
- Understand the modelling of infinitely repeated games and the interpretation of discount factors.
- Understand the different implications of finite vs. infinite repetition of stage games in terms of equilibrium outcomes.
- Understand the notation and modelling of incomplete information games.
- Understand and implement solution concepts for incomplete information games, and the relevant equilibrium refinements.
- Apply game theory to the analysis of price and quantity competition in oligopolies.
- Understand the modeling of adverse selection problems using game theory.
- Understand the modeling of moral hazard problems using game theory.
- Understand the role of signaling in incomplete information games.
- Understand the motivation behind mechanism design in the context of the above applications.

Fogelman College: Learning Outcomes for Your Degree

This course is designed to help you to meet the overall learning objectives for the MA/PhD degree offered by the Fogelman College. You should take the time to become familiar with the overall learning objectives as a student your respective program.

- MA in Economics Program Outcomes (opens in new window)
- PhD Program Outcomes (opens in new window)

Grading and Evaluation Criteria

This section of the syllabus describes the assessed work you will be doing and how overall (final) letter grades will be computed.
Final Course Grades

Final course grades are earned according to the following table:

<table>
<thead>
<tr>
<th>Point Range</th>
<th>Assigned Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100 Points</td>
<td>A</td>
</tr>
<tr>
<td>80-90 Points</td>
<td>B</td>
</tr>
<tr>
<td>70-80 Points</td>
<td>C</td>
</tr>
<tr>
<td>60-70 Points</td>
<td>D</td>
</tr>
<tr>
<td>Under 60 Points</td>
<td>F</td>
</tr>
</tbody>
</table>

Summary of Graded Activities

Both the midterm and the final exams will be in class and closed book, meaning that you may not consult the text, your notes, or any other material, nor may you communicate with each other while taking them. These exams will be based primarily on homework and class notes (rather than on the text or supplemental reading).

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Date</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>October 11</td>
<td>50%</td>
</tr>
<tr>
<td>Final</td>
<td>December 13</td>
<td>50%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

I will not offer a makeup exam. Valid excuses for missing the exam include a verified illness or special family circumstances (e.g. death of a member of the immediate family). To be excused from the exam, you must notify me via university email before the exam begins. If you are excused, your course grade will then depend on your homework grade and on your performance on the other exam.

The homework, which will be posted on the class website, will consist of 4 problem sets. You are not required to turn in these problem sets, meaning that these will NOT be graded. It is your responsibility to do the work and to have them finished by the due date. Solutions will be posted on the class website on the due date. It is your responsibility to correct your own work. These problems are designed to challenge and may be time intensive. Their purpose is to be a learning tool by which you assess your own understanding of the course material, and therefore, your level of preparedness for the exams.

On homework (and exams), focus on the completeness, clarity and logical structure of your solutions. You must provide a written answer to each question; numbers or calculations with no explanation will not be satisfactory. In other words, your answers should not only directly answer the question, but also provide to a reader an explanation of how you arrived at that answer. As is usually the case in graduate school, you are encouraged to work together.
However, each student must turn in his or her own write-up of the solutions in a timely manner. Failure to do so will result in a loss of credit.

Tentative due dates are the following:

<table>
<thead>
<tr>
<th>Problem Set</th>
<th>Tentative “Due” Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 20</td>
</tr>
<tr>
<td>2</td>
<td>Oct 4</td>
</tr>
<tr>
<td>3</td>
<td>Nov 15</td>
</tr>
<tr>
<td>4</td>
<td>Dec 6</td>
</tr>
</tbody>
</table>

Course Topics:

1. Static Games of Complete Information
2. Dynamic Games of Complete Information
3. Static Games of Incomplete Information
4. Dynamic Games of Incomplete Information
5. Assorted Topics: Bargaining, Adverse Selection, etc. (time contingent)
6. Overview of Mechanism Design

Final Exam Schedule

The final exam for this class will be scheduled according to the Registrar’s academic calendar website (opens in new window).

Course Policies

E-MAIL:

All students are required to maintain and access their University of Memphis (@memphis.edu) email account. You will receive all official course correspondence at this email account. Any inability to receive incoming mail in a timely fashion (e.g., not regularly checking your email, having a “full mailbox” condition, etc.) is the student’s responsibility.

Attendance:

As this is a graduate class, the assumption is that you all have the drive and intention to attend all class lectures. Thus, formal attendance will not be taken. Your full engagement in the class begins on the first day of the semester and should be maintained until the last assignment is submitted. For students receiving funding, any lack of engagement in the course may
potentially impact access to funding in the future. Students are responsible for all the material covered in class, even if they are unable to attend.

**Adding / Dropping:**

If you have questions about adding or dropping classes, please refer to this page on the Registrar’s website (opens in new window).

**Academic Integrity:**

The University of Memphis has clear codes regarding cheating and classroom misconduct. If interested, you may refer to the Student Handbook section on academic misconduct for a discussion of these codes. Note that using a “Solutions Manual” is considered cheating. Should your professor have evidence that using a “Solutions Manual” has occurred, he/she may take steps as described on the campus’ Office of Student Conduct website (opens in new window). If you have any questions about academic integrity or plagiarism, you are strongly encouraged to review the Fogelman College's Website on Academic Integrity (opens in new window).

**Inclement Weather:**

In the event that inclement weather requires the cancellation of classes at The University of Memphis, local radio and television media will be immediately notified. Additionally, The University of Memphis has established an Inclement Weather Hotline at 678-0888 as well as TigerText (opens in new window), an emergency alert text messaging service to students, faculty and staff. This optional service is used in the event of an on-campus emergency, an unscheduled university closing, or a delay or cancellation of classes due to, for instance, inclement weather. Additional information on TigerText (opens in new window).

**Syllabus Changes:**

The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor will immediately notify students of such changes both by individual email communication and posting both notification and nature of change(s) on the course bulletin board.

**Student Services**

Please access the FCBE Student Services (opens in new window) page for information about:

- Students with Disabilities
- Tutoring and other Academic Assistance
- Advising Services for Fogelman Students
- Technical Assistance