Course Syllabus
ECON 4810 – Quantitative Economic Analysis
Fall Semester, 2015
3.0 Credit Hours

Instructor: Dr. Jamin D. Speer
Phone: 901.678.1192
E-mail: jspeer@memphis.edu
Office: FAB 413

Class meeting times: Tuesday/Thursday, 9:40-11:05 am, FCB 370
Office Hours: Tuesdays, 2:15-4:00 pm, or by appointment

Course Overview:

This course provides an introduction to the application of mathematical tools in economics and business. We will examine and/or review important concepts, including matrix algebra, differential and integral calculus, optimization with and without constraints, comparative statics, dynamic analysis, differential equations, and game theory. We will focus on application of these concepts to economic problems. Some of this material will be familiar to you, while some of it you may have forgotten or not seen before.

Pre-Requisites/Co-Requisites:

This course is intended for graduate students and advanced undergraduates. If you are an undergraduate, you are required to have taken Econ 2010 and Econ 2020 before taking this course. As this is largely a math class, the most important background is familiarity with basic calculus. You are likely to struggle in this course if you have not had calculus, or if you do not remember what you learned in calculus.

Required Texts (and Related Materials):

*Fundamental Methods of Mathematical Economics, by Alpha Chiang and Kevin Wainwright (4th edition)*
Location of Course Materials:
I will regularly post class materials (homework assignments, announcements, exam solutions, etc.) on the eCourseware website. Please check it regularly.

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

1. Perform important set operations.
2. Maximize functions of one or more variables.
3. Maximize functions of one or more variables when there exist one or more constraints.
5. Define important concepts including sets, intersections, unions, and real numbers.
6. Solve basic problems of integration.

Fogelman College: Learning Outcomes for Your Degree
This course is designed to help you to meet the overall learning objectives for the BBA degree offered by the Fogelman College. You should take the time to become familiar with the overall learning objectives as a student in the BBA program:

- [http://www.fcbeassessment.net/LearningOutcomes/BBADegreeLearningOutcomes.pdf](http://www.fcbeassessment.net/LearningOutcomes/BBADegreeLearningOutcomes.pdf)

Grading and Evaluation Criteria
Your grade will be based on a mixture of assignments, exams, and attendance, as described below.

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</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-70</td>
<td>D</td>
</tr>
<tr>
<td>Under 60</td>
<td>F</td>
</tr>
</tbody>
</table>
I reserve the right to give “pluses” and “minuses” in accordance with this grading scheme, at my own discretion. For example, a grade of 91 might merit a grade of A-minus.

**Summary of Graded Activities**

Points earned on the assessed activities will be distributed as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>% of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Sets</td>
<td>35</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>30</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>5</td>
</tr>
</tbody>
</table>

You are expected to **attend and participate** in class. This essentially means: 1) show up to class regularly (an absence here and there is okay, but you should not make it a habit), 2) pay attention (no texting, facebook, etc.) and 3) be willing to answer questions or work on the board when asked. If you need to miss more than a couple of classes for some reason, please talk to me.

There will be 6 **problem sets** based on lecture material and the textbook. You may work together, but all students are required to turn in their own work. If this requirement is not followed, credit will not be given.

There will be a **midterm exam** held in class halfway through the course. All material covered in the book, lectures, and problem sets will be fair game.

Finally, there will be a **final exam**, which will be cumulative but will focus more heavily on the second half of the course.

**Important Dates**

(Dates are subject to change, through class announcements)

- September 17: Problem set 1 due
- October 1: Problem set 2 due
- October 15: Problem set 3 due
- October 22: Midterm exam
- November 5: Problem set 4 due
- November 19: Problem set 5 due
- December 5: Problem set 6 due
- December 8: Final exam

**Final Exam Schedule**

The final exam for this class will be Tuesday, December 8, at 10:30 am in the regular class meeting room.
Course Topics:
Set theory and functions (~1 week)
Matrices and matrix algebra (~4-5 weeks)
Derivatives (~1 week)
Logarithms and exponential functions (~1 week)
Unconstrained optimization (~2 weeks)
Constrained optimization (~2 weeks)
Integration and differential equations (~1 week)
Dynamic analysis and Bellman equations (if time permits)

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.

Computers:
You may not use a laptop during class. This is for several reasons. First, the material will be hand-written on the board, and you will want to take notes by hand. Second, studies show that students who take notes by hand do significantly better in class than those who use laptops. Third, computers are distracting to students around you. You may bring a laptop, but I expect it to be turned off by the time class begins.

Attendance:
Although I will not take formal attendance, I expect you to be in class every time we meet. Based on past teaching of this course, I can tell you that students who miss class perform significantly worse than students who attend regularly. Your general attendance and participation in class will factor into your grade (see grading section of this syllabus).

Adding / Dropping:
If you have questions about adding or dropping classes, please refer to this page on the Registrar’s website.

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. If you have
any questions about academic integrity or plagiarism, you are strongly encouraged to review the Fogelman College’s Website on Academic Integrity.

**Participation:**

To be successful in this course as a student, you must stay active and involved throughout the entire semester. This involves showing up to class, asking questions when needed, and answering questions when called upon.

**Classroom Behavior:**

All participants in the course should be considerate of the other course participants and treat them with respect. This involves, among other things, not talking while instruction is taking place. If you disrupt class, I will ask you to leave.

**Late Assignments:**

Assignments will only receive full credit if turned in by the due date specified by the professor. The only exception to this policy will be for official school-approved absences (school athletics, etc.) or in other *extreme* cases. The definition of “extreme” is at the discretion of the professor. If you feel that you have a reason to turn in late work that should qualify, please come talk to me. Problem sets turned in within a week of the due date will receive half credit at most.

**Extra Credit:**

I do not plan to offer extra credit in this course. Your final grade will be computed based on your work on the formal/assessed activities previously described in this syllabus. However, individual assignments and exams may offer extra credit in the form of bonus questions or more than 100 points being possible.

**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, 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. Click [Here](#) for information on TigerText.

**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 in class and by posting on ECourseware.

**Student Services**

Please access the [FCBE Student Services](#) page for information about:
- Students with Disabilities
- Tutoring and other Academic Assistance
- Advising Services for Fogelman Students
- Technical Assistance