Course Syllabus
Econ 4810/6810 – Quantitative Economic Analysis
Fall Semester, 2020
3.0 Credit Hours

Professor: Dr. Jamin D. Speer
E-mail: jspeer@memphis.edu

***** SEE INFORMATION ABOUT CLASS FORMAT BELOW*****

Office Hours: Held via Zoom. Email me at jspeer@memphis.edu for an appointment.

University COVID information: https://www.memphis.edu/fcbe/faculty/covid_19_notice.php

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.

Course Format
This course will be an online course. The main material will be delivered through recorded lectures, uploaded to Ecourseware.

The university may allow students to return to campus later this semester. This course will remain online for the whole semester even if this occurs.

****Important****

From 9:40-11:05 am on Thursdays, I will conduct a “live” online class via Zoom where we will go over examples and I can answer any questions you have. I expect you to watch the lecture
videos before attending the Thursday live class. Attendance at this live class is encourage, but not required.

Here is the link to the Thursday live classes:

https://memphis.zoom.us/j/97951780989?pwd=LytJaXJSbk9QaS8rUmF5T0NZVIFudz09

Meeting ID: 979 5178 0989

Passcode: quant

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:

Course information, such as the syllabus and exam grades will be available via ecourseware. Weekly quizzes will also sometimes be given on ecourseware (and sometimes in class).

Hardware and Software Requirements

The minimum requirements can be found at https://www.memphis.edu/uofmglobal/services/technology/requirements.php opens in new window

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>Homeworks</td>
<td>50</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25</td>
</tr>
<tr>
<td>Introduce Yourself (Discussion)</td>
<td>5</td>
</tr>
</tbody>
</table>

There will be ~6 Homeworks 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. Homeworks count for 50% of your grade.

There will be a midterm exam that is a take-home exam. All material covered in the book, lectures, and Homeworks will be fair game. I will give more details about how we will take this exam as the date gets closer.

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

Together, the exams count for 45% of your grade.

Important Dates
Final Exam Schedule

The final exam for this class will be sometime the week of November 23. It will be a take-home exam.

Course Topics:
Set theory and functions (~2 weeks)
Derivatives (~1 week)
Logarithms and exponential functions (~1 week)
Unconstrained optimization (~2 weeks)
Constrained optimization (~2 weeks)
Matrices and matrix algebra (~3-4 weeks)
Integration and differential equations (if time permits)

Guidelines for Submitting Homework
Submit all homework assignments to the appropriate Dropbox folders on Ecourseware. Submit as one single document (not several pictures). The best way to do this is to scan the pages of your homework into a single pdf (I use Camscanner on my iPhone).

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

Please see learning objectives for your degree at this website:


Professor’s Expectations of Students:

I do expect you to keep up with all class materials online (lectures, quizzes, etc.). If you choose to come to the in-person class times, I expect you to arrive on time and pay attention.

Student’s Expectations of the Professor:

In my role as your instructor, there are certain things you can expect from me including: well-organized and engaging learning experience, response to emails within two (2) business days or as quickly as possible, and feedback on all work submitted as quickly as possible.

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:

Attendance at the live online classes is encouraged, but not required.

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.
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. Homeworks 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 the LiveSafe app. Here is information regarding LiveSafe:
For Apple iOS instructions, visit http://www.memphis.edu/police/pdf/uofm-livesafe-onboarding-ios.pdf

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 Health
Students who have a positive COVID-19 test should contact the Dean of Students at deanofstudents@memphis.edu.

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