ECON 5305: Applied Mathematical Economics (ONLINE)
CRN: 19411
Fall 2020

Professor Daniel Pastor
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Office hours: Virtually via Blackboard Collaborate Ultra, W 5-6 pm MT

Course Information: What this class is about and what we will do

COURSE DESCRIPTION

The course is required for the Master’s of Science in Economics program. Students must pass this course with a B or better in order to continue in the program.

This is a course in mathematical methods for economists. It is expected that students have taken calculus and are comfortable with derivatives, as well as intermediate economic theory. The language of mathematics will be used to describe situations that occur in economics, finance, and business. Mathematical modeling is an important tool in economics, finance, business, and management. Mathematics enables us to solve problems that cannot be effectively solved in other ways.

COURSE OBJECTIVES OR EXPECTED LEARNING OUTCOMES

At the end of this course, students will be able to:

- Understand mathematical models as they relate to Economic problems
- Solve linear systems of equations using matrix algebra
- Perform comparative static analysis
- Apply optimization to economic problems

LEARNING MODULES

This course is designed using a modular format—that is, each week is “packaged” as a single module so that all the materials and lecture notes are in one area for a given week. Each module will be available on the Blackboard home page for this course.

REQUIRED MATERIALS


COURSE ASSIGNMENTS AND GRADING

Assignments for this course are assessed according to rubrics. You can find these rubrics by clicking on the appropriate assignment link in Blackboard and choosing to “View Rubric” from the button beneath the Points Possible for the assignment.
Grade Distribution:

- 100-90 = A
- 89-80 = B
- 79-70 = C
- 69-60 = D
- 59 and Below = F

- Problem Sets: 30%
- Midterm: 35%
- Final Exam: 35%

Evaluation Criteria: There are no exceptions to the grading policy. I sympathize with students who are close to the cutoff for the next higher grade; however, it is unfair to others to give special consideration to any student.

Problem Sets: There will be problems assigned each week. The problems are to be used to check your understanding of the material and to help you work through some of the technical issues in this course. The assignments will be available on Blackboard and must be submitted in Blackboard. Homework is due each Sunday night at midnight. Late problems sets will not be accepted.

I strongly urge the students to use all the problems as preparation for the exams. Mathematics cannot be learned passively and the problem sets are a part of active learning.

Exams: There will be two exams: One midterm and one final. You will be given 24 hours to complete each exam and it must be submitted to Blackboard. Due to its comprehensive nature, the final exam requires the students to have knowledge from previous chapters. Mathematics is cumulative by nature, and the final exam is cumulative as well. If you get behind or have difficulty early on, do not delay getting help or you will have more difficulty as the course proceeds. Because this class is online, the exams will be open book. Do not let the open book nature of the exams lead you into complacency. This material can only be mastered through ongoing practice and study.

TECHNOLOGY REQUIREMENTS

Course content is delivered via the Internet through the Blackboard learning management system. Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Google Chrome and Mozilla Firefox are the best browsers for Blackboard; other browsers may cause complications. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have access to a computer/laptop and a scanner. Optional items are a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, Adobe Acrobat Reader, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

If you do not have word-processing software, you can download Word and other Microsoft Office programs (including Excel, PowerPoint, Outlook and more) for free via UTEP’s Microsoft Office Portal. Click the following link for more information about Microsoft Office 365 and follow the instructions.
IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk as they are trained specifically in assisting with technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

**Course Communication: How we will stay in contact with each other**

Because this is an online class, we won’t see each other in the ways you may be accustomed to: during class time, small group meetings, and office hours. However, there are a number of ways we can keep the communication channels open:

- **Office Hours**: We will not be able to meet on campus, but I will still have office hours for your questions and comments about the course. My office hours will be held on Blackboard Collaborate during the following times:

  Wednesdays: 5-6 pm. Mountain Time

- **Email**: UTEP e-mail is the best way to contact me. I will make every attempt to respond to your e-mail within 24-48 hours of receipt. When e-mailing me, be sure to email from your UTEP student account and please put the course number in the subject line. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name, and your university identification number.

- **Announcements**: Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

**NETIQUETTE**

As we know, sometimes communication online can be challenging. It’s possible to miscommunicate what we mean or to misunderstand what our classmates mean given the lack of body language and immediate feedback. Therefore, please keep these netiquette (network etiquette) guidelines in mind. Failure to observe them may result in disciplinary action.

- Always consider audience. This is a college-level course; therefore, all communication should reflect polite consideration of other’s ideas.

- Respect and courtesy must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.

- When reacting to someone else’s message, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.

- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space.
**Course Policies:** What do you need to do to be successful in the course

**EXCUSED ABSENCES AND/OR COURSE DROP POLICY**

I will not drop you from the course. However, if you feel that you are unable to complete the course successfully, please let me know and then contact the Registrar’s Office to initiate the drop process. If you do not, you are at risk of receiving an “F” for the course.

**DEADLINES, LATE WORK, AND ABSENCE POLICY**

**Homework**

- Homework assignments will be due on Sundays at midnight (11:59 PM Mountain Time) and is to be submitted to Blackboard. No late work will be accepted if the reason is not considered excusable.

**MAKE-UP WORK**

Make-up work will be given only in the case of a documented emergency. Note that make-up work may be in a different format than the original work, may require more intensive preparation, and may be graded with penalty points. If you miss an assignment and the reason is not considered excusable, you will receive a zero. It is therefore important to reach out to me—in advance if at all possible—and explain with proper documentation why you missed a given course requirement. Once a deadline has been established for make-up work, no further extensions or exceptions will be granted.

**ALTERNATIVE MEANS OF SUBMITTING WORK IN CASE OF TECHNICAL ISSUES**

I strongly suggest that you submit your work with plenty of time to spare in the event that you have a technical issue with the course website, network, and/or your computer. I also suggest you save all your work in a separate Word document as a back-up. This way, you will have evidence that you completed the work and will not lose credit. If you are experiencing difficulties submitting your work through the course website, please contact the UTEP Help Desk. You can email me your back-up document as a last resort and only after you have contacted the UTEP Help Desk.

**INCOMPLETE GRADE POLICY**

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

**ACCOMMODATIONS POLICY**

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance
with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the CASS portal.

**SCHOLASTIC INTEGRITY**

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as one's own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.

**CLASS RECORDINGS**

The use of recordings will enable you to have access to class lectures. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP’s acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action.

**COPYRIGHT STATEMENT FOR COURSE MATERIALS**

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

**COVID-19 Accommodations**

Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.
COVID-19 PRECAUTIONS

You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDAction@utep.edu.

For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures.

Course Resources: Where you can go for assistance

UTEP provides a variety of student services and support:

Technology Resources
- **Help Desk**: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

Academic Resources
- **UTEP Library**: Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- **University Writing Center (UWC)**: Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- **Math Tutoring Center (MaRCS)**: Ask a tutor for help and explore other available math resources.

Individual Resources
- **Military Student Success Center**: Assists personnel in any branch of service to reach their educational goals.
- **Center for Accommodations and Support Services**: Assists students with ADA-related accommodations for coursework, housing, and internships.
• **Counseling and Psychological Services**: Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.
Weekly Calendar (Subject to Change)

This calendar provides an overview of the course. The due date for assignments is ALWAYS Sunday at 11:59 PM (MST). No late work will be accepted.

KEY:
PS=Problem Set
Mid=Midterm
Bb=Blackboard
CW=Chiang-Wainwright

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<th>Week 1</th>
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<th>Readings Due</th>
<th>Assignments Due</th>
<th>Notes</th>
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<td>8/24-8/30</td>
<td>Class introduction, syllabus. Ch. 2</td>
<td>Review syllabus, Bb Chapter 2: 2.1, 2.3-2.6, CW</td>
<td>PS 1, Bb due 8/30</td>
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<td>Week 2</td>
<td>Ch. 3</td>
<td>Ch. 3: 3.2-3.5, CW</td>
<td>PS 2, Bb due 9/6</td>
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<td>8/31-9/6</td>
<td>Ch. 4: 4.1-4.3</td>
<td>Ch. 4: 4.1-4.3, CW</td>
<td>PS 3, Bb due 9/13</td>
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<td>Week 3</td>
<td>Ch. 4: 4.4-4.6</td>
<td>Ch. 4: 4.4-4.6, CW</td>
<td>PS 4, Bb due 9/20</td>
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<td>Ch. 5: 5.1-5.2</td>
<td>Ch. 5: 5.1-5.2, CW</td>
<td>PS 5, Bb due 9/27</td>
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<td>Week 4</td>
<td>Ch. 5: 5.3-5.5</td>
<td>Ch. 5: 5.3-5.5, CW</td>
<td>PS 6, Bb due 10/4</td>
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<td>9/13-9/20</td>
<td>Ch. 6</td>
<td>Ch. 6: 6.1-6.7, CW</td>
<td>PS 7, Bb due 10/11</td>
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<td>Week 5</td>
<td>Ch. 7</td>
<td>Ch. 7: 7.1-7.6, CW</td>
<td>PS 8, Bb due 10/18</td>
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<tr>
<td>9/21-9/27</td>
<td>Mid</td>
<td>None</td>
<td>Midterm Exam 24 hours to complete</td>
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<td>Week 6</td>
<td>Mid Wed. 10/21 starting at 10:00 am</td>
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<td>Week</td>
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<td>Week 10</td>
<td>Ch. 8</td>
<td>Ch. 8: 8.1-8.6, CW</td>
<td>PS 9, Bb due 11/1</td>
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<td>Week 11</td>
<td>Ch. 9</td>
<td>Ch. 9: 9.1-9.4, CW</td>
<td>PS 10, Bb due 11/8</td>
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<td>Week 12</td>
<td>Ch. 10</td>
<td>Ch. 10: 10.1-10.7, CW</td>
<td>PS 11, Bb due 11/15</td>
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<td>Week 13</td>
<td>Ch. 11: 11.1-11.3</td>
<td>Ch. 11: 11.1-11.3, CW</td>
<td>PS 12, Bb due 11/22</td>
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<td>Week 14</td>
<td>Ch. 11: 11.4-11.5</td>
<td>Ch. 11: 11.4-11.5, CW</td>
<td>None</td>
<td>Thanksgiving</td>
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<td>Week 15</td>
<td>Ch. 12</td>
<td>Ch. 12: 12.2, 12.3, 12.5, 12.6, CW</td>
<td>PS 13, Bb due 12/3</td>
<td>Final week of class, Final problem set includes chapter 12.</td>
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