Microeconomic Analysis

University of Maryland
Department of Economics
M.S. IN APPLIED ECONOMICS PROGRAM

Syllabus Fall 2025
ECON 641: Microeconomic Analysis **(online section)**
Instructor: Professor Filipe Lage de Sousa, PhD (flage@umd.edu)
Office Hours (via Zoom): Fridays from 5 pm to 6 pm, or by appointment

TA: Trishna Mohan (trishmoh@umd.edu)
TA Office Hours: Wednesdays from 5 pm to 6 pm, or by appointment

Online Program Coordinator: Herman Byrd (onlinemasters-econ@umd.edu)

Prerequisites:
Admission to the Master of Science Program in Applied Economics
Note: Admission requirements include a grade of B or better in an introductory calculus course.

Synchronous Online Class Meetings
Day/Time: Mondays 6:45 pm – 9:30 pm (with break) via Zoom.
It will be two 75-minute sessions with a 15-minute break

To join the Zoom meetings, you must log in to Zoom using your UMD credentials.
The link to the Zoom meeting is provided on the course ELMS/Canvas website.

Notes: The Math Quiz will be on **Monday, September 29th**
The Midterm Exam will be on **Monday, October 20th**
The Final Exam will be on **Monday, November 17th**

|General Description and Overview
This is a course in microeconomics, which focuses on scarcity and decision-making by individuals, firms, and governments. As we will see throughout the course, economics is a very broad field. This course aims to develop a deeper and more advanced understanding of economic principles and economic thinking. The value of this course lies in its application of the principles and logical framework of economics to various settings. As such, critical thinking skills will be stressed and rewarded rather than rote memorization and regurgitation.

Students will master microeconomic theory at a level of mathematical rigor befitting a STEM-designated Master of Science degree program in applied economics. The level of mathematical rigor will be higher than in a typical undergraduate intermediate microeconomics course, but much

lower than in the first year of a top 40" economics PhD program like the University of Maryland's. We will make extensive use of differential calculus. Students will apply microeconomic theory to a broad range of questions relevant to public policy.

Course Objectives

Our program has 7 general learning outcomes for students:

1. Ability to understand, evaluate, and analyze economic data

2: Ability to understand and interpret statistical evidence from economic data

3: Ability to apply empirical evidence to assess economic arguments

4: Ability to apply macroeconomic theories to policy discussions

5: Ability to apply microeconomic theories to policy discussions

6: Ability to communicate economic ideas to a broader audience

7: Ability to evaluate the effectiveness of policy programs using sound economic techniques

The learning outcomes that pertain to ECON 641 are 5, 6, and 7.

Course Website: Copies of the course syllabus, your grades, and other relevant links and documents will be posted on the course's ELMS/Canvas website. You can access the site via https://elms.umd.edu/. You will need to use your University of Maryland "directory ID" and password.

Email: The University has adopted email as the primary means of communication outside the classroom, and I will use it to inform you of important announcements. The University creates an "umd.edu" email address for every graduate student. All official UMD communications will be sent to students at their "umd.edu" email address. You are responsible for reading your @umd.edu email address, including ELMS/Canvas Announcements I sent to the class. You should make sure ELMS/Canvas Announcements and messages are forwarded to an email address that you check regularly. Failure to check emails, errors in forwarding emails, and returned emails due to "mailbox full" or "user unknown" will not excuse a student from missing announcements or deadlines.

I will do my best to respond to email within 36 hours. I prefer that you contact me via email at flage@umd.edu, rather than through the ELMS/Canvas messaging system, though I will reply to either kind of message.

Required Textbooks

Main Text: *Microeconomics: Theory and Applications with Calculus* by Jeffrey Perloff (P).

Any edition will work; don't pay more when you can pay less. Syllabus references will come from the 5th edition.

It is important you buy the version that has "with Calculus" in the title, as the non-calculus version is quite different in notation.

For students who would like additional texts to reference, recommendations are below:

Workouts in Microeconomic Theory by Bergstrom and Varian (available online here)

Microeconomic Theory: Basic Principles and Extensions by Nicholson and Snyder

There are many online calculus resources. A good place to start is Khan Academy.

Discussions during the semester will cover applications from the main textbook and from the following textbooks:

Intermediate Microeconomics and Its Application by Nicholson and Snyder

Microeconomics by Goolsbee, Levitt, and Syverson

Graded Course Components

There are 5 grade components to the course. The 5 components and their relative weights in the course grade are:

Math Quiz	10%
Homework	10%
Presentation	15%
Online Discussion	10%
Midterm Exam	20%
Final Exam	35%

Math Quiz (10 points)

A math assessment quiz will be given on September 29th and is worth 10% of the overall grade. Microeconomic theory relies heavily on a solid understanding of differential calculus and solving optimization problems. Students must be able to solve these problems to progress through the class. This quiz will help identify students who need to spend more time reviewing calculus and optimization, and those who are identified should plan to schedule additional math review sessions with the TA. Students are not permitted to discuss or work together on the math quiz.

Homework (10 points)

There will be homework assignments throughout the semester, always due on Mondays at 6:30 pm. Students will need to upload a PDF version of their assignments to ELMS. Homework assignments will count for 10% of the overall grade, but most importantly, they will be crucial in preparing for exams.

No extensions or makeup assignments will be given. I encourage you to work with your classmates, but make no mistakes - encouragement to work together does not imply that copying the work of others is acceptable. The answers you submit should be written entirely on your own.

Presentations (15 points)

Students will give a short 20-minute presentation at some point during the semester, either live or a pre-recorded presentation. I will ask students to provide their preferences for presentation week during the first week of class. I will then make a schedule of presentations and assign whether the presentation will be online or in class. Students will be able to work in pairs if they want. Presentations will use the textbook applications as a starting point to then discuss the cited research paper. For live presentations, a short discussion will follow with the audience (students) asking questions or commenting on the presentation. For prerecorded presentations, there will be a discussion post where every student is to provide a thoughtful written response. Details on the assignment will be provided on ELMS/Canvas. This grade will be based on the clarity and quality of the presentation, the presenter's ability to incorporate my pre-presentation feedback, the quality of slides, the inclusion of outside material, and the presenter's answers to questions posed during the presentation.

Online Discussions (10 points)

Every week, there will be an online discussion about a topic related to this class. The instructor and/or the Teaching Assistant will start the discussion, but students may also start one if, for example, he/she has read an article related to the material covered. Your grade in this online discussion will be based on your participation, clarity, and contribution

Midterm Exam (20 points)

The midterm exam will test everything covered in the course up to the last class.

Final Exam (35 points)

I will elaborate on an exam that I think students should be able to complete in 2 hours, though students are welcome to use 2 hours and 45 minutes from 6:45-9:30. The final exam will be cumulative.

The midterm and final exams will begin at 6:45 PM (see course schedule for dates). Both exams will be open-book and open-note, and students should be able to log in to Zoom and keep their

camera on until they submit their exams. I will virtually proctor the exams and be available to address clarifying questions during the exam. Students can use whatever notes they like, but communication with anyone else by any means is prohibited while taking an exam. Communication with anyone by phone, email, text message, online chat, AI software (such as ChatGPT), or any other means would be cheating. Students are advised to prepare a compact sheet or two of the most important formulas for quick reference. Students who spend too much time leafing through books will run out of time.

Final Course Letter Grades

At the end of the semester, I will add up each student's course points. This will be a number between 0 and 100. I do not grade on a curve. Numerical course grades will be translated into letter grades as follows:

93-100	90-92	80-89	70-79	60-69	50-59	40-49	30-39	20-29	10-19	0-9
A	A-	B+	B	B-	C+	C	C-	D+	D	F

At my discretion, I might (or might not) give an A+ to a student or two at the very top of the class's grade distribution.

Tentative Schedule

Revisions, if any, will be announced in class and by ELMS/Canvas Announcement

Except for where noted below, the class will meet on Monday evenings between September 2nd and November 21st.

1st Class
9/8: Meet each other and introduce the course
P Ch. 1: Introduction
P Ch. 2: Supply and Demand
P Appendix: Calculus

2nd Class: Friday
9/12: **P Ch. 3**: A Consumer's Constrained Choice (Utility and Optimal Choice)

3rd Class
9/15: **P Ch. 4**: Demand (Optimization and Derivation of Demand)
P Ch. 5: Consumer Welfare and Policy Analysis (Slutsky Decomposition)

4th Class
9/22: **P Ch. 16**: Uncertainty (Risk and Expected Utility)
1st Students' Presentation

5th Class
9/29: **P Ch. 6**: Firms and Production (Production and Profits)
Math Quiz

6th Class
10/6: **P Ch. 7**: Costs (Cost Minimization)
P Ch. 8: Competitive Firms & Markets (Competitive Supply)
2nd Students' Presentation

No Class
10/13: **Fall Break**

7th Class: Friday
10/17: P Ch. 11: Monopoly and Monopsony
P Ch. 12: Pricing and Advertising

8th Class
10/20: **Midterm Exam**

9th Class
10/27: **P Ch. 9**: Properties and Applications of the Competitive Model
P Ch. 10: General Equilibrium and Economic Welfare
3rd Students' Presentation

10th Class
11/03: **P Ch. 13**: Game Theory
P Ch. 14: Oligopoly and Monopolist Competition
4th Students' Presentation

11th Class
11/10: **P Ch. 17**: Property Rights, Externalities, Rivalry, and Exclusion
P Ch. 18: Asymmetric Information
P Ch. 19: Contracts and Moral Hazards
5th Students' Presentation

12th Class
11/17: **Final Exam**

UMD Grad School and Program-level policies

Policies related to all graduate courses at the University of Maryland are posted on this page of the Graduate School's website:

https://gradschool.umd.edu/faculty-and-staff/course-related-policies

Please familiarize yourself with these policies related to academic integrity, non-discrimination policy, accessibility, absences and accommodations, grading, academic standing, grievance procedures, and other important policies.

Contact Hours: Three credit master's-level courses at the University of Maryland require a minimum amount of contact between instructors and students. Our courses' 12 weekly meetings only satisfy 80% of the university's contact requirement. The other 20% are satisfied with the weekly mandatory and graded online contact. In principle, the contact hours requirement could be satisfied by scheduling 3 additional 150-minute meetings per term, or 6 additional 75-minute meetings, or 10 additional 45-minute meetings. But in practice, the contact hours requirement is satisfied by the weekly online discussion boards. The weekly online discussions are a more flexible way to ensure that our program's courses in DC provide the same level of student-instructor contact as the traditional 15-week face-to-face version of the same course when it is taught on campus in College Park.

Synchronous and asynchronous contact: If the online section of a 12-week course has weekly synchronous Zoom meetings that consist of two 60-minute Zoom sessions, rather than two 75-minute sessions (as in our in-person sections), the course website should also provide 2 or 3 asynchronous video presentations/demonstrations per week, with each video being 10-to-15 minutes in length. This would be to make up for the fact that the online section's weekly Zoom sessions are 30 minutes shorter than the weekly class meetings of an in-person section.

Workload: Mastering the material covered in this course requires a significant amount of work outside of class. Students should expect to spend more time outside of class than in class – typically at least twice as much time. In a regular 15-week semester (as in the College Park version of our program). Taking 3 master's-level courses is supposed to approach the time commitment of a full-time job (~36-39 hours per week, so 12-13 hours per week per course). Taking 3 master's-level courses while simultaneously working at a demanding full-time job during the day is not advisable. Students with questions about the workload in this program should speak with one of the program directors. The courses in our DC and online programs are 12-week courses that cover all the same material as a traditional semester-long 3-credit course (15 weeks). The compressed schedule makes it possible to complete our degree in just 15 months if you take 2 courses each term. But the compressed schedule also implies an accelerated pace with an average of 25% more work per week in a given course (15/12 = 1.25). So maybe about 15 hours of work per week per course. The weekly workload when taking 2 of our DC courses per term is equivalent to the weekly load from 2.5 "normal" 15-week courses - so maybe about 30 hours per week. Students who take 2 courses

per quarter in our DC or online programs complete 8 courses per calendar year. This is what makes it possible to complete the whole 10-course program in just 5 quarters, or 15 months.

Academic Progress: The graduate school requires that students maintain a GPA of at least 3.0. Students whose cumulative GPA falls below 3.0 will be placed on academic probation by the graduate school. Students on academic probation must ask the program's director to petition the graduate school if they want to remain in the program. The petition must include a plan for getting the student's GPA up to at least 3.0. Students who do not live up to their plan can be forced to leave the program without having earned the degree. Note: a grade of "B" corresponds to a GPA of 3.0. A grade of "B-" corresponds to a GPA of 2.7.

Excused Absences: If you miss any class meetings for any reason, you are still responsible for all material covered during the meeting you missed. It is your responsibility to work with study partners, the teaching assistant, and the instructor to make sure you catch up on the missed material. Instructors routinely facilitate things by posting lecture notes, etc.

If you need to miss an exam or other graded course requirement because of illness, injury, or some other emergency: Follow the doctor's orders and get documentation. Get in touch with the instructor as soon as you're able – preferably prior to missing the exam or deadline. Communicate with the instructor to make up the course requirement as soon as possible. You are entitled to recover before you make up the course requirement, but you are not entitled to extra days to study beyond the time the doctor's note says you've been incapacitated. If you are incapacitated for more than a week or so beyond the end of the term, your grade in the course will be an "Incomplete." In such cases, you must negotiate a plan with your instructor to complete the course requirements. Once you meet the course requirement, the instructor will change your "I" to the appropriate letter grade.

School Closings and Delays: Information regarding official University closing and delays can be found on the campus website and the snow phone line: (301) 405-SNOW (405-7669). The program director will also announce cancellation information to the program as an announcement on the program's ELMS/Canvas site. This will generally be done by 1:00 p.m. on days when weather or other factors are an issue. When classes need to be canceled during the semester, we make every effort to schedule makeup classes.

UMD Counseling Center: Sometimes students experience academic, personal, and/or emotional distress. The UMD Counseling Center in Shoemaker Hall provides comprehensive and confidential support services that promote personal, social, and academic success. The cost of these services is covered by the fees you already paid when you registered for classes, and there is no additional charge if you use the services. Proactively explore the range of services available at http://www.counseling.umd.edu/

UMD Accessibility & Disability Service: The University of Maryland is committed to creating and maintaining a welcoming and inclusive educational, working, and living environment for people of all abilities. The University of Maryland is also committed to the principle that no

qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the University, or be subjected to discrimination. The Accessibility & Disability Service (ADS) provides reasonable accommodations to qualified individuals to provide equal access to services, programs, and activities. ADS cannot assist retroactively, so it is generally best to request accommodations several weeks before the semester begins or as soon as a disability becomes known. Any student who needs accommodations should contact ADS as soon as possible so that they have sufficient time to make arrangements. For assistance in obtaining an accommodation, contact Accessibility and Disability Service at 301-314-7682, or email them at adsfrontdesk@umd.edu. Information about sharing your accommodation letter, discussing accommodation logistics, and getting assistance from ADS staff and more can be found on the ADS website.

Graduate Academic Counselor: The UMD Graduate School also has an academic counselor available to support students who are having difficulty navigating mental health resources on campus, are considering a leave of absence, and/or need assistance finding mental health care off campus. The Graduate Academic Counselor also facilitates bi-weekly Graduate Student Circle Sessions, which provide an opportunity to learn about resources and connect with other graduate students. Students can learn more about the Graduate Academic Counselor by going to: https://gradschool.umd.edu/gradcounselor

Course Evaluations: Near the end of the term, you will receive an email inviting you to submit a voluntary and anonymous course evaluation. Your feedback on courses will be very helpful in improving the quality of instruction in our program.

General Disclaimer

I reserve the right to make changes to the syllabus at any point in time throughout the semester. Most likely, this will happen with respect to the reading assignments. Some material will take longer to go through, and other material will get through faster than I intended. The obvious way to be informed about changes is to attend class.