

University of Delaware Syllabus: Econ 301

Intermediate Microeconomic Theory with Calculus

Instructor: Manaswini Rao

Fall 2025

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1 Fundamentals

Class Meetings: Location Purnell Room 233B, Tu & Th: 12:45-2:05

Instructor: Manaswini Rao, email: manasrao@udel.edu

Instructor Office Hours: Fridays 2 p.m. - 4 p.m. by appointment via Google Calendar link

<https://calendar.app.google/faDgv1M3fC3ZxBv87>; meeting at 420 Purnell Hall

Teaching Assistant (TA): Umer Sohail, email: umersoha@udel.edu

TA Office Hours: TBD

Midterms: 10/02 Thursday and 11/06 Thursday in class

Final: Last day of class 12/09, in class

Canvas Website: ECON301-011 <https://udel.instructure.com/courses/1873389>

Optional Textbooks: Microeconomics: Theory and Applications with Calculus by Jeffery

Perloff or Intermediate Microeconomics by Hal Varian 8th or 9th Edition

Prerequisites: Must earn C- or better in ECON101 and one of the following: MATH221,

MATH222, MATH232, MATH241, MATH242 or MATH243.

RESTRICTIONS: Students who received credit in ECON251, ECON255 or ECON300 are not eligible to take this course without permission.

About the Instructor - Manaswini Rao

I am an Assistant Professor of Economics at the Alfred Lerner College of Business and Economics, University of Delaware. My primary fields of interest are development economics, organizational economics, and the economics of institutions with a focus on legal and judicial institutions. For more details on my research and teaching interests, visit my [homepage](#).

2 Course Overview

This course introduces the foundations of microeconomic theory using calculus and builds a framework for analyzing the behavior of individuals, firms, and other economic units and the interaction of these agents in the marketplace. Consumer theory, producer theory, market structures, and efficiency are covered, with an emphasis on problem-solving, marginal analysis, and equilibrium concepts. We will also analyze market outcomes, aggregate surplus, heterogeneous impacts on different subgroups, and discuss policies to increase economic welfare, with examples drawn from current affairs. The principles covered in this course will provide the building blocks for economic analysis in a variety of fields, including health, environment, development, and labor economics. The objective of this course is to understand and learn to apply a set of tools, using graphical analysis and calculus, which can be used to analyze a broad variety of scenarios as an economist. The course material will typically match the first several chapters of any undergraduate-level microeconomics text and is standard for a college intermediate microeconomics course.

The general layout of this course is that I will introduce a particular topic on Tuesdays (typically) and test alternately through short, 10 min Canvas quiz or a more involved in-class problem set on Thursdays (typically). The idea behind this format is emphasis on learning and application to real world problems that you may encounter in the future.

This course relies on calculus, and students are expected to have an understanding of algebra, functions, and derivatives. Prerequisites are strictly enforced as per department policy, and any questions about prerequisites or enrollment should be directed to the department's undergraduate advisor Elizabeth Bayley via email ebayley@udel.edu.

3 Learning Objectives

The goal of this course is to learn the basic tools economists use. Over the semester, we will learn how to take a practical question, frame it in economic terms, and then apply economic models to answer it. Students will be expected to learn problem solving methods by understanding the key steps in specific frameworks we use to generate the answer. Following are important learning objectives of this course:

1. Learn quantitative problem solving using constrained optimization.
2. Learn to apply economic models and problem solving tools to real-world problems.
3. Identify policy solutions to the economic problems and explain the solution using corresponding economic frameworks.

4 Learning Resources

All course material are available on the course page on Canvas under files folder. I will post updated lecture notes the weekend prior to the corresponding Tuesday meetings. In addition to the lecture notes, you may refer to above mentioned optional textbooks for learning. Some of these authors also offer practice workbooks. I will post a number of practice problems on the course page on Canvas. A key to success in this course is to attend lectures and practice after each topic. Practice is key to mastery. I would recommend reviewing each week's topic and practice relevant problems every week. Regular study will reduce last minute panic since the course is hard not just because of math but because it combines economic intuition with math.

About Canvas

In this class, [Canvas](#), UD's online learning management system, will be used for all course activities and communication channels. All assignments will be posted through the Canvas course site unless otherwise directed. Information on how to use Canvas is available through the [Canvas Student Guide](#). Canvas can also be accessed via [MyUD](#).

Quizzes on Canvas

We will use Canvas Quiz platform to collect real-time responses from everyone attending class. Access is possible by using any computer or mobile device with internet access. Canvas is a UD licensed tool and there is no cost to you to use this tool. Please read over the [UD student guide](#) that will demonstrate how to use Canvas for your course.

As a reminder, the [UD academic honesty policy](#) applies to the use of educational technology tools such as Canvas as well.

5 Learning Assessment

Attendance to lectures is mandatory. You will be assessed along the following milestones listed below, which include quizzes, problem sets, two midterm exams, and one final exam. I will notify the quiz dates on Canvas one week ahead. Quizzes will be short (≈ 10 min), mostly multiple choice and aimed at continuous assessment of course material. This will also help me tweak course material and in my choice of pedagogical tools.

Problem sets are in-class. They will be posted on the day of the class. You can collaborate with other students or refer to your notes but the solution must be your own. I will provide printed problem-set booklets with space for answers and extra pages for calculations and rough work during class. Answers need to be written only in the space provided for them. I will discuss the solutions in class so you (or your peer) can grade your solutions immediately.

All exams will be in-person in classroom as indicated below. As with problem sets, I will provide exam booklets with spaces for answers. The exams will be closed book, self-work no collaboration or asking for help except for clarifying questions. You may bring 1 A-4 size page “cheat-sheet”, which can be used to refer to important formulae or mathematical identities for calculation (with the objective of reducing memorization).

6 IN-CLASS QUIZZES: Quiz scores contribute to 12% of the course grade in total

6 IN-CLASS PROBLEM SETS (PS): PS contribute 30% of the course grade in total; note that collaboration with your peers, asking questions to me, and referring to only your notes will be allowed

2 IN-CLASS MIDTERM EXAMS: 19% of the course grade each (total 38%)

1 IN-CLASS COMPREHENSIVE FINAL: 20% of the course grade

Key Deadlines

Assignment	Mode	Due On
QUIZ 1	In-class	09/04
QUIZ 2	In-class	09/18
QUIZ 3	In-class	10/09
QUIZ 4	In-class	10/23
QUIZ 5	In-class	11/13
QUIZ 6	In-class	10/23
PS 1 (Consumer Theory)	In-class	09/11
PS 2 (Consumer Theory)	In-class	09/25
PS 3 (Producer Theory)	In-class	10/16
PS 4 (Producer Theory)	In-class	10/30
PS 5 (Markets and Welfare)	In-class	11/20
PS 6 (Imperfect Competition, Externalities)	In-class	12/04
Midterm 1	In-class	10/02
Content: Consumer Theory	In-class	11/06
Midterm 2		
Content: Producer Theory, PC Markets	In-class	12/09
Comprehensive Final		

Course Grade Distribution

Grades will be curved with the mean score getting a B; Z Unofficial Withdraw (applicable to students who never attended/participated or stopped attending/participating).

6 Course Schedule

WEEK 1 Course Introduction and Math Review

WEEK 2 Consumer Theory: Preferences and Utility

WEEK 3 Consumer Theory: Utility Maximization

WEEK 4 Consumer Theory: Budget Constraints and Choice (Incl Revealed Preference)

WEEK 5 Consumer Theory: Consumer Demand (Incl Consumer Surplus), Slutsky Equation and Decomposition (Income and Substitution Effects), Market Demand, and Applications

WEEK 6 Producer Theory: Input, Output, Technology, and Production Functions

WEEK 7 Producer Theory: Profit Maximization/Cost Minimization

WEEK 8 Producer Theory: Cost Curves, Firm Supply, and Aggregate Supply

WEEK 9 Markets: Market demand and supply (recap), Perfect Competition, Equilibrium

WEEK 10 Markets: Efficiency Concepts, and Factor Markets (esp. labor)

WEEK 11 Markets: General Equilibrium (Edgeworth Box, Trade, and Welfare) - (depending on the pace thus far)

WEEK 12 Monopoly (Marginal Revenue, Profit Maximization, Inefficiency, and Deadweight Loss), Monopoly Behavior (Price Discrimination), and Regulations (e.g., antitrust); Parallels with Factor Markets (Monopsony)

WEEK 13 Oligopoly, Game Theory, and Nash Equilibrium Concepts

WEEK 14 Externalities and Public Goods

7 UD Academic Policies

The Safety of Our Learning Environment

Student learning can only occur when students and their instructors feel safe, respected, and supported by each other. To ensure that our learning environment is as safe as possible, you are expected to abide by the most up-to-date University of Delaware's COVID-19 Guidelines,

Academic Honesty

This course is bound by the university's Code of Academic Conduct. Note that it is a violation of the Code to post materials from this course on other websites or forums without the permission of the instructor. Cheating and plagiarism will not be tolerated. You may cite work of others but cannot copy without providing due credit.

Please familiarize yourself with UD policies regarding academic dishonesty. The [Academic Honesty Policy](#) states: "Students must be honest and forthright in their academic studies. Students are expected to do their own work and must give proper credit for any work not their own. Students may neither give nor receive unauthorized assistance. Engaging in academic dishonesty, or allowing other students to do the same, corrupts the educational process and diminishes the quality of a University of Delaware degree." View the [university's procedures](#) for resolving academic dishonesty concerns. Contact Community Standards & Conflict Resolution at communitystandards@udel.edu or (302) 831-2117.

Full text of the Code can be found at <https://www.udel.edu/students/community-standards/academic-integrity/>.

Harassment, Discrimination, and Sexual Misconduct

The University of Delaware works to promote an academic and work environment that is free from all forms of discrimination, including harassment and sexual misconduct. As a member of the community, your rights, resources and responsibilities are reflected in the Non-Discrimination, Sexual Misconduct, and Title IX policy. Please familiarize yourself with this policy at the University's Office of Equity & Inclusion's website. You can report any concerns to the [University's Office of Equity & Inclusion](#) (302) 831-8063 or at titleixcoordinator@udel.edu. you can report anonymously through UD Police (302) 831-2222 or the [EthicsPoint Compliance Hotline](#).

- Read the [full policy](#).
- [File a report](#).

Faculty Statement on Disclosures of Instances of Sexual Misconduct

If, at any time during this course, I happen to be made aware that a student may have been the victim of sexual misconduct (including sexual harassment, sexual violence, domestic/dating violence, or stalking), I am a responsible employee, which means I am directed to report any incident of sexual harassment or misconduct to the University's Title IX Coordinator. The Title IX Coordinator will then meet with the student to discuss how the University will respond to the report and the student's rights and options, to offer resources, and to ensure that the student and the campus community are safe. If such a situation is disclosed to me in class, in a paper assignment, or in office hours, I promise to protect your privacy—I will not disclose the incident to anyone but the Title IX Coordinator in a confidential manner.

For more information on Sexual Misconduct policies, where to get help, and reporting information, please refer to www.udel.edu/sexualmisconduct. You can also send an email to the Title IX Coordinator at titleixcoordinator@udel.edu. At UD, we provide 24/7/365 crisis assistance and victim advocacy and counseling. Contact 302-831-1001 to get in touch with a sexual offense support advocate, as well as confidential and anonymous counseling services for other concerns.

Accommodations for Students with Disabilities

Any student who may need disability-related accommodations should contact the Office of Disability Support Services (DSS) office as soon as possible. For more information, please visit [Getting Registered at DSS](http://www.udel.edu/dss). Contact DSS by phone: 302-831-4643; fax: 302-831-3261; website: www.udel.edu/dss; email: dssoffice@udel.edu; or visit 240 Academy Street, Alison Hall Suite 130 during business hours (8-5 M-F).

Non-Discrimination

The University of Delaware does not discriminate against any person on the basis of race, color, national origin, sex, gender identity or expression, sexual orientation, genetic information, marital status, disability, religion, age, veteran status or any other characteristic protected by applicable law in its employment, educational programs and activities, admissions policies, and scholarship and loan programs as required by Title IX of the Educational Amendments of 1972, the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964, and other applicable statutes and University policies. The University of Delaware also prohibits unlawful harassment including sexual harassment and sexual violence. For inquiries or complaints related to non-discrimination policies, please contact: Office of Equity & Inclusion- oei@udel.edu, (302) 831-8063 For complaints related to Section 504 of the Rehabilitation Act of 1973 and/or the Americans with Disabilities Act, please contact: Office of Disability Support Services, dssoffice@udel.edu, Alison Hall, Suite 130, Newark, DE 19716 (302) 831-4643 OR contact the [U.S. Department of Education - Office for Civil Rights](http://www.ed.gov)

8 Student Resources

College students often experience things that may interfere with academic success such as academic stress, sleep problems, juggling responsibilities, life events, relationship concerns, or feelings of anxiety, hopelessness, or depression. If you are experiencing any of the above in a way that is negatively impacting your ability to participate fully in the learning activities for this class, I strongly encourage you to get in touch with me. Additionally, I have provided information from other campus-wide units below.

- Contact me: If you are struggling with this class, please check-in during office hours or contact me by email at manasrao@udel.edu
- Check-in with your academic advisor or the Assistant Dean for Student Services in your college: If you are struggling in multiple classes, unsure whether you are making the most of your time at UD, or unsure what academic resources are available at UD.
- UD's Center for Counseling & Student Development (CCSD), TimelyCare, and UD Helpline
 - UD's Center for Counseling & Student Development (CCSD) provides cost-free and confidential mental health services promoting psychological wellbeing so that students can be more successful in their academic, personal, and career pursuits. CCSD provides in-person services including walk-in urgent visits, scheduled individual and group counseling, and consultation for students, parents, and faculty.

- CCSD partners with TimelyCare to provide scheduled counseling and health coaching via telehealth.
- For 24/7 mental health support, students have the option of calling the UD Helpline at 302-831-1001 or accessing TimelyCare’s Talk Now service through the TimelyCare app or online. Visit CCSD’s website for additional information and resources.
- UD’s Crisis Text Line: Text “UDTEXT” (or “STEVE” for students desiring to connect with a professional who specializes in supporting students of color) to 741741 for confidential text message support.
- Division of Student Life: Explore the [Student Life’s Wellbeing webpage](#) for a comprehensive listing of well-being resources, activities, and services available to all students.

Lerner Diversity Council

At Lerner College of Business and Economics, we celebrate diversity, amplify voices, and promote understanding and belonging through open dialogue, impactful initiatives, and engaging programs. In [our classroom/insert course here], we value human diversity in all its richly complex and multi-faceted forms – expressed through race and ethnicity, culture, political and social views, religious and spiritual beliefs, language and geographic characteristics, gender, gender identities, and sexual orientations, learning and physical abilities, age, and social or economic classes. Should you encounter any concerns or issues, particularly related to inclusivity or discrimination, we encourage you to reach out to your professor, the Office of Equity and Inclusion, and/or the Dean of Students for support and resolution.

Discover more about our upcoming events by visiting the [LDC Events page](#) and take the step to pledge your commitment to diversity and inclusion by signing [the Lerner Promise](#). For more information and/or to volunteer, please contact Professor Anu Sivaraman (anusiva@udel.edu).

Please scan below to sign now

