

Economics 310-1: MICROECONOMIC THEORY

Northwestern University ♦ Fall 2020

Professor James A. Hornsten

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Personal ZOOM for Office Hours: <https://northwestern.zoom.us/j/7316183050>

Course ZOOM for Lectures & Exams: See Canvas

Teaching Assistants' ZOOM for Discussion Sections & Office Hours: See Canvas

Class Meetings, Attendance and Communication

We will meet 1:50 – 2:40PM on Mondays, Wednesdays & Fridays at the Zoom link posted on Canvas. Refer to the attached schedule for important calendar dates. Although attendance is not mandatory, it is expected, and some material will be presented only during class or section (even if most of the notes are posted). If you do miss class, it is your responsibility to track down handouts, notes or any other information (especially regarding exams) you may have missed. When making your rational attendance choice, remember secondhand notes may not be clear or complete, lectures are not repeated in office hours, and much can be learned from our collective classroom experience. Your best way to contact me is e-mail, which I check regularly; please use ECON 310-1 in your subject line. Check Canvas and your NU e-mail daily for announcements and materials.

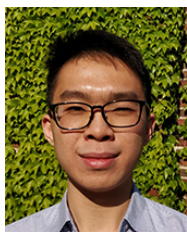
Office Hours

I will usually be available for drop-in office hours, though I may add other hours and announce changes on Canvas. Virtual office hours will be 9:30–11:00AM and 1:00–2:00PM on Tuesdays (also by appointment). In office hours, you may find groups of students of all levels discussing problems (from the textbook, problem sets or old exams); students in the past have found this collaborative approach to learning helpful. I'm also happy to have one-on-one conversations. Office hours are also a time to talk about the ECON major, careers, NU life, and whatnot.

Teaching Assistants and Discussion Sections

Our five graduate teaching assistants will lead weekly synchronous 50-minute discussion sections. Sections are not required, but I expect you to attend one of the five sections beginning the second week of class. In typical discussion sections, the TAs will build upon problems you have previewed, present original material, review key ideas, discuss recent or upcoming exams, and/or answer your questions. Each TA will also hold office hours during which you can speak to them via Zoom; an updated office hours schedule will be posted to Canvas. Feel free to attend any TA's office hours that fit your schedule. The TAs will also lead review sessions and exam simulations before the exams.

<i>Name</i>	<i>Section Times on Tuesdays</i>	<i>E-mail @u.northwestern.edu ZOOM personal ID</i>	<i>Virtual Office Hours</i>
Yan Chiu	8:30 – 9:20AM	KwokChiu2025 91777069555	Monday 10:30AM-12:00PM; Saturday 10:30AM-12:00PM
Guillaume Gex	7:40 – 8:30PM	GuillaumeGex2023 9934024371	Thursday 4:30-6:00PM; Sunday 1:30-3:00PM
Gaston Lopez	4:50 – 5:40PM	GastonLopez2024 2854003796	Thursday 3:00-4:30PM; Friday 10:00-11:30AM
Meg Murakami	4:50 – 5:40PM	MegumiMurakami2022 2206455059	Tuesday 3:00-4:00PM; Saturday 6:00-8:00PM
Jason Premo	6:00 – 6:50PM	JasonPremo2023 7464250834	Sunday 8:30-10:00PM; Wednesday 8:30-10:00PM



Yan



Guillaume



Gaston



Megumi



Jason

Zoom Recording Policy

This class or portions of this class will be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course and will be deleted at the end of the end of our Fall 2020 course. I will communicate how you can access the recordings. Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology as an accommodation should contact [AccessibleNU](#). Unauthorized use of classroom recordings – including distributing or posting them – is also prohibited. Under the University’s [Copyright Policy](#), faculty own the copyright to instructional materials – including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display, or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording, or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

Textbook, Readings and Equipment

- David Besanko and Ronald R. Braeutigam (2020) *Microeconomics*, 6th edition, John Wiley & Sons, ISBN 978-1119554844, wiley.com/college/besanko

New, used, and digital versions of the textbook are usually available at the Norris Center Bookstore for purchase or rent and the University (Main) Library’s main circulation desk has three copies on reserve. B&B is also used by Kellogg MBAs and other 310-1 instructors so there are many used copies nearby (or on Amazon, etc.). We will follow the 6th edition closely, but the 5th or 4th edition are reasonable substitutes because the end-of-chapter problems are very similar (you will want to do as many of these as possible!). I will occasionally post additional readings (e.g., recent articles from the business press) on Canvas.

Because you frequently will be solving problems and drawing graphs, it is a good idea to have a physical or virtual notebook, a straight edge (6 inches is sufficient), and some writing utensils (perhaps multi-color pens) handy for each class. You may use a calculator on our exams.

In order to participate in our regular Zoom meetings you will also need

1. a reliable device, such as a computer (preferred), a tablet, or alternatively a smartphone;
2. a reliable high-speed internet connection;
3. an internal or external microphone connected to your device;
4. an internal or external camera connected to your device;
5. access to a quiet space.

To promote academic integrity during our exams, you will need to set up a smartphone off to the side (to show a video stream of you working) and use your computer to access Canvas.

Prerequisites

You should have completed (or at least be familiar with) ECON 201 (Introduction to Macroeconomics), ECON 202 (Introduction to Microeconomics), and MATH 220 (Differential Calculus). We explore selected ECON 202 topics at a deeper level, introducing and using straightforward calculus only as needed.

Course Description

Picking up where ECON 202 left off, this course uses mathematical models to analyze the behavior of optimizing (but constrained!) consumers and producers in market economies, thereby providing insights regarding the fundamental inner workings of markets (i.e., the origins of supply and demand). We will also use equilibrium analysis and comparative statics to understand markets characterized by competition,

monopoly or monopsony. ECON 310-1 is a course primarily for economics majors and minors, so it will emphasize the development and application of economic theory.

Learning Outcomes

During this course you will use three basic tools of economic analysis (equilibrium, constrained optimization, and comparative statics) to model and analyze a variety of economic problems. After completing this course you will be able to:

1. Utilize supply and demand curves to analyze equilibrium, the efficient allocation of resources, and the effects of various forms of government intervention in inherently competitive markets.
2. Characterize a consumer's satisfaction-maximizing choices for goods given a limited budget, derive a consumer's demand curve for a product, and determine how a change in the price of a good affects a consumer's welfare.
3. Characterize the technology available to a firm, using production functions, cost curves, and supply curves.
4. Analyze and compare market outcomes in a perfectly competitive market, a monopoly market and, if time permits, a monopsony market.

Teaching Methodology and Philosophy

You will have many opportunities to engage the material, including reading the textbook, attending and actively participating in lectures and discussion sections, working on practice exercises or problem sets either individually or in a group, taking practice exams, and attending office hours. The **readings** are meant to familiarize you with vocabulary and concepts, inspire questions, and give you a chance to ponder the material before I present similar ideas in different packaging. I recommend reading the relevant textbook chapter both before and after class to preview and then review the material. **Lectures** will typically take the form of PowerPoint presentations, though I will often ask you to work out short problems in class with a friend. Posted lectures may include extra slides for reference or omit some slides. During a typical **discussion section**, a TA will work out selected problems, present original material, discuss some of the ideas from lecture, or field some of your questions. Our textbook features hundreds of end-of-chapter **practice exercises** that enable you to develop your economic reasoning skills at your own pace. I will post solutions to many of these problems, reserving the others for problem-solving sessions and discussion sections. I encourage you to try as many of these as possible. Ideally, work them on your own, meet with classmates to compare answers, and ask remaining questions by email. Each week I will distribute a graded **problem set** with about five exercises for you to work on individually or in groups. Problem sets will give you a chance to “get your hands dirty” and to prepare for both discussion sections and exams. Usually I will assign problems on material I have covered, but occasionally I may ask you to read ahead and practice learning directly from the book. I encourage you to collaborate with others as you practice applying our tools, but warn you that repeated free riding does not prepare you very well for the exams. For a simple test of your knowledge, try explaining a problem and its solution to a friend or try constructing some problems (with answers) on your own. The **exams** will test your understanding of microeconomic theory, including your ability to apply theory to economic problems. You should therefore focus on the systematic reasoning we are trying to develop, rather than on mere memorization. Economics does NOT lend itself to pulling all-nighters before exams. Later analysis relies on principles covered earlier, so the exams are cumulative implicitly, if not explicitly. Class is much more enjoyable when there is active involvement by many students, so be prepared to speak up now and then, and to **participate** in a Goldilocks sort of way – neither too little nor too much. The TAs and I both hold regular **office hours**, and these are good times to talk about specific questions, general intuition, course registration, the ECON major, careers, NU life, etc. You are welcome to attend any of our office hours. If you feel you are struggling, seek help early – there are many resources in place to help you. It is both my desire and job to help you learn, so please let me know if anything is frustrating your efforts so that I can try to remedy the situation. Part of your job as a responsible adult is to monitor your progress and seek help from your peers, the TAs, or me when necessary. Often it doesn't take much to get back on track if you take the first step by asking for assistance from a peer, TA, or me. You should adopt an active approach to learning: once you think you understand the material from the readings and lectures, work problems on old exams for practice, try the exercises at the end of the chapters, and ask yourself if you see how all of the material fits together. Finally, while ECON 310-1 emphasizes the development and application of microeconomic analysis, I want you to leave this class possessing not only new theoretical skills, but also the ability to (1) understand the strengths and limitations of economic models, (2) use economic thinking to improve personal decisions, (3) feel more comfortable interpreting the media's jargon and discussing real-world economics issues, and (4) pursue additional study in this area.

Evaluation

Your course grade will be assigned based on your performance on four exams and weekly problem sets. The relative weights of the graded components are as follows:

<u>COMPONENT</u>	<u>IMPORTANT DATES</u>	<u>%</u>
<i>Problem Sets</i>	<i>Due every Monday until Thanksgiving</i>	<i>10</i>
<i>Examination 1</i>	<i>Friday, October 2 (covers Chps. 1,2,10; in class)</i>	<i>20</i>
<i>Examination 2</i>	<i>Friday, October 23 (covers Chps. 3-5; in class)</i>	<i>20</i>
<i>Examination 3</i>	<i>Friday, November 13 (covers Chps. 6-9; in class)</i>	<i>20</i>
<i>Final Examination</i>	<i>Monday, December 7, 9:00 – 11:00AM</i>	<i>30</i>
	<i>TOTAL</i>	<i>100%</i>

Exams: The course is divided into four units, each followed by an exam; the final exam covers Unit 4 and also contains “big picture” questions so I can assess your overall mastery of the course. Exams will feature a diversified portfolio of questions and topics designed to test your ability to apply economic theory. Due to the substantial difficulties of administering more than four examinations, there will be no make-up exams. If you miss one of the unit exams for some reason, then I will reweigh your other exams; the new weights would be 25% on each of the unit exams and 40% on the final. I will neither drop a score for an exam that you have taken nor arbitrarily reweight exams. You must take at least two unit exams and the final exam to pass the course.

Problem Sets: Early each week I will distribute a five-question problem set that will be collected the following Monday at 1:00PM; the final problem set is due the Monday of Thanksgiving week. Each question will be graded on a 2-point scale, where 2 = correct, 1 = good try, and 0 = way off or blank. We do not accept late submissions, but we will drop your lowest score. I encourage you to collaborate, particularly by trying each problem on your own and then discussing your answers with a classmate. Many of the problems are taken from old exams, so they are meant to be challenging and to take an hour or two to complete.

Final Exam Policy

WCAS policy: “The College forbids administering a final examination to individual students in advance of the assigned time. You are required to take the final examination at the designated time. If you are unable--for sufficient reason--to take a final examination at the designated time, you should apply for an incomplete in the course.” Since University policy requires us to administer the final exam at the appointed time, **PLEASE DO NOT ASK TO TAKE THE FINAL AT ANY HOUR OTHER THAN THE ONE ASSIGNED BY THE REGISTRAR.** In the unlikely case that you cannot take the final exam at the regular time, I will assign an incomplete grade of “X” (which is what you would receive if you were ill and didn’t show up for the final). If the WCAS Dean’s office (1908 Sheridan Road) and I agree to the “X” option, we will schedule a make-up exam in the near future, typically at the beginning of the next quarter.

Grades: I grade to the curve rather than using an absolute percentage standard. This means that a score of 75 does not automatically map to a C grade, but rather is considered relative to this and previous classes; if a 75 were the high score, it would map to an A and if it were the low score, then it may map to a C- or lower. The average grade in ECON 310-1 across many years has been a B (or about a 3.0 GPA). I take into account performance trends and difficulty of the exams. **Re-grading:** Occasionally, a student finds or suspects a grading error. If this is the case, please email to me the particular question within one week after the graded exams are released.

Drops or Withdrawals

The Registrar’s deadline for dropping the course without any advisor’s approval is Friday, November 6. Usually you can do this using CAESAR up until 11:59PM, though the Registrar’s Office closes at 5:00PM. It may be possible for you to withdraw from the course as late as November 23, the Monday before Thanksgiving; to do so, you must communicate with your advisor in your home school and complete the applicable withdrawal petition procedure by 5:00PM on that date. Check with the Registrar to ensure these dates are correct.

Submitting Your Work Through Crowdmark

The teaching assistants and I will use Crowdmark to streamline the grading and recording of your problem sets and exams. You submit your work through an emailed link, dragging PDFs or JPGs into fields, and then

we can read these online, insert grading comments, automatically send your score to Canvas, and then allow you to peruse a digital version of your graded work.

Peer-Guided Study Groups – Registration Required for this Quarter-Long Opportunity

Peer-Guided Study Groups (formerly AMP and GSW) offer peer-led academic support in a small-group setting for students enrolled in this course. If you join the program, you will meet weekly with about 5 to 8 other students and a peer facilitator – a student who has already taken and done well in ECON 310-1. During the two-hour weekly sessions students review concepts, work through practice problems, raise questions, and work together to develop answers. Past participants report that this program helped them stay on track, solidify their understanding of course concepts, and increase their confidence – all in a comfortable atmosphere. Students register for the full quarter on CAESAR and attendance is expected weekly. Study Group sessions are listed below course lecture and discussion sections (e.g., ECON 310-SG-1 Peer-Guided Study Group: Microeconomics I). Contact Borislava at borislava.miltcheva@northwestern.edu with any questions. Provided through Academic Support & Learning Advancement.

Drop-In Peer Tutoring (No Appointment Needed)

Students are welcome to stop by Drop-In Peer Tutoring — via Zoom — to get support with a specific question or issue, or just talk through course materials with others. Covers many introductory courses in Biology, Chemistry, Economics, Engineering, Math, Physics and Stats. Tutoring takes place Sundays through Thursdays. Check Zoom links, specific times, courses and locations on the Drop-In Peer Tutoring website. Feel free to contact Krystal at krystal.wilson@northwestern.edu with any questions. This is an excellent opportunity to connect with others in your class while we are physically separated.

<https://www.northwestern.edu/academic-support-learning/course-support/drop-in-peer-tutoring.html>

Wondering how to learn and stay engaged? ASLA's Learning During COVID-19 page has helpful tools and suggestions.

Academic or Athletic Accommodation

Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU < accessiblenu@northwestern.edu OR 847-467-5530 > and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. I recommend that you use accommodations for which you qualify. I will reserve a quiet room close to our regular classroom for each exam, but you may also take exams at the ANU Office if you register in advance. Students on Northwestern's varsity athletic teams who expect an academic conflict due to an official NCAA event should ask Eileen O'Rourke in Academic Services < eileen.orourke@northwestern.edu OR 847.491.8805 to contact me on your behalf as soon as possible. For all types of accommodation, all information will remain confidential. Please make your plans early and keep me informed; the 24 hours before an exam are often very busy and I may not be able to handle last-minute accommodation requests.

Wellness

In November 2018, the Faculty Senate approved a resolution recommending the following be added to course syllabi: "Students can find useful resources for safety and security, academic support, and mental and physical health and well-being at the NUhelp website and app." <https://www.northwestern.edu/nuhelp/>

Professionalism

I expect a reasonable degree of professionalism, broadly defined to include those things that generally contribute to an environment that is conducive to learning by being courteous to us and to your classmates. Do things that generate positive externalities, such as attending, smiling, participating and helping your peers. Avoid generating negative externalities in the virtual classroom via potentially distracting behavior (e.g., napping, off-topic chatter, offensive language or images). Serious disruptions will not be tolerated.

Sexual Misconduct and Reporting

Northwestern University is committed to fostering an environment where students are safe and free from sexual misconduct. Confidential resources are available to those who have experienced sexual misconduct. Faculty, instructors, and TAs are not confidential resources and are required to report incidents of sexual misconduct, whether discussed in your assignments or in person, to the Office of Equity, which can provide information about resources and options. I encourage students who have experienced sexual misconduct to talk with someone to get support. For more information, including how to request interim protective measures and academic accommodations or file a complaint, see the Get Help page.

Discrimination and Sexual Harassment

Northwestern University's Policies on Discrimination, Harassment, and Sexual Misconduct apply to all members of the University community, including students, staff, faculty, and third parties. Any student, staff, or faculty member, or third party, who believes that they have been discriminated against or harassed on the basis of their race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, pregnancy, parental status, marital status, age, disability, citizenship, veteran status, genetic information or any other classification protected by law, should contact the Office of Equity at (847) 467-6571. Additional information about the University's discrimination and harassment policies, including the campus resources available to assist individuals with discrimination or harassment concerns, is available online on the Office of Equity website, <https://www.northwestern.edu/equity/>. Students, staff, and faculty who report harassment, discrimination, or sexual misconduct are also protected under the [University's Policy on Non-Retaliation](#).

Academic Integrity

Suspicion of academic integrity violations will be referred immediately to the Academic Dean's office; University rules prohibit subsequent discussion of the situation with the student. Our expectations in regard to issues of academic honesty are articulated at <https://catalogs.northwestern.edu/undergraduate/academic-integrity/>. While you are a Northwestern student, you will be treated as an adult and will be held accountable for your actions; consequently, you are expected to know and abide by the rules of the institution. It is important that you read and understand Academic Integrity at Northwestern: A Basic Guide) found at <http://www.northwestern.edu/provost/policies/academic-integrity/index.html>. Whether intentional or not, improper use of materials can be considered a violation of academic honesty. For example, you should not refer to prohibited materials during an exam, alter an exam for re-grading, plagiarize (use another's ideas or words without acknowledging the source), or fabricate excuses or lie in connection with your academic work. If you are unsure as to what is permissible, please consult me, because ignorance is not a valid excuse.

Reading Assignments

The following schedule is provided as a guide and may be subject to slight changes as our pace naturally varies. Each lecture will make apparent our progress in the textbook. Please mark on your calendars the important exam and due dates, which will only change under extreme circumstances and with sufficient warning. Do your best to keep up with the reading assignments, which will complement the lectures, and as you read, jot down your questions. If you find yourself getting bogged down in math, focus on the intuition and main ideas, then address the detailed economic methods later. Remember that economics tends to be cumulative in nature, so regularly ponder how each chapter adds to previous chapters.

For the most up-to-date information as we move through the course, check Canvas.

Schedule of Planned 310-1 Topics, Recommended Readings, and Important Dates

Week #	Dates <u>HW due</u>	Lecture Topics and Important Dates <i>Recommended Chapters in Besanko & Braeutigam – Microeconomics 4th/5th/6th</i>
1	Sept 16, 18	UNIT 1: Analyzing Perfectly Competitive Markets Introduction, Logistics; 3 Tools for Analyzing Economic Problems Review of Supply & Demand; Elasticities <i>No TA sections this week!</i> <i>Chps. 1-2</i>
2	Sept 21 , 23, 25	Supply & Demand Analysis with Comparative Statics Gov't Interventions I: Taxes & Subsidies, Price Ceilings & Floors, Prod. Quotas Gov't Interventions II: Agricultural & International Trade Policies <i>Chps. 2, 10</i>
3	Sept 28 , 30, Oct 2	<i>Optional Exam Simulation on Monday, September 28 with TA Jason</i> Unit 1 Leftovers & Review Begin Unit 2: Consumer Preferences (Utility, MU, MRS) EXAMINATION 1 – Friday, October 2 (<i>Covers Chapters 1,2,10</i>) <i>Chp. 3</i>

4	Oct <u>5</u> , 7, 9	UNIT 2: Consumer Theory (Origins of Demand) Indifference Curves (Cobb-Douglas, Perf-Substitutes, Leontief, Quasi-Linear) Budget Lines, Optimal Consumer Choice, Corner Solutions Composite Goods & Fancy Budget Constraints Revealed Preference (reverse-engineering consumer preferences) <i>Chps. 3-4</i>
5	Oct <u>12</u> , 14, 16	Theory of Demand: Generating Demand Curves (via P- and I-expansion paths) Income & Substitution Effects (for our four most important utility functions) Welfare Analysis using Consumer Surplus or Compensating Variation <i>Chps. 4-5</i>
6	Oct <u>19</u> , 21, 23	<i>Optional Exam Simulation on Wednesday, October 21 with TA Gaston</i> Unit 2 Leftovers & Review Begin Unit 3: Production (Inputs, Marginal Product, Isoquants, MRTS) EXAMINATION 2 – Friday, October 23 (<i>Covers Chapters 3-5</i>) <i>Chp. 6</i>
7	Oct <u>26</u> , 28, 30	UNIT 3: Producer Theory (Origins of Supply) Production Functions (Special Cases, Returns to Scale) Costs and Cost Minimization (Concepts, Input Demands, Isocosts, Duality) LR vs SR Cost Curves; Cost Relationships (Totals, Averages and Marginals) <i>Chps. 7-8</i>
8	Nov <u>2</u> , 4, 6	Long Run Cost Envelope, Economies of Scale Perfect Competition: Choosing Outputs or Inputs Perfect Competition: Firm Decisions – Entry, Exit, Shutdown, SR Supply <i>Chps. 7-9</i> <i>Friday is the Drop Deadline</i>
9	Nov <u>9</u> , 11, 13	<i>Optional Exam Simulations TBA</i> Perfect Competition: Long Run Equilibrium, Producer Surplus, # of Firms Unit 3 Leftovers & Review EXAMINATION 3 – Friday, November 13 (<i>Covers Chapters 6-9</i>) <i>Friday is the P/N Deadline</i>
10	Nov <u>16</u> , 18, 20	UNIT 4: Markets with One Big Player Monopoly Primer Monopoly Applications Monopsony <i>Chp. 11</i>
11	Nov <u>23</u> , 25, 27	Unit 4 Leftovers & Review; Wrap-Up Course; Discuss Final (MON) <i>No TA sections this week. No class meetings on WED or FRI.</i> <i>☺ Happy Thanksgiving! ☺</i> <i>Monday is the Withdrawal Deadline</i>
12 Study!	Nov 30, Dec 2, 4	<i>TA sections will meet on Tuesday to cover Monopoly/Monopsony</i> <i>Optional review sessions at regular class times on MON, WED, & FRI</i>
13 Final	Dec 7	FINAL EXAMINATION – Monday, December 7th, 9:00 – 11:00AM <i>(This cumulative exam covers Chapters 1-11)</i>

A syllabus is a contract between the instructor and students that provides information about the course and provides a commitment device to prevent arbitrary behavior. I will assume that you are familiar with, and agree to, all policies in this contract. If you object to, or do not understand, any part of this contract, please contact us immediately.