

University of Wisconsin–Madison
Economics 711: PhD Micro I
Fall 2021, first half of the semester
<https://canvas.wisc.edu/courses/257100>

Like literally everything in life since March 2020, some details are subject to change. Last updated: 10/4/2021

Instructional mode: In person.

Lectures: Tuesdays and Thursdays, 1-2:15 p.m., in Plant Sciences 108
Class will not meet on Thursday Sept 16 (Yom Kippur), I'll instead post a pre-recorded video lecture that day to watch before class meets the following Tuesday

Credits: 3

Instructors: First half (Sep 9-Oct 26): [Dan Quint](mailto:dquint@ssc.wisc.edu), Associate Professor, dquint@ssc.wisc.edu
Second half (Oct 28-Dec 14): [Lones Smith](mailto:lones.smith@wisc.edu), Professor, lones.smith@wisc.edu

TAs: Michael Nattinger, nattinger@wisc.edu
Yuqi (Angela) Jiang, jiang326@wisc.edu

Description: First course in a two-semester sequence: theories of firms, consumers, and markets; or partial and general equilibria in market and centralized economies; topics in welfare economics.

Prerequisites: If you're not sure whether you should be in this class, you probably shouldn't. For more detail, contact one of the instructors, or Kim Grocholski <kim.grocholski@wisc.edu>.

Grading: Each half of the semester will have regular homework assignments and an exam. The two half-semesters will be graded separately, and the final semester grade will be based on the average of the scores on the two halves.

The rest of this syllabus refers to only the first half of the semester.

Learning Outcomes

After taking this class, successful students will be able to...

- recognize and explain apply standard models of individual and firm decision-making
- apply techniques of constrained optimization and other problem-solving techniques to economic models
- apply basic proof techniques to economic models
- understand the limitations of standard economic models, and how they can be used to gain insight into real-world settings
- understand the link between theoretical models and empirical observations – when data are consistent or inconsistent with a model, and when data can “identify” the unknown parts of a model

Grading

The first-half grade will be based 50% on homework and 50% on a midterm exam. I urge you in the strongest possible terms to do all the homework assignments, as I think this is vital to learning the material, but I will drop the lowest homework score in calculating your first-half grade.

Office Hours

We will begin the semester with a mix of in-person and virtual office hours scheduled; we will revisit this schedule as conditions, and student attendance, warrant.

In-person office hours:

Prof. Quint: Mondays, **3:25-4:25 p.m.**, and Thursdays, 3:30-4:30 p.m., 6444 Social Sciences
Michael: Mondays, 4:25-5:25 p.m. and Fridays, 3:30-4:30 p.m., 6413 Social Sciences
Angela: Mondays, 9:45-10:45 a.m. and Fridays, **1-2 p.m.**, 6413 Social Sciences

Virtual office hours:

Michael: Tuesdays, 2:30-3:30 p.m. on Zoom
Angela: Wednesdays, 7:15-8:15 p.m. on Zoom
Prof. Quint: Zoom meetings available by appointment

Homeworks and Exams

The exam for the first half of the semester will be given on Thursday evening, November 4, from 8-10 p.m. Practice exams will be posted on the Canvas site.

Homework assignments will be posted and submitted online, assigned weekly, and typically due at midnight each Monday night. I expect homework assignments to be due on Monday September 20, 27, October 4, 11, 18, 25, and on Tuesday November 2 (since many of you will have a Macro exam that Monday). Homework due on a Monday will typically cover material in lecture up to the previous Tuesday.

Policy on Joint Work

I encourage you to work together on homeworks, but I require that each person write up his or her own answers separately.

You should feel free to discuss the questions and answers and come to a consensus on what you feel the right answers are; but then each person should go back and write up those answers individually, rather than passing around one set of answers for everyone to copy.

It should go without saying that joint work of any sort is not allowed on exams.

Looking Ahead

For those of you starting to think ahead about prelims, you can find past prelim questions I've asked, along with solutions, here: <https://www.ssc.wisc.edu/~dqint/teaching.htm>

Policy on Laptops and Electronic Devices

I know that many of you are used to taking notes on laptops or other electronic devices. However, once open, these devices make it very easy for even the most well-meaning students to get distracted; they can be distracting to other students; and recent research suggests that students learn better when they take notes by hand rather than by computer.¹ **IF YOU HAVE AN UNUSUAL NEED FOR AN ELECTRONIC DEVICE DURING CLASS, PLEASE SPEAK WITH ME; OTHERWISE, I ASK THAT YOU PLEASE NOT USE LAPTOPS OR OTHER DEVICES IN CLASS.**

What We Call Each Other

I use male pronouns (he/him/his), and am happy for students in graduate classes to call me Dan. If you're uncomfortable with that, Professor Quint or Professor is fine too.

In a large lecture class, I find I rarely refer to students in the third person; I won't ask about your pronouns, because I don't anticipate needing to use them. (And I don't want to put you on the spot if the answer is complicated.) If your preferred pronouns or any other part of your identity, gender or otherwise, is important to you and something you want me to be aware of, I hope you'll feel comfortable sharing it with me.

¹ For example, see <https://www.businessinsider.com/handwriting-helps-you-learn-2014-12> and <https://www.brookings.edu/research/for-better-learning-in-college-lectures-lay-down-the-laptop-and-pick-up-a-pen/>

Course Overview and Readings

The first half of the course will have 14 lectures: most likely 6 on producer theory, 6 on consumer theory under certainty, and 2 on choice under uncertainty. Articles listed below, and others discussed during lecture, will be posted on Canvas.

Producer Theory (~6 lectures)

Firms and production

Profit maximization and properties of its solution

Rationalizability and recoverability

Cost Minimization

Monotone Comparative Statics, Topkis' Theorem, and the LeChatelier Principle

Recommended reading:

Mas-Colell, Whinston, and Green, *Microeconomic Theory* (Oxford U Press, 1995), ch. 5

Milgrom and Roberts (1990), "The Economics of Modern Manufacturing: Technology, Strategy and Organization," *American Economic Review* 80(3) ([link](#))^{2,3}

Milgrom and Roberts (1996), "The LeChatelier Principle," *American Economic Review* 86(1) ([link](#))

Consumer Theory (~6 lectures)

Preferences and Choice

Existence of a Utility Representation

Properties of Preferences

Utility Maximization and Marshallian Demand

Solving the consumer problem via Lagrangians, and the Kuhn-Tucker Conditions

Expenditure Minimization and Hicksian Demand

The link between Hicksian and Marshallian demand (the Slutsky Equation)

Rationalizability of finite data, aggregation, welfare measures

Recommended reading:

Mas-Colell, Whinston, and Green, ch. 1-4

Choice Under Uncertainty (~2 lectures)

Lotteries

Existence of an Expected Utility representation

Who is more risk-averse than whom? (measuring risk aversion)

When is one lottery better than another? (first and second-order stochastic dominance)

Recommended reading:

Mas-Colell, Whinston, and Green, ch. 6

Pratt (1964), "Risk Aversion in the Small and in the Large," *Econometrica* 32(1/2) ([link](#))

Rothschild and Stiglitz (1970), "Increasing Risk: I. A Definition," *Journal of Economic Theory* 2 ([link](#))

² Note that Theorems 7, 8 and 9 of Milgrom and Roberts (1990) are not correct as published. If you really want to get into the weeds on this, see ([Bushnell/Shepard comment](#)), ([Topkis comment](#)), and ([Milgrom/Roberts reply](#)), all from *AER* 85(4). Or just use Milgrom and Roberts for context, motivation, and to understand the general setup.

³ If you want more, Milgrom and Shannon (1995), "Monotone Comparative Statics," *Econometrica* 62(1) ([link](#)) offers greater generality; Topkis (1978), "Minimizing a Submodular Function on a Lattice," *Operations Research* 26(2) ([link](#)) gives the underlying mathematical foundation.

COVID-19

Early this summer, it felt (in highly vaccinated parts of the U.S.) like the pandemic was mostly behind us, and I started to get very excited about being back in person this Fall – teaching, holding office hours, and seeing the bottom half of peoples’ faces. But writing this in August, with vaccination rates plateaued and case rates rising everywhere due to the much-more-transmissible delta variant, it’s clear we’re not out of the woods yet. Luckily, vaccines offer some protection against infection and transmission, and *excellent* protection against serious cases leading to hospitalization and death. **IF YOU’RE NOT VACCINATED BUT WANT TO BE, [HERE](#) IS A LINK TO SCHEDULE AN APPOINTMENT.**

Following current guidelines and campus policy, **MASKS WILL BE REQUIRED IN CLASS REGARDLESS OF VACCINATION STATUS.** I am fully vaccinated, and will be wearing a mask while teaching. Similarly, if you come to in-person office hours, I ask that you wear a mask, and I will as well. I’ll update these policies as conditions warrant.

IF YOU HAVE QUESTIONS OR CONCERNS ABOUT COVID VACCINES, I URGE YOU TO MAKE AN APPOINTMENT WITH YOUR DOCTOR TO TALK ABOUT THESE CONCERNS.

Your family doctor back home, or a doctor at UHS, will have the most reliable and current medical information.⁴

Some sources I like for reliable information on COVID-19:

- CDC: <https://www.cdc.gov/coronavirus/2019-nCoV/index.html>
- Public Health Madison & Dane County: <https://www.publichealthmdc.com/>
- UW: <https://news.wisc.edu/covid-19-campus-response/> and <https://smartrestart.wisc.edu/>
- Some epidemiologists and other relevant professionals I like on social media: [Dear Pandemic](#) ([FB](#), [Twitter](#), [IG](#)) and [Your Local Epidemiologist](#)

Mental Health

The past year and a half has been difficult on many people in a variety of ways. Many of us have felt isolated or scared; many have lost family members or close friends; many are mourning things we’ve missed out on doing. The return to full-scale in-person instruction this Fall may also be stressful and disorienting after a full year of online learning, as will the return to “outside life” in an environment of uncertainty. **I URGE YOU TO TAKE YOUR MENTAL HEALTH VERY SERIOUSLY THIS SEMESTER.**

UHS has a variety of free, confidential mental health services available for students:

- [UHS Mental Health page](#)
- [UHS Support Groups](#)
- [Access Appointment process](#) (phone call to connect with appropriate resources)
- [Virtual Wellness Resources](#)
- [SilverCloud](#): online, self-guided mental health resource available 24/7 (no referral needed)
- [24 hour crisis services](#): 608-265-5600

IF YOU FEEL OVERWHELMED OR DEPRESSED, YOU ARE NOT ALONE AND THERE IS NO SHAME IN FEELING THIS WAY. Please know that help is always available.

⁴ Some of you may think that, being young and healthy, you’d survive getting COVID and don’t need to worry about it. Statistically, you’re right – you almost certainly would survive it. On the other hand, if case rates spike again in Madison this fall, I assume classes will shift back online, bars and restaurants will close, large parties and events will be canceled, and we’ll all lose another year of our lives hiding in our homes. **If you want this year to be anything close to “normal,” the best way to contribute to that is to get vaccinated.**

Violence Prevention Resources

Experiences of sexual assault, sexual harassment, dating violence, domestic violence, and stalking affect many students on this campus and can create barriers to learning. UW-Madison is committed to fostering a safe, productive learning environment and offers a variety of resources and options for students impacted by violence. Learn about the free, confidential services available on campus and in the community by visiting www.uhs.wisc.edu/assault.

Institutional Statement on Diversity

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background - people who as students, faculty, and staff serve Wisconsin and the world.

Accommodations for Students with Disabilities

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

Misconduct Statement

As I will discuss on the first day of class, I take academic integrity INCREDIBLY SERIOUSLY in a PhD course. Being caught cheating in this class will be devastating to your future.

Academic Integrity is critical to maintaining fair and knowledge based learning at UW Madison. Academic dishonesty is a serious violation: it undermines the bonds of trust and honesty between members of our academic community, degrades the value of your degree and defrauds those who may eventually depend upon your knowledge and integrity.

Examples of academic misconduct include, but are not limited to: cheating on an examination (copying from another student's paper, referring to materials on the exam other than those explicitly permitted, continuing to work on an exam after the time has expired, turning in an exam for regrading after making changes to the exam), copying the homework of someone else, submitting for credit work done by someone else, stealing examinations or course materials, tampering with the grade records or with another student's work, or knowingly and intentionally assisting another student in any of the above.

Students are reminded that online sources, including anonymous or unattributed ones like Wikipedia, still need to be cited like any other source; and copying from any source without attribution is considered plagiarism.

The Department of Economics will deal with these offenses harshly following [UWS14 procedures](#):

1. The penalty for misconduct in most cases will be removal from the course and a failing grade,
2. The department will inform the Dean of Students as required and additional sanctions may be applied.
3. The department will keep an internal record of misconduct incidents. This information will be made available to teaching faculty writing recommendation letters and to admission offices of the School of Business and Engineering.

If you think you see incidents of misconduct, you should tell your instructor about them, in which case they will take appropriate action and protect your identity. You can also choose to contact our department administrator, Tammy Herbst-Koel (therbst@wisc.edu), and your identity will be kept confidential.

For more information, refer to <https://www.students.wisc.edu/doso/academic-integrity/>

Grievance Procedure

The Department of Economics has developed a grievance procedure through which you may register comments or complaints about a course, an instructor, or a teaching assistant. The Department continues to provide a course evaluation each semester in every class. If you wish to make anonymous complaints to an instructor or teaching assistant, the appropriate vehicle is the course evaluation. If you have a disagreement with an instructor or a teaching assistant, we strongly encourage you to try to resolve the dispute with him or her directly. The grievance procedure is designed for situations where neither of these channels is appropriate.

If you wish to file a grievance, you should go to room 7238 Social Science and request a Course Comment Sheet, or contact our department administrator, Tammy Herbst-Koel (therbst@wisc.edu), to request one remotely. When completing the comment sheet, you will need to provide a detailed statement that describes what aspects of the course you find unsatisfactory. You will need to sign the sheet and provide your student identification number, your address, and a phone where you can be reached. The Department plans to investigate comments fully and will respond in writing to complaints.

Your name, address, phone number, and student ID number will not be revealed to the instructor or teaching assistant involved and will be treated as confidential. The Department needs this information, because it may become necessary for a commenting student to have a meeting with the department chair or a nominee to gather additional information. A name and address are necessary for providing a written response.