

Online Econ 8370 – Mathematics for Economics

Fall 2020

Department of Economics
University of Missouri-Columbia

INSTRUCTOR: DR. X. H. WANG

EMAIL: wangx@missouri.edu

(All email correspondences with me should be sent to this address. Messages sent through Canvas may not be received in a timely manner.)

WEBPAGE: <https://economics.missouri.edu/people/wang>

(Note: All times used in this syllabus are US Central Time (CT). Daylight saving time in 2020 will end at 2:00am on Sunday, November 1.)

COURSE DESCRIPTION

The aim of this course is to provide an introduction to the fundamental mathematical tools and methods used for economic analyses. Topics include single- and multi-variable functions, matrix algebra, equilibrium analyses, optimization theory, and their applications in economics.

LEARNING OBJECTIVES

After completing the entire course, you are expected to be able to

- Understand fundamental concepts of single- and multi-variable functions
- Understand basic concepts of matrix algebra
- Understand basic concepts of unconstrained and constrained optimization
- Apply basic mathematical concepts to analyze some important economic problems

REQUIRED TEXTBOOK

Mathematics for Economics, Third Edition, MIT Press
by Michael Hoy, John Livernois, Chris McKenna, Ray Rees and Thanasis Stengos

ONLINE COURSE ACCESS

You may access the course via <https://courses.missouri.edu>. Under course login, select Canvas and enter your MU PawPrint username and password. If you run into any technical difficulties, please contact the Mizzou IT Help Desk via phone 573-882-5000 or e-mail helpdesk@missouri.edu or from the self-service portal: <https://cherwell.umsystem.edu/CherwellPortal/DoITPortal>.

OFFICE HOURS

There are no scheduled office hours. You are welcome to email me requests for Zoom meetings. My preferred Zoom meeting times are on Tuesdays from 3:00pm-5:00pm CT. However, if you cannot meet me during these hours, specify in your email your available times and I will respond with a proposed meeting time based on your availability and mine.

Discussion Board

For general questions (i.e., not specific to you personally), you are encouraged to post to the discussion board on our course Canvas site. All of you are strongly encouraged to both post and answer questions on the discussion board. It will be monitored throughout the week.

TESTS AND TEST DATES

- There is a test for each of three sections of the course. Each section test will be on Thursday night in the section review week. Each test will start at 7pm CT and end at 8:30pm CT (15 minutes for setting up; 60 minutes for answering questions; and 15 minutes for submission.)
- There is a cumulative final exam that will be on Thursday night in the Finals week. The final exam will start at 7pm CT and end at 9pm CT (15 minutes for setting up; 90 minutes for answering questions; and 15 minutes for submission.)
- All tests must be submitted in Canvas by the deadline in one PDF file. Please note that once the due time has reached, the link to submit disappears and you can no longer submit your answers. (If you do not have a PDF file maker, check out the CamScan_instructions file in the course Canvas site, install the freely available app and practice with it to create PDF files.)

MISSED TEST POLICY

If you have circumstances that affect your ability to take a test, please contact the instructor at least 2 days in advance of the test date.

SHOW YOUR INDEPENDENT WORK

All tests in this class will be open book and unsupervised. However, it is very important that all of your submitted answers are your own independent work. You are not allowed to consult anyone else.

GRADING

The course will be graded on the basis of three section tests and a cumulative final exam. Each section test is worth 45 points. The final exam is worth 65 points. The maximum total points will be 200. Letter grades will be assigned using the Grade Table below.

Plus/Minus Grade Table (Usual rules will be used to round decimals)

A+: 98-100 percent	A: 94-97 percent	A-: 90-93 percent
B+: 85-89 percent	B: 80-84 percent	B-: 75-79 percent
C+: 70-74 percent	C: 65-69 percent	C-: 60-64 percent
F: below 60 percent		

ADVICE (HOW TO BE SUCCESSFUL)

- Read the textbook/study the chapter slides: For each chapter covered, the first thing I recommend is to read both the chapter lecture slides in Canvas and the textbook.
- Watch the lecture videos: Each week has two or three lecture videos. These videos are based on the chapter lecture slides. I encourage you to view the videos at least once. However, each of you will develop a study method most suitable to you and some of you may find that studying the chapter slides is more effective.
- Practice, practice, practice! For each chapter covered, problems from the textbook will be

selected as Work Problems. You are strongly encouraged to work on these problems as practice problems and then check the answer keys.

WEEKLY SCHEDULE

Week	Unit	Tasks
0	Preparations	<ol style="list-style-type: none"> 1) Study carefully the course syllabus 2) Familiarize yourself with a PDF converter 3) Read Chapter 1 of textbook
1 (8/23-8/29)	Chapter 2	<ol style="list-style-type: none"> 1) Read Chapter 2 of textbook 2) Review Chapter 2 notes 3) Study Chapter 2 lecture slides 4) Watch Chapter 2 lectures 1-3 5) Work on Chapter 2 work problems
2 (8/30-9/5)	Chapter 3 Chapter 4	<ol style="list-style-type: none"> 1) Read Chapter 3 of textbook 2) Review Chapter 3 notes 3) Study Chapter 3 lecture slides 4) Watch Chapter 3 lectures 1-2 5) Work on Chapter 3 work problems 6) Read Chapter 4 of textbook 7) Review Chapter 4 notes 8) Study Chapter 4 lecture slides 9) Watch Chapter 4 lecture 10) Work on Chapter 4 work problems
3 (9/6-9/12)	Chapter 5	<ol style="list-style-type: none"> 1) Read Chapter 5 of textbook 2) Review Chapter 5 notes 3) Study Chapter 5 lecture slides 4) Watch Chapter 5 lectures 1-3 5) Work on Chapter 5 work problems
4 (9/13-9/19)	Chapter 6	<ol style="list-style-type: none"> 1) Read Chapter 6 of textbook 2) Review Chapter 6 notes 3) Study Chapter 6 lecture slides 4) Watch Chapter 6 lectures 1-2 5) Work on Chapter 6 work problems
5 (9/20-9/26)	Section 1 Review and Test 1	<ol style="list-style-type: none"> 1) Review Chapters 2-6 2) Take Test 1 from 7pm-8:30pm on Thursday September 24
6	Chapter 7	<ol style="list-style-type: none"> 1) Read Chapter 7 of textbook

(9/27-10/3)		<ul style="list-style-type: none"> 2) Review Chapter 7 notes 3) Study Chapter 7 lecture slides 4) Watch Chapter 7 lectures 1-2 5) Work on Chapter 7 work problems
7 (10/4-10/10)	Chapter 8	<ul style="list-style-type: none"> 1) Read Chapter 8 of textbook 2) Review Chapter 8 notes 3) Study Chapter 8 lecture slides 4) Watch Chapter 8 lectures 1-2 5) Work on Chapter 8 work problems
8 (10/11-10/17)	Chapter 9	<ul style="list-style-type: none"> 1) Read Chapter 9 of textbook 2) Review Chapter 9 note 3) Study Chapter 9 lecture slides 4) Watch Chapter 9 lectures 1-3 5) Work on Chapter 9 work problems
9 (10/18-10/24)	Chapter 10	<ul style="list-style-type: none"> 1) Read Chapter 10 of textbook 2) Review Chapter 10 notes 3) Study Chapter 10 lecture slides 4) Watch Chapter 10 lectures 1-3 5) Work on Chapter 10 work problems
10 (10/25-10/31)	Section 2 Review and Test 2	<ul style="list-style-type: none"> 1) Review Chapters 7-10 2) Take Test 2 from 7pm-8:30pm on Thursday October 29
11 (11/1-11/7)	Chapter 11	<ul style="list-style-type: none"> 1) Read Chapter 11 Sections 11.1-11.3 of textbook 2) Review Chapter 11 notes part 1 3) Study Chapter 11 lecture slides part 1 4) Watch Chapter 11 lectures 1-3 5) Work on Chapter 11 work problems part 1.
12 (11/8-11/14)	Chapter 11	<ul style="list-style-type: none"> 1) Read Chapter 11 Sections 11.4-11.5 of textbook 2) Review Chapter 11 notes part 2 3) Study Chapter 11 lecture slides part 2 4) Watch Chapter 11 lectures 4-6 5) Work on Chapter 11 work problems part 2.
13 (11/15-11/21)	Chapter 12	<ul style="list-style-type: none"> 1) Read Chapter 12 of textbook 2) Review Chapter 12 notes 3) Study Chapter 12 lecture slides 4) Watch Chapter 12 lectures 1-2 5) Work on Chapter 12 work problems
		Thanksgiving Break: 11/22-11/28

14 (11/29-12/5)	Chapter 13 Chapter 14	<ol style="list-style-type: none"> 1) Read Chapter 13 of textbook 2) Review Chapter 13 notes 3) Study Chapter 13 lecture slides 4) Watch Chapter 13 lectures 1-2 5) Work on Chapter 13 work problems 6) Read Chapter 14 of textbook 7) Review Chapter 14 notes 8) Study Chapter 14 lecture slides 9) Watch Chapter 14 lecture 10) Work on Chapter 14 work problems
15 (12/6-12/12)	Section 3 Review and Test 3	<ol style="list-style-type: none"> 1) Review Chapters 11-14 2) Take Test 3 from 7pm-8:30pm on Thursday December 10
16 (12/13-12/19)	Final Exam	<ol style="list-style-type: none"> 1) Review all materials covered in this semester 2) Take Final Exam from 7pm-9pm on Thursday December 17

ACADEMIC INTEGRITY

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

ADA STATEMENT

If you anticipate barriers related to the format of requirements of this course, or if you have emergency medical information to share with me, please let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams), please establish an accommodation plan with the MU Disability Center (<https://disabilitycenter.missouri.edu/>), S5 Memorial Union, 573-882-4696, and then notify me of your eligibility for reasonable accommodations.

STATEMENT ON INTELLECTUAL PLURALISM

The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the departmental chair, the director of the Office of Students Rights and Responsibilities (<https://osrr.missouri.edu/>), or the MU Equity Office (<https://equity.missouri.edu/>). All students will have the opportunity to submit an anonymous evaluation of the instructor at the end of the course.

UNIVERSITY OF MISSOURI NOTICE OF NONDISCRIMINATION

The University of Missouri System is an Equal Opportunity/Affirmative Action institution and is nondiscriminatory relative to race, religion, color, national origin, sex, sexual orientation, age, disability

or status as a Vietnam-era veteran. Any person having inquiries concerning the University of Missouri's compliance with implementing Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans With Disabilities Act of 1990, or other civil rights laws should contact the Associate Vice Chancellor for Human Resource Services (<https://hrs.missouri.edu/>), 1095 Virginia Avenue, MO 65211, 573-882-4256.

TITLE IX POLICY

University of Missouri policies prohibit discrimination on the basis of race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, pregnancy, age, genetic information, disability and protected veteran status. Discrimination includes any form of unequal treatment such as denial of opportunities, harassment, and violence. Sex-based violence includes rape, sexual assault, unwanted touching, stalking, dating/interpersonal violence, and sexual exploitation.

If you experience discrimination, you are encouraged (but not required) to report the incident to the MU Office for Civil Rights & Title IX. Learn more about your rights and options at civilrights.missouri.edu or call 573-882-3880. You also may make an anonymous report online.

Students may also contact the Relationship & Sexual Violence Prevention (RSVP) Center, a confidential resource, for advocacy and other support related to rape or power-based personal violence at rsvp@missouri.edu or 573-882-6638, or go to rsvp.missouri.edu.

Both the [Office for Civil Rights & Title IX](#) and the [RSVP Center](#) can provide assistance to students who need help with academics, housing, or other issues.

GRADE APPEAL/GRIEVANCE POLICY

Information concerning student grade appeal procedures and non-academic grievances and appeals can be found at <https://registrar.missouri.edu/policies-procedures/grade-appeals.php>.

ONLINE CLASS NETIQUETTE

In an online classroom, our primary means of communication is written language. The written language has many advantages: more opportunity for reasoned thought, more ability to go in-depth, and more time to think through an issue before posting a comment on the Discussion Board forum. However, written communication also has certain disadvantages, such as lack of the face-to-face signaling that occurs through body language, intonation, pausing, facial expressions, and gestures. As a result, please be aware of the possibility of miscommunication and compose your comments in a positive, supportive, and constructive manner.

ONLINE COURSE MATERIALS

All online contents of this class are copyrighted and are not to be shared or used outside of this class.