Economics 4370/7370: Quantitative Economics

Fall 2018

Instructor: Dr. X. H. Wang
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Office Hours: 2–4pm Tuesdays

Class Time and Location: MW 2–3:15pm, Neff Hall 204

Course Webpage: Canvas at https://courses.missouri.edu/

Grader: Mr. Yang AN, 128 Professional Building
yavt7@mail.missouri.edu; **Office hours**: 11am–12pm Fridays

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.

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

Course Requirements: There will be eight quizzes, one midterm exam, and one final exam. All quizzes are open-book; all exams are closed-book; all questions are multiple choices or of the problem-solving type.

Grading: Plus/minus grades will be used. See the Grade Table (based on 100 percent). Your grade will be determined by the following:

Quizzes (6 best out of 8)	60 points
Midterm	60 points
Final	60 points
Total	180 points

Quiz Dates: (all during class time)

1: 8/29 (W)   **2**: 9/12 (W)   **3**: 9/24 (M)   **4**: 10/3 (W)
5: 10/24 (W) **6**: 11/5 (M)   **7**: 11/14 (W) **8**: 12/3 (M)

Exam Schedule: (all in regular classroom)

Midterm:	**October 10**	Wednesday (during class time)
Final:	**December 10**	Monday 12:30-2:30pm

Work Problems

Work problems from the textbook will be selected and posted on Canvas on a weekly basis. You are not required to submit your answers.

Make-up Exams

Make-up exams will generally not be given. A request for alternative arrangements must be in writing and must be accompanied by appropriate documentation for not taking the scheduled exam.

Emergency Related Issues

In case of an emergency, military call-ups, sickness or death in the family affecting attendance the day of an exam or a quiz, you will be excused from the exam or the quiz if you follow this procedure:

You must provide your justification via e-mail and you must submit proper documentation in a timely manner (e.g., military order in advance, doctor's note upon your return). When you go through a death in the family, you need to send a statement, via e-email, telling the deceased's name and the relationship to you and provide with a copy of the obituary upon your return. Unexcused (i.e., no documentation) missed exams and quizzes will be scored as zeros. The excused quiz will be scored as the average of your other quizzes. Your performance on the final exam will replace your midterm score if you miss the midterm with an accepted excuse.

Note on Emails

All emails must have a <u>subject line</u> that includes "Econ 4370--" or "Econ 7370--" followed by a keyword such as "Question" or "Appointment". Appointment emails should provide your own available times and days.

Major Topics	**Readings in Text**
Introduction	Chapters 2 & 3
sets, numbers,	2.1, 2.3
functions,	2.4
sequences, limits, present value	3.1–3.4
Univariate Calculus and Optimization	Chapters 4–6
continuity	Ch. 4
differentiation, differential	5.1, 5.2, 5.4
convex & concave functions	5.5
Taylor's formula	5.6
one-variable optimization	Ch. 6
Linear Algebra	Chapters 7–10
system of linear equations	Ch. 7
matrices	Ch. 8
determinants, inverse matrix	9.1, 9.2
Cramer's rule	9.4
eigenvalues	10.2
quadratic forms	10.3
Multivariate Calculus and Optimization	Chapters 11–15
functions of many variables, partial derivatives	11.1–11.5
optimization: first- & second-order conditions	12.1, 12.2
constrained optimization: Lagrange multiplier method	13.1, 13.2
comparative statistics	Ch. 14
concave programming: Kuhn-Tucker conditions	Ch. 15
Dynamics	Chapters 18–20

ACADEMIC INTEGRITY POLICY

Academic honesty 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 academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult the course instructor.

Academic Dishonesty includes but is not necessarily limited to the following:

A. Cheating or knowingly assisting another student in committing an act of cheating or other academic dishonesty.
B. Plagiarism which includes but is not necessarily limited to submitting examinations, themes, reports, drawings, laboratory notes, or other material as one's own work when such work has been prepared by another person or copied from another person.
C. Unauthorized possession of examinations or reserve library materials, or laboratory materials or experiments, or any other similar actions.
D. Unauthorized changing of grades or markings on an examination or in an instructor's grade book or such change of any grade report.

ACADEMIC INTEGRITY PLEDGE: *"I strive to uphold the University values of respect, responsibility, discovery, and excellence. On my honor, I pledge that I have neither given nor received unauthorized assistance on this work."* Students are expected to adhere to this pledge on all graded work whether or not they are explicitly asked in advance to do so.

The University has specific academic dishonesty administrative procedures. Although policy states that cases of academic dishonesty must be reported to the Office of the Provost for possible action, the instructor may assign a failing grade for the assignment or a failing grade for the course, or may adjust the grade as deemed appropriate. The instructor also may require the student to repeat the assignment or to perform additional assignments. In instances where academic integrity is in question, faculty, staff and students should refer to Article VI of the Faculty Handbook. Article VI is also available in the M-Book. Article VI provides further information regarding the process by which violations are handled and sets forth a standard of excellence in our community.

ADA STATEMENT (FROM OFFICE OF THE PROVOST)

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible.

If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please establish an accommodation plan with the Disability Center (http://disabilitycenter.missouri.edu), S5 Memorial Union, 573-882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for persons with disabilities, click on "Disability Resources" on the MU homepage.

THE DEPARTMENT OF ECONOMICS EXAM ACCOMMODATION PROCEDURE FOR STUDENTS WITH DISABILITIES:

1. A disabled student who wants accommodations for an exam in Economics course must present the course instructor with a Letter of Accommodation from the Office of Disability

Services (ODS) that documents the accommodations the student is entitled to receive. This should be done as early in the semester as possible.

2.   For each accommodated exam, the student should bring the course instructor an Adaptive Examination Request Form from ODS. The course instructor is not required to accept such a request unless the student has first provided you with a Letter of Accommodation. ODS policies require that this form be provided to you at least 7 business days in advance for hourly examinations and by Thanksgiving Break (Spring Break) for fall (spring) final examinations.

3.   The student section of the form must be properly filled out (including consistency with the Letter of Accommodation regarding the accommodations) and signed by the student. The course instructor must fill out the instructor portion including a note in the SPECIAL INSTRUCTIONS box and sign the form.

4.   The white and pink copies of the form are given back to the student and the student must submit the white copy to ODS.

Audio/Video Recording

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in Section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under Section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of Section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of Section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

INTELLECTUAL PLURALISM STATEMENT (FROM OFFICE OF THE PROVOST)

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (http://osrr.missouri.edu/). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

Plus/Minus Grade Table

A+: 97-100 percent	A: 93-96 percent	A-: 90-92 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
D+: 57-59 percent	D: 53-56 percent	D-: 50-52 percent