

Economics 3G03: Introduction to Advanced Economic Theory Fall Term 2017

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Office Hours: 3:30 - 4:30 pm on Mondays or by appointment

Class Schedule

Term: Tuesday, September 5 – Wednesday, December 6
Mid-term Recess: Monday October 9 - Sunday October 15
Class Time: 9:30 - 11:20 am on Mondays, 10:30 - 11:20 pm on Wednesdays
Location: KTH 104
Course webpage: available at Avenue

Objective

This course is an introduction to the mathematical methods commonly used in economic theory. The purpose of the course is to make students comfortable with the application of mathematics to economic theory and therefore, prepare them for their third- and fourth- year economic courses. The course will review and cover topics in linear algebra and calculus as well as focus on the theories of constrained optimization, differential equations and difference equations. The emphasis of the course will be on problem-solving with illustrative examples taken from various fields of economic study.

Problem set

Practice questions will be posted on the course website or announced in class. They are essential to prepare for term tests and the final exam. Remember that the only way to learn the material in this course is to do lots of problems!!!

Assignment/Term Test/Final exam

There will be three term tests and a three-hour final exam. There will be an assignment before each term test. Students should refer to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty. The date and time for the final exam are to be scheduled by the Office of the Registrar. No calculators will be permitted in any term test and the final exam. The tentative term test schedule is:

- Test 1: October 2, 10:30 - 11:20 am, Location: KTH 104
- Test 2: November 1, 10:30 - 11:20 am, Location: KTH 104
- Test 3: November 29, 10:30 - 11:20 am, Location: KTH 104

Each term test will receive a weight of 17% and each assignment a weight of 3% in the final mark, and the final exam will receive a weight of 40%. If a student gets a higher marks in the final exam than the average marks of the three term tests and three assignments, the final exam will receive a weight of 80% and the three term tests will receive a weight of 20%. A Student who misses a term test without a medical excuse will receive a grade of zero for that exam. If a student misses a term test with a medical excuse, the weight of that test will be moved forward onto the remaining test(s) and the final exam.

Academic Dishonesty

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at

http://www.mcmaster.ca/senate/academic/ac_integrity.htm

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

E-mail Communication Policy

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student’s own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student’s responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

Email Forwarding in MUGSI:

<http://www.mcmaster.ca/uts/support/email/emailforward.html>

*Forwarding will take effect 24-hours after students complete the process at the above link

(Approved at the Faculty of Social Sciences meeting on Tues. May 25, 2010)

Textbook

“Fundamental Methods of Mathematical Economics” Alpha C. Chiang and Kevin Wainwright, 4th edition, McGraw Hill

A copy of the textbook is listed as a course reserve at Mills Library (You can borrow it for one day).

Schedule

- *Introduction*
Equilibrium Analysis in Economics, Chapter 3.
- *Review of Linear Algebra*
Linear Models and Matrix Algebra, Chapters 4 and 5.
- *Competitive Static Analysis*
Comparative Statics and the Concept of Derivative, Chapter 6.
Rules of Differentiation and Their Use in Comparative Statics, Chapter 7.
Comparative-Static Analysis of General Function Models Chapter 8
- *Optimization Problems*
Optimization: A Special Variety of Equilibrium Analysis, Chapter 9.
Exponential and Logarithmic Functions, Chapter 10.
The Case of More than One Choice Variable, Chapter 11.
Optimization with Equality Constraints, Chapter 12.
Further Topics in Optimization Chapter 13
- *Dynamic Analysis*
Economic Dynamics and Integral Calculus, Chapter 14
Continuous Time: First-Order Differential Equations, Chapter 15.
Discrete Time: First-Order Difference Equations, Chapter 17.
Simultaneous Differential Equations and Difference Equations, Chapter 19.