

UNIVERSITY OF GUELPH
College of Management and Economics
Department of Economics and Finance

ECON*4700: Advanced Mathematical Economics
ECON*6060: Mathematical Methods for Economics

Fall 2011

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Lectures: Tue. &Thu. 11:30 – 12:50 pm in MacK 225

Lab: Wed. 2:30 – 3:20 pm in MacK 225

Office hours: Thursday, 2:30 – 4:00, or by appointment.

It is your responsibility as a student to be aware of and to abide by the University's policies regarding academic misconduct, e-mail communication, maintaining copies of out-of class assignments, what to do when you cannot meet a course requirement and the drop date for this semester. To better understand these policies, visit:

<http://www.economics.uoguelph.ca/student-responsibilities-policies.asp>

Course outline

Description: This is an advanced undergraduate course in mathematical economics, with selected applications. The first six weeks focuses on techniques with some familiar economic applications. The second part of the course studies topics in contracts, incentives and the functioning of markets with uncertainty. The first six weeks is a combined course with ECON*4700 and ECON*6060. The second part of the course is for ECON*4700 only.

Main texts: Hoy, M., J. Livernois, C. McKenna, R. Rees, and T. Stengos,, *Mathematics for Economics*, MIT Press, 3rd Edition. [Hoy]

Other texts: Macho-Stadler, I. and J.D. Pérez-Castrillo, *An Introduction to the Economics of Information*, Oxford University Press, 2nd Edition. [MP]

Pissarides, C.A., *Equilibrium Unemployment Theory*, MIT Press, 2nd Edition. [CP]

Salanié, B., *The Economics of Contracts*, MIT Press, 2nd Edition. [BS]

All texts are on reserve in the University Library.

Evaluation: There will be two in-class midterm exams (worth 20% each) scheduled for 6 October and 3 November. The final exam (60%) is scheduled for 9 December, 11:30 – 1:30.

Feedback: You will be asked to complete an evaluation of this course at some time during the last two weeks of the semester. The Department of Economics policy regarding the conduct and use of these evaluations will be found at:

<http://www.economics.uoguelph.ca/course-evaluation.asp>

Student responsibilities: You should be aware of your responsibilities regarding University policies on academic misconduct, drop dates, email communication and course requirements. You are advised to visit:

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Week 1 & 2: Review of calculus and optimization of multivariate functions. Hoy Chs 11, 12 & 13.

Week 3: Comparative statics. Hoy Ch 14.

Week 4: Integration. Hoy Ch 16.

Weeks 5 & 6: Dynamics – continuous-time models. Hoy 17, 21, 22.

Week 7: Modeling uncertainty. MP Chs 1 & 2.

Week 8: Moral hazard. MP Ch 3, BS Ch 5.

Week 9: Adverse selection. MP Ch 4, BS Chs 2 & 6.

Week 10: Unemployment and job creation. CP Ch 1.

Week 11: Unemployment and job destruction. CP Ch 2.

Week 12: Labour turnover. CP Ch 4.

Additional readings for weeks 7 through 12 will be given in class.