

ECON 351
Mathematical Economics II: An Introduction to Dynamic Methods
Spring 2015 – CRN: 20904

Instructor: Dr. Daniel Rondeau, BEC 342; rondeau@uvic.ca
Office Hours: Tuesday 1:00 – 2:30; Wednesday 2:30 – 4:00
Classes: Monday + Thursday 8:30 – 9:50 ELL 168
Prerequisites: Successful completion of Econ 350 (or previously ECON 250).
Students who have failed ECON 350 (Fall 2014) but who are still registered in 351 will be automatically de-registered. This pre-requisite will not be e waived.
Course Web Page: <http://web.uvic.ca/~rondeau/econ351>
Access with your UVic NetLinkID and Password.

Course Overview:

The objective of the course is to prepare students for the study of advanced economics topics in which *time* becomes an important dimension (e.g. macroeconomic theory, natural resource economics, time series econometrics, learning, evolutionary game theory, etc.). The course is concerned with the fundamental mathematical methods of economic dynamics: Integration, Difference Equations, Differential Equations, Complex Numbers, Systems of differential equations and, optimal control theory (if time permits).

By the end of the course, students should be able to solve or qualitatively analyze the behavior of variables evolving according to linear and non-linear first and second order difference and ordinary differential equations; and analyze simple systems of difference or differential equations. In addition, students should have a basic understanding of how to optimally choose a variable over time using optimal control theory (if time permits).

Textbook

The required text for this course is
Hoy, Livernois, McKenna, Rees and Stengos. Mathematics for Economics, 3rd Edition, MIT Press, 2011.

Lecture Topics

The course will cover chapters 16 to 25 of the Hoy et al. text. The chapters will be covered in the following order: 17 to 20, 16, 21 to 25. The Table of Contents of the textbook constitutes a detailed outline of the topics covered in the course, although some sections of selected chapters will not be covered. The topics are:

1. Introduction to Economic Dynamics (Ch. 17)
2. Linear First Order difference equations (Ch. 18)
3. Non-linear First Order difference equations (Ch. 19)
4. Key results from Complex Number Theory and trigonometry (Hoy et al. Technical Appendix)
5. Linear Second Order difference equations (Ch. 20)
6. Key elements of Integration techniques (Ch. 16)
7. Linear First Order differential equations (Ch. 21)
8. Non-linear First Order differential equations (Ch. 22)
9. Linear Second Order differential equations (Ch. 23)
10. Systems of difference and differential equations (Ch. 24)
11. Optimal Control Theory (Ch. 25) – if time allows.

Grading:

There will be 6 to 8 written homework assignments, two mid-term examinations and a final exam. While assignments will contain several questions, only one or two questions on each assignment will be chosen at random for actual grading.

Final grades will be calculated according to the following weights:

Homework assignments:	10%
Mid-Term Examination 1 (Thursday February 5):	20%
Mid-Term Examination 2 (Thursday March 5):	20%
Final Examination (cumulative):	50%

Your percentage grade translates to a UVic letter grade as follows:

90-100: A+; 85-89: A; 80-84: A-

Grades of A+, A and A- are given to exceptional, outstanding and excellent performance. These grades indicate a student who is self-initiating, exceeds expectation and has an insightful grasp of the subject matter.

77-79: B+; 73-76: B; 70-72: B-

Grades of B+, B and B- are given for very good, good and solid performance. These grades indicate a good grasp of the subject matter or excellent grasp in one area balanced with satisfactory grasp in the other area.

65-69: C+ 60-64: C

Grades of C and C+ are given for satisfactory, or minimally satisfactory performance. These grades indicate a satisfactory performance and knowledge of the subject matter. Note that a grade of C or better is required in econ 203 in order to obtain an economics degree.

50-59: D

A grade of D indicates a marginal performance. A student receiving this grade demonstrated a superficial grasp of the subject matter.

0-49: F (Fail).

Unsatisfactory performance. Wrote final examination and completed course requirements.

N Did not write examination or complete course requirements by the end of the term.

Students who have questions or concerns regarding their grade should come to office hours. All concerns must be brought to my attention no later than one week after the graded material was returned to the student. After one week the assigned grade is final.

Failed exams cannot be retaken and no extra work can be done to improve your grade.

Other Matters

All Departmental, Faculty and University Policies applicable to undergraduate courses and students apply to this course and to you. The following are excerpts of some key elements of policy, that in no way limit the applicability of the entire policies. Students are all expected to know and abide by all applicable policies. The policies can be found on the Econ Department website at:

<http://www.uvic.ca/socialsciences/economics/undergraduate/home/course%20policies/index.php>

Use of Electronic devices

Electronic devices are great, but their proliferation has resulted in an increasing number of classroom disruptions. Be considerate. Get into the habit of turning the bells and whistles off, even the vibrating modes, when you arrive on campus. That all important message is only a little over one hour away – at most!

No electronic device other than a basic non-scientific calculator will be allowed during exams.

E-mail correspondence

As per Department of Economics guidelines: Emails should be limited to critical matters, such as inability to attend class, an exam, or prolonged illness, and should include the course name and number in the subject line. Questions on course material should be asked during office hours or in class. The standard format for writing a letter must be used. This means it should start off with a salutation (e.g. Dear...), include full sentences and conclude with a signature that includes your name (e.g. “Sincerely, *your full name*). Text message lingo should not be used.

Academic Integrity

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Students are expected to observe the same standards of scholarly integrity as their academic and professional counterparts. A student who is found to have engaged in unethical academic behavior, including the practices described in the Policy on Academic Integrity (see <http://web.uvic.ca/calendar/FACS/UnIn/UARe/PoAcI.html>) in the University Calendar, is subject to penalty by the University.

With respect to assignments, it is understood that students work together on assignment problems. Your objective should be to help each other UNDERSTAND HOW to solve problems, not take from or provide a solution to someone else. Therefore, two or more IDENTICAL HOMEWORK SOLUTIONS WILL BE TREATED AS PLAGIARISM, and ALL STUDENTS INVOLVED WILL BE PENALIZED EQUALLY.

Attendance

Students are expected to attend all classes and labs in which they are enrolled (Attendance Policy - <http://web.uvic.ca/calendar/FACS/UnIn/UARe/index.html>). Class attendance will not be monitored. Note that courses that are not formally dropped while the student does not write tests will result in a fail grade, while such students may also be required to withdraw, and will be required to pay the tuition fee for the course.

An instructor may refuse a student admission to a lecture or laboratory because of lateness, misconduct, inattention or failure to meet the responsibilities of the course. Students who are absent because of illness, accident or family affliction should report to their instructors as soon as possible.

Students who write a test must submit the question sheets, answers, as well as scrap paper, if any before leaving the room. Failure to do so may result in an N grade for the course.

Academic concession

A student whose academic performance is affected by injury, family or personal affliction, or illness should immediately consult with University Counseling Services, University Health Services, or another health professional, and may request, directly from the course instructor, deferral or substitution of a test or assignment which is due during the term. This request must be accompanied by supporting documentation from the health professional and must specifically cover the date of the missed examination or assignment deadline. It should normally be dated on or before the exam/deadline date and be submitted to the instructor within 10 days of this date.

If the student considers requesting deferral or substitution of a test or assignment which is due during the term students should also (a) to contact the instructor no later than the time or due date of the test or assignment, (b) to supply the instructor with both a phone number and an email address. Contact the instructor by either by email (rondeau@uvic.ca) or leaving a voice mail message (250-472-4423). Students (as well as the instructor) are expected to get back to emails regarding the case within 24 hours. Students who do not stick to these rules will find their options run out very fast.

All work for which a Concession is approved must be completed before course grades are submitted by the instructor. If makeup tests are assigned, they will be scheduled by the Department according to its make up exam schedule. Students must be registered for these tests by their instructors in order to be permitted to take them.

If the request for deferral or substitution of term work is denied, a student may appeal as described under Appeals (<http://web.uvic.ca/calendar/FACS/UnIn/UARe/Appe.html>).

Academic concession for work that will be completed after course grades are submitted by the instructor In the event of a missed final examination, or submission of an assignment after grades are submitted by the instructor, students must submit a Request for Academic Concession (RAC) to Undergraduate Records with the required official documentation from a health professional within 10 working days of the end of the examination period.

Travel plans

Students are advised not to make work or travel plans until after the examination timetable has been finalized. Students who wish to finalize their travel plans at an earlier date should book flights that depart after the end of the examination period. There will be no special accommodation if travel plans conflict with the examination.

Students with a disability

The University aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of its classes and curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of a course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way.

Students with disabilities seeking academic accommodation are expected to contact the Resource Centre for Students with a Disability (<http://rcsd.uvic.ca/>) as early as possible to avoid a delay in service, to initiate the process of determining and arranging appropriate academic accommodation in individual situations.

In order to receive course-based and exam-based accommodations, instructors must be notified of student needs. For example, if a student requires additional time on exams, assistance with note-taking or a substitute assignment, the instructor needs to be informed.

At the start of each academic term, students fill in a Memo to Professors Form and hand it in to the RCSD. Only instructors listed on the request form will receive a copy of this memo. The memo confirms that the student is registered with the RCSD and lists the accommodations to which the student is entitled and has requested. It is the student's responsibility to introduce themselves to their instructors to discuss the contents of the memo and make any necessary arrangements to receive accommodations. The memo's collection, protection, retention and disclosure is governed by provisions of the B.C. Freedom of Information and Protection of Privacy Act.

Policy on inclusivity and diversity

The University of Victoria is committed to promoting, providing and protecting a positive, supportive and safe learning and working environment for all its members.