Introduction to Mathematical Economics
Summer 2018

ECON 640   Bill Robinson, Ph.D.
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                                                           Hours: Daily 9-10 Or by Appt.

Course Content:
Application of mathematics to economic analysis.

Learning Objectives:

The learning objectives for this course are related to the learning objectives for economics students in general. Specifically, at the end of this course, you should be able to:

1.   Explain how mathematical reasoning underlies much of economic theory;
2.   Understand how linear algebra can simplify the representation of computations, particularly with regard to econometric uses;
3.   Explain the fundamentals of differentiation, and the economic interpretation of the derivatives of various economic functions;
4.   Perform both unconstrained and constrained optimization on multivariate functions and explain the economic interpretation of the resulting equations;
5.   Explain how dynamic optimization and control methods can simulate the long term economic growth of an economy.

Text: Mathematical Methods for Economics, 2nd Edition, Michael Klein.

Grading:

Grades will be based on two mid-term exams, and a final exam.   Exams will be a few short answer and many problems. An "A" will require 90% score, a "B" 80%, "C" 70%, and "D" 60%. Those with less than 60% of the possible score will receive an "F." No plus or minus grades are given.   Each exam counts 100 points.   There will be three homework problem sets due on the dates of each exam. The homework will count 20 points each.   Graduate students in ECO 640 will have an additional 40 points attached to a professional paper, for which they will analyze the mathematics used to develop the theoretical model in published research provided by the instructor.   The paper is due the final day of class.

Total points:
Exams:	3 x 100 = 300
Homework:	3 x 20 = 60
Analysis:	1 x 40 = 40
Total	400

Makeup exams are given at the instructors discretion for acceptable reasons. Students should attend exams when given.   The dates of exams given below are fixed, and the student may be certain that an exam is given on that day, allowing the adjustment of their schedule well in advance.

Class Rules:

- Cell phones and iPods must be turned off during class.
- The use of phones during exams is prohibited. Students may bring a basic function calculator if desired.
- Use of teamwork to do homework is encouraged.
- Attendance is not taken, but is encouraged.
- Students are expected to log in to WebCampus frequently to check for updates and announcements.
- I answer emails within 24 hours during the week. I may not answer emails after 5 pm on Friday until Monday morning.

Schedule of Events

Section 1.

The Mathematical Framework of Economic Analysis, Functions, Systems of Equations and Matrix Algebra. Chapter 1 through 5.   Exam on the 9th day of class.

Section 2.

Introduction to Differential Calculus, Univariate Calculus, Multivariate Calculus, Extreme Values of Univariate Functions.   Chapters 6 through 9.   Exam on the 17th day of class.

Section 3.

Optimization, Extreme Values of Multivariate, Functions, Constrained Optimization, Integration, Dynamic Optimization.   Chapters 10 through 12 and 15.   Exam on the 25th day of class.

University Information

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: http://studentconduct.unlv.edu/misconduct/policy.html.

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Disability Resource Center (DRC) – The Disability Resource Center (DRC) determines accommodations that are "reasonable" in promoting the equal access of a student reporting a disability to the general UNLV learning experience.   In so doing, the DRC also balances instructor and departmental interests in maintaining curricular standards so as to best achieve a fair evaluation standard amongst students being assisted. In order for the DRC to be effective it must be considered in the dialog between the faculty and the student who is requesting accommodations. For this reason faculty should only provide students course adjustment after having received this "Academic Accommodation Plan." If faculty members have any questions regarding the DRC, they should call a DRC counselor.

UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The DRC is located in the Student Services Complex (SSC-A), Room 143, phone (702) 895-0866, fax (702) 895-0651. For additional information, please visit: http://drc.unlv.edu/.

Religious Holidays Policy -- Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the last day of late registration of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university which could have been avoided. For additional information, please visit: http://catalog.unlv.edu/content.php?catoid=4&navoid=164.

Tutoring -- The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex, #22 on the current UNLV map. Students may learn more about tutoring services by calling (702) 895-3177 or visiting the tutoring web site at: http://academicsuccess.unlv.edu/tutoring/.

UNLV Writing Center
One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: http://writingcenter.unlv.edu/

Rebelmail – By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's Official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. The suffix is always @unlv.nevada.edu.

Incomplete Grades - The grade of I – Incomplete – can be granted when a student has satisfactorily completed all course work up to the withdrawal date of that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. A student who receives an I is responsible for making up whatever work was lacking at the end of the semester. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.