

**Economics 3620 - Mathematics for Economists
Summer 2007**

Instructor: Michael Hogue

Days/Times: Monday and Wednesday 6:00-9:00 P.M.

Office Address: KDGB 19

Office Hours: M,W 5:00-6:00 P.M.

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Class Address: BuC 304

Course Webpage: <http://www.econ.utah.edu/~mhogue/3620Su07/3620Su07.html>

Required Text.

Course Description. This course is a survey of some of the mathematical concepts and methods useful to economists, especially calculus and the applied math of optimization. We will cover all of the following topics:

[Section 3.4] Propositions, implications, equivalences, necessary and sufficient conditions.

[Chapters 4 and 5] Functions, their properties and their graphs.

[Chapter 6] Limits, the derivative, methods for computing the derivative.

[Sections 7.1, 7.2, 7.4, 7.7, 7.8] Implicit differentiation, differentials, more limits, continuity, applications.

[Chapter 8] Single-variable optimization

[Sections 11.1, 11.2, 11.3, 11.8] Functions of more than one variable.

[Section 12.3, 12.5] Implicit differentiation and elasticity of substitution.

[Sections 13.1, 13.2, 13.3, 13.4] Multi-variable optimization.

[Sections 14.1, 14.2, 14.3] Constrained optimization: the method of Lagrange multipliers, an indication of why it works, and a useful way to interpret the multipliers.

Depending on time, we will also cover at least some of the following topics:

[Sections 9.1, 9.2, 9.3, 9.4] Integration.

[Sections 17.1, 17.2, 17.3, 17.4] Linear programming, shadow value (again) and the dual.

How our Classes will be Structured. Quizzes and exams (on days when we have them – see below for the dates) will be given at the beginning of class. Up to 30 minutes are allowed for the quizzes, with 1 hour and 2 hours allowed for the mid-term and final exams respectively. After the quizzes/mid-term, I'll lecture until 9:00, but we'll take a break at 7:30.

Preparation. The official prerequisite for ECON3620 is MATH 1090. This means that the student should have a solid understanding of the topics typically covered in that course (see <http://www.acs.utah.edu/GenCatalog/crsdesc/math.html#1090>). If you have questions or concerns regarding your preparation for ECON 3620, see or email me as soon as possible.

Homework. Homework will normally be assigned at the end of each lecture but it will not be collected. Instead, the homework problems will show up in slightly modified form on the quizzes.

Testing. The overall course grade is based on the following three components:

Quizzes: We will have 6 3 0-minute quizzes. I will drop the lowest scoring quiz, and the average of the remaining 5 will make up 45% of the course grade.

Ordinary Exams: There will be a 1-hour mid-term exam, counting for 20% of the course grade.

Final Exam: The final exam is comprehensive and accounts for the remaining 35% of the course grade.

Letter-Grade Assignment. If G is the student's overall grade on a 100pt scale, then the letter grade assigned to G is given as follows:

$93 \leq G \leq 100$	$89 \leq G < 93$	$85 \leq G < 89$	$81 \leq G < 85$	$77 \leq G < 81$	$73 \leq G < 77$
A	A-	B+	B	B-	C+

$69 \leq G < 73$	$65 \leq G < 69$	$61 \leq G < 65$	$57 \leq G < 61$	$53 \leq G < 57$	$G < 53$
C	C-	D+	D	D-	E

Test Materials. Calculator use will be permitted on quizzes and exams as long as the calculator does not have the ability to store text. Prohibited calculators include but are not limited to the TI-8x and TI-9x series. Generally, calculators that have a single-line display will be permitted, while those with a multi-line display will not. If in doubt, be sure to have your calculator cleared by the instructor. No other electronics, including headphones, cell-phones, and PDAs, are allowed during quizzes or exams. In addition, all quizzes and exams are closed-book and closed-notes. The instructor will provide "scratch" paper when necessary.

Makeups. Make-up quizzes will not be given. Make-up exams will only be given in extraordinary circumstances. If notice of an unavoidable absence from an exam is given at least one week in advance, and if the instructor is provided supporting documentation that is persuasive and verifiable, then a make-up exam will be given within a reasonable time around the date of the missed exam. If less than one week's notice is given, and especially if no notice is given, then any make-up exam offered is subject to being more difficult than the one missed and/or accompanied by a grade penalty.

Getting Help. Students should consider the instructor as their primary resource for help in this course. If you are unable to see me during the official office hours, feel free to make an appointment. For secondary resources, note that ASUU provides several tutoring services, including free drop-in tutoring at the Peterson Heritage Center Seminar Room #1 (Sunday through Thursday 7:00 P.M.-10:00 P.M.) for all University of Utah students (see <http://www.sa.utah.edu/tutoring>). ASUU also provides one-on-one tutoring for \$6 per hour with discounted rates for groups. ASUU tutoring services office is located at the Student Services Building (SSB).

5/21	Quiz 1	6/4	Mid-term Exam
5/23	Quiz 2 and the last day to drop the class	6/6	Quiz 4
5/28	Memorial Day Holiday	6/11	Quiz 5
5/30	Quiz 3	6/13	Quiz 6
6/1	Last day to withdraw from the class	6/20	Final Exam

A Few Dates to Keep in Mind.

ADA Information. A message from the Center for Disability Services (CDS):

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and to make arrangements for accommodations.

The URL for CDS is <http://www.admin.utah.edu/ppmanual/8/8-10.html>. You are free (but not required) to discuss these issues with me at the beginning of the course.

Academic Integrity. Please remember that all students at the University of Utah are bound by the student code (see <http://www.admin.utah.edu/ppmanual/8/8-10.html>).

About this Syllabus. The instructor reserves the right to make such alterations to this syllabus as unforeseeable circumstances may warrant. Any change will be announced in class and on the course webpage.