Econ 204
Mathematical Tools for Economists
Summer/Fall 2021

Econ 204 is online only in 2021. All times below are Pacific Daylight Time (Berkeley time).

Instructors

Chris Shannon
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Office hours:
11:30 – 12:30 (end of lecture + 1hr) MTWThF
other times by appointment

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Office hours for Bruno and Damian:
MTWThF 3:00-5:00 pm

Course Material
The course will cover Chapters 1-5 and part of Chapter 6 of *Mathematical Methods and Models for Economists* by Angel de la Fuente. Additional material will be covered from several handouts.

Class website  http://elsa.berkeley.edu/users/cshannon/e204_21.html

bCourses site:  https://bcourses.berkeley.edu/courses/1506600
Course Schedule
The course runs from July 26 – August 18.

Lectures: MTWThF 9:00 – 11:30 am, July 26 – August 13
     Note: We will often run past 11:30, so do not schedule anything else between 11:30 and 12:00.

Discussion Sections: MTWThF 1:00 – 3:00

All lectures and discussion sections will be held live on Zoom, and also recorded and posted for students to view later. Links for participating live or viewing recorded lectures and discussion sections will be available only in bCourses. Students must register to have access to the 204 bCourses site.

Final Exam: Wednesday August 18
     details regarding exam format will be discussed in class

Course Requirements
Lectures will cover theory; the discussion sections will review the lectures, introduce additional material, and discuss problem sets. All students should attend the discussion sections and will be responsible for the material discussed in the sections.

There will be a total of six problem sets, due according to the following schedule:

Problem set 1: due Friday July 30
Problem set 2: due Tuesday August 3
Problem set 3: due Friday August 6
Problem set 4: due Tuesday August 10
Problem set 5: due Friday August 13
Problem set 6: due Monday August 16

Students are encouraged to work in study groups. Students must turn in their own solutions in their own handwriting (or typed individually), however.

Because of the importance of posting solutions and grading problem sets promptly, no late problem sets will be accepted. There will be no exceptions to this rule. The problem set grade will be based on the 5 highest grades among the 6 problem sets. This allows for missing one problem set without penalty.
Grading
The grade for Econ 204 will be based on problem set scores and the final exam, according to the following formula:

- Problem sets 10%
- Final exam 90%

Prerequisites
Math 1A – 1B and Math 53 – 54, or equivalent

Course Outline

References below are to sections in de la Fuente. Lecture notes may contain additional material not contained in the textbook.

Lecture 1  Monday July 26
dlF 1.2-1.3, begin 1.4 (see Corrections handout), Set Formation and Axiom of Choice handouts (read dlF section 1.1 on your own)

Lecture 2  Tuesday July 27
dlF 1.4, 1.5-1.6 (read 1.7 on your own)

Lecture 3  Wednesday July 28
dlF 2.1-2.3, handout on lim sup and lim inf

Lecture 4  Thursday July 29
dlF 2.4, begin 2.6 (read 2.5 on your own)

Lecture 5  Friday July 30
dlF 2.6, 2.7

Lecture 6  Monday August 2
dlF 2.8

Lecture 7  Tuesday August 3
dlF 2.9, 2.11 (read 2.10 on your own)

Lecture 8  Wednesday August 4
dlF 3.1–3.3

Lecture 9  Thursday August 5
dlF 3.3, 3.5 – 3.6 and handouts on Matrix Representation, Diagonalization and Quadratic Forms

Lecture 10  Friday August 6
dlF 3.6, 3.4, Diagonalization and Quadratic Forms
Lecture 11  Monday August 9  
dlF 4.1-4.3, 4.4 and Taylor Theorem handout (read 4.5 on your own)

Lecture 12  Tuesday August 10  
dlF 4.3, begin 5.2

Lecture 13  Wednesday August 11  
dlF 5.2, 5.3, 6.1(d)

Lecture 14  Thursday August 12  
Handout on Difference and Differential Equations

Lecture 15  Friday August 13  
Handout on Difference and Differential Equations