Econ 204  
Mathematical Tools for Economists  
Summer/Fall 2017

Instructors

Chris Shannon  
511 Evans Hall  
cshannon@econ.berkeley.edu  
643-7283  
Office hours:  
drop-in: 11:30 – 12:30 (end of lecture + 1hr) MTWThF  
other times by appointment

Farzad Pourbabaee  
farzad@berkeley.edu

Walker Ray  
walkerdray@econ.berkeley.edu

Office hours for Farzad and Walker:  
MTWThF 4:00-5:00 pm 648 Evans Hall (discussion section room)

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.

Website  http://elsa.berkeley.edu/users/cshannon/e204_17.html

Course Schedule
The course runs from July 17 – August 9.

Lectures: MTWThF 9:00 – 11:30 am, July 17 – August 4  141 McConic Hall  
Note: We will often run past 11:30, so do not schedule anything else between 11:30 and 12:00.
Sections: MTWThF 1:00 – 2:30, 2:30 – 4:00, 648 Evans Hall

Final Exam: Wednesday August 9 9:00 am – 12:00 noon, Location TBA
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 21 in lecture
- Problem set 2: due Tuesday July 25 in lecture
- Problem set 3: due Friday July 28 in lecture
- Problem set 4: due Tuesday August 1 in lecture
- Problem set 5: due Friday August 4 in lecture
- Problem set 6: due Monday August 7 – turn in to Farzad/Walker by 9:00 am

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 17**
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 18**
dLF 1.4, 1.5-1.6 (read 1.7-1.8 on your own)

Lecture 3  **Wednesday July 19**
dLF 2.1-2.3, handout on lim sup and lim inf

Lecture 4  **Thursday July 20**
dLF 2.4, begin 2.6 (read 2.5 on your own)

Lecture 5  **Friday July 21**
dLF 2.6, 2.7

Lecture 6  **Monday July 24**
dLF 2.8

Lecture 7  **Tuesday July 25**
dLF 2.9, 2.11 (read 2.10 on your own)

Lecture 8  **Wednesday July 26**
dLF 3.1–3.3

Lecture 9  **Thursday July 27**
dLF 3.3, 3.5 – 3.6 and handouts on Matrix Representation, Diagonalization and Quadratic Forms

Lecture 10  **Friday July 28**
dLF 3.6, 3.4, Diagonalization and Quadratic Forms

Lecture 11  **Monday July 31**
dLF 4.1-4.3, 4.4 and Taylor Theorem handout (read 4.5 on your own)

Lecture 12  **Tuesday August 1**
dLF 4.3, begin 5.2

Lecture 13  **Wednesday August 2**
dLF 5.2, 5.3, 6.1(d)

Lecture 14  **Thursday August 3**
Handout on Difference and Differential Equations

Lecture 15  **Friday August 4**
Handout on Difference and Differential Equations