Econ 204  
Mathematical Tools for Economists  
Summer/Fall 2016  

Instructors  

Chris Shannon  
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643-7283  
Office hours:  
drop-in:  11:30 – 12:30 MTWThF  
other times by appointment  

Tamas Batyi  
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Walker Ray  
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Office hours for Tamas and Walker:  
MTWThF  4:30-5:30 pm Location TBA  

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_16.html  

Course Schedule  
The course runs from July 25 – August 17.  

Lectures: MTWThF 9:30 – 11:30 am, July 25 – August 12  101 Wurster Hall  
Note: We will often run past 11:30, so do not schedule anything else between 11:30 and 12:30.  
Sections: MTWThF 1:30 – 3:00, 3:00 – 4:30, 597 Evans Hall  

Final Exam: Wednesday August 17  9:00 – 12:00, 3106 Etcheverry Hall
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 29 in lecture
- Problem set 2: due Tuesday August 2 in lecture
- Problem set 3: due Friday August 5 in lecture
- Problem set 4: due Tuesday August 9 in lecture
- Problem set 5: due Friday August 12 in lecture
- Problem set 6: due Monday August 15 – turn in to Tamas/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 25**

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 26**

dlF 1.4, 1.5-1.6 (read 1.7-1.8 on your own)

Lecture 3  **Wednesday July 27**

dlF 2.1-2.3, handout on lim sup and lim inf

Lecture 4  **Thursday July 28**

dlF 2.4, begin 2.6 (read 2.5 on your own)

Lecture 5  **Friday July 29**

dlF 2.6, 2.7

Lecture 6  **Monday August 1**

dlF 2.8

Lecture 7  **Tuesday August 2**

dlF 2.9, 2.11 (read 2.10 on your own)

Lecture 8  **Wednesday August 3**

dlF 3.1–3.3

Lecture 9  **Thursday August 4**

dlF 3.3, 3.5 – 3.6 and handouts on Matrix Representation, Diagonalization and Quadratic Forms

Lecture 10  **Friday August 5**

dlF 3.6, 3.4, Diagonalization and Quadratic Forms

Lecture 11  **Monday August 8**

dlF 4.1-4.3, 4.4 and Taylor Theorem handout (read 4.5 on your own)

Lecture 12  **Tuesday August 9**

dlF 4.3, begin 5.2

Lecture 13  **Wednesday August 10**

dlF 5.2, 5.3, 6.1(d)

Lecture 14  **Thursday August 11**

Handout on Difference and Differential Equations

Lecture 15  **Friday August 12**

Handout on Difference and Differential Equations