

**Econ 204**  
**Mathematical Tools for Economists**  
**Summer/Fall 2016**

**Instructors**

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drop-in: 11:30 – 12:30 MTWThF  
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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](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**

dIF 1.2-1.3, begin 1.4 (see Corrections handout), Set Formation and Axiom of Choice handouts (read dIF section 1.1 on your own)

**Lecture 2 Tuesday July 26**

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

**Lecture 3 Wednesday July 27**

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

**Lecture 4 Thursday July 28**

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

**Lecture 5 Friday July 29**

dIF 2.6, 2.7

**Lecture 6 Monday August 1**

dIF 2.8

**Lecture 7 Tuesday August 2**

dIF 2.9, 2.11 (read 2.10 on your own)

**Lecture 8 Wednesday August 3**

dIF 3.1–3.3

**Lecture 9 Thursday August 4**

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

**Lecture 10 Friday August 5**

dIF 3.6, 3.4, Diagonalization and Quadratic Forms

**Lecture 11 Monday August 8**

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

**Lecture 12 Tuesday August 9**

dIF 4.3, begin 5.2

**Lecture 13 Wednesday August 10**

dIF 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