

MATH 516 GRADUATE ALGEBRA I

İzzet Coşkun, MWF 10:00-10:50 p.m.

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Welcome to Math 516! This is the first semester graduate algebra course intended to introduce basics of categories, groups, rings and modules. We will cover basic theorems such as Sylow Theorems, the classification of finitely generated modules over PIDs and some basic linear and homological algebra. This course will prepare you for Math 517 and other courses in the department that use algebra heavily.

Course webpage: <http://www.math.uic.edu/~coskun/math5162014.html>

Venue: TH 304

Office hours: MWF 11:00-12:00 and by appointment in SEO 423.

Text: The text book for the course is Paolo Aluffi, Algebra: Chapter 0, GSM 104, American Mathematical Society, 2009. Some other good references for an introductory course in algebra include

- Serge Lang, Algebra, Addison Wesley, 1995.
- I.N. Herstein, Topics in Algebra, John Wiley & Sons, 1975.
- Dummit and Foote, Abstract Algebra, John Wiley & Sons, 2004.

Prerequisites: Undergraduate algebra.

Requirements: There will be weekly homework. Homework is a very important component of this course. It will count for 50 % of your grade. No late homework will be accepted. You may collaborate on the homework problems, but you must write your own solutions and properly acknowledge any help you receive from others. There will be a take home midterm counting for 20 % of your grade and a take home final counting for 30 % of your grade. The midterm will be due October 29. The final will be due December 3.

Topics: The following is a tentative list of topics that will be covered in the course. The chapter numbers refer to the course text book.

Aug 25	I.1 and I.2
Aug 27	I.3 and I.4
Aug 29	I.5
Sep 1	No class: Labor Day
Sep 3	II. 1 and II. 2
Sep 5	II.2 and II.3
Sep 8	II.4 and II.5
Sep 10	II.6 and II.7
Sep 12	II.7 and II.8
Sep 15	II.9 and II.10
Sep 17	II
Sep 19	III.1 and III.2
Sep 22	III.2 and III.3
Sep 24	III.4
Sep 26	III.5
Sep 29	III.6
Oct 1	III.7
Oct 3	IV.1
Oct 6	IV.2
Oct 8	IV.2
Oct 10	IV.3
Oct 13	IV.4
Oct 15	IV.5
Oct 17	IV.6
Oct 20	IV
Oct 22	V.1
Oct 24	V.2
Oct 27	V.3
Oct 29	V.4
Oct 31	V.5
Nov 3	V.6
Nov 5	V
Nov 7	VI .1
Nov 10	VI.2
Nov 12	VI.3
Nov 14	VI.4
Nov 17	VI.5
Nov 19	VI.5
Nov 21	VI.6
Nov 24	VI.7
Nov 26	VI
Nov 28	No class: Thanksgiving
Dec 1	
Dec 3	
Dec 5	