

## Course Outline: Math 8300, Fall 09

The web page for this course can be found at <http://livetoad.org/>. Please check there frequently for announcements, changes, due dates, solutions, scores, and other goodies.

<i>Labor Day</i>	Mon	7	Sep
<i>Fall Break</i>	Mon–Tue	5–6	Oct
Exam 1	Thu	15	Oct
<i>Last Day to Withdraw</i>	Fri	30	Oct
<i>Veterans Day</i>	Wed	11	Nov
<i>Thanksgiving Break</i>	Wed–Fri	25–27	Nov
Exam 2	Fri	18	Dec, 12:30–2:30

### Introduction

Welcome to Algebra I! This course is a rigorous, first look at abstract algebra. We will study the basic algebraic structures — vectors and matrices, polynomials, permutations — from a high-level point of view. It is not a comprehensive survey of abstract algebra. With its cousins Topology and Real Analysis it lays a foundation for independent research in modern mathematics. Hence a primary goal of this course is to prepare you to work independently in abstract mathematics.

### Office hours

My office is UH 4080e. The phone number is 419 530 2975. My email address is simply paul.hewitt, at utledo.edu. I will be in my office for an hour before and after each class. At these times you can call or stop by without an appointment. I am also available at other times, but for these you must make an appointment. Feel free to ask for appointments at other times if you cannot make it to my regular office hours. If you call me when I am not in my office then you can leave a voice mail message and I will get back to you as soon as I can.

### Text and prerequisites

We will use Serge Lang's classic *Algebra* (3rd edition, Springer-Verlag). The book is structured to allow maximum flexibility in covering the material. Hence we will not be starting on page 1 and working systematically through page 900. You should learn to use this book as a reference, to help you understand more deeply the material we cover in class. Lang was a highly accomplished mathematician who made important contributions to algebraic number theory. One of your goals should be to absorb his perspective on abstract algebra. This does not mean that you should aim to imitate the style of his proofs. On the contrary, you should aim to replace his proofs with your own, or at least to amplify his proofs with your own insights. If Lang's ghost were to sit in our class and turn in pages from his book for the homework assignments, many of them would be returned to him marked "show more details" or "explain more clearly". This is not a fault of the book. In fact, it is an opportunity for us. Take advantage of this opportunity.

### Attendance

This course moves through a lot of material in a very short amount of time. If you miss more than one or two classes then you will have a great deal of difficulty catching up in time to pass the class. For this reason I will not accept late homework under any circumstances. If you miss an assignment or quiz then I will simply drop that score from your total, and so it will not affect your final grade. However, if you miss more than a couple of classes then you have bigger problems than making up an assignment. Do not allow yourself to fall behind.

## Assignments

There will be an assignment due *at the beginning of class* every Tuesday. The assignments will be posted on the course web site. Each assignment will be worth 20 points. I will count your 10 best scores towards your final grade. I will not accept assignments even 10 minutes late under any circumstances. If you are late to class or miss an assignment then that will be one of the scores you drop.

Before you turn in your homework, fold the papers lengthwise and write on the outside

*your name, Math 8300, Fall 09, assignment number, due date*

## Plagiarism

I encourage you to work together. Studies show that students who work together consistently out-perform those who do not. However, your own work must be written in your own words. Do not “divide up the labor”. Do not turn in work that is not your own. Copying is cheating. This includes copying from another student or copying from a book. If you turn in work that is not your own then you will get a 0 on that assignment. If it happens a second time you will get an F in the course.

## Exams

There will be two exams, each worth 100 points. The exam dates are listed on the calendar above.

I will give make-up exams only in case of a documented exigency, such as illness or a funeral. If you are sick the day of the exam then you must call or email that same day if you expect to be able to make up the exam. Otherwise you must arrange for a make-up exam ahead of time. If I am not in my office then you can leave a voice mail message. If you fail to show up for an exam and do not contact me about it until afterwards then you will not be able to make up that exam and you will get a 0 for that exam.

## Grades

Your final grade will be determined from your total points earned, based on the following scale:

90% earns an A; 80–89% earns a B; 70–79% earns a C; 60–69% earns a D.

If you want me to post your scores under a nickname then on your quiz card write your name, an email address, and the nickname you want to use — preferably something not obvious! I will not accept email requests to email or post your scores or final grade. If you want me to post your scores then you must write the above information on your quiz card.

Faculty can no longer give an IW grade. If you are still registered after the 10th week you will get a grade in this course, whether or not you have stopped attending.