MATH 4108 SYLLABUS

SPRING 2003

Course Number:	Math 4108 A
Course Name:	Abstract Algebra II
Lecture Time:	MWF 10:05–10:55 a.m.
Lecture Room:	Skiles 140
Instructor:	Dr. Christopher Heil Office: Skiles 260 Office Phone: 404-894-9231 Email Address: `heil@math.gatech.edu`
Office Hours:	TBA and by appointment
Contacting me:	I encourage you to contact me at any time by email. I try to check email evenings and weekends and to respond to questions quickly. Please don't be afraid to set up other appointment times if you are having trouble getting in touch with me.
Textbook:	*Algebra: Abstract and Concrete*, SECOND EDITION, by Frederick M. Goodman
Material:	Selected from Chapters 5, 7, 8, 9 plus additional topics
Prerequisites:	Math 4107 (Abstract Algebrak I)

Prerequisites. This is an advanced undergraduate course. I expect that you have had the equivalent of the course MATH 4107 (Abstract Algebra I), and that you understood and remember the material from that course. The basic topics covered in that course are: groups, subgroups, homomorphisms, isomorphisms, quotient groups, rings, and fields. I expect that you know how to write a proof (and hopefully that you enjoy doing it!).

Grading. We will have between 4 and 6 homework assignments, two in-class exams, and one final exam. With 5 homeworks, points would be scored as follows.

6 Homeworks	15 points each
Exam I	30 points
Exam II	30 points
Final Exam	45 points
TOTAL	180 points

Letter grades will be based on your accumulated points at the end of the quarter, according to standard 90%, 80%, 70%, 60% cutoffs (although I may adjust the cutoffs downward at the end of the quarter, depending on class distribution):

162–180	A
144–161	B
126–143	C
108–125	D
0–107	F

At the end of the course, I'll evaluate the class distribution and decide if a curve is needed. I'll only curve *down* from the above cutoffs, not up!

If we have more or fewer homeworks, the total number of points possible and the corresponding cutoffs will be adjusted accordingly.

Homework. Homeworks will be assigned approximately once every two weeks, and will usually be due one week after they are handed out. Homeworks will consist of problems selected from the book or problems that I make up. A subset of these will be selected for grading.

You are allowed (and encouraged) to work together with other students on the homework, as long as you each independently write up your own solutions. You are also allowed (and encouraged) to ask me questions, although you should try to think about the problems before asking. I strongly encourage you to work extra problems from the book on your own.

Exams. The tentative dates for the exams are:

Exam I	Friday, February 7 (in class)
Exam II	Friday, March 14 (in class)
Final Exam	Friday, May 2, 2:50–5:40 p.m.

The exams are closed-book and closed-notes, except that you will be allowed to bring one note sheet to each exam. The final is comprehensive.

Makeup exams are given only in extraordinary circumstances.

Syllabus for Math 4108, Abstract Algebra

January 11, 2010

Instructor: Ernie Croot
email: ecroot@math.gatech.edu/∼ecroot

Please resist the urge to email me unless it is absolutely necessary.

Course Webpage: www.math.gatech.edu/∼ecroot Click on the Math 4108 link from the main page.
Office: 103 Skiles
Office Hours: Tuesday 2:00 to 3:00, Wednesday 1:00-2:00.
Class Meeting Times and Place: MW 3:05-4:25 in Skiles 243
Textbook: Herstein's *Topics in Algebra*
Grade: 20% for each of the first two midterms, 30% for homework, and 30% for the final.

Because this is an advanced class, so long as you turn in most of the homeworks and show that you have made a sincere effort, I will give you at least a C (i.e. nobody fails unless they miss most of the classes and turn in very few HWs).

Homeworks: Homeworks will be collected once every two weeks.
Course Material: In this couse you will learn about the basics of field theory, ring theory, Galois Theory, the theory of modules, algebras, and possibly some other topics like category theory. Your text does not cover all of these in detail, so I may have to write up some handouts.

Math 4108: Abstract Algebra II Spring 2009

Course Syllabus

Professor: Dr. Christine Heitsch **Office:** Skiles 226 **Phone:** (404) 894 - 4758

Email: heitsch@math.gatech.edu **Webpage:** http://www.math.gatech.edu/~heitsch

Office Hours: Tuesday 1 – 2pm, Monday and Wednesday 6 – 6:30pm. If you need to see me at another time, please email me to set up an appointment.

Lectures: Mon, Wed 4:35 – 5:55 in Skiles 243.

Required Textbook: I. N. Herstein, *Abstract Algebra*, Third edition, John Wiley & Sons, Inc., 1995.

Recommended Textbook: I. N. Herstein, *Topics in Algebra*, Second edition, John Wiley & Sons, Inc., 1975.

Course Description: "Continuation of Abstract Algebra I, with emphasis on Galois theory, modules, polynomial fields, and the theory of linear associative algebra."

Prerequisites: Math 4107 Abstract Algebra I.

Grading Scheme: Grades will be calculated according to the following distribution:

30% Final Exam

40% Two Midterm Exams (20% + 20%)

30% Homework

Grades will be assigned on the standard scale:
A 90 or higher **B** 80 – 89 **C** 70 – 79 **D** 60 – 69 **F** Below 60

On an individual basis, significant improvement over the semester will be taken into account. The overall class distribution will also be carefully considered.

Final Exam: The final exam is scheduled for Wednesday, April 29th, from 11:30 AM - 2:20 PM. The exam will be cumulative and count for 30% of the final grade.

Midterm Exams: There will be two in-class exams, each counting for 20% of the final grade, for a total of 40%. The exams will be closed book, closed notes, no calculator, individual tests. The **tentative** exam dates are:

Midterm 1 Wednesday, February 11th

Midterm 2 Wednesday, April 1st

Exam dates will be confirmed at least a week in advance.

Homework: Homework will be assigned approximately every two weeks, and due one week later at the beginning of class. **Late homework will not be accepted**.

A subset of the homework problems will be selected for grading. Assignments must be neatly and clearly written in complete, correct English sentences. Homework must be written on the front side of the page only, and multiple pages must be stapled together. Illegible and/or unintelligible solutions will receive no credit.

Collaboration is allowed (and even encouraged) when working on homework problems. However, **each student must write-up and submit an independent solution in his/her own words**.

Attendance: Regular attendance is expected. Exceptions will be accommodated only for valid, documented reasons including (1) official representation of the Institute and (2) medical emergencies. Note that makeup exams will be given only under extraordinary circumstances.

Exceptions: If you know that you will not be able to meet the requirements of the class as stated, you must contact me within the first two weeks of class.

Academic Integrity: Students are reminded of the obligations and expectations associated with the Georgia Tech *Academic Honor Code* and *Student Code of Conduct*, available online at:
`http://www.deanofstudents.gatech.edu/Honor/index.html` and
`http://www.deanofstudents.gatech.edu/integrity/policies.php`.
Any violations must be reported to directly to the Dean of Students.

Practice Problems: In addition to the homework assignments, numerous "practice problems" from the book will be suggested. You are strongly encouraged to work these problems and other additional exercises on your own and/or with other students to master the course material.

Additional Resources:

- T-Square — `http://t-square.gatech.edu`
- 4108 webpage — `http://www.math.gatech.edu/~heitsch/4108.html`

Updates: This syllabus is subject to modification. Any changes will be announced in class and posted on the course website.

Georgia Institute of Technology

Math 4108 - Abstract Algebra II – Spring 2012

Room	Days/Time
Skiles 271	MWF 2:05–2:55 pm

Instructor: Dr. Josephine Yu
Office Hours: MW 10-11am and by appointment. You are strongly encouraged to come and talk to me about the course material and other interesting mathematics.
Office: Skiles 223
Email: jyu@math.gatech.edu
Phone: (404)894-4754
Webpage: http://people.math.gatech.edu/∼jyu67/teaching/2012Spring4108/ and t-square.
Textbook: *Topics in Algebra* 2nd ed. by I. N. Herstein.

Topics: Modules (Chapter 4), modules over PIDs. Fileds (Chapter 5) including field extensions, roots of polynomials, ruler and compass construction, Galois theory, and solvability by radicals. Selected topics (Chapter 7) including finite fields, Wedderburn's Theorem on finite division rings, Frobenius' Theorem on division rings over reals. If time permits, I will cover some representation theory.

Homework: There will be regular homework assignments, roughly one every two weeks. You are encouraged to discuss homework problems and solutions with each other and with me, but you must write up your own solutions independently, i.e. you must not be looking at other people's solutions while you are writing yours. Write in complete sentences clearly and concisely.

Late homework policy: Homeworks are collected in class on the due date. I will accept late homework with 25% penalty for each late day, for up to two days, i.e. being 1-24 hours late will get you 75% credit and 25-48 hours late will get you 50% credit (hours rounded up).

Exams: There will be two in-class exams and a comprehensive final exam. The tentative dates for the exams are:

Exam 1	Feb 10
Exam 2	Mar 30
Final	May 2 (11:30am - 2:20pm)

Grading: The following weighting is used to compute the grades:

Homework	20 %
Exam 1	20 %
Exam 2	20 %
Final	40 %