Math 456: Abstract Algebra II – Spring 2007

Instructor:	Luís Finotti
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Office Hours:	MWF 2:30pm-3:30pm (*subject to change!*) or by appointment
Course Web Page:	`http://www.math.utk.edu/~finotti/s07/M456.html` (Careful with lower and upper case letters!)
Textbook:	M. Artin. "Algebra", 1st Edition. Prentice Hall, 1991.
Prerequisite:	Math 455.
Class:	MWF 10:10pm-11:00am at Ayres 111. (Section 1.)
Midterms:	02/16 (F) and 03/30 (F) during regular class time.
Final:	05/02 (W) from 10:15am to 12:15am.
Grade:	20% for homeworks, 20% for each midterm, 40% for the final. **Note the weight of the HWs!**

Course Information

In this course you will be introduced to *Rings* and *Fields*. **I will assume you have the proper background from Math 455.** We will use elements from it often. If you had difficulty in that course, you might need to review the material. (I would gladly try to help you with that if you come to my office hours.)

Homeworks

Homeworks will be assigned after every class and will be posted at the course home page at

`http://www.math.utk.edu/~finotti/s07/M456.html`

No paper copy of the HW assignments will be distributed in class. **It is your responsibility to check the course page often!**.

The site above is the official site for the course. **Blackboard** (`http://online.utk.edu/`) **will be used only for grades.** (You will be able to see all your grades there, including HWs.) Everything else will be at the official site (above).

The HWs will be collected on Wednesdays. Each HW will have problems from the previous week (Monday, Wednesday and Friday lectures). The problems to be turned in, as well as due dates, will be clearly posted on the course page. Note that maybe not all of the problems turned in will be graded, but you won't know which until you get them back.

No late HWs will be accepted, except in extraordinary circumstances which are properly documented.

It is your responsibility to keep all your graded HWs and Midterms! It is very important to have them in case there is any problem with your grade.

I will do my best to post solutions. Please check the course page.

In my opinion, doing the HW is one of the most important parts of the learning process, so the weight for them is equal to the weight of a single midterm, and I will assume that you will work very hard on them.

Also, you should try to come to my office hours if you are having difficulties with the course. I will do my best to help you. Please try to come during my *scheduled* office hours, but feel free to make an appointment if that would be impossible.

E-Mails

You will have to check your e-mail at least once a week, preferably daily. I will use your e-mail (given to me by the registrar's office) to make announcements. If that is not your preferred address, write me an e-mail letting me know ASAP. I will assume that any message that I sent via e-mail will be read in a week or less, and it will be considered an *official* communication.

Feedback

I have an *On-line Feedback Form* at

`http://www.math.utk.edu/~finotti/php/feedback.html`

where you can anonymously send me your comments and suggestions. I will consider your comments and try to do whatever I can to resolve possible problems before it is too late. So, please, feel free to use it whenever you have any constructive comment or suggestion. (In fact, I would greatly appreciate it.) If you don't want your comments to be anonymous, just send me an e-mail or come by my office and we can discuss the problem.

Course Structure (tentative)

We will likely cover the following portions from the text:

- **Chapter 10:**. Quick review of sections 1 and 2, and Sections 3-7.
- **Chapter 11**: Sections 1-6 and maybe 7-8.
- **Chapter 13:** Sections 1-6 and maybe 9.
- **Chapter 14**: Sections 1-2, parts of 3, and 4-5. If time allows, maybe 8 and 9.

Chapter 10 gives the basic properties of *Rings*, while Chapter 11 studies factorization (in rings). Chapter 13 develops the theory of *Fields*, and Chapter 13 deals with *Galois Theory*, which is basically the study of field extensions.

Additional Bibliography

Here are some other books you might find helpful (same as last quarter – they should all be still on reserve at the library):

- J. Fraleigh "A First Course in Abstract Algebra", 7th Ed., 2002. Addison Wesley.
- J. Gallian, "Contemporary Abstract Algebra", 6th Ed., 2005. Houghton Mifflin Co.
- I. Herstein, "Topics in Algebra", 2nd Ed., 1975. Wiley.

The first two books are considered "easier" books, and although they also have a somewhat different approach, they have most of the topics we will cover and may be of good help if you have difficulty reading Artin's book.

The last one is a "standard" text for a first course in abstract algebra, but might have a higher level of difficulty. (It's been used for the honors section of this course.) Nevertheless, it is a very good reference.

Legal Issues

Conduct. All students should be familiar with and maintain their "Academic Integrity": from *Hilltopics 2006/2007* (`http://web.utk.edu/~homepage/hilltopics/HILLTOPICS2006-07.pdf`) pg. 40:

> ***Academic Integrity***
>
> *The responsibility for learning is an individual matter. Study, preparation and presentation should involve at all times the student's own work, unless it has been clearly specified that work is to be a team effort. Academic honesty requires that all work presented be the student's own work, not only on tests, but in themes, papers, homework, and class presentation. There is a clear distinction between learning new ideas and presenting them as facts or as answers, and presenting them as one's own ideas. It is part of the learning process to incorporate the thoughts or ideas of others into one's own mind and presentations with the purpose of learning and enlarging on personal boundaries of knowledge.*

All students should follow the "Honor Statement": from *Hilltopics 2006/2007*, pg. 11:

> ***Honor Statement***
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> *"An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."*

You should also be familiar with the "Classroom Behavior Expectations" found at

`http://www.math.utk.edu/Undergraduate/undergrad/Expectations.pdf`.

Disabilities. Students with disabilities that need special accommodations should contact the "Office of Disability Services" (`http://ods.utk.edu/`) and bring me the appropriate letter/forms.

Sexual Harassment and Discrimination. For *Sexual Harassment* and *Discrimination* information, please visit the *Office of Equity and Diversity* at `http://oed.admin.utk.edu/` and check

`http://oed.admin.utk.edu/docs/complaint_sex_harass.pdf` (Sexual Harassment)

`http://oed.admin.utk.edu/docs/DiscrimCompProc.pdf` (Discrimination)