Course Guidelines | Math 434
Dr. R. Beezer | Spring 2003

Text We will be using *Contemporary Abstract Algebra* (Fifth Edition) by Joseph A. Gallian. We will cover material from Chapters 12 through 23, and 32. We will also use *Galois Theory* (Second Edition) by Joseph Rotman and will cover most of the book. See the attached **tentative** schedule for the exact sections and pages of each book to be covered.

Home Page Start at `http://buzzard.ups.edu/courses.html` to locate the WWW page for this course.

Office Hours My office is Thompson 321G; the telephone number is 879–3564. Making appointments or simple, non-mathematical questions can be handled via electronic mail — my address is `beezer@ups.edu`. Office hours will be 10:00–10:50 on Monday, Wednesday and Friday and 9:30–11:20 on Tuesday. I will always be available during these times on a first-come, first-served basis. If these times are not convenient, please do not hesitate to make an appointment with me for another time. You are also welcome to drop by my office without an appointment at any time that I am in. Office hours are your opportunity to receive extra help or clarification on material from class, or to discuss any other aspect of the course.

Homework Homework will be assigned for each chapter, but will not be collected. Of course, you are not limited to working *just* these assigned problems. Once a week, generally on Wednesday or Friday, we will have a problem session where we can discuss these problems. It is your responsibility to be certain that you are learning from the homework exercises. The best ways to do this are to work the problems diligently when assigned and to participate in the classroom discussion. If at this point you are still unsure about a problem, then a visit to my office is in order. Making a consistent effort outside of the classroom is the easiest way to do well in this course.

> Mathematics not only demands straight thinking, it grants the student the satisfaction of knowing when he is thinking straight. — D. Jackson

> Mathematics is not a spectator sport. — Anonymous

> I hear, I forget.
> I see, I remember.
> I do, I understand.
> — Chinese Proverb

Reading Questions Reading questions will be posted on the course WWW page for each chapter. Your answers are due back to me by 10 P.M. the night before we begin discussing a new chapter (usually this will be Sunday night).

Projects You will participate in one research project on a topic related to the material in this course (interpreting this to mean both Math 433 and Math 434) as a way to demonstrate your progession towards becoming an independent scholar of mathematics. You may work in a group of size n, $1 \leq n \leq 3$. My expectations for the quality and quantity of your work will be αn, where α is some indeterminable constant of proportionality. The **tentative** schedule contains target dates for various deliverables: team and topic selection, draft content, presentation materials, presentation. Your team will receive a numerical score as a group, timeliness will be a consideration. Public presentations will be made as part of "Math Day" on a Saturday late in the semester (date has not been determined yet).

Quizzes There will be seven one-hour quizzes — see the attached sheet for tentative dates — though mostly they will be every other Friday. The lowest of your quiz scores will be dropped. The comprehensive final exam will be given at 8 A.M. on Monday, May 12. The final exam cannot be given at any other time, so be certain that you do not make any travel plans that conflict, and also be aware that I will allow you to work longer on the final exam than just the two-hour scheduled block of time.

Grades Grades will be based on the following breakdown: Quizzes — 65%; Research Project — 10%, Reading Questions — 5%; Final — 20%. Homework, attendance and improvement will be considered for borderline grades. Scores will be posted on the World Wide Web at
`http://buzzard.ups.edu/courses.html`. A reminder about withdrawals — a Withdrawal Passing grade (W) can only be given during the third or fourth weeks of the semester, after that time (barring unusual circumstances), the appropriate grade is a Withdrawal Failing (WF), *even if your work has been of passing quality.* See the attached schedule for the last day to drop with an automatic 'W' and please read *The Logger* about these often misunderstood grades.

Attendance Daily attendance is required and expected, and is a pretty good idea.

Purpose At this point in your college career, you should be well on your way to being an independent scholar, who appreciates the beauty of mathematics and understands the effort needed to master new and difficult ideas. Consistent with that, I will be giving you a fair degree of freedom to learn this material in a manner that suits you. We will be a bit more relaxed than last semester, though this will not diminish my expectations for your work.

Read the books before the lectures, work the exercises diligently, tidy up your class notes each evening, and ask questions. Arriving late to class, or having conversations with others during class, not only disrupts your peers, but tells me you are not serious about your education. I will not routinely check attendance, but our class is small enough that I will

notice when you are not here, and again this will be another way that you signal me about your commitment to the endeavor.

Many consider abstract algebra (and especially Galois Theory) one of the most fascinating areas of mathematics. The investment of your time and energy applied to studying it will be amply repaid by a full understanding of its deeper ideas.

Tentative Schedule

Week	Gallian	Rotman	Other	Problems	Quiz
Jan 20		1–7	SCVT Graphs (Tue, Wed, Fri)		
Jan 27	12	7–13		Friday	
Feb 03	13	13–15		Wednesday	Friday, #1
Feb 10	14	21–23		Friday	
Feb 17	15	21–23		Wednesday	Friday, #2
Feb 24	16	24–30	Teams/Topic (Friday)	Friday	
Mar 03	17	31–43		Wednesday	Friday, #3
Mar 10	18	31–43		Friday	
Mar 17	Spring Break				
Mar 24	19	44–49		Wednesday	Friday, #4
Mar 31	20	50–58	Draft Content (Monday)	Friday	
Apr 07	21	59–106		Wednesday	Friday, #5
Apr 14	22	59–106		Friday	
Apr 21	23	Appx C		Wednesday	Friday, #6
Apr 28	32	59–106	Presentation Materials (Monday)	Friday	
May 07			Housekeeping (Tuesday)		Monday, #7

Research Project Target Dates

Friday, February 28 In writing: team members, topic, primary source(s).

Monday, March 31 Written report of research, approximately $3n$ pages, where n is the size of your team.

Monday, April 28 Presentation materials finalized and submitted. This date could be moved sooner so that it falls *prior* to Math Day presentations.

Saturday, May 3 Wild guess for Math Day scheduled.