

**Text** We will be using *Contemporary Abstract Algebra* (Fifth Edition) by Joseph A. Gallian. We will cover material from Chapters 0 through 11, and 24 — see the attached **tentative** schedule for the exact sections 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](mailto:beezer@ups.edu). Office hours will be 10:00–10:50 on Monday, Wednesday and Friday, and 9:30–10:50 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 (2 P.M. to 4 P.M. is a good time to try). 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 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 Monday night).

**Quizzes** There will be thirteen one-hour quizzes — see the attached sheet for tentative dates — though mostly they will be on Monday, at the conclusion of each chapter. The lowest two of your quiz scores will be dropped. The comprehensive final exam will be given at Noon on Monday, December 15. 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 — 75%; 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.

Read the book 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 group theory (the branch of Abstract Algebra that we will concentrate on this semester) 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.

## Homework Exercises

| Chapter | Page | Computational                                | Theoretical                                |
|---------|------|--|--|
| 0       | 23   | 4, 16, 29, 38, 41, 46                        | 8, 12, 14, 15, 21, 24                      |
| 1       | 37   | 4, 13, 19, 22                                | 6, 7, 8, 9                                 |
| 2       | 53   | 3, 5, 8, 13, 22, 24, 37                      | 12, 14, 16, 17, 19, 29, 33                 |
| 3       | 67   | 9, 24, 27, 28, 31, 33, 34, 41, 42            | 10, 13, 14, 16, 19, 21, 22                 |
| 4       | 82   | 19, 22, 33, 40, 45, 46, 55, 65               | 24, 31, 41, 54, 56, 62, 64                 |
| 5       | 111  | 4, 6, 24, 25, 32, 33, 36, 43                 | 13, 16, 22, 31, 40, 45, 46                 |
| 6       | 129  | 3, 4, 5, 7, 12, 16, 22, 23                   | 2, 10, 30, 32, 33, 34, 35                  |
| 7       | 145  | 1, 2, 3, 6, 8, 12, 13, 26, 33                | 10, 15, 19, 21, 23, 24, 36                 |
| 8       | 162  | 5, 8, 12, 18, 20, 22, 26, 30, 40, 49, 51, 53 | 3, 14, 16, 55                              |
| 9       | 186  | 3, 4, 5, 9, 12, 14, 21, 24                   | 6, 10, 30, 37, 41, 43, 46, 48, 49, 58      |
| 10      | 205  | 2, 6, 10, 11, 14, 17, 19, 20                 | 22, 37, 38, 42, 45, 46, 53 (see #7 p. 169) |
| 11      | 219  | 3, 4, 6, 7, 8, 12, 15, 19, 25, 28            | 20, 30, 32, 34                             |
| 24      | 407  | 5, 7, 11, 12, 18, 21, 44                     | 1, 4, 10, 33, 36, 39, 42                   |

## Tentative Daily Schedule

| Monday             | Tuesday             | Wednesday           | Friday                    |
|--------------------|---------------------|---------------------|---------------------------|
| Sep 1<br>Labor Day | Sep 2<br>Chapter 0  | Sep 3<br>Chapter 0  | Sep 5<br>Problem Session  |
| Sep 8<br>Quiz #1   | Sep 9<br>Chapter 1  | Sep 10<br>Chapter 1 | Sep 12<br>Problem Session |
| Sep 15<br>Quiz #2  | Sep 16<br>Chapter 2 | Sep 17<br>Chapter 2 | Sep 19<br>Problem Session |
| Sep 23<br>Quiz #3  | Sep 24<br>Chapter 3 | Sep 25<br>Chapter 3 | Sep 27<br>Problem Session |
| Sep 29<br>Quiz #4  | Sep 30<br>Chapter 4 | Oct 1<br>Chapter 4  | Oct 3<br>Problem Session  |
| Oct 6<br>Quiz #5   | Oct 7<br>Chapter 5  | Oct 8<br>Chapter 5  | Oct 10<br>Problem Session |
| Oct 13<br>Quiz #6  | Oct 14<br>Chapter 6 | Oct 15<br>Chapter 6 | Oct 17<br>Problem Session |

Mid-Term

## Tentative Daily Schedule

| Monday                              | Tuesday                          | Wednesday                             | Friday                    |
|-------------------------------------|----------------------------------|---------------------------------------|---------------------------|
| Oct 20<br>Fall Break                | Oct 21<br>Quiz #7                | Oct 22<br>Chapter 7<br>Thurs: Chap. 7 | Oct 24<br>Problem Session |
| Oct 27<br>Quiz #8                   | Oct 28<br>Chapter 8              | Oct 29<br>Chapter 8                   | Oct 31<br>Problem Session |
| Nov 3<br>Quiz #9                    | Nov 4<br>Bonus Day<br>RSA Crypto | Nov 5<br>Bonus Day<br>RSA Crypto      | Nov 7<br>No class         |
| Nov 10<br>Bonus Day<br>Rubik's Cube | Nov 11<br>Chapter 9              | Nov 12<br>Chapter 9                   | Nov 14<br>Problem Session |
| Nov 17<br>Quiz #10                  | Nov 18<br>Chapter 10             | Nov 19<br>Chapter 10                  | Nov 21<br>Problem Session |
| Nov 24<br>Quiz #11                  | Nov 25<br>Chapter 11             | Nov 26<br>Chapter 11                  | Nov 28<br>Thanksgiving    |
| Dec 1<br>Problem Session            | Dec 2<br>Quiz #12                | Dec 3<br>Chapter 24                   | Dec 5<br>Chapter 24       |
| Dec 8<br>Problem Session            | Dec 9<br>Quiz #13                | Dec 10<br>Housekeeping                |                           |

Final Examinations  
Monday, December 15 at Noon