

# MATH 521-01 Intro to Abstract Algebra I, Fall '09

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Office Hours: TTh 2:20-3:35pm, and by appointment.

**Course Meetings** TTh 1:00pm - 2:15pm, NS113

**Textbook** Contemporary Abstract Algebra, 7<sup>th</sup> Edition by Joseph A. Gallian.

**Prerequisites** Math 301, Math 325, Math 311.

## Important Dates

Aug. 28 (Fri.) : Last day to drop or add  
Oct. 12-13 (Mon. Tue) : Mid-term break, no classes  
Oct. 15 (Thursday) : Last day to withdraw  
Nov. 25-29: Thanksgiving break, no classes  
Dec. 7 (Monday) : End of classes

**Course Content/Goal** In this course we will cover the basics of Abstract Algebra, starting with basic facts about the integers, functions and leading into permutations on a finite set, groups, subgroups, cyclic groups, groups of symmetries, alternating groups, cosets of a subgroup, normal subgroups, factor groups, group homomorphisms, and group isomorphisms. We will cover Chapters 0-11 of the text and if time permits, chapter 24.

**Emphasis** In addition to mastering the basics of Abstract Algebra, you will learn how to do mathematics in this course. You will come up with proof of your own and you will develop your creative ability to come up with new and innovative ideas for proofs. THIS IS NOT A COURSE WHERE YOU WILL MEMORIZE FACTS AND REGURGITATE THEM. You are allowed to use a simple calculator (for a graphic one, ask me) on all quizzes and exams (but even correct answers without explanations will receive no credit).

**Grading Procedure** Your final letter grade will be determined by your performance on quizzes/homework/projects, 3 tests, and one final. The percentage break up is as follows:

Homework/(Pop) Quizzes/Projects	25 %
Three tests	45 % (15% per each)
Final Exam	30 %
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Total	100%

*Students taking this course for graduate credit will be required to do extra work. This usually will be in the form of an extra problem on the test. Undergraduates can do the graduate for extra credit.*

**Minimum letter grades are as follows:**

$A^+ \geq 98\%$ ,  $A \geq 90\%$ ,  $A^- \geq 86\frac{2}{3}\%$ ,  
 $B^+ \geq 83\frac{1}{3}\%$ ,  $B \geq 80\%$ ,  $B^- \geq 76\frac{2}{3}\%$ ,  
 $C^+ \geq 73\frac{1}{3}\%$ ,  $C \geq 70\%$ ,  $C^- \geq 66\frac{2}{3}\%$ ,  
 $D^+ \geq 63\frac{1}{3}\%$ ,  $D \geq 60\%$ ,  $D^- \geq 56\frac{2}{3}\%$ ,  
 $F < 56\frac{2}{3}\%$ .

### **Tentative Test Schedule:**

Test 1	Thursday, Sept 24
Test 2	Thursday, Oct 22
Test 3	Thursday, Nov 19
Final Exam	Friday, Dec 11, 2:30PM - 5:00PM

**Homework** We will have homework assignment. It is very important that you do the homework regularly. If you fall behind, it will be difficult to catch up. We will discuss homework in class and, from time to time, you will be required to make presentations in class.

**Quizzes** There will be several quizzes during the semester. Some of them may be announced and others unannounced. Hence, you always need to come to class prepared. We will drop your lowest quiz grade.

**Projects** There might be a project dealing with interesting topics. More detailed information will be available later.

**Make-up** NO MAKE-UP QUIZZES OR EXAMS will be given unless you report your absence before the quiz/exam, get a permission from me, and you show doctor's note or some documents for excuse by the following class day. In this case, at most one make-up for either quiz or exam is allowed.

**Absences** In order to receive consideration, arrangement must be made prior to missing any tests, quizzes, homework or other due date, if possible. However, in any event, it **MUST BE MADE BEFORE THE NEXT CLASS MEETING**. Official documentation, such as accident reports, hospital admission forms should be provided when appropriate to substantiate excuses. If you are absence from class for any reason, it is **YOUR** responsibility to obtain notes, assignments, due dates from another student in class. It is a good idea to exchange phone #'s or e-mail addresses with a couple of your classmates.

**Remarks** The instructor reserves the right to make changes in the syllabus when necessary to meet learning objectives, to compensate for missed classes, or for similar reason.

You also need to check blackboard and your UofL e-mail for updates, announcements, etc for this course.

Students must adhere to the Code of Student Conduct and to the Code of Student Rights and Responsibilities.

**Class substitution** It is expected that you will join Prof. Darji's Algebra class (in SH 103 at the same class time, SH stands for Sackett Hall) for three weeks of September due to my leave of absence. I will email the exact weeks later and post them on the blackboard too.

## Homework

Below are some homework exercises for each chapter. Other exercises will be added as the material is discussed in class.

### Homework exercises

Chapter	Problems
0	5,8,10,13,14,19,20,24,30
1	1,2,3,5,9,22
2	1,3,7,8,14,17,18,23,26,34
3	1,2,4,6,8,10,17,18,19,20,26,46(b),60
4	1,3,7,11,13,17,21,22,26,37,53
5	3,4,6,7,9,11,12,17,30,38
6	1,2,4,5,10,15,17,24,27,32
7	1,2,7,9,13,15,18,20,25,26
8	3,4,7,8,9,14,21,22,23,31,37,46,47
9	1,2,7,9,10,13,20,21,26,31,50,52
10	8,11,12,15,16,24,31,39,40
11	1,10,15,19,29,30
24	TBA