

## Modern Algebra I

Math 5520.001, Fall 2013, MW 12:00-1:20, GAB 461

**Professor:** Dr. Conley, GAB 419, 565-3326, conley@unt.edu. Assignments and announcements will be posted at [www.math.unt.edu/~conley](http://www.math.unt.edu/~conley).

**Office Hours:** MW 1:30-3:30 and by appointment (brief questions welcome any time, just knock if the door is closed).

**Text:** The text is *Abstract Algebra*, third edition, by Dummit and Foote.

**Exams, Homework, and Grading:** There will be a 150 point midterm on Wednesday, October 23, and a comprehensive 225 point final on Wednesday, December 11, 10:30-12:30. There will be thirteen problem sets, usually worth 10 points each, due at the beginning of Wednesday lectures. There will be no make-up exams, and late homework will be worth half-credit.

**Disabled Students:** Please let me know of your disability at the end of the first lecture.

**Topics:** We will spend most of the first semester on Part I of the text, which covers groups and focuses on finite groups. Highlights will be the classification of abelian groups, the Sylow theorems, and the simplicity of the alternating groups. Towards the end of the semester we will begin discussing Part II of the text, on rings. In the second semester we will continue with rings and go on to Parts III and IV, on modules, field theory, and Galois theory.

**Problem Set 1** (due Wednesday, September 4):

*Section 0.2:* 1ab, 3, 5, 7, 10, 11

*Section 0.3:* 4, 8, 9, 11-13, 15b

*Section 1.1:* 1bcd, 6, 8-9, 11-12, 21-22, 25, 31-33

**Monday 9/30 and Wednesday 10/2:** I will be away on these dates. Either there will be a substitute or I will teach by video conference, in which case you will be in Gateway 049 (a long walk from the GAB) and I will be on the Mediterranean coast (a long swim from the GAB).

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| <b>MONDAY</b>   | <b>TUESDAY</b> | <b>WEDNESDAY</b>                         | <b>THURSDAY</b>       | <b>FRIDAY</b>    |
|---|----------------|--|-----------------------|------------------|
| 8/26  | 8/27           | 8/28<br>First lecture                    | 8/29                  | 8/30             |
| 9/2<br>Holiday  | 9/3            | 9/4<br>HW 1                              | 9/5                   | 9/6              |
| 9/9   | 9/10           | 9/11<br>HW 2                             | 9/12                  | 9/13             |
| 9/16  | 9/17           | 9/18<br>HW 3                             | 9/19                  | 9/20             |
| 9/23  | 9/24           | 9/25<br>HW 4                             | 9/26                  | 9/27             |
| 9/30<br>I'm away: substitute or<br>video class in Gateway 049 | 10/1           | 10/2<br>HW 5<br>Still away: Gateway 049? | 10/3                  | 10/4             |
| 10/7  | 10/8           | 10/9<br>HW 6                             | 10/10                 | 10/11            |
| 10/14   | 10/15          | 10/16<br>HW 7                            | 10/17                 | 10/18            |
| 10/21   | 10/22          | 10/23<br>Midterm Exam                    | 10/24                 | 10/25            |
| 10/28   | 10/29          | 10/30<br>HW 8                            | 10/31                 | 11/1             |
| 11/4  | 11/5           | 11/6<br>HW 9                             | 11/7                  | 11/8             |
| 11/11   | 11/12          | 11/13<br>HW 10                           | 11/14                 | 11/15            |
| 11/18   | 11/19          | 11/20<br>HW 11                           | 11/21                 | 11/22            |
| 11/25   | 11/26          | 11/27<br>HW 12                           | 11/28<br>Thanksgiving | 11/29<br>Holiday |
| 12/2  | 12/3           | 12/4<br>HW 13 (5 points)                 | 12/5                  | 12/6             |
| 12/9  | 12/10          | 12/11<br>Final Exam: 10:30-12:30         | 12/12                 | 12/13            |