

Math 231

syllabus

Fall, 2008

Professor: Matthew Neal (nealm@denison.edu)
Office and phone: Olin 202 (6288)
Office Hours: W 1-2:30, 3:30-4:30 R 1-4:30 p.m. or by appointment
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Course

This is a course on linear mathematical systems. These can be finite dimensional (Linear Algebra) or infinite dimensional (Differential Equations). There is considerable interplay between the finite dimensional and infinite dimensional points of view. Linear systems are used extensively to model physical and social systems in the real world. In addition, many beautiful mathematical ideas have come from the study of linear systems.

Audience

This course is intended for students who have successfully taken Math 124 or have taken a year of college Calculus and have some exposure to matrix algebra and using matrices to solve systems of linear equations. If you have not worked with matrices, see me.

Book

Differential Equations and Linear Algebra, 2nd ed.

Grades and Expectations

The grade will be calculated with the following weights:

- 25 % for each of three tests
- 25 % Final exam

Grade Scale: 90-100 A 78-89 B 66-77 C 50-65 D 0-49 F

Tests

Tests occur every four weeks on Friday. The first test is on September 26th. Each test will have two take home problems to be turned in at the start of the next class period. You may use only your book and notes for the take home problems and you may not work together on them. For each test, you are responsible to understand everything said in class or written in the text for the sections covered as well as every problem assigned. This includes the homework problems for the test week. Note that *understand* does not mean *memorize* and the problems on the test will not be identical copies of homework problems.

Homework and Quizzes

Every Friday on non-test days will begin with a 10 minute quiz. This quiz will consist of 2 homework problems from the week's assignment. If you have completed and studied the assignment, this should be an easy way to get points. Each problem is worth 1 point and your score is added to the next test. Every Thursday will be devoted entirely to discussing the week's homework. **Also** on some weeks I will ask you to turn in an assignment to be completed with the Maple software program which I will push to your Novell space. These will replace one quiz problem for that week.

Office Hours

Every Wednesday from 1-2:30 and 3:30 - 4:30 and Thursday from 1 to 4:30 I will be in my office for help with Math or other issues. Please come to office hours so I can get to know you better!

Late Work

Late tests will receive a 20 % point penalty per day late unless there is a written note (such as a note from Whistler) that verifies a VERY strong excuse (such as illness or important sports team events). Late quizzes are not accepted at all without a written excuse as above.

Calculators

Graphing calculators are never permitted on tests. I do permit a scientific calculator. Leave all answers as fractions and leave all relevant transcendental numbers (such as π or e) in symbolic form unless the instructions say otherwise.

Academic Integrity

Academic dishonesty will not be tolerated. This includes looking at anyone else's work or looking at any outside materials during the test. As is indicated in Denisons Student Handbook , available through mydenison.edu , instructors must refer every act of academic dishonesty to the Associate Provost, and violations may result in failure in the course, suspension, or expulsion.

Disabilities

Any student who feels he or she may need an accommodation based on the impact of a disability should contact me privately as soon as possible to discuss his or her specific needs. I rely on the Academic Support and Enrichment Center in 102 Doane to verify the need for reasonable accommodations based on documentation on file in that office.

Schedule and Text Sections Covered

Week 1	(1.3-1.5),1.6
Week 2	2.1, 2.2, 2.3
Week 3	2.4, 2.5, (3.1-3.3)
Week 4	(3.4-3.6) Test 1
Week 5	3.7, 4.1, 4.2,
Week 6	4.3, 4.4, 4.5,
Week 7	4.6, 4.7, 5.1
Week 8	5.2, 5.3, Test II
Week 9	5.4, 5.5, 5.6
Week 10	Supplemental material on Linear transformations, 6.1
Week 11	6.2, 6.3, supplemental application
Week 12	7.1, 7.2, 7.3 Test IV
Week 13	7.4, 7.5, 8.2
Week 14	9.1, 9.2, 9.3
Sat., Dec. 13th (time TBA)	Review
Tue., Dec 16th, 9-11 a.m.	Final Exam