

**Math 221 – Section 010**  
**TR 11:00-12:15**  
**AvH 118**  
**Spring 2007**

**Instructor:** Frank Moore  
**Office:** 341 Avery Hall  
**Office Hours:** MWF 8:30-10:00 or by discovery/appointment  
**Phone:** 472-8193  
**E-Mail:** fmoore@math.unl.edu  
**Course Web Page:** <http://www.math.unl.edu/~fmoore/math221/S2007>  
**Text:** Edwards and Penny, third edition

### Exams and Grades

There will be three exams and a final in the class, and I will collect selected homework problems periodically throughout the semester. I will also have quizzes on occasion, which will often be unannounced. Your grade will be computed as follows: exams (55%), comprehensive final (25%), homework/quizzes/reports (20%).

Generally, expect the grade ranges to be near: A (87-100), B (75-86), C (60-74), D (50-59). Pluses and minuses will be assigned at the upper and lower ends of those ranges. Some reasonable level of mastery of the concepts is required. Class attendance is mandatory, and missed classes may lower your grade if you are a borderline case. Please let me know by email when you are going to miss class.

### Homework

The homework listed in the tentative course schedule should be considered the problems you should do **at a minimum**. I will ask that you turn in selected problems about every other week. No late work will be accepted, although if you turn it in, I will look at it and comment on your work. Please turn in neat homework, not pages torn out of your notebook, done furiously five minutes before the class period they are due.

### Technology

Students might benefit from a scientific calculator that numerically and graphically solves systems of ordinary differential equations and finds eigenvalues and eigenvectors of matrices; a TI-86, TI-89, or TI Voyage 200 is a good choice. The best choice might be the TI-89 because it has a computer algebra package. Some assignments in the course may involve using a computer algebra system MATLAB in the department's computer laboratory (Avery Hall 18). You have an account in the computer laboratory. A student version of MATLAB that run on a personal computer can be purchased at the university computer shop for about \$100 (it is not required). Listed below is a website for pplane6.m and dfield.m, MATLAB-based software packages that graphically solve differential equations. You may download these programs. References on MATLAB are available in the Mathematics Library (basement of Avery Hall). MATLAB books can be purchased at the bookstore; a particularly good one is J. Higham & D. Higham: MATLAB, published by SIAM. pplane6.m and dfield.m can be downloaded from <http://www.math.rice.edu/polking/>.

You may also use Maple or Mathematica (or even Excel!) if you so desire, although MATLAB is the de facto standard for differential equations, and some of the engineering students will need to learn MATLAB eventually anyway. All I really care about is that you understand what you did, what the output tells you, and how to use the computer to glean information about a problem.

### Course Management

The basic guidelines for success in my section are: attend all classes, take good notes, work the exercises immediately, verify all the examples worked out in the textbook, and ask questions when you do not understand something. Expect to spend a minimum of 6 hours each week outside of class. The goal is to end up

with some level of mastery of differential equations, not just a cursory knowledge. The best plan to study for examinations is to make sure you can do all the homework problems and the problems worked out in lecture and in the text. Some problems on the exams may not be exactly like book questions, but rather they may test your understanding and ability to apply learned concepts to new situations.

Students who earned a grade lower than B in the calculus sequence are at risk in Mathematics 221, which relies heavily on material in Calculus I, II. Such students should plan to spend additional time learning calculus concepts and skills to be successful. Please realize that the level of effort you put forth in the calculus **will not** lead to success in Mathematics 221.

## **Office Hours**

Be sure to come by my office hours (MWF 8:30-10:00) if you have any questions on the material at any time during the semester, and always feel free to interrupt me during lecture with a question. Also, if my office hours conflict with your schedule, then I will set up a time with you to answer any questions that you may have.

## **Departmental Grading Appeals Policy**

Students who believe their academic evaluation has been prejudiced or capricious have recourse for appeals to (in order) the instructor, the departmental chair, the departmental appeals committee, and the college appeals committee.