

**Syllabus for Math 309A**  
**Linear Analysis**  
**Autumn 2009**

- **Instructor:** Jonathan Browder, Padelford C-434, email: [browder@math.washington.edu](mailto:browder@math.washington.edu)
- **Office Hours:** Tuesday 1:00-2:00, Wednesday 2:30-3:30, or by appointment.
- **Course Website:** [www.math.washington.edu/~browder/309A/309Aaut09.html](http://www.math.washington.edu/~browder/309A/309Aaut09.html)
- **Lecture:** MWF 11:30–12:20, MEB 103
- **Textbook:** *Elementary Differential Equations and Boundary Value Problems*, Boyce and DiPrima, 9th Edition.
- **About the course:** Math 309 is the culmination of the 307-308-309 program in linear analysis. It combines tools from analysis (such as series expansions, complex numbers and exponentials, and differential equations) and ideas from linear algebra (such as linear independence and eigenvalues). The plan is cover Chapter 7, Chapter 10, and selected topics from Chapter 9 (depending on time). Chapter 7 concerns linear systems of differential equations. In Chapter 9 we will focus on qualitative and geometric aspects of solutions to differential equations. Chapter 10 concerns partial differential equations, Fourier series, and boundary value problems.
- **Studying:** This is a challenging course. To succeed you will need to put forth significant effort and be actively engaged in the class. The course will follow the text fairly closely; you should read the sections ahead of time so you can come armed with meaningful questions (I will do my best to indicate what we'll be covering in the next class at the end of each lecture).

If you don't understand something ask for help as soon as you can. The more you fall behind the harder it will be to catch up again. We will do some review of linear algebra in class but you may find it helpful to do some extra review of your own.

Do all the homework and practice problems! Practice is the only way to master the material. Make sure you understand all the problems and how to solve them. If you make a mistake, find out where you went wrong.

- **Exams:** Midterm 1: Monday, October 19. Midterm 2: Friday, November 20. Final: Wednesday, December 16, 2:30-4:20. No calculators on any exam. The final is cumulative but with emphasis on the material covered after the second midterm. If you do exceptionally well on your final I may give a small boost to your final grade.

- **Homework:** Most weeks there will be graded homework assignments, due at the beginning of class on Monday (starting week 3). Of the assigned problems I will select only a few to be graded; your homework grade will be based on these. Late assignments will not be accepted, but I will drop your lowest homework grade to allow for a missed class. **I expect your homework assignments to be (a) neat and legible, (b) well organized, (c) clearly labeled and in order, and (d) stapled.** This will ensure your assignments will be graded efficiently and correctly.

You may work on homework with your classmates but must write it up individually.

- Grading:
  - Homework: 15%
  - Midterms: 25% each
  - Final: 35%
- **Missed Exams** If you must miss an exam let me know as soon as possible (absolutely BEFORE the exam), and accommodations will be made on a case by case basis. Make-up exams will only be given with serious, legitimate reason (malfunctioning alarm clocks and missed buses and the like do **not** qualify). In most cases I will require some kind of documentation.