Math 308 — Winter 2012

1. General Information

Instructor: Nathan Grigg

Email: grigg@uw.edu. Please include the number 308 in the subject line of all emails.

Class web page: http://staff.washington.edu/grigg/math308. You are expected to monitor the website for announcements and homework assignments. You may also subscribe to the RSS feed linked there.

Textbook: *Introduction to Linear Algebra, 5th edition*, by Johnson, Riess, and Arnold. ISBN 978-0-20-165859-0.

2. Student responsibilities

It is your responsibility to learn the skills and material that this course covers. In particular, *we will assume in our class discussions that everyone has read the appropriate section in the book* and attempted some of the easier homework problems before class. There may be material on the homework or exams that we do not fully discuss in class.

In addition to reading to book before class, you should think of some questions to ask. They could be specific, such as "What does the n in the example on page 105 refer to?" or more general, like "Why does row reducing an augmented matrix give me solutions to a system of equations?" Learning to ask good questions is an important learning skill. In addition, you should always be asking yourself "What parts of this do I not understand?" and "What can I do to fill in these gaps in my knowledge/ability?" Often the quickest way to answer the first question is by doing homework problems.

3. Schedule and exams

Week 1. 1.1–1.3: Row reduction and systems of linear equations.
Week 2. 1.5–1.6: Geometry of linear equations and matrix operations.
Week 3. 1.7–1.8: Linear independence and datafitting.
Week 4. 1.9: Matrix inverse. **Exam 1 on Friday, January 27.**
Week 5. 3.1–3.3: $\mathbf{R}^n$ and its subspaces.
Week 6. 3.4–3.5: Basis and dimension.
Week 7. 3.6–3.8: Orthogonal bases and Least Squares.
Week 8. 3.9: Least Squares. **Exam 2 on Friday, February 24.**
Week 9. 4.1–4.4: Eigenvalues and determinants.
Week 10. 4.5, 4.7: Eigenvalues and eigenspaces
Final Exam on March 14 at 2:30 pm.

For each exam, you may use one page of notes (writing on both sides). You may not use a calculator. The midterm exams are each worth 25% of your total grade, and the final exam is worth 35% of your total grade.

4. Homework

Homework is due on Wednesdays. The assignments will be posted on the class website. A few problems are graded from each homework. Your lowest homework score is dropped. No late homeworks are accepted. Homework is worth 15% of your total grade.

A few problems will be graded from each homework. Your total homework score will be based on your performance on these problems, together with a grade judging the completeness and neatness of your work.

Some weeks, one homework problem will be submitted via Catalyst, to be graded by me directly. These will involve some kind of proof.

5. Proofs

You will be required to prove some things on your homeworks and during the exams. We will spend time in class talking about what constitutes a good proof.

Try not to be intimidated by the idea of a proof. A proof is nothing more than a careful line of reasoning. Think of it as a short persuasive essay in which every argument you make can stand up to intense scrutiny.

6. Office Hours

I will hold office hours on Tuesday and Friday mornings from 10:00 to 11:00 in Art 336.

7. Important information

If you have a disability or other special circumstance that requires accommodation this quarter, please alert me as soon as possible.

I do not tolerate academic dishonesty. If I see evidence of dishonesty, I will report it to the dean.