Computer Science/Mathematics 451.1/451.2
General Information

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Course Summary: Numerical analysis is the science of understanding computer methods for solving mathematical problems. CmpSc/Math 451 introduces these methods, explains how they work, and discusses how they may fail. All of the lecture notes will be on Angel. Although they say CmpSc/Math 455, the two courses cover the same topics. However, I tend to chose a more mathematical text for CmpSc/Math 455 and require more computation in the homeworks in CmpSc/Math 451.

CmpSC/Math 451 is intended primarily for engineering and science majors.

The following topics will be covered. Dates given are approximate. We also list appropriate sections of the Turner book. Sometimes the lectures will cover topics somewhat differently from the book. Major departures from the text will be announced.

Honors option: Will be supported. Please see me if you are interested.
Prerequisites: Math 230 or 231; 3 credits in computer science (at least CmpSc 103 or 201).
Syllabus–Dates Approximate

• January 11–20. Introduction. Read Chapter one about arithmetic systems.

• Martin Luther King, Jr. Day. No classes.

• January 22–February 15. Chapter Seven. Systems of Linear Equations. MATLAB will be introduced here.

• February 17–March 1. Chapter Two. Systems of Nonlinear Equations.

• March 8–12. Spring Break.


• April 26–30. Special Topics as time permits.

Final Exam: To be announced. It will be during the week May 3–7. There will be a common final for the two sections of this course.

Grades

The grades will be based upon two midterm exams, homeworks that include MATLAB programs, and a final exam. These will comprise the following percentage of your grade.

30% Homework including MATLAB programs
40% Two in-class midterms
30% Final

All assignments are due in class on the due date. They can be turned in for a 25% penalty at the next class session. After that, do not bother turning them in.