

Math 4500/6500 Syllabus

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Our classroom: Boyd 322
12:30-1:45 TTh
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Office hours: Wednesday 2-5

Book: **Ward Cheney and David Kincaid, Numerical Mathematics and Computing** (6th or 7th edition).

1. COURSE SCHEDULE

See Google calendar.

2. PREREQUISITES

Students are expected to have MATH 2500 or 2270 and MATH 3000 or 3300 (or the MATH 3500/3510 sequence), as well as MATH 3100 and CSCI 1301 or equivalent programming experience. Substantial programming will be required as part of the course.

3. COURSE GOALS

Students will develop fluency with fundamental techniques in numerical mathematics and apply them to some real-world problems. The most important outcome of the course is for students to understand the role and analysis of numerical error in computations.

4. DISCLAIMER

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

5. HOW TO OBTAIN MATHEMATICA

You will shortly get an email from EITS with links to download your copy of *Mathematica*.

6. GRADING AND WP/WF POLICIES

The grading system has two tracks; one for students who intend to go to graduate school and/or a mathematical industry job or are taking this course for graduate credit, and one for students who are primarily taking the course as a graduation requirement.

Track 1. Maximum grade of A, requires $\sim 90\%$ of possible points. Required for MATH 6500 students.

- (1) 20% for completion of "An Elementary Introduction to the Wolfram Language" (1-47)
- (2) 30% for the midterm exam (in class, theory)
- (3) 30% for the final project (see examples)
- (4) 20% for homework assignments

The in-class final is not required for students on Track 1.

Track 2. Maximum grade of C, requires $\sim 70\%$ of possible points.

- (1) 30% for completion of "An Elementary Introduction to the Wolfram Language" (1-31 only)
- (2) 20% for the midterm exam (in class, theory)
- (3) 20% for the final exam (in class, theory)
- (4) 30% for homework assignments

The final project is not required for students on Track 2.

7. PRINCIPAL COURSE ASSIGNMENTS AND MATHEMATICA

Homework will be due more or less weekly. Much of the homework will use *Mathematica*. The Math Department has a site license for *Mathematica* which allows students to get copies for personal or home use. This course assumes that you have access to a computer on which you can install Mathematica and use it for some longer projects and assignments. Students on Track 1 will be required to complete a substantial final project (see webpage for examples), but will not take an in-class final exam. Students on Track 2 will take an in-class final exam, but will not be required to submit a final project. Students on either track will complete an in-class midterm exam.

8. ATTENDANCE POLICY

Students are expected to attend class. Students who miss more than 6 classes (two weeks of class) may be withdrawn from the course by the instructor.

9. ACADEMIC HONESTY

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at: www.uga.edu/honesty. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

It is perfectly acceptable to work on homework problems in groups in this course. However, the help you should get from your fellow students should enable you to complete the problem on your own. Recruiting another student to complete the homework for you, or to simply provide answers to the problems, is a violation of the honesty policy.

10. REQUIRED COURSE MATERIAL

The course textbook (Cheney and Kincaid, *Numerical Mathematics and Computing*, 6th or 7th edition) is strongly suggested for the course. It is required that you arrange access to a computer on which you can install *Mathematica*.

11. MAKE-UP EXAMINATIONS

This course has one or two in-class exams (. Late examinations will not be accepted without a very good reason (usually medical or legal). **Makeup examinations will not be given.**