

MATH 4510/6510 Numerical Analysis II

Instructor: Caner Kazanci

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Course website: <http://eco.engr.uga.edu/4510-6510>

Schedule: 9:30am-10:45am Tuesdays and Thursdays, 302 Boyd Graduate Studies

Office Hours: 10:45am-11:30am Tuesdays and Thursdays, and anytime by appointment.

Text: Numerical Mathematics and Computing, *by D. Kincaid and W. Cheney*, ITP

Objective: Many of the mathematical equations and problems that arise in modern sciences are generally very complicated and/or high dimensional. Therefore it is very hard to come up with exact analytical solutions. In this course, we will learn how to interpret a wide range of mathematical problems into numerical algorithms. These numerical schemes can be coded into a computer program using appropriate languages. We will use Matlab for this purpose.

Prerequisites: MATH 2700, and MATH 2500 or MATH 3510. We will use Matlab for computer work, however no prior knowledge or experience is necessary.

Topics: Here's tentative schedule of topics to be covered:

Topics	Dates
Systems of Linear Equations	Jan 8 - Jan 26
More on Systems of Linear Equations	Jan 29 - Feb 15
Approximation by Spline Functions	Feb 20 - March 9
Numerical ODE solutions	March 6 - March 23
ODE systems	March 27 - April 5
Numerical PDE Solutions	April 10 - April 26
Monte Carlo	April 17 - April 26

Grading: The course grade will be based on homework assignments (40%), one in-class exam (30% each), and an in-class final (30%). Homework's will be posted on the course website each week. It is your responsibility to check the website to get the HW assignments. All academic work must meet the standards contained in "A Culture of Honesty". Students are responsible for informing themselves about those standards before performing any academic work.

Homework policy: Unless announced in class, Homework assignments will be posted on the course website on Fridays; and they will be due next Friday by noon in the mailbox of Jianbao Wu. His mailbox is located at 4th floor of Boyd Graduate Studies building. For computer problems in HW assignments, please attach all your codes to a single e-mail and send it to Jianbao (jwu@math.uga.edu) before the due date. Also do not forget to include printed hard copies of your codes along with the solution of the regular HW problems; please hand them in together. You need to show all your work on solutions of the HW assignments. Grades will be assigned to correct solutions, not correct answers. A solution attempt that is correct in nature will definitely get partial credit even though the final answer might be wrong.

Attendance: Attendance is required. If you miss any classes, it is your responsibility to get notes from your classmates and make up for the class you missed.

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