

MATH 403 - Mathematical Methods for Engineers and Scientists - Fall 2009

Professor: Tim Schulze, AC 415C, 974-4162, schulze@math.utk.edu

Office Hours: W 2:00 – 3:00 or by appointment

Text: *Advanced Engineering Mathematics, third edition*, Zill & Cullen (ZC).

Course Prerequisites: Differential Equations, Vector Calculus, and familiarity with a programming language.

Grading: Your grade will be determined by a weighted average of homework (15%), 2 midterm exams (25% each) and a comprehensive final exam (35%). Homework will be assigned on most days and collected on Tuesdays at the beginning of class. No late assignments. Makeup exams are only given if arranged before the exam. Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Grades will be awarded based on the following percentages: A 90 and above, A- 87, B+ 83, B 80, B- 77, C+ 73, C 70, C- 67, D+ 63, D 60, D- 57, F below 57.

Course Description: This course is an introduction to matrix computations and partial differential equations. We will cover linear systems, eigenvalue problems, some numerical methods, Fourier series and generalized Fourier series, Sturm-Liouville problems, boundary value problems for the heat, wave and Laplace's equation, solutions in polar and cylindrical coordinates. This corresponds to chapters 7, 8,12, 13 & 14 in ZC.

1. The first midterm covers chapter 7 &, 8
2. The second midterm covers chapter 12 & part of 13
3. The final is cumulative, but will have some emphasis on material covered in the last portion of the course.

Here are some important dates:

- October 15 - Fall break, no class
- November 26 - Thanksgiving break, no class
- December 1 - Last day of class
- December 10 - FINAL: 2:45–4:45