

INSTRUCTOR Paul J. Atzberger
<http://atzberger.org/#Teaching>

Office: 6712 South Hall
Office Hours: TR 10:45am – 12:00pm



CLASS TIMES TR 9:30am – 10:45am.
HSSB 2251.

DESCRIPTION Finite element methods provide an important class of numerical methods for approximating solutions of partial differential equations. In this course we will cover both fundamental mathematical concepts and foundations as well as how in practice to develop and to apply finite element methods to specific problems. We will develop methods for Elliptic, Parabolic, and Hyperbolic PDEs as well as for non-linear problems.

PREREQUISITES A working knowledge of advanced calculus, linear algebra, and partial differential equations.

TEXTBOOKS The Mathematical Theory of Finite Element Methods (*third edition*)
S. Brenner and R. Scott, published by Springer.

GRADING Homework 30%
Midterm 30%
Take-home Final Exam 40%

POLICIES Assignments will be assigned in class and posted on the course website. Prompt submission of homeworks will be required. While no late homework will be accepted, one missed homework will be allowed without penalty. While it is permissible for you to discuss materials with classmates, the submitted homework must be your own work.

EXAMS The midterm exam will be on Thursday, November 12th.
Final project will be due at the end of the quarter by Tuesday, December 8th.