

EGFD-706 Finite Element Techniques II Spring Quarter 2004

Instructor: Dr. Dong Qian, Assistant Professor of Mechanical Engineering
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Textbook: *Concepts and Applications of Finite Element Analysis* by Cook, Malkus, Plesha and Witt, 2002, 4th edition, Wiley.

Class: 2:00-3:15 TTH, 649 Baldwin Hall

TA: Mr. Jian Sun 591 Rhodes Hall, 556-0429

Office Hours: Dr. Qian: 1:00-2:00 TTH. or stop by, 406B Rhodes.

Mr. Sun 1:00 – 2:00 TTH

Goals: Introduction to the 2D and 3D finite elements and techniques.

Prerequisites: FET-I or equivalent, Linear Algebra, Differential Equations, Strength of Materials.

Topics:

1. Displacement-based formulation for FEM.
2. 2D elements, plate and shell elements, Solid Elements.
3. Isoparametric formulation.
4. Topics in computational mechanics.

Computer Usage:

- Students will primarily use Matlab with the options to use C, C++, Fortran, etc. and write a simple 2D FEM code.
- Use of ANSYS to solve static problems will be continued in this Quarter through one or two ANSYS lab sessions, if time permits.

Grading: 40% homework; 30% midterm exam; 30% final exam.

Homework: Regular homework due 1 week after day assigned. Computer homework due 2 weeks after day assigned. Late submission will not be graded.

Special Needs: If you have any special needs related to your participation in this course, including identified visual impairment, hearing impairment, physical impairment, communication disorder, and/or specific learning disability that may influence your performance in this course, you should meet with the instructor to arrange for reasonable provisions to ensure an equitable opportunity to meet all the requirements of this course. At the discretion of the instructor, some accommodations may require prior approval by Disability Services.

Policy on academic dishonesty: Academic dishonesty is a serious matter and will be dealt with as provided for in the student code of conduct by University of Cincinnati.