ME 639
APPLICATIONS OF FINITE ELEMENT ANALYSIS IN
MECHANICAL ENGINEERING SYSTEMS
SPRING 2001

COURSE OBJECTIVES: Design and analysis of basic machine components using finite element method.

PREREQUISITES: ME 439 and ME 522 or equivalent.

TEXTBOOK: Saeed Moaveni, *Finite Element Analysis - Theory and Application with ANSYS*, Prentice Hall, New Jersey, 1999.

REFERENCES:
1. Charles E. Knight, *The Finite Element Method in Mechanical Design,* PWS-KENT Publishing Company, Boston, 1993.
2. Daryl L. Logan, *A First Course in the Finite Element Method*, PWS-KENT Publishing Company, Boston, 1993.

INSTRUCTOR: Dr. C. Charles Yang, P.E.
Office: 101C Engineering Building, Phone: 978-6312 *636-5881 (H)*
E-mail: yang@me.twsu.edu
Class Hours: 12:30 - 1:20 PM, T TH, Classroom: 102 Eng. Bldg.
Lab Hours: 1:00 - 3:30 PM Wednesday or 1:00 - 3:30 PM Friday
Lab Location: 209 Eng. Bldg.
Office Hours: 1:30 - 2:30 PM, T TH (or by appointment)

Zip-Disk
Buy Lab Manual

TOPICS:
1. General Approaches of Finite Element Method.
2. Element Formulation, Boundary Conditions, Applied Forces, and Output Interpretations of
   - Truss Elements
   - Beam and Frame Elements
   - Two-Dimensional Solid Elements
   - Three-Dimensional Solid Elements
   - Axisymmetric Elements   } *Not Covered in*
   - Plate and Shell Elements } *Textbook.*
3. Heat Transfer and Thermal Stress Analysis.

GRADING: Homework Assignments (20%), Labs (10%), Two Exams (20% Each), and Final Exam (30%).

1st Mar. 15s?
2nd Apr. 20s?

GRADE: A(>90); B(>80); C(>70); D(>60)

FINAL EXAM: 1:00 - 2:50 PM, May 10 (Thursday), 2001

Note:
1. There will be a total of approximately six (6) homework assignments. Each student must do his/her own work. Group discussions are O.K., but the actual doing of the analysis and the preparation of report, etc. are the responsibility of the individual.
2. No makeup exam will be given. No late assignment will be accepted.