



ME 4733: Deformation and Fracture of Engineering Materials

Spring 2002

Course Organization

Objective: To give the students a multiscale (atomistic, micro-structural, and macroscopic) understanding of effects of temperature, strain rate, and corrosion on stress-strain behavior and fracture of engineering materials, including metals and ceramics. This understanding is to enable students to make improved design decisions regarding material performance.

Prerequisites: CE 3400, ME 2733 or equivalent

Instructor: Honglai Tan, CEBA 2504

Text: Deformation and Fracture Mechanics of Engineering Materials, Richard W. Hertzberg, 4th Edition, Wiley & Sons, 1996.

Course Times: Lectures – Monday, Wednesday and Friday 12:30 – 1:30pm
CEBA 1114

Office Hours: Tuesday 3:00 – 5:00pm and by appointment

Grades: $F \leq 50 < D \leq 60 < C \leq 70 < B \leq 80 < A$
20% Homework
20% Test 1 (outline topics 1-4)
20% Test 2 (outline topics 5-7)
40% Final Exam (comprehensive)

You can earn 15 extra points based on your participation and report in getting familiar with the work of a famous scientist in the field.

Homework: Given out in Wednesday class, due at the beginning of class the following Wednesday. Late work will be given no credit.

Tests: 1 hour in class, closed book, 1 single-sided crib sheet.
Test 1 – Monday, 2/25/02
Test 2 – Wednesday, 3/27/02
Need *prior* permission to reschedule.

Final: 2 hours, closed book, 2 crib sheets.
12:30 – 2:30, Thursday, 5/16/02.

Extra points: **Getting familiar with the work of a famous scientist in the field**
Schedule:
2/8 (Friday), submit proposal on which scientist you are interested in;
2/9-5/7, research the scientist's work and try to contact with him or her, talk or email to me about you progress, write the report;
5/8 (Wednesday), submit the report.