

Course: AE 737 Mechanics of Damage Tolerance  
Semester: Spring 2004 (Section #21671)  
Instructor: Prof. Bert smith  
Office: Room 206 WH, Class Room: 209 WH

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**Grading:**

Your grade will be determined from (1) homework (20%), (2) closed book exams (60%), and (3) a final closed book exam (20%). Homework must represent *your own* work, and it must be *neat* and *well organized*. The final exam will be given at the officially scheduled time. Exams will usually have two major components: computational and objective.

In general, the following grading scale will apply:

90-100%	A - Distinguished (better than extraordinary) achievement.
80-89%	B - Superior (extraordinary) achievement.
70-79%	C - Average (ordinary, typical, usual) achievement.
60-69%	D - Below average achievement.
0-59%	F - Failing work.

**Instructional Material:**

There is no single source (text) for all of the topics covered in this course. Therefore, the instructor will supply a set of notes (approximately 400 pages of instructional material). To obtain the notes, you must pay \$20.00 to the secretary or student assistant in the AE office. ***Do this before the second class period.***

The major topics covered in this course are as follows (a more detailed list is given on another page):

- Introduction
- Stress Intensity
- Crack Tip Plastic Zone
- Fracture Toughness
- Residual Strength
- Fatigue Crack Growth Rate
- Fatigue Crack Propagation
- Damage Tolerance

**Classroom courtesy:**

- Please ***arrive on time*** so as not to disrupt the class while in progress.
- Feel free to ask questions at any time*** (a dead class is boring for everyone).
- Please ***do not wear hats*** during class (this is just an old fashioned rule that I like).
- Please avoid lengthy private conversations while instructor is conducting class.
- No snoring. If your neighbor falls asleep give him/her a shove.
- No foul language (except occasionally by the instructor).
- No cell phone ringing.
- Homework is due at the beginning of the session. Put it on front table when you arrive.

### Classroom Instruction:

For most people, much of the learning will take place outside of the classroom, where you can concentrate without interruption, and work at your own pace. I will serve as your consultant, and we will accomplish as much as possible during the 75-minute class sessions. Classroom sessions will generally include questions/answers, overviews, summaries/reviews, and mostly introductions to new material (with occasionally a small amount of nonsense).

### Homework:

Print your name (last name first) at the upper right hand corner of the 1<sup>st</sup> page.

***Use only one side of the paper.***

Start each problem at the top of a new page.

***Use only 8.5 by 11 inch paper.***

***Printed Mathcad screens are not acceptable*** to be handed in as homework.

***Sloppy work will not be acceptable.***

Don't fold the homework.

***Late homework will not be accepted without prior arrangement.***

Since homework will be graded, ***it must represent your own work.***

Place your homework on the front desk before class begins.

Curves must be plotted with computer software or plotted by hand and drawn with the use of a French Curve.

Curves must be labeled correctly.