AE 737: Mechanics of Damage Tolerance

Lecture 12 - Exam 1 Review

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schedule

- 1 Mar - Exam 1 Review, HW5 Due, HW 4 Self-grade due
- 3 - Exam 1
- 8 Mar - Stress-based Fatigue
- 10 Mar - Stress-based Fatigue, HW6 Due, HW5 Self-grade due
- 15 Mar - (Spring Break)

outline

- exam
- review problems

exam

exam format

- Look at the exam and equation sheet posted on Blackboard
- Expect a mixture of quantitative and qualitative questions (some short answer justifications)
- 5 questions (current plan)
- I curve all my exams linearly
- Pay attention to what the question is asking for and be sure to answer all parts of the question
- There will be no T/F section, but those questions in the text can still be useful for review

equation sheet

- The equation sheet for this exam will be the same as the previous equation sheet posted to Blackboard
- Other specific information and formulas (mixed-mode fracture, stiffener data, etc.) will be given in the problem

topics

- Stress Intensity
- Fracture Toughness
- Residual Strength
- Stiffeners
- Multiple Site Damage
- Mixed Mode Fracture

stress intensity

topics

- Stress intensity
- Compounding
- Superposition
- Cracks near curved boundaries
- Plastic Zone
- Fracture Toughness
- Residual Strength
- Stiffeners
- Multiple Site Damage
- Mixed-Mode Fracture

review problems

review

- p. 415 problem 6
- p. 418 problem 9
- p. 419 problem 10-11
- p. 421 problem 13
- p. 423 problem 17
- p. 424 problem 3
- p. 425 problem 5
- p. 426 problem 1
- p. 427 problem 3
- p. 429 problem 6
- p. 432 problem 9
- p. 433 problem 14
- p. 434 problem 3
- p. 437 problem 8