

**Course:** ENGR 674 Fracture Mechanics  
**Room:** 211 Carrier Hall  
**Time:** MWF 2:00-2:50 p.m.

**Professor:** Ahmed Al-Ostaz  
202 Carrier Hall  
662-915-5364  
[alostaz@olemiss.edu](mailto:alostaz@olemiss.edu)

**Office Hrs:** MWF 3:00-4:00 p.m.

**Course Notes:** Will be distributed

**References:** Hellan, K., Introduction to Fracture Mechanics,  
McGraw-Hill, 1984

Kanninen, M. F., and Popelar, C. H., Advanced Fracture  
Mechanics, Oxford University Press, 1985

**Grading:**

Homework	30%	(Late homework not accepted)
Midterm Exam	35%	
Final Exam	35%	

**Topics:**

- Linear Fracture Mechanics
  - Introduction to Fracture Mechanics
  - The stress Intensity Factor
  - The Energy Release Rate
  - Crack Tip Plasticity
  - Crack Initiation & Quasistatic Growth
  - Elastic-Plastic Fracture Mechanics
- Nonlinear Fracture Mechanics
- Discrete Element Approach
- Particle Dynamics
- Dynamic Fracture