

1. **MEEG 215**            **Solid Mechanics**
2. **Credits 3**            **Contact Hours 3**
3. **Fall 2016**            Dr. X. L. Lu, Ph.D., Office: 225, Spencer Lab  
Dr. M. Z. Hossain, Ph.D., Office: 229, Spencer Lab
4. **Textbook**            “Mechanics of Materials” 8<sup>th</sup> Edition,  
by James Gere and Barry Goodno, ISBN 978-1111577735

5. **Specific course information**

- a. **Catalog Description:** Analytical study of stresses and deformations and their application to the design of machine and structural elements under axial, torsional, bending and lateral loads. Buckling and energy methods are discussed.
- b. **Prerequisite:** Grade of C- or better in MEEG112 or CIEG211.
- c. **Course is required.**

6. **Specific goals for the course**

- a. **Specific Outcomes of Instruction:** This is a basic course for freshman and sophomore students. The instruction is designed to help the students understand various fundamental concepts that are exploited in engineering design of machine elements and solid structures. This course primarily helps students to develop a) an ability to apply knowledge of mathematics, science and engineering, and to a lesser extent objective e) an ability to identify, formulate, and solve engineering problems
- b. **Student Outcomes Addressed:**  
No outcomes are directly assessed/evaluated in freshmen or sophomore level courses.

7. **Brief list of topics to be covered**

- Tension, compression and shear
- Axially loaded members
- Torsion
- Shear forces and bending moments
- Stresses in beams
- Analysis of stress and strain
- Deflections of beams
- Combined loading
- Energy method
- Buckling