## Aero 215: Introduction to Solid Mechanics and Aerospace Structures

<table>
<thead>
<tr>
<th>COURSE #: AE 215</th>
<th>COURSE TITLE: INTRODUCTION TO SOLID MECHANICS AND AEROSPACE STRUCTURES</th>
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<tr>
<td>TERMS OFFERED: Fall/Winter</td>
<td>PREREQUISITES: Math 215. Preceded or accompanied by Aero 245</td>
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<td>COGNIZANT INSTRUCTOR: Shaw</td>
<td>SCIENCE/DESIGN CREDITS: 4/0 (required course)</td>
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### COURSE OBJECTIVES
1. To acquaint students with the fundamentals of aerospace structures.
2. To acquaint students with structural mathematical models.
3. To introduce students to design considerations applied to simple aerospace structural elements.

### COURSE OUTCOMES
**On completion of Aero 215, students can:**
1. Recognize phenomena such as deformation, strain, and stress in simple aerospace structural elements. (Assessed by: 1,2,3)
2. Analytically and numerically calculate the deformation and stress states of aerospace structural components. (Assessed by: 1,2,3)
3. Evaluate the suitability of simple structural elements for specific aerospace applications given design constraints, such as allowable stresses, deformations, and weight. (Assessed by: 1,2,3)
4. Recognize structural failure modes such as yielding, fracture, and fatigue. (Assessed by: 1,2,3)

### ASSESSMENT TOOLS
1. Hourly exams.
2. Individual homework.
3. Final exam.

Updated: September 2010