

ABET Course Syllabus**ENAE 324 Aerospace Structures**

<b>Credits &amp; Contact Hours:</b>	3 credits (3 hours of lecture)
<b>Course Status:</b>	Required
<b>Schedule:</b>	Offered every Spring semester
<b>Course Description:</b>	Analysis of torsion, beam bending, plate bending, buckling and their application to aerospace.
<b>Pre-Requisites:</b>	ENES 220
<b>Co-Requisites:</b>	None
<b>Textbooks:</b>	Course notes
<b>Other Required Material:</b>	Course lecture notes and handouts
<b>Course Oversight:</b>	Structures and Vibration Committee
<b>Syllabus Prepared By/Date:</b>	Dr. Mary Bowden, June 6 2011

**Course Objectives/Student Learning Outcomes:**

1. Sizing under strength and stiffness constraints
2. Torsion, bending and buckling of thin-walled structures
3. Concept of damage tolerant design
4. Concept of finite element modeling

**Topics Covered:**

1. Basic structural elements
2. Internal loads
3. Inertia loads
4. Shear center & wing box sizing
5. Torsion of thin-walled structures
6. Bending of thin-wall structures
7. Direct shear of thin-wall structures
8. Torque equivalence & finding shear center
9. Shear flow
10. Stringers & shear panels
11. Temperature effects
12. Column & panel buckling
13. Finite element modeling
14. Structural integrity

**Relationship of Course Objectives to Program Outcomes**

This course addresses program outcomes: 1, 3, 5, 8, 9