

ABET Course Syllabus**ENAE 283H Introduction to Aerospace Systems (Honors)**

Credits & Contact Hours: 3 credits (3 hours of lecture)

Course Status: Required

Schedule: Offered every Fall semester

Course Description: Introduction to airplanes and space vehicles as aerospace systems. Fundamentals that describe these systems. Elements of aerodynamics, airfoils and wings. Airplane performance, stability and control. Aircraft and rocket propulsion. Fundamentals of orbital motion. Aspects of vehicle conceptual design.

Pre-Requisites: CHEM 135, ENES 102

Co-Requisites: None

Textbooks: (1) J. Anderson. Introduction to Flight. McGraw Hill, sixth edition, 2007.

Other Required Material: Course lecture notes and handouts

Course Oversight: Undergraduate Committee

Syllabus Prepared By/Date: Dr. Alison Flatau, May 2011

Course Objectives/Student Learning Outcomes:

1. Ability to use and incorporate fundamental principles from mathematics, basic science and physics, and computer science to solve general fundamental problems associated with the broad field of Aerospace Systems.
2. An appreciation for the various interconnected and interrelated disciplines of the Aeronautic or Space track within the department.
3. An ability to apply the fundamental principles and concepts of engineering to formulate one or more approaches or models to a new problem and to suggest solutions or solution procedures to solve the problem
4. An ability to communicate knowledge and understanding in written reports and oral presentations.

Topics Covered:

1. Elements of aerodynamics, airfoils and wings.
2. Airplane performance, stability and control.
3. Aircraft and rocket propulsion.
4. Fundamentals of orbital motion.
5. Aspects of vehicle conceptual design.

Relationship of Course Objectives to Program Outcomes

This course addresses program outcomes: 2, 3, 5