

ABET Course Syllabus**ENAE 283 Introduction to Aerospace Systems**

Credits & Contact Hours:	3 credits (3 hours of lecture)
Course Status:	Required
Schedule:	Offered every Fall semester and during the summer
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:	PHYS 161, ENES 012, and MATH 141.
Co-Requisites:	PHYS 260/261
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. Mary Bowden, August 2010

Course Objectives/Student Learning Outcomes:

1. Know the basic principles on which the development of aerodynamics and other principal subdisciplines of aerospace engineering are based.
2. Use and apply principles from mathematics, physics, and computational methods to solve beginning level problems in aerodynamics, vehicle-performance, vehicle stability and control, 2-body orbit theory, and propulsion systems.

Topics Covered:

1. Basic aerodynamics, airfoil and wing design;
2. Aircraft performance, stability, and control;
3. Launch vehicle and spacecraft design, orbital motion and orbital maneuvers;
4. Propulsion.

Relationship of Course Objectives to Program Outcomes

This course addresses program outcomes: 2, 3, 5,