THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Applied Aircraft Performance II

AVIATN 3850

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
Second of an applied course sequence covering the fundamental principles of aerodynamics, aircraft performance, and stability of high?performance aircraft. Course includes compressible aerodynamics, flight stability and handling.

Prerequisites and Co-requisites:
AVIATN 2850

Course Goals / Objectives:
- Calculate detailed aircraft performance estimates.
- Distinguish between compressible and incompressible flow characteristics.
- Determine the pitch stability margin of an aircraft.
- Explain the stability and handling characteristics of aircraft performance.

Course Topics:

- Course Introduction and Atmospheric Properties
- Lift, Drag, Pitching Moment Review
- Flight Mechanics review
- Equations of Motion
- Detailed Performance Analysis
- Flight Test Engineering
- Data Analysis
- Compressible vs Incompressible Flow
- High?speed Flight ? Normal Shocks
- High?speed Flight ? Oblique Shocks
- High?speed ? Internal Flow
- Static Stability and Pitch Margin
- Dynamic Stability Modes
- Stability, Control and Handling

Designation:

Elective