

AA321 COURSE DETAILS

TITLE:	Aerospace Laboratory I
CREDITS:	3
FORMAT & SCHEDULE:	Lecture, 1 hour / week; Lab, 2 hours / week
FACULTY CONTACT:	James Hermanson

COURSE DESCRIPTION (Catalog Short Form, 50 words Max):

The design and conduct of experimental inquiry in the field of aeronautics and astronautics. Laboratory experiments on supersonic flow, structures, vibrations, material properties, and other topics. Theory, calibration, and use of instruments, measurement techniques, analysis of data, report writing.

COURSE OVERVIEW & LEARNING OBJECTIVES:

Course Objectives:

1. Students will be able to perform wind tunnel tests and reduce wind tunnel data.
2. Students will be able to test materials, apply strain gauges, and measure stresses.
3. Students will understand how to take data on dynamic systems in vibration.
4. Students will be able to perform supersonic wind tunnel tests and reduce the resulting tunnel data.
5. Students will know how to write good lab reports.

COURSE REQUIREMENTS

PREREQUISITES: 1) A A 311
2) A A 320

REQUIRED TEXTBOOK: *None*

COURSE SCHEDULE

Topics

Sphere drag

Materials testing

2D wing

Stress analysis with strain gages

3D wing

Stress concentration

Ludwig Tube/Supersonic Flow

Beam bending and vibration

Propeller performance