AE 4350 - Aerospace Engineering Design Project I (2-3-3)

Catalog Data: AE 4350: Aerospace Engineering Design Project I. Preliminary design or case study of an aerospace system such as an aerospace system such as a complete flight vehicle, a propulsion system, a structural system, or a control system.

Prerequisites: AE 3521, AE 3310.

Textbook: None.


Coordinator: M.W. M. Jenkins, Professor of A.E.

Learning Objectives: Develop an understanding of design methodology through lectures and applications.

Expected Outcomes: Student will complete individual design of three diverse aircraft to meet given specifications.

Topics:

1. Design methodology, including mission development. (4 classes)
2. Initial sizing and trade studies. (2 classes)
3. Wing and empennage requirements, selection and sizing. (4 classes)
4. Structural design factors/materials. (2 classes)
5. Propulsion and landing gear sizing and installation. (2 classes)
6. Stability and control, handling qualities and design. (2 classes)
7. Low observables. (2 classes)
8. Life cycle cost. (2 classes)
9. Tests. (none)