Design of Atmospheric Flight Vehicles II

AEROENG 4516

Credit Hours: 3.00

Course Levels: Undergraduate (1000-5000 level)

Course Components: Lecture, Lab

Course Description: Continuation of 4515. Preliminary and detailed design of aerospace vehicle components: design of a vehicle for atmospheric flight.

Prerequisites and Co-requisites: Prereq: 4515, and enrollment as AeroEng-BS student.

Course Goals / Objectives:
- Provide students with preliminary and detailed aircraft design experience
- Foster multidisciplinary thought processes and collaborations
- Train students in effective teamwork
- Refine students' technical communication skills through written reports and presentations
- Teach students the importance of considering engineering standards in the design process.
Course Topics:
- Minimum Buckling Load Design
- Low Cycle/High Cycle Fatigue Design
- FEA with Hypermesh and Nastran
- Structural design presentations
- Detailed aerodynamic analysis
- Detailed weights estimation
- Detailed stability, control, and handling
- Detailed propulsion performance
- Detailed performance assessment
- Cost analysis
- Final presentations

Designation:
Required