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 (515 and 516), and enrollment as AeroEng-BS student (No pre-majors can enroll in this class).

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
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