



# Advanced Structures for Flight Vehicles

## AEROENG 7842

**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Graduate (5000-8000 level)

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**Course Components:**

Lecture

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**Course Description:**

Structural Analysis of Flight Vehicles.

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**Prerequisites and Co-requisites:**

Prereq: Grad standing in Mechanical or Aerospace Engineering, or permission of instructor.

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**Course Goals / Objectives:**

- Be able to perform analysis of aircraft structural components
  - Understand theory of membrane shells
  - Understand theory of plates
  - Understand the principles of structural stability
  - Be able to formulate the analysis procedures using energy methods and Newtonian mechanics
  - Be to conduct analysis of thin-walled structures
  - Understand the numerical approaches in analysis of aircraft structures
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**Course Topics:**

- Introduction to Energy Methods
  - Theory of Membrane Shells
  - Theory of Plates
  - Principles of Structural Stability
  - Analysis of Thin-walled Structures
  - Numerical Methods in Aircraft Structural Analysis
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**Designation:**

Elective