MECH 484

Course Syllabus

Title:

Applied Aerodynamics for Aircraft
Preliminary Design
1. Course Particulars

Instructor: Wayne M. Williams, P. Eng
Email: waynewilliams@dccnet.com
Office: t. b.d

Classes and Class times and location:

Term 1, Mondays and Wednesdays 5-7 pm

Course Details:
Credits: 3
Calendar Description:
Aircraft Design: Aerodynamics

Aircraft performance, stability and control, loading and airworthiness. Detailed examples. [2-2-0]

Prerequisites: None.

Textbook:

Course notes will be provided with information from several references

Recommended textbook(s)
2. Course Objectives

This course will be useful for those who wish to consider and/or prepare for an engineering career in aviation.

The objective of the course is to familiarize the student with the application of aeronautical engineering principles and design practices. The course will focus on steps in preliminary design of general aviation aircraft with emphasis on the iterative aspects of design.

In addition to discussion about career paths in aeronautical engineering, insight regarding the certification process will be provided.

Emphasis will be on the design cycle with specific reference to:

- Product Requirement and Specification (Design Category)
- Product Function (Design Payload, Weights, and Speeds)
- Loads (V-n Diagrams)
- Lift
- Drag
- Performance
- Stability and Control

Upon completion of the course material, the student should be able to assess existing aircraft designs, look at the issues related to modification of existing designs, and/or understand the steps in development of new aircraft.

3. Course Schedule and Format

1 day, (2 hours per session) per week, class time
1 day, (2 hours per session) per week, tutorial/project time.

4. Grading

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<thead>
<tr>
<th>Grading</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1 mid term</td>
<td>15 %</td>
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<tr>
<td>1 preliminary design study exercises</td>
<td>50 %</td>
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<td>1 final exam</td>
<td>35 %</td>
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