Design of Atmospheric Flight Vehicles II

AEROENG 4516

Description / Conditions

Transcript Abbreviation:
Det Des Aircraft

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

Course Levels:
Undergraduate (1000-5000 level)

Designation:
Required

General Education Course:
(N/A)

Cross-Listings:
(N/A)

Course Detail

Credit Hours (Minimum if “Range” selected):
3.00

Max Credit Hours:
(N/A)

Select if Repeatable:
Off
Maximum Repeatable Credits:
(N/A)

Total Completions Allowed:
(N/A)

Allow Multiple Enrollments in Term:
No

Course Length:
14 weeks (autumn or spring)
12 weeks (summer only)

Off Campus:
Never

Campus Location:
Columbus

Instruction Modes:
In Person (75-100% campus; 0-24% online)

Prerequisites and Co-requisites:
Prereq: 4515 (515 and 516), and enrollment as AeroEng-BS student (No pre-majors can enroll in this class).

Electronically Enforced:
No

Exclusions:
Not open to students with credit for 516.01 or 517.01.

Course Goals and Learning Objectives

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

Check if concurrence sought:
No

Contact Hours
### Contact Hours:

<table>
<thead>
<tr>
<th>Topic</th>
<th>LEC</th>
<th>REC out-of-class</th>
<th>REC in-class</th>
<th>Weekly LAB out-of-class</th>
<th>Weekly LAB in-class</th>
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<td>Minimum Buckling Load Design</td>
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<td>0.0</td>
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<tr>
<td>Low Cycle/High Cycle Fatigue Design</td>
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<tr>
<td>FEA with Hypermesh and Nastran</td>
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<tr>
<td>Structural design presentations</td>
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<tr>
<td>Detailed aerodynamic analysis</td>
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<tr>
<td>Detailed weights estimation</td>
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<td>Detailed stability, control, and handling</td>
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<td>Detailed propulsion performance</td>
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### Grading and Texts

**Grading Plan:**

Letter Grade
Course Components:
Lecture
Lab

Grade Roster Component:
Lecture

Credit by Exam (EM):
No

Grades Breakdown:

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<th>Aspect</th>
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<tbody>
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<td>Final Presentation</td>
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<tr>
<td>Final Report</td>
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<tr>
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<td>Quizzes</td>
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Representative Textbooks and Other Course Materials:

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<th>Title</th>
<th>Author</th>
<th>Year</th>
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ABET Student Learning Outcomes

ABET-CAC Criterion 3 Outcomes:
(N/A)

ABET-ETAC Criterion 3 Outcomes:
(N/A)
### ABET-EAC Criterion 3 Outcomes:

<table>
<thead>
<tr>
<th>Contribution</th>
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<tr>
<td>Significant contribution (7+ hours)</td>
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</tr>
<tr>
<td>Significant contribution (7+ hours)</td>
<td>2</td>
</tr>
<tr>
<td>Significant contribution (7+ hours)</td>
<td>3</td>
</tr>
<tr>
<td>Significant contribution (7+ hours)</td>
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<tr>
<td>Significant contribution (7+ hours)</td>
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<tr>
<td>Substantial contribution (3-6 hours)</td>
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### Embedded Literacies (UG courses only)

**Embedded Literacies Info:**

**Attachments / Additional Notes or Comments**

**Attachments:**
(N/A)

**Additional Notes or Comments:**
(N/A)