Helicopter Aerodynamics

AEROENG 5610

Description / Conditions

Transcript Abbreviation:
Helicopter Aero

Course Description:
Basic treatment of helicopter aerodynamics, performance, and design.

Course Levels:
Undegraduate (1000-5000 level)
Graduate (5000-8000 level)

Designation:
Elective

Course Detail

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

Max Credit Hours:
3.00

Check if Repeatable:
Off

Maximum Repeatable Credits:
3.00

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: 3570 (530 and 570).

Electronically Enforced:
No

Course Goals and Learning Objectives

Course Goals / Objectives:
Introduce students to the fundamentals of helicopter flight including rotorcraft aerodynamics, design, performance, and control in hover and forward flight

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 in-class</th>
<th>Weekly LAB out-of-class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction and Historical Perspective</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Momentum Theory</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Blade Element Theory</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Blade Motion, Dynamics, and Control</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Performance</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Design</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Grading and Texts

Grading Plan:
Letter Grade

Course Components:
Lecture

Grade Roster Component: Lecture

Credit by Exam (EM): No

Grades Breakdown:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Project</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
</tbody>
</table>

Representative Textbooks and Other Course Materials:

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Helicopter Aerodynamics, 2nd ed.</td>
<td>J. Gordon Leishman</td>
<td></td>
</tr>
</tbody>
</table>

ABET Student Learning Outcomes

Embedded Literacies (UG courses only)

Embedded Literacies Info:

Attachments / Additional Notes or Comments

ABET Syllabus: AEROENG_5610_ABET.pdf