ADDITION A NEW COURSE TO THE CURRICULUM

This course is available for student registration only after the approval process has been completed.

SUBJECT AVT
(Course No. 1007)

CREDIT HOURS 2
TERM TO BE ADDED TO THE FILE Spring 2011

CLASS HOURS 32/semester
LECTURE HOURS 32/semester
LAB HOURS
CONTACT HOURS (CEU ONLY)

DEPARTMENT Aviation Studies
(e.g., Computer Sciences)
SCHEDULE TYPE Lecture (A)
(e.g., Lecture, Lab or Special Topics/Project)

☑ COLLEGE OF AERONAUTICS - 23
☐ COLLEGE OF PSYCHOLOGY AND LIBERAL ARTS - 25
☐ COLLEGE OF SCIENCE - 26
☐ COLLEGE OF ENGINEERING - 1
☐ EXTENDED STUDIES DIVISION / NATHAN M. BISK COLLEGE OF BUSINESS - 90

COMPUTER TITLE Restricted to 25 characters, including spaces HoLo Tran Pr Plt Add-On

CATALOG TITLE Helicopter Transition Private Pilot Add-On

CATALOG DESCRIPTION OF COURSE Restricted to 350 characters, including spaces
Provides helicopter aeronautics instruction for private pilot candidates who have previously completed the requirements for the FAA fixed-wing private pilot written examination. Prepares flight students for the FAA private pilot-helicopter transition written examination. (Requirement: Prerequisite of AVT 1001 or equivalent)

This description has been approved by the catalog office
Catalog Director 9/1/10

In addition, please attach a course syllabus and/or more detailed description.

RESTRICTIONS ☑ Prerequisite AVT 1001
☐ Corequisite AVF 1006
☐ and ☐ or ☑ A, B, C, D, F
☐ A, B, C, D, F, CEU
☐ CEU
☐ S, U
☐ P, F
☐ Other

ADDITIONAL RESTRICTION
(e.g., Major, Class Level, Department Approval)

If this course replaces a course currently offered in BANNER, please indicate old course information and the date/term the course may be removed from the system.

SUBJECT Prefix (e.g., CSO) COURSE NO. (e.g., 1001) TERM TO INACTIVATE

APPROVALS: Upon completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee for approval below and forward to Catalog Director.

Original 9/3/2010
Date
Chair, Graduate Council

Department Head/Program Chair 9/3/2010
Date
Chair, Undergraduate Curriculum Committee

Dean or Associate Dean 9/7/10
Date

CATALOG DIRECTOR

These changes/additions have been made for the University Catalog/policy management system and entered into the BANNER term named above.

Catalog Director Date

REGISTRAR’S USE ONLY

SCAPURSE SCAPURSA SCAPREQ SCAPBASE
SCAPURES Operator Init. Date

DISTRIBUTION
Original - Registrar
Copy - Academic Unit

Florida Institute of Technology • Office of the Registrar
150 West University Boulevard, Melbourne, FL 32901-6975 • (321) 674-8114 • Fax (321) 674-7827
RGR-078-10
Florida Institute of Technology
College of Aeronautics

MASTER COURSE SYLLABUS

AVT 1007 Helicopter Transition Private Pilot Add-On

Spring 2010

Catalog Course Description

AVT 1007 HELICOPTER TRANSITION PRIVATE PILOT ADD-ON (2 credits). Provides helicopter aeronautics instruction for private pilot candidates who have previously completed the requirements for the FAA fixed wing private pilot written examination. Prepares flight students for the FAA private pilot-helicopter/transition written examination. Prerequisite: AVT 1001 or equivalent, Corequisite: AVF 1006.

Course Objectives

Introduce students to the rotorcraft aeronautics field of study and prepare helicopter flight students for the FAA Private Pilot-Helicopter/Transition Written Examination.

Upon completion of this course the student should be able to:

1. Demonstrate an understanding of helicopter terminology, including basic aerodynamic forces, lift, drag, blade pitch, rotational and induced flow, angle of attack and rotor thrust/drag.
2. Be able to identify the parts of a helicopter and understand the operation of flight controls such as the collective, cyclic, and yaw controls, including the concepts of tail rotor drift and roll.
3. Understand the factors affecting aircraft performance, including take-off, vertical flight, descent, hovering in and out of ground effect, center of gravity, influence of the horizontal stabilizer and tail rotor.
4. Describe the concept of autorotation in forward flight, vertical autorotation, including flare effect, RPM change with speed, and range and endurance factors.
5. Demonstrate an understanding of main and tail rotor design and controls, the types of rotor heads, component parts, materials and composite technology.
6. Describe basic helicopter transmission systems, configurations, speed and torque relationships, main and tail rotor gearbox, drive shafts, clutches and freewheels.
7. Understand the basics of helicopter instrumentation including torquemeters, dual tachometers of piston and turbine engines.
Lead Instructor

S. K. Cusick, J.D. Associate Professor

Curriculum Coordinator

Peter G. Dunn, M.S. ATP, Chair Flight Education Program

Texts and References

1. Helicopter Pilot Textbook – Schweizer by Jeppesen
2. Principles of Helicopter Flight by W.J. Wagendonk
4. Federal Aviation Regulations/Aeronautical Information Manual
5. Private Pilot Test Prep 11, Private Pilot Helicopter/Transition, ASA Publications
6. Schweizer (S300CBI) Helicopter Manual (Pilot’s Operating Handbook)
7. Practical Test Standards for Private Pilot Rotorcraft (Helicopter) FAA-S-8081-15A

Instructional Format

Lecture 100%

Student Materials Beyond Texts, References, and Common Student Materials

Sectional charts and Airport Facility Directory
E6B computer or equivalent electronic calculator
Navigation plotter

<table>
<thead>
<tr>
<th>Topical Content</th>
<th>Classroom Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Helicopter Pilot Training</td>
<td>2</td>
</tr>
<tr>
<td>Helicopter Flight Principles and Basic Components</td>
<td>2</td>
</tr>
<tr>
<td>The Rotor System, Powerplant and Related Systems</td>
<td>2</td>
</tr>
<tr>
<td>Helicopter Flight Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>Basic Helicopter Aerodynamics</td>
<td>2</td>
</tr>
<tr>
<td>Helicopter Performance -- Turns, Loads and Autorotative Descents</td>
<td>2</td>
</tr>
<tr>
<td>Helicopter Weight and Balance</td>
<td>2</td>
</tr>
<tr>
<td>Rotorcraft Hazards and Emergency Procedures</td>
<td>2</td>
</tr>
<tr>
<td>Heliport Operations at controlled and uncontrolled fields</td>
<td>2</td>
</tr>
<tr>
<td>Airspace &amp; Airman’s Information Manual - Special VFR</td>
<td>2</td>
</tr>
<tr>
<td>Helicopter Flight Manuals and Sources of Flight Information</td>
<td>2</td>
</tr>
<tr>
<td>Aviation Weather Services for rotary wing aircraft</td>
<td>2</td>
</tr>
<tr>
<td>Pilotage, and Helicopter Radio Navigation</td>
<td>2</td>
</tr>
<tr>
<td>Topic</td>
<td>Credit</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Helicopter Maneuvers and Aeronautical Decision Making</td>
<td>2</td>
</tr>
<tr>
<td>Helo FAR/AIM Requirements - 14 CFR Parts 1, 61, 91; AIM Ch 10</td>
<td>2</td>
</tr>
<tr>
<td>Examinations</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

**Grading (typical)**

- Class participation: 5%
- Quizzes and Homeworks: 10%
- Exams (3) 15% each: 45%
- FAA Stage Check Exam: 20%
- University Final exam: 20%

**Teaching Media and Delivery Methods**

Lecture, required textbooks, reference texts, class discussion, text and graphic projections, black/white board text and graphic presentations, videos, wall charts, aircraft and engine hands-on visual aids, guest lecturers, Internet references projections, quizzes, exams, homework, group exercises using sectional charts, weather reports and forecasts, E-6B and plotter.

**Laboratory Use**

None

**Team Training Concepts**

Homework assignments and presentations.