New courses are available beginning with the fall term in which they appear in the University Catalog. ☐ Yes ☐ No

SUBJECT A V S COURSE NO.* 4 9 9 9 CREDIT HOURS 4 ACADEMIC YEAR TO BE ADDED TO THE FILE Fall 2018 *(e.g., CSE) (e.g., 1001)

*Justify level if 1000-level and no co- or prerequisites. Must be taken in final semester before graduation.

CLASS HOURS 60/semester LECTURE HOURS 45/semester LAB HOURS 15/semester CONTACT HOURS (CEU ONLY) N/A

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

☐ COLLEGE OF AERONAUTICS – 22 ☐ COLLEGE OF PSYCHOLOGY AND LIBERAL ARTS – 25
☐ NATHAN M. BISK COLLEGE OF BUSINESS – 24 ☐ COLLEGE OF SCIENCE – 26
☐ COLLEGE OF ENGINEERING AND COMPUTING – 01 ☐ SCHOOL OF HUMAN-CENTERED DESIGN, INNOVATION AND ART – 28

COMPUTER TITLE Aviation Systems Safety

This course will be entered into the system as: ☐ Bi-Level ☐ Cross-Listed ☐ Dual-Numbered ☐ Full-Load ☐ None of these/Standard Listing

CATALOG DESCRIPTION OF COURSE Restricted to 350 characters, including spaces

Provides instruction for a multidisciplinary approach to safety in all aviation systems. Includes flight, airports, weather, human factors, and the aviation sciences infrastructure. Requires the student to apply new and prior knowledge to solve problems directly related to their aviation major.

This description has been approved by the catalog office 10/16/2017

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

GRADES TO BE ISSUED

☐ A, B, C, D, F ☐ A, B, C, D, F, CEU/Audit
☐ CEU ☐ S, U ☐ P, F ☐ Other

ADDITIONAL RESTRICTION ☐ and ☐ or Must be taken in final semester before graduation. Not offered in the summer.

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., CSE) COURSE NO. (e.g., 1001) TERM TO INACTIVATE

☐ Yes ☐ No ☐ Will this course be used to measure program-level student learning outcomes? If yes, review and signature required**
☐ Yes ☐ No ☐ Will this course be used to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.
☐ Yes ☐ No ☐ Will this course impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program impacted.

APPROVALS: On completion of description and course number verification, affix appropriate signatures as indicated, and submit to the Office of Graduate Programs, or Undergraduate Curriculum Committee Chair for placement on agenda.

Dr. John Cain 10/17/17

Chair, Graduate Council Date

Dr. Victoria Dunbar 10/17/17

Chair, Undergraduate Curriculum Committee Date

Dean or Associate Dean Date

**Chair, Academic Programs Assessment Committee Date

CATALOG & CURRICULUM MANAGER

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

Catalog & Curriculum Manager Date

REGISTRAR’S USE ONLY

SCACRS SCADET SCAPREQ SCBASE ACATALOG

SCAPRS CIP Code Operator Init Date
Florida Institute of Technology
College of Aeronautics

MASTER COURSE SYLLABUS

AVS 4999 Aviation Systems Safety

Catalog Course Description - AVS 4999 Aviation Systems Safety (4 credits). Provides instruction for a multidisciplinary approach to safety for all aviation systems. Includes flight, airports, weather, human factors, and the aviation sciences infrastructure. Requires the student to apply new and prior knowledge to solve problems directly related to their aviation major. (Requirement: Must be taken in final semester before graduation. Course not offered in the summer.)

Lead Instructor - Dr. Korhan Oyman, koyman@fit.edu.

Course-level Student Learning Objectives or Outcomes (SLOs) - Students completing this course should be able to:

SLO 1: Analyze data and interpret data as they apply mathematics, science, and applied sciences to solve aviation systems safety problems.
SLO 2: Apply appropriate aviation knowledge to identify aviation systems safety problems, develop ethical solutions, and make professional decisions in selecting best solutions.
SLO 3: Work effectively on multi-disciplinary and diverse teams to assess contemporary issues.
SLO 4: Communicate effectively in written documents and oral presentations.
SLO 5: Use, and recognize the need for life-long learning in, techniques, skills, and modern technology necessary for professional practice.
SLO 6: Assess the national and international aviation environment and apply business sustainability principles to aviation businesses in that environment.

SLO Assessment – Student products in this course will be assessed for course-level SLO achievement using the scoring rubric provided by the CoA Assessment Committee.

Texts and References


Other current references related to course content will be provided by the instructor in a timely manner.

**Assignments** – Assignments will require students to apply their cumulative knowledge gained throughout their major curriculum to solve current aviation system safety problems.

**Multi-disciplinary Teams** – This course will normally have students from all the CoA majors enrolled. Multi-disciplinary teams will be formed for many of the case studies and students will have to work effectively in the team environment to succeed. Each team member will be assessed by the other team members. The multi-disciplinary nature of the problems presented will require each student to bring to bear his/her major-specific knowledge to succeed. (SLO3)

**Technical Reports and Presentations** – Students will be required to demonstrate that they can communicate effectively, using both written and oral communication skills. Assignments require professional technical reports and presentations. Student products must show that the student is able to use the techniques, skills, and modern technology necessary for the aviation professional. (SLO4)
<table>
<thead>
<tr>
<th>Major Topical Content (typical)</th>
<th>Classroom Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aviation systems safety principles (lecture)(SLO2)</td>
<td>12</td>
</tr>
<tr>
<td>Expectations and standards for student performance (lecture)</td>
<td></td>
</tr>
<tr>
<td>- working in a multi-disciplinary team. (SLO3)</td>
<td></td>
</tr>
<tr>
<td>- producing written and oral communications products (SLO4)</td>
<td></td>
</tr>
<tr>
<td>- using the techniques, skills, and modern technology necessary for the aviation professional (SLO5)</td>
<td></td>
</tr>
<tr>
<td>Analyzing and interpreting aviation systems safety data (lecture) (SLO1)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics, science, and applied sciences applications in aviation systems safety (lecture) (SLO1).</td>
<td></td>
</tr>
<tr>
<td>Assignment 1 concerning mathematics, science, and applied sciences applications in aviation systems safety (SLO1) requiring analysis and interpretation of aviation systems safety data (SLO1)</td>
<td>3</td>
</tr>
<tr>
<td>Aeronautical science and aviation management (flight and non-flight) will focus on aircraft design, performance, operating characteristics, and maintenance. (AABI aviation core topic 2.)</td>
<td></td>
</tr>
<tr>
<td>Professional attributes, attitudes, and ethics necessary to make ethical decisions to competently function as a professional in aviation systems safety. (lecture) (SLO2)</td>
<td>2</td>
</tr>
<tr>
<td>Assignment 2 concerning professional attributes, attitudes, and ethics requiring the student to make professional and ethical decisions in the aviation systems safety arena specific to his/her aviation major. (SLO2)</td>
<td>3</td>
</tr>
<tr>
<td>Flight majors will focus on the attitudes to competently and ethically function as professional pilots in the aviation industry. (AABI program criteria - flight education.)</td>
<td></td>
</tr>
<tr>
<td>Non-flight aeronautical science and aviation management majors will focus on the attitudes to competently and ethically function as a professional in the aviation industry. (AABI program criteria – aviation studies.)</td>
<td></td>
</tr>
<tr>
<td>Life-long learning, career advancement, and certification in aviation. (Guest lecturers as available) (SLO5)</td>
<td>2</td>
</tr>
<tr>
<td>Assignment 3 concerning career advancement considerations. Students will develop a life-long, professional advancement plan for their chosen aviation profession. (SLO5)</td>
<td>3</td>
</tr>
<tr>
<td>Aeronautical science and aviation management (flight and non-flight) will focus on attributes of an aviation professional, career planning and certification. (AABI aviation core topic 1.)</td>
<td></td>
</tr>
</tbody>
</table>
Major Topical Content (typical)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Classroom Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contemporary national and international aviation systems safety issues (lecture) (SLO6)</td>
<td>8</td>
</tr>
<tr>
<td>Assignment 4 concerning contemporary aviation systems safety issues in the national and international aviation systems safety environment. Students will be required to apply their cumulative knowledge in identifying, assessing, and solving contemporary aviation systems safety issues. (SLO6) Aeronautical science and aviation management (flight and non-flight) will focus on national and international aviation law, regulations and labor issues. (AABI aviation core topic 4.)</td>
<td>3</td>
</tr>
<tr>
<td>Assignment 5 concerning contemporary aviation systems safety issues in the national and international aviation systems safety environment. Students will be required to apply their cumulative knowledge in identifying, assessing, and solving contemporary aviation systems safety issues. (SLO6) Aeronautical science and aviation management (flight and non-flight) will focus on aviation safety and human factors data. (AABI aviation core topic 3.)</td>
<td>3</td>
</tr>
<tr>
<td>Airports, airspace, and air traffic control issues for aviation system safety. (lecture) (AABI aviation core topic 6)</td>
<td>3</td>
</tr>
<tr>
<td>Assignment 6 concerning airports, airspace, and air traffic control issues for aviation systems safety. (AABI aviation core topic 5)</td>
<td>3</td>
</tr>
<tr>
<td>Meteorology and environmental issues in aviation systems safety (lecture) (AABI aviation core topic 6.)</td>
<td>2</td>
</tr>
<tr>
<td>Assignment 7 concerning meteorology and environmental issues (SLO6) Aeronautical science and aviation management (flight and non-flight) will focus on meteorology and environmental issues. (AABI aviation core topic 6)</td>
<td>3</td>
</tr>
<tr>
<td>Aviation business sustainability principles (lecture)(SLO6)</td>
<td>2</td>
</tr>
<tr>
<td>Assignment 8 concerning business sustainability principles to the aviation systems safety domain. (SLO6)</td>
<td>3</td>
</tr>
<tr>
<td>Examinations and critiques.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

Grading Criteria

- Technical reports and presentations 85
- Final Exam 15
  - 100

Plagiarism Statement
University academic honesty standards will be strictly enforced. Incidents shall be treated in accordance with university policy as outlined in the Student Handbook. For a review of plagiarism, see this FIT Library website.
Appendix A to AVS 4999 Aviation Systems Safety Syllabus

Program-level Learning Objectives or Outcomes (PLO) – This course is used to assess APAC and AABI program-level learning outcomes (PLOs) for every CoA undergraduate program. Students completing any CoA undergraduate program should be able to:

PLO-1: Analyze data and interpret data as they apply mathematics, science, and applied sciences to solve aviation-related problems. (AABI a and b) (APAC critical thinking CT)

PLO 2: Apply appropriate aviation knowledge to identify aviation problems, develop ethical solutions, and make professional decisions in selecting best solutions. (AABI d and j) (CT)

PLO 3: Work effectively on multi-disciplinary and diverse teams to assess contemporary issues. (AABI c and g) (COM)

PLO 4: Communicate effectively in written documents and oral presentations. (AABI e) (COM)

PLO 5: Use, and recognize the need for life-long learning in, techniques, skills, and modern technology necessary for professional practice. (AABI f and h)(DSK)

PLO 6 Assess the national and international aviation environment and apply business sustainability principles to aviation businesses in that environment. (AABI I and k) (DSK)

PLO Assessment – The instructor and the CoA Assessment Committee will assess each student in this course using the approved scoring rubric for each major. The student products assessed will be retained to provide an evidentiary e-portfolio for non-FIT assessment agencies.

Class of 44 students based on number/% of majors:

7102 Aeronautical Science – Flight : 110 13
7113 Aviation Management – Flight: 94 11
7114 Aviation Management: 93 10
7103 Aeronautical Science: 46 6
7235 Human Factors & Safety – Flight: 5 1
7234 Human Factors & Safety: 6 1
7106 Aviation Meteorology: 5 1
7105 Aviation Meteorology – Flight: 1 1
Appendix B to AVS 4999 Aviation Systems Safety Syllabus

The SLOs and PLOs above are based on AABI Education Goals prescribed for each AABI accredited program. In addition, AABI requires Aviation Core topics be addressed in all AABI accredited programs and outcomes developed for the aviation core topics. AABI further prescribes program criteria be met, which for the CoA, is Flight Education and Aviation Studies.

This AVS 4xxx Aviation Systems Safety course meets and documents these additional AABI requirements.

AABI Aviation Core

Aviation programs MUST develop outcomes appropriate to the following aviation core topics:

1. Attributes of an aviation professional, career planning and certification.
   Outcome:

2. Aircraft design, performance, operating characteristics and maintenance. Outcome:

3. Aviation safety and human factors.
   Outcome:

4. National and international aviation law, regulations and labor issues. Outcome:

5. Airports, airspace, and air traffic control.
   Outcome: Students will have the ability to apply business sustainability principles to airports, airspace, and air traffic control functions.

   Outcome:

AABI Program Criteria

Flight Education

Each program MUST provide evidence that graduates possess the necessary knowledge, skills, and attitudes to competently and ethically function as professional pilots in the aviation industry.

Aviation Studies

Each program MUST provide evidence that graduates possess the necessary knowledge, skills, and attitudes to competently and ethically function as a professional in the aviation industry.