Dept. of Human Sciences
AVSC 2380-001 Flight Physiology
Fall 2023

Instructor: Eric Jones Ph. D.
Course Time & Location: 12:30-1:45 TR (EDAN 127)
Office: EDAN 103
Office Phone: 468-1864
Office Hours: TR (8:30-11:00)
Other Contact Information: Lab # 468-1493
Credits: 3
Email: jonesej@sfasu.edu

Prerequisites: N/A

I. Course Description:
This course covers the effects of high-altitude flight on the human body, flying and health, first aid and survival. Attention will also be given to information processing and perception in flight. AVSC 2380 “Flight Physiology” (3 credits) meets twice each week in 75-minute segments for 15 weeks, includes 150 minutes of asynchronous assignments and also meets for a 2-hour final examination. Students have significant weekly reading assignments, numerous homework assignments, take two exams and are also required to produce a research project for future professional use. These activities average at a minimum 6 hours of work each week to adequately prepare outside of classroom hours. The James I. Perkins College of Education is committed to proactively recruiting and retaining a diverse faculty, staff, and student population. Through open dialogue, mutual respect and shared responsibility, faculty, staff and students will demonstrate an understanding and sensitivity to ethnicity, race, gender, exceptionalities, culture, language/dialect, age, social class, family structure, sexual orientation, religion and spiritual values in order to enhance the quality of life in a diverse, global community.

II. Intended Learning Outcomes/Goals/Objectives (Program/Student Learning Outcomes):
This course links with SFA Initiative #4: Develop a learner-centered environment.
This course links with SFA’s COE Goal and Initiative #2: Prepare educators and industry professionals.
This course links with SFA Initiative #5: Create new learning opportunities through additional interdisciplinary, international, service learning, and civic engagement experiences.
This course links with SFA’s COE Goal and Initiative #2: Prepare educators and industry professionals.

Program Learning Outcomes:
Upon successful completion of the Major, the student will be able to:

- Understand career planning, flight certification, and the attributes and behavior of an aviation professional
- Understand the concepts of a Safety Management System
- Analyze and explain the role and regulations regarding aviation safety and human factors
- Understand the role and processes in CRM development, dynamics and management
- Communicate effectively
- Function effectively as crew members
- Describe meteorology and environmental issues as they relate to aviation
- Apply current knowledge and adapt to emerging applications and technologies in aviation
- Demonstrate an understanding of aircraft design, performance, operating characteristics, and maintenance as it relates to the student's career goals
- Understand the basic economic principles of commercial aviation including:
  - production theory and costs,
  - cost benefit analysis, economic growth concepts,
  - and international economic relationships
- Apply these basic economic principles to the management of aviation operations
- Understand the basics of proper operations and management of commercial passenger airlines as well as freight operations
- Apply business accounting and statistical analysis principles to financial situations in aviation
- Describe the legal and labor issues in national and international aviation operations
**Student Learning Outcomes:**
Upon successful completion of this course, the student will be able to, as a minimum:

- Identify the basic relationship between the pilot and the Aviation Medical Examiner
- Correctly describe the atmosphere and its properties.
- Explain the FAA Medical program
- Discuss how human performance is affected by high-altitude flight.
- Describe the human body systems function as they are affected by altitude.
- Explain the development of altitude related injuries.
- Explain the different prevention methods for altitude related injuries.

**III. Course Assignments and Exams:**
Knowledge will be assessed daily through class participation, 2 written tests, 4 quizzes, and a research presentation. **Exams will cover reading assignments, lecture notes; in-class activities (labs), i.e., anything covered in class is fair game.** Students have the opportunity to correct mistakes made on tests to earn half-credit back on missed questions. When doing exam corrections, students must get the correct answer and justify their corrections in order to get half of the credit back for the question. There will be open-ended discussions and critiques. Students will be expected to participate in oral recitations and class demonstrations. Approaching the end of the semester, students will present an evaluative analysis to the class.

**Make Up Assignments/Exams** – Make up exams will not be given, **prior** arrangements must be made in critical cases. If a student is absence on exam day, he/she will be earn a zero.

**IV. Evaluation and Assessment**

**Grading/Evaluation Procedures**

| Quizzes (4) | 10pt |
| Exam I | 100pt |
| Exam II | 100pt |
| Research Presentation | 100pt |
| **Total** | **340pt** |

**V. Tentative Course Outline/Calendar:**

<table>
<thead>
<tr>
<th>Week Of:</th>
<th>Module</th>
<th>Content Topic</th>
<th>Assignment</th>
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</thead>
<tbody>
<tr>
<td>09/05-07</td>
<td>Legislation, Rules and Regulations</td>
<td>Types of Incapacitation</td>
<td>Read: Two Challenge Rule</td>
</tr>
<tr>
<td>09/12-14</td>
<td>Fitness for Aviation</td>
<td>Basic Assessments</td>
<td>Read: AIM Chapter 8 Section 1The &quot;I'm Safe&quot; Checklist</td>
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<tr>
<td>09/19-21</td>
<td>The AME and Pilot relationship</td>
<td>How to find an AME</td>
<td>Read: Medical Certificate Requirements</td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>Subtopic</td>
<td>Reading/Study</td>
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<tr>
<td>09/26-28</td>
<td>The Atmosphere</td>
<td>Functional Limits for Human Flight</td>
<td>Read: Aerospace Physiology</td>
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<td>The Effects of Altitude</td>
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<tr>
<td>10/03-05</td>
<td>The Atmosphere</td>
<td>Functional Divisions</td>
<td>Read: Physiological Zones</td>
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<tr>
<td>10/10-12</td>
<td>The Atmosphere</td>
<td>The body’s relationship with the atmosphere</td>
<td>Study: Gas Laws in Aerospace Physiology</td>
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<td>Gas Laws and their significance</td>
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<tr>
<td>10/17-19</td>
<td>Aviation Physiology</td>
<td>Test 1</td>
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<tr>
<td>10/24-26</td>
<td>Hypoxia</td>
<td>Signs and Symptoms</td>
<td>Read: Hypoxia</td>
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<tr>
<td>10/31</td>
<td>Rapid Decompression</td>
<td>Time of Useful Consciousness,</td>
<td>Read: What Happens When an Airliner losses Pressure</td>
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<td></td>
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<td>decompression sickness</td>
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<tr>
<td>11/07-09</td>
<td>Acceleration</td>
<td>G-Loading</td>
<td>None.</td>
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<td>Noise and Vibration</td>
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<tr>
<td>11/14-16</td>
<td>Visual Disorientation</td>
<td>The anatomy of the Eye</td>
<td>None.</td>
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<td>Vestibular Disorientation</td>
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<tr>
<td>11/21-23</td>
<td>Aviation Physiology</td>
<td>Test 2</td>
<td>Read: Previous lessons and quizzes</td>
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<tr>
<td>11/28-30</td>
<td>Final Presentations</td>
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<tr>
<td>12/05-07</td>
<td>Final Presentations</td>
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*Schedule is an approximation and could change*

VI. Readings:

Open Educational Resources are being utilized in this course as part of the University’s efforts to reduce textbook expenses for students. Links to all resources can be found on the corresponding D2L site.

VII. Course Evaluations:

“Near the conclusion of each semester, students in the College of Education electronically evaluate courses taken within the COE. Evaluation data is used for a variety of important purposes including: 1. Course and program improvement, planning, and accreditation; 2. Instruction evaluation purposes; and 3. Making decisions on faculty tenure, promotion, pay, and retention. As you evaluate this course, please be thoughtful, thorough, and accurate in completing the evaluation. Please know that the COE faculty is committed to excellence in teaching and continued improvement. Therefore, your response is critical! In the College of Education, the course evaluation process has been simplified and is completed electronically through MySFA. Although the instructor will be able to view the names of students who complete the survey, all ratings and comments are confidential and anonymous, and will not be available to the instructor until after final grades are posted.

VIII. Student Ethics and Other Policy Information
The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

Withheld Grades Semester Grades Policy (5.5)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

Students with Disabilities

To obtain disability-related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services promptly may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Attendance:

Regular, punctual attendance, documented participation, and, if indicated in the syllabus, submission of completed assignments are expected at all classes, laboratories, and other activities for which the student is registered. Based on university policy, failure of students to adhere to these requirements shall influence the course grade, financial assistance, and/or enrollment status. The instructor shall maintain an accurate record of
each student’s attendance and participation as well as note this information in required reports (including the first 12-day attendance report) and in determining final grades. Students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. However, students are responsible for notifying their instructors in advance, when possible, for excusable absences. Whether absences are excused or unexcused, a student is still responsible for all course content and assignments. Students with accepted excuses may be permitted to make up work for up to three weeks of absences during a semester or one week of a summer term, depending on the nature of the missed work. Make-up work must be completed as soon as possible after returning from an absence.

Attendance and participation are required at all times. 2 absences will be given to each student for the entire semester, use them wisely! University travel and Legal obligations will be the only excused absences allowed (written documentation required). Each absence beyond 2 will result in a loss of one letter grade. Arriving late to class and early departure is unacceptable. 3 such occurrences will result in an absence and the attendance grade will be reduced accordingly. Any student(s) maintaining no less than a “B” average and perfect attendance may waive the final exam if so desired. No exceptions will be made for any of the above policies.

Student Wellness and Well-Being
SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
The Dean of Students Office (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:
- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching