School of Human Sciences
Instrument Ground, AVSC-2340
Fall 2023

Instructor: Chris Barker
Office: HUSC EdAn Room 127
Office Hours: Tue/Thr 1300-1400
Credits: 3

Course Time & Location: Tue/Thr 1400-1515
Office Phone: 936-615-3456
Email: Chris.Barker@SFASU.edu
Prerequisites: AVSC-2340-001

I. Course Description:
Instrument Ground is part two of two parts covering those Federal Aviation Administration requirements for the aeronautical knowledge outlined in 14CFR §61, 14CFR §141 and FAA Airman Certification Standards. Instrument Ground will further develop the student’s knowledge on Federal Aviation Regulations, Instrument Flight Rules, Instrument Meteorological Conditions, Flight by Reference to Instruments, and Instrument In-flight emergencies. This course will also advance the student pilot’s understanding of Technically Advanced Aircraft Systems, Flight Deck Displays, Instrument Operations, and Cross-country Flight Planning. The knowledge and skills acquired in Instrument Ground will prepare the student for the FAA Instrument Rating Airplane Written Test. This course requires the student to successfully complete the FAA Instrument Airplane Written Knowledge Test. Students who do not successfully complete the FAA Instrument Airplane Written Knowledge test cannot receive a Passing Grade.

This course may include instructional time that is delivered asynchronously. Examples of asynchronous instruction may include (but are not limited to): written content, video content, discussions, case studies, synthesis exercises, reflection activities, peer review, and skills practice.

Course Credit Justification: AVSC-2340 “Instrument Ground” (3 credits). The class meets two times per week for 15 weeks and also meets for a 2-hour final exam. Students have weekly reading assignments, weekly calculations and problem sets and weekly quizzes. These requirements take at least 3 hours of out-of-class student work each week to complete.

II. Intended Learning Outcomes/Goals/Objectives (Program/Student Learning Outcomes):
The mission of the College of Education is to prepare competent, successful, caring, and enthusiastic professionals dedicated to responsible service, leadership, social justice and continued professional and intellectual development in an interconnected global society.

In the College of Education at Stephen F. Austin State University, we value and are committed to:
1. Academic excellence through critical, reflective and creative thinking
2. Life-long learning
3. Collaboration and shared decision making
4. Openness to new ideas, culturally diverse people and innovation and change
5. Integrity, responsibility, diligence, and ethical behavior, and
6. Service that enriches the community

This course relates to the College of Education’s Conceptual Framework (CF) and/or Vision, Mission, Goals, and Core Values (VMGV).

Program Learning Outcomes:
1. Complete Certificates and Ratings for a career as a professional pilot in the Aviation Industry
2. Meet eligibility requirements outlined in the Federal Aviation Regulations: 14CFR §61, 14CFR §141 and FAA Airman Certification Standards
**Student Learning Outcomes:**

Upon successful completion of this course, the student will:

1. Demonstrate familiarity with the Federal Aviation Regulations as they pertain to the Instrument Rated Pilot.
2. Describe the various Aviation Weather products.
3. Comprehend basic instrument attitude flying.
5. Describe theory of operation for cockpit flight deck displays and aircraft systems.
8. Describe emergencies and partial panel procedures.
9. Demonstrate understanding of radio communications failures, lost radar contact, and instrument operations in the national Airspace System.
10. Complete the FAA required Instrument Airplane Rating Written Knowledge Test in accordance with 14CFR §61.65(a).

### III. Course Assignments, Activities, Instructional Strategies, Use of Technology:

1. **Activities:** PSI Written Exam Date
2. **Quizzes:** Multiple Unit Quizzes and Study Assessments, during the semester. Questions may include T/F, Matching and Multiple Choice.
3. **Final Exam:** FAA Written Knowledge Test. **NOTE:** Students who do not attain an average of 85% on Unit Endorsement Quizzes will NOT receive the required Instructor Endorsement to take the Written Knowledge Test until they demonstrate readiness via a Self-study Program. Students who do not successfully complete the FAA Instrument Airplane Written Knowledge test cannot receive a Passing Grade.
4. **Attendance:** Students are expected to attend class regularly. Greater than 3 unexcused absences will result in a failing grade. Federal Guidance is used for minimum contact hours for each Airman Certificate or Rating course. These minimum contact hours cannot be achieved if more than 3 scheduled class sessions have been recorded as absent. Absences determined to be Excused by the course Instructor may be ‘made-up’ in a manner determined by the Instructor.

### IV. Evaluation & Assessments (Grading):

The course is graded on a letter grade basis (A-F). Final grade will be determined by a percentage of total grades.

\[
\begin{align*}
A &= 90\% - 100\% \\
B &= 80\% - 89\% \\
C &= 70\% - 79\% \\
D &= 60\% - 69\% \\
F &= 0\% - 59\%
\end{align*}
\]

If at any time a minimum of 70% course calculated grade is not maintained notification will be sent to the Chief Flight Instructor and student will be placed in “Academic No-Fly” status.
### Tentative Course Outline

<table>
<thead>
<tr>
<th>Wk</th>
<th>Day</th>
<th>ACS Ref</th>
<th>Topics/Content</th>
<th>Books &amp; Readings</th>
<th>Activities &amp; Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>8/28</td>
<td>Course Introductions</td>
<td>Instrument Flying Handbook, FAR/AIM</td>
<td>Grading, Class Introduction, discuss Quizzes and Scheduling written Test, Required books and Charts</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>IR.I.A.K1-3</td>
<td>Pilot Qualifications and Acronyms</td>
<td>FAR/AIM</td>
<td>Instrument privileges and Limitation, Recency and Recordkeeping Part68 Basic Med Privileges and Limitations</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>9/24</td>
<td>Intro to Approach Procedures (Plates)</td>
<td>Instrument Flying Handbook, Approach Plates</td>
<td>Briefing an approach and symbols, Elements to missed approach procedures, Autopilot, Circling Approach, Categories, Speed restrictions, Landing from an approach, Signs, Markings, Lighting</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>IR.VI.C.K1</td>
<td></td>
<td></td>
<td>FAA Written Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR.VI.D.K1</td>
<td></td>
<td></td>
<td>Hold Entry’s and reporting, speeds, standard, nonstandard, non-published.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR.VI.E.K1-2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>1 / 2</td>
<td>9/11</td>
<td>Hold Entry, Procedure Turns, Holding, DME Holds and</td>
<td>Instrument Flying Handbook, FAR/AIM Approach Plates</td>
<td>Symbols and Description Airways, MEA,MOCA,</td>
</tr>
<tr>
<td>4</td>
<td>1 / 2</td>
<td>9/18</td>
<td>IFR Low chart</td>
<td>Instrument Flying Handbook, IFR Low Chart</td>
<td></td>
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<tr>
<td>5</td>
<td>1 / 2</td>
<td>9/25</td>
<td>SID and DPs, STARS</td>
<td>Instrument Flying Handbook, Approach Plates</td>
<td>Elements related to ATC routes, including DPs, climb gradients and arrival procedures STARS Pilot, Controller responsibility</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>10/2</td>
<td>Precision approaches</td>
<td>Instrument Flying Handbook, Approach Plates</td>
<td>Procedures and limitations of Precision approaches, Decent rates in operational equipment. Systems displays announcements, ground based and satellite based navigation, stabilized approach</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>IR.VI.A.K1-4</td>
<td>Non Precision Approaches</td>
<td>Instrument Flying Handbook, Approach Plates</td>
<td>Procedures and limitations of Non Precision approaches LP vs LNAV approach, Annunciations Ground based and satellite based navigation systems, Stabilized approach</td>
</tr>
<tr>
<td>Week</td>
<td>Dates</td>
<td>Section</td>
<td>Topic</td>
<td>Reference</td>
<td>Description</td>
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<tr>
<td>8</td>
<td>1/2</td>
<td>IR.V.A.K1</td>
<td>VOR Systems</td>
<td>Instrument Flying Handbook, FAR AIM, Approach Plates, IFR Low Chart</td>
<td>Ground based Navigation, equipment, tests and regulation, tracking courses and arcs</td>
</tr>
<tr>
<td>9</td>
<td>1/2</td>
<td>IR.V.A,K2</td>
<td>GPS Systems</td>
<td>Instrument Flying Handbook, FAR AIM, Approach Plates, IFR Low Chart</td>
<td>Satellite based navigation, test regulations, interference, databases, RAIM, WAAS intercepting and tracking courses and arcs</td>
</tr>
<tr>
<td>10</td>
<td>1/2</td>
<td>IR.II.B.K1-K2</td>
<td>Human Factors</td>
<td>Instrument Flying Handbook, PHAK</td>
<td>Inner Ear, Illusions, Coping</td>
</tr>
<tr>
<td>12</td>
<td>1/2</td>
<td>IR.III.A.K1-3 IR.VIII.A.K1</td>
<td>Radio Communication Procedures and Clearances, and Lost Communications Failure</td>
<td>Instrument Flying Handbook</td>
<td>ATC clearances, Departure, enroute and arrival, PIC emergency authority, Lost communication, Procedures for non-Radar environments Deviate from an IFR clearance, and when to begin an approach at the destination</td>
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</tbody>
</table>

Nov 20 - 26 Break No Class - Thanksgiving Break
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Objectives</th>
<th>Study materials</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>12/4</td>
<td>Aircraft Systems Related to IFR</td>
<td>Instrument Flying Handbook, PHAK</td>
<td>Deicing systems, airframe intake Fuel and Pitot Static systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instrument Flight Deck Check</td>
<td>Instrument Flying Handbook, PHAK, FAR/AIM</td>
<td>IFR Airworthiness and Inspections and Documentation, and limitations of flying with inoperative equipment Procedures for checking the functionality of installed instruments and navigation equipment</td>
</tr>
<tr>
<td>16</td>
<td>12/15</td>
<td>Final Exam</td>
<td>FAA IRA Written</td>
<td></td>
</tr>
</tbody>
</table>

VI. **Course Textbooks (Purchase required):**

- Federal Aviation Regulations/Aeronautical Information Manual (FAR/AIM)
- Pilots Handbook of Aeronautical Knowledge (PHAK) – FAA-H-8083-25B
- Instrument Pilot - Airplane Airman Certification Standards (ACS) – FAA-S-ACS-8B
- FAA FIP Enroute Low Altitude Chart – L19 / L20
- FAA U.S. Terminal Procedures Publication – SC-5, SE-TX
- Pilot’s Operating Handbook (POH) – Make/Model

Note: Text requirements must be current as of the first day of the enrolled course. Text materials that expire or become obsolete during the period of the course may be used through completion. Every attempt to advise students of significant changes will be made by the course Instructor.

VII. **Course Evaluations:**

Near the conclusion of each semester, students in the Perkins College of Education electronically evaluate courses taken within the PCOE. 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 PCOE faculty is committed to excellence in teaching and continued improvement. Therefore, your response is critical!

In the Perkins 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: Found at [https://www.sfasu.edu/policies](https://www.sfasu.edu/policies)

Class Attendance and Excused Absence: Policy 6.7

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 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.

Academic Accommodation for Students with Disabilities: Policy 6.1 and 6.6

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, 936-468-3004 (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 in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

Aviation Sciences students wishing to pursue the Aviation Courses and Flight Labs directly related to the award of a Federal Aviation Administration (FAA) Pilot Certificate or Rating must first obtain an appropriate FAA Medical Certificate through an FAA approved Aviation Medical Examiner. It is not lawful for Aviation Students to be awarded disability accommodations that are not acceptable by or, in conflict with the Federal Aviation Administration’s guidelines. Should a student have any disabilities that require such accommodations, it is the student’s sole responsibility to obtain an unrestricted Second Class Medical Certificate through the FAA’s Statement of Demonstrated Ability (SODA). Please refer to the FAA SODA Guidelines found at [https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/app_process/general/appeals/soda/](https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/app_process/general/appeals/soda/)

For information on how to obtain an FAA Medical Certificate and a list of AMEs please go to [https://www.faa.gov/licenses_certificates/medical_certification/get/](https://www.faa.gov/licenses_certificates/medical_certification/get/)

Academic Integrity (4.1)

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)**

At the discretion of the instructor and with the approval of the academic unit head, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work by the deadline set by the instructor, not to exceed one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F, except as allowed through policy. All WH grades for Aviation Sciences Flight Labs will coordinated with the Chief Instructor Pilot who will determine the date of expiration based on cancelation data obtained from the student’s FAA Flight Training Records. For additional information please see: [https://www.sfasu.edu/policies/course-grades-5.5.pdf](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/](http://www.sfasu.edu/disabilityservices/).

**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
· Alcohol and Other Drug Education www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:
· Burke 24-hour crisis line: 1.800.392.8343
· National Suicide Crisis Prevention: 9-8-8
· Suicide Prevention Lifeline: 1.800.273.TALK (8255)
· johCrisis Text Line: Text HELLO to 741-741

XI. Other Relevant Course Information:

Acceptable Student Behavior
Stephen F. Austin State University Aviation students are required to understand, acknowledge and abide by the Flight Training Provider’s Code of Conduct policies. These policies focus on Safety First, Security, Incident/Accident Prevention, Professional Conduct and, the use of illegal drugs and alcohol. SFASU Aviation Students will be subjected to drug and alcohol screenings as directed by the Chief Instructor Pilot.

Acceptable behavior also includes how you interact with your fellow students in class discussions, online discussion forums, and any group work. Language used should always be professional. While you are encouraged to share personal experiences as examples for synthesizing class information, it will never be required of you to disclose information that makes you uncomfortable. When disagreeing with other students in the class, please be professional and refrain from profanity, personal attacks, and slurs.

Class participation
Class participation promotes a valuable learning environment, and is therefore encouraged and expected. Participation includes asking questions (for clarification or better understanding), discussing current or controversial issues related to course content, exploring applications of ideas or concepts, problem solving, and other exchanges of ideas. It is the student’s responsibility (and to his/her benefit) to read the material assigned in the class schedule prior to the assignment to be able to participate effectively in discussion postings and/or activities. Students are encouraged to collaborate with others in the class when studying and/or reviewing material via chat, student-created discussion board postings, in person, or other methods by which they will be successful.
Proof of Citizenship
Students enrolled in Flight Labs or Ground Courses associated with the pursuit of an Airman Certificate or Rating must provide proof of US Citizenship under Federal Law.
Valid Government Issued Photo ID or US Passport
US Born Birth Certificate or US Passport
Naturalization Certificate or US Passport