I. Course Description:

Instrument Ground covers those Federal Aviation Administration requirements for the aeronautical knowledge outlined in 14 CFR §61, 14 CFR §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.

The FAA Instrument Airplane Rating Written Knowledge test will be recorded as the final exam grade for this course. In order to meet the requirements of 14 CFR §61.189 students are required to provide a copy of the written test results to the Chief Instructor not later than 1200 on the final day of the term. Students who do not successfully complete the FAA Instrument Rating Airplane Written Knowledge test cannot receive a Passing Grade for this course. The Chief Instructor will be the sole authority for determining eligibility for Endorsement and Course Graduation. Students who do not attain at least an 85% on the Endorsement Assessment test will NOT receive the required endorsement to take the Written Knowledge Test from the 14 CFR §141 Designated Chief Instructor.

II. 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.

III. 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).

IV. 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: The Chief Instructor will be the sole authority for determining eligibility for Endorsement and Course Graduation. Students who do not attain at least an 85% on the Endorsement Assessment test will NOT receive the required endorsement to take the Written Knowledge Test from the 14CFR §141 Designated Chief Instructor. 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.
5. Students are required to obtain an up-to-date FAA Written Preparation product of their choice. SFASU Aviation sciences will use the ASA PrepWare series for developing assessments throughout the course. It is highly recommended students purchase a personal copy of the appropriate ASA Prepware.

V. 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.
A = 90% -100%
B = 80% - 89%
C = 70% - 79%
D = 60% - 69%
F = 0% - 59%

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.

VI. 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>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td></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>
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<tr>
<td></td>
<td>1</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</td>
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<td>IR.VI.C.K1</td>
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<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>
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<td>IR.VI.D.K1</td>
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<td>Weekly Study Assessment 1</td>
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<td>IR.VI.E.K1-2</td>
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<td>2</td>
<td>1</td>
<td>IR.III.B.K1</td>
<td>Hold Entry, Procedure Turns, Holding, DME Holds and IFR Low chart</td>
<td>Instrument Flying Handbook, FAR/AIM Approach Plates</td>
<td>Hold Entry’s and reporting, speeds, standard, nonstandard, non-published. Symbols and Description Airways, MEA, MOCA,</td>
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<td>Instrument Flying Handbook, IFR Low Chart</td>
<td>Weekly Study Assessment 2</td>
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<td>2</td>
<td>IR.V.B.K1-2</td>
<td>SID and DPs, STARS</td>
<td>Precision approaches</td>
<td>Elements related to ATC routes, including DPs, climb gradients and arrival procedures STARS Pilot, Controller responsibility Procedures and limitations of Precision approaches, Decent rates in operational equipment. Systems displays annunciations, ground based and satellite based navigation, stabilized approach</td>
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<td>4</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>
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<tr>
<td>Week</td>
<td>Section</td>
<td>Topic</td>
<td>Notes</td>
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<td>4</td>
<td>2</td>
<td>Attitude Flying</td>
<td>Elements related to attitude instrument flying during straight and level, climbs, turn and descents, interpretation, operation and limitations of pitch, bank, and power instruments. Normal and abnormal indications, Unusual Attitudes, Equipment failures, and environmental factors, Advising of ATC of Failures. How to correct or minimize the effect of loss. <strong>Weekly Study Assessment 4</strong></td>
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<td>5</td>
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<td>VOR Systems</td>
<td>Ground based Navigation, equipment, tests and regulation, tracking courses and arcs</td>
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<td>1</td>
<td>GPS Systems</td>
<td>Satellite based navigation, test regulations, interference, databases, RAIM, WAAS intercepting and tracking courses and arcs</td>
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<td>2</td>
<td>Human Factors</td>
<td>Inner Ear, Illusions, Coping</td>
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<td>2</td>
<td>Flight Instrument and Navigation Equipment</td>
<td>Piot-static system, Altimeter, Airspeed indicator, VSI, Gyroscopic/ Electric/vacuum, Heading, Turn/ Slip, Turn coordinator PFD, MFD, Transponder, ADSB Magnetic Compass, VOR, DME, ILS, Marker Beacon, RNAV, GPS, WAAS, FMS, Auto Pilot <strong>Weekly Study Assessment 5</strong></td>
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<td>6</td>
<td>1</td>
<td>Weather Information</td>
<td>Weather Data, Recourses, Weather for your route of Flight, Hazards of flight Clouds, Fog, Icing, Frost, Thunder storms, Obstructions to Visibility, Digital Displays 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 <strong>Weekly Study Assessment 6</strong></td>
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<td>Radio Communication Procedures and Clearances, and Lost Communications Failure</td>
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**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
Airman Knowledge Test Supplement for Instrument Rating – FAA-CT-8080-3F
Pilot’s Operating Handbook (POH) – Make/Model
An Electronic Flight Bag – Recommend iPad Mini with ForeFlight or Garmin Pilot
FAA FIP Enroute Low Altitude Chart – L19 / L20 (EFB Subscription)
FAA U.S. Terminal Procedures Publication – SC-5, SE-TX (EFB Subscription)

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

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 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/.

Student 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/

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/

Student Academic Dishonesty: Policy 4.1

Abiding by university policy on academic integrity is a responsibility of all university faculty and students.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment; and/or;
- helping or attempting to help another in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one's own. Examples of plagiarism include, but are not limited to:
- submitting an assignment as one's own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source; and/or,
- incorporating the words or ideas of an author into one's paper or presentation without giving the author credit.

**Penalties for Academic Dishonesty**
Penalties may include, but are not limited to reprimand, no credit for the assignment or exam, re-submission of the work, make-up exam, failure of the course, or expulsion from the university.

**Student Appeals**
A student who wishes to appeal decisions related to academic dishonesty should follow procedures outlined in Academic Appeals by Students (6.3).

**Withheld Grades: Policy 5.5**
At the discretion of the instructor of record 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 within 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 (i.e., Active Military Service (6.14)). If students register for the same course in future semesters, the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

**Student Code of Conduct: Policy 10.4**
Disorderly conduct including but not limited to: (a) disruption or Interference of Students, faculty, administration, staff, the educational mission, or routine operations of the University. (b) Commercial solicitation on campus or with University resources without prior approval from University officials. (c) Failure to comply with a reasonable and lawful request or directive of University Officials. (d) Facilitation of Student misconduct including but not limited to assisting, conspiring, soliciting, or encouraging others to engage in conduct which violates the Student Code of Conduct. More information on Student Code of Conduct can be found at https://www.sfasu.edu/policies/student-code-of-conduct-10.4.pdf.

The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program at SFA.

SFA values students’ mental health and the role it plays in academic and overall student success. 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:**
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
https://www.sfasu.edu/humanservices/clinics-labs/counseling-clinic
Human Services Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline 1(800) 273-TALK (8255)
Crisis Text Line: Text HELLO to 741-741IX.

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