I. Course Description:
Multi-engine 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. Multi-engine Ground will further develop the student’s knowledge on Federal Aviation Regulations, Multi-engine Airplanes and One Engine Inoperative Aerodynamics, Multi-engine Systems, and Multi-engine One Engine Inoperative emergencies. This course will also advance the student pilot’s understanding of Technically Advanced Aircraft Systems, Flight Deck Displays, Night Operations, and Cross-country Flight Planning. The knowledge and skills acquired in Multi-engine Ground will prepare the student for the FAA Commercial Pilot Multi-engine Land Practical Test. This course requires the student to successfully complete the FAA Flight Instructor Airplane Written Knowledge Test.

The FAA Flight Instructor Airplane (FIA) Written Knowledge test will be recorded as the final exam grade for this course. In order to meet the requirements of 14CFR §61.189 students are required to provide a copy of the written test results to the endorsing Ground Instructor not later than 1200 on the final day of the term. Students who do not successfully complete the FAA Flight Instructor Airplane Written Knowledge test cannot receive a Passing Grade for this course.

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 3225 “Multi-engine Ground” (2 credits). The class meets two times per week for 8 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 6 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 Private Pilot.
2. Describe the various Aviation Weather products.
3. Comprehend basic lift theory and forces in flight, axes of rotation, flight controls, turning tendencies, aircraft stability and dynamics, loads and load factors, and ground effect.
4. Comprehend angle of attack, critical angle of attack, stalls, VMC, and spins.
5. Describe theory of operation for cockpit flight deck displays and aircraft systems.
7. Demonstrate familiarity with airports, runways, air traffic control, wind indicators, airspaces, weather reporting systems, and ELTs.
8. Describe emergencies, One Engine Inoperative Aerodynamics and Performance, wake turbulence and avoidance, and collision avoidance.
9. Demonstrate radio communications a pilot/controller phraseology.
10. Complete the FAA required Flight Instructor Airplane Written Knowledge Test in accordance with 14CFR §61.103(e).

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 all Unit Quizzes and Study Assessments 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 Flight Instructor 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.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100%</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89%</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79%</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69%</td>
</tr>
<tr>
<td>F</td>
<td>0% - 59%</td>
</tr>
</tbody>
</table>

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. Students must have 100% attendance for an FAA course completion certificate to be issued.
### Tentative Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Unit</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>Threat, Risk and Hazard Analysis and Mitigation</td>
<td>PHAK FAA-H-8083-25B P2006T POH</td>
<td>PAVE, IMSAFE</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Multi-engine Terms and V-speeds</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>3 Hangar</td>
<td>Preflight</td>
<td>The Complete Multi-engine Pilot</td>
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</tr>
<tr>
<td>2</td>
<td>4</td>
<td>Weight And Balance</td>
<td>PHAK FAA-H-8083-25B P2006T POH</td>
<td>TOLD Card</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Performance</td>
<td></td>
<td>Engines and Propellers</td>
</tr>
<tr>
<td></td>
<td>6 Hangar</td>
<td>Multi-engine Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>VMC Certification Requirements</td>
<td>14CFR 23.149/PHAK P2006T POH</td>
<td>SMACFUM</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>One Engine Inoperative Aerodynamics</td>
<td></td>
<td>Landing Gear/Flight Controls</td>
</tr>
<tr>
<td></td>
<td>9 Hangar</td>
<td>Multi-engine Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>10 Sim</td>
<td>Loss of engine in flight</td>
<td>P2006T POH</td>
<td>MCX Multi-engine Simulator</td>
</tr>
<tr>
<td></td>
<td>21 Sim</td>
<td>G950 Cockpit Display</td>
<td>Garmin G950 Guide</td>
<td>MCX Multi-engine Simulator</td>
</tr>
<tr>
<td></td>
<td>12 Hangar</td>
<td>Multi-engine Systems</td>
<td></td>
<td>Cockpit and Cabin</td>
</tr>
<tr>
<td>5</td>
<td>13</td>
<td>The Drag Demo</td>
<td>PHAK FAA-H-8083-25B</td>
<td>Maneuvers Guide</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>The VMC Demo</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>15</td>
<td>Meet the Designated Pilot Examiner</td>
<td></td>
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</tr>
<tr>
<td>Final</td>
<td>16</td>
<td>Final Exam</td>
<td>FAA Flight Instructor Airplane Written Test</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
- The Complete Multi-engine Pilot; Fifth Edition
- Commercial Pilot - Airplane Airman Certification Standards (ACS) – FAA-S-ACS-7A
- Pilot’s Operating Handbook (POH) – Make/Model
- Advisory Circular (AC) 90-66C
- Advisory Circular (AC) 90-23G
- Instrument Flight View Limiting device (foggles)
- Electronic Flight Bag – Recommend iPad Mini (with cellular capability)
- EFB Flight Planning Software – Recommend ForeFlight or Garmin Pilot
- Suitable General Aviation Communications Headset (Flight Lab students only)

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 Policy

Institutional Absences (HOP 04-110)

An Institutional Absence may be granted to a student who participates as a representative of the University in academic (including research), extra- or cocurricular, or athletic activities. Students will be excused for institutional purposes from otherwise required academic activity only when a valid Institutional Absence is approved by the appropriate administrative unit or official and the documentation of approval is provided to the faculty member at least five (5) days in advance.

Institutional absences will not be approved for keystone events, defined as: a special or unique assignment, test, project, experience, or other academic exercise identified by the Faculty member as critical for successful completion of standards of the class and unable to be missed. These events must be identified on the syllabus at the beginning of the semester and communicated to the students. Events added to the syllabus at a later date will not qualify for Keystone Event status. Keystone Events where the date/time is changed will no longer be considered a Keystone Event. Students should make themselves aware of any Keystone Events identified in the syllabus to ensure there are no conflicts.

For keystone events where the assignment dates vary, it is incumbent upon the students to work with their faculty member to not select a conflicting date.

More information on Institutional Absences, including how to apply, can be found at https://www.sfasu.edu/deanofstudents/student-resources/institutional-absences.

Code of Student Conduct and Academic Integrity

The Code of Student Conduct and Academic Integrity (HOP 04-106) 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. For additional information, go to https://www.sfasu.edu/docs/hops/04-106.pdf.

**Withheld Grades Semester Grades Policy (HOP policy 02-206)**

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/docs/hops/02-206.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/.

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 First 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 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.

Other important course-related policies:

***Other SFA policy information is found in the Handbook of Operating Procedures (HOP)***

IX: Resources

- **On-campus Resources:**
  - The Dean of Students Office (Rusk Building, 3rd floor lobby)
    - www.sfasu.edu/deanofstudents
    - 936.468.7249
    - dos@sfasu.edu
  - SFASU Counseling Services • [www.sfasu.edu/counselingservices](http://www.sfasu.edu/counselingservices)
    - Health and Wellness Hub (corner of E. College and Raguet) • 936-468-2401
  - SFASU Human Services Counseling Clinic • [www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)
    - Human Services Room 202 • 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](http://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)
  - Crisis Text Line: Text HELLO to 741-741

XI. Other Relevant Course Information:

This course is derived from a Federal Aviation Administration Approved Training Course Outline as described in 14CFR §141.55. The course must be delivered in a manner acceptable to The Administrator by a certificated Ground or Flight Instructor who has been standardized by The Designated Chief Instructor. Specific federal and course guidelines have been highlighted and must be adhered to in order to receive a Graduation Certificate under the guidance found in 14CFR §141.95.
- Students who do not successfully complete the FAA Private Pilot Airplane Written Knowledge test cannot receive a Passing Grade.
- Students who do not attain an average of 85% on all Unit Quizzes and Study Assessments will NOT receive the required Instructor Endorsement to take the Written Knowledge Test until they demonstrate readiness via a Self-study Program.
- 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.
- Student wishing to pursue the Aviation Courses and Flight Labs directly related to the award of a 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 license to adhere to those standards found in 14CFR §61.153:

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.

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.

The intended career employment goal for the Stephen F. Austin State University Aviation Sciences Degree is the achievement of the FAA Airline Transport Pilot Certificate. Therefore, it is appropriate for students participating in the pursuit of any pilot certificate to adhere to those standards found in 14CFR §61.153:

§61.153 Eligibility requirements: General.
To be eligible for an airline transport pilot certificate, a person must:
(a) Meet specific age requirements as outlined
(b) Be able to read, speak, write, and understand the English language.
(c) Be of good moral character

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