

Texas A&M University - Central Texas
AVSC 4302-110 ADVANCED AIRCRAFT SYSTEMS

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Andy Dobis, MAS
Office: Online
Phone: 602-999-8384 (cell phone for emergency use only)
Email: andydobis@tamuct.edu

Office Hours:

Due to my airline schedule, I do not have set office hours. Please E-mail me first and we can set up a phone conference if the issue cannot be handled via E-mail (which 99.9% of the times we can fix the issue over E-mail).

Mode of instruction and course access: This course is a 100% online course and uses TAMUCT Canvas LMS (<https://tamuct.instructure.com>).

Student-instructor interaction

My primary concern is the quality of your education with regards to our class. I check my TAMUCT E-mails at least once every 48 hours, usually more often, it just depends on my schedule. As aspiring airline pilots, living and working with unpredictable schedules is a way of life that you (and your family) will have to become accustomed to. Just because we have unpredictable schedules doesn't mean we lose contact with the world. If you have an issue, E-mail me, if the issue is urgent, text me. If the issue needs my immediate attention, and the hour is reasonable, call me!

UNILERT: Emergency Warning System for Texas A&M University – Central Texas

UNILERT is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in UNILERT through their myCT email account. Connect at <https://www.tamuct.edu/departments/security/unilert.php> to change where you receive your alerts or to opt out. By staying enrolled in UNILERT, university officials can quickly pass on safety-related information, regardless of your location.

COURSE INFORMATION

Course Overview and description:

This course is designed to prepare the commercial pilot for the application and operation of advanced aircraft systems that are used by aircraft utilized in air carrier operations. A thorough study of aerodynamics, federal aviation regulations, weight and balance and the turbine systems will be covered. Prerequisite: Commercial Pilot Certificate or instructor approval.

Course Objective:**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- Apply mathematics, science, and applied science skills to accurately solve Flight Engineer (FE) practice test questions with a minimum 80% correct
- Analyze and interpret FE practice test data provided to answer with minimum of 80% correct
- Describe the major systems of advanced aircraft
- Discuss the unique characteristics and responsibilities of piloting advanced aircraft
- Implement in writing a personal lifelong learning plan and preparation for compliance with FAA moral standards, continued compliance with FAA physical fitness standards, and regularly reviewing FAA advisory circulars (ACs) specific to pilots of advanced aircraft

Competency Goals Statements (certification or standards)

Required Reading and Textbook(s):

1. ASA Flight Engineer Test Prep.
2. Internet access to the Electronic Code of Federal Regulations at http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?&c=ecfr&tpl=/ecfrbrowse/Title14/14tab_02.tpl

Supplemental Suggested Materials:

1. Everything Explained for the Professional Pilot, Richie Lengel
2. American Psychological Association Publication Manual, 6th Edition

COURSE REQUIREMENTS**Course Requirements:**

Acceptance into Professional Pilot program and Commercial Pilot Certificate or instructor approval

COURSE REQUIREMENTS**Course Grading:**

There are four components of this course that are graded:

- | | |
|---------------------------|-----------|
| 1) Discussion Boards | 60 points |
| 2) Lifelong Learning Plan | 10 points |
| 3) Midterm | 10 points |
| 4) Final | 20 points |

For the sixteen weeks this class meets, there are 20 Discussion Board topics you will post to. This represents the backbone of the class and your interaction with your instructor and fellow classmates. Each Discussion Board is worth three (3) points. Since there are 20 Discussion Boards, you can see that poor participation every week will result in a failing grade.

Every Discussion Board topic requires you to write an original post of no less than 200 words on that week's Discussion Board. At the end of your post, you will place in parenthesis how many words your post was.

Additionally, you will comment on at least two of your fellow classmate's posts. Your comments should be approximately 50 words each comment.

Each component (one post and two comments) is worth 1 point each. If you only post, and do not comment, you will receive one out of three points for the assignment.

You will see that there are no papers due in this class. If you do the math, however, you will see that 20 Discussion Boards with a 200 (minimum) word post and two follow up comments (50 words each) will equal approximately 6,000 words.

If you were completing a paper, double spaced, 6,000 words is approximately 24 pages. So while it is true there is no paper, you will definitely be writing this semester.

Remember – it is Texas A&M policy, that all scholarly work is to be written to APA 6th Edition standards – which means your work must be cited and references accordingly. Yes – even scholarly Discussion Board posts (not necessarily your follow up comments).

It is required that you post early each academic week. If you wait towards the end of the week to post, you will deny yourself and your fellow classmates a chance to enter a discussion – which is the point of our “Discussion” Boards! Post early, cite and reference to APA standards, and post often.

These posts are your ticket out of having to write a research paper! Make your work count!

The midterm and final exam will be multiple choice questions taken directly from the FAA test bank relating to advanced aircraft systems on the Flight Engineer exam. While you will probably never need a Flight Engineer certificate, the systems questions found in the Flight Engineer Test Prep and test bank match perfectly to the student learning outcomes for our class.

A = 91-100

B = 81-90

C = 71-80

D = 61-79

F = 0 – 60

Posting of Grades

- All student grades will be posted on the Canvas Grade book where you can monitor your status.

Students can expect grades to be posted to Canvas within 7 days of an assignment being turned in.

COURSE OUTLINE

WEEK 1

TOPIC(S): Introduction to Advanced Aircraft Systems, Special Airworthiness Requirements, Instrument and Equipment Requirements, Airman and Crewmember Requirements, Flight Operations

STUDENT LEARNING OUTCOME: SLO 1, SLO 2

ASSIGNMENT(S):

- 1) Complete ASA FE Test Prep pages 1-11 through 1-20 and pages 1-28 to 1-30.
- 2) Discussion Board 1.1 – Class Introductions

WEEK 2

TOPIC(S): Aerodynamics

STUDENT LEARNING OUTCOME: SLO 1, SLO 2, SLO 3

ASSIGNMENT(S):

- 1) Complete ASA FE Test Prep Chapter 2
- 2) Discussion Board 2.1
- 3) Discussion Board 2.2

WEEK 3

TOPIC(S): Meteorology

STUDENT LEARNING OUTCOME: SLO 1, SLO 2, SLO 3, SLO 4

ASSIGNMENT(S):

- 1) Complete ASA FE Test Prep Chapter 3
- 2) Discussion Board 3.1

WEEK 4**TOPIC(S):** Weight and Balance**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 4 pages 4-0 to 4-16
- 2) Discussion Board 4.1
- 3) Discussion Board 4.2

WEEK 5**TOPIC(S):** Engine Systems (Part 1)**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 5, pages 5-3 to 5-19
- 2) Discussion Board 5.1

WEEK 6**TOPIC(S):** Engine Systems (Part 2)**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 5, pages 5-19 to pages 5-40
- 2) Discussion Board 6.1

WEEK 7**TOPIC(S):** Fuel Systems**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 6
- 2) Discussion Board 7.1

WEEK 8**TOPIC(S):** Hydraulic Systems**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 7
- 2) Discussion Board 8.1
- 3) Review Chapters ASA FE Test Prep Chapters 1-7 for mid-term examination preparation.

WEEK 9**TOPIC(S):** Mid-term Exam**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2**ASSIGNMENT(S):**

- 1) Complete Mid-Term examination
- 2) Discussion Board 9.1

WEEK 10**TOPIC(S):** Electrical Systems**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 8.
- 2) Discussion Board 10.1
- 3) Discussion Board 10.2 (Lifelong learning plan) introduction

WEEK 11**TOPIC(S):** Pneumatic Systems**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 9.
- 2) Discussion Board 11.1
- 3) Discussion Board 11.2

WEEK 12**TOPIC(S):** Rain and Ice Protection**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 10.
- 2) Discussion Board 12.1

WEEK 13**TOPIC(S):** Instruments and Hand Signals**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 11.
- 2) Discussion Board 13.1

WEEK 14**TOPIC(S):** Warning and Emergency Systems**STUDENT LEARNING OUTCOME:****ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 12.
- 2) Discussion Board 14.1
- 3) Discussion Board 14.2

WEEK 15**TOPIC(S):** Performance Computations**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2, SLO 3, SLO 4**ASSIGNMENT(S):**

- 1) Complete ASA FE Test Prep Chapter 13.
- 2) Discussion Board 15.1
- 3) Review ASA FE Test Prep Chapters 1-13 for final examination preparation.
- 4) Submit Lifelong learning plan

WEEK 16**TOPIC(S):** Final examination**STUDENT LEARNING OUTCOME:** SLO 1, SLO 2**ASSIGNMENT(S):**

- 1) Final Exam
- 2) Discussion Board 16.1

INSTRUCTOR POLICIES**Copyright Notice.**

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas' Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

TECHNOLOGY REQUIREMENTS AND SUPPORT.**Technology Requirements.**

Online courses require that you have a reliable internet connection. All of your coursework and exams will be assigned and submitted in an online environment.

To successfully complete an online course, you must have access to these minimum technology tools:

- Reliable Internet connection
- Desktop or Laptop computer with 2Gb RAM and 60Gb Hard drive space (4Gb RAM, 400Gb Hard drive is preferred)
- Windows Vista, 7, 8, or 8.1, or Mac OSX 10.7-10.9
- Internet Explorer 9 or 10, Firefox 4 or higher, Chrome 19 or higher, or Safari 4.0 (Macs only)
- Text Editor - MS Word, LibreOffice or OpenOffice
- Audio/Video Player
- Course-Recommended Plug-ins

- Course-Recommended Software

The above listing is for minimum requirements.

This course will use the TAMUCT Instructure Canvas learning management system.

Logon to TAMUCT Canvas [<https://tamuct.instructure.com>]

Username: Your MyCT username

(xx123 or everything before the "@" in your MyCT e-mail address)

Password: Your MyCT password

Technology Support. For technology issues, students should contact Help Desk Central.

24 hours a day, 7 days a week:

Email: helpdesk@tam.u.edu

Phone: (254) 519-5466

Web Chat: <http://hdc.tam.u.edu>

When calling for support please let your support technician know you are a TAMUCT student.

For issues related to course content and requirements, contact your instructor.

COURSE AND UNIVERSITY PROCEDURES AND POLICIES

Drop Policy. If you discover that you need to drop this class, you must go to the Registrar's Office and complete a Drop Request Form. Professors **cannot** drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the University Calendar for which the form must be returned, completed and signed. Once you return the signed form to the Registrar's Office and wait 24 hours, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid.

Academic Integrity. Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

Access & Inclusion. At Texas A&M University – Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to an education that is barrier-free. The Office of Access & Inclusion is responsible for ensuring that students with a disability enjoy equal access to the University's programs, services and activities. Some aspects of this course or the way the course is taught may present barriers to learning due to a disability. If you feel this is the case, please contact Access & Inclusion at (254) 501-5831 in Warrior Hall, Ste. 212. For more information, please visit their website at <https://www.tamuct.edu/departments/access-inclusion/>. Any information you provide is private and confidential and will be treated as such.

Tutoring. Tutoring is available to all TAMUCT students, both on-campus and online. Subjects tutored include Accounting, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.

If you have a question regarding tutor schedules, contact information, need to schedule a tutoring session, are interested in becoming a tutor, or any other question, contact Academic Support Programs at 254-519-5796, or by emailing Kim Wood at k.wood@tamuct.edu

Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables TAMUCT students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in Mathematics, Chemistry, Physics, Biology, Spanish, Calculus, and Statistics. To access Tutor.com, click on <https://www.tamuct.edu/departments/academicsupport/tutoring.php>

University Writing Center. Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students from 11am-6pm Monday-Thursday. Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available). Tutors are prepared to help writers of all levels and abilities at any stage of the writing process.

While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the University Writing Center is here to help!

If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu.

University Library. The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 72,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at TAMUCT are available through our website to help students navigate these resources. On-campus, the library offers

technology including cameras, laptops, microphones, webcams, and digital sound recorders. Research assistance from a librarian is also available twenty-four hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the TAMUCT main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our homepage: <https://tamuct.libguides.com/>