



## AVSC 2300 – 001

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

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**Semester:** Fall

**Year:** 2025

**Course Prefix:** AVSC

**Course and Section #:** 2300 001

**Course Title:** Ground IV - Commercial

**Credits:** 3

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### ***Course Description***

Covers privileges, responsibilities and the operational environment of a commercial pilot. Explores application of aeronautical knowledge and skills in simulated commercial operation situations. Develops judgment and decision-making skills. Studies aerodynamics, performance and limitations, weight and balance, aircraft systems, airworthiness, aeromedical factors, night and high altitude operations, weather hazards and reports, airport operations, flight planning, and decision making. Prepares students for the required FAA Commercial Pilot Airplane Knowledge Test.

### ***Course Attributes***

This course has the following attributes:

- ☐ General Education Requirements
- ☐ Global/Intercultural Graduation Requirements
- ☐ Writing Enriched Graduation Requirements
- ☒ Discipline Core Requirements in Program
- ☐ Elective Core Requirements in Program
- ☐ Open Elective

Other: *Click here to enter text.*

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### ***Instructor Information***

**Instructor Name:** Chamberlain, Cory

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### ***Student Learning Outcomes***

- Explain commercial pilot privileges and responsibilities.
- Describe aerodynamic issues related to principles of flight, stability, flight controls, aircraft design and stall/spin characteristics, awareness, recognition & recovery.
- Perform both simple and complex performance/weight and balance computations.
- Explain potential causes of abnormal and emergency powerplant and system problems.
- Identify aeromedical issues affecting flight operations to include high altitude and night operations.
- Describe weather hazards, weather forecasts and reports available to identify potential impact on weather related decision making: Including the ability to avoid, or reduce the risk of such hazards.
- Perform complex navigation and flight planning scenarios.

- Describe airworthiness requirements including airworthiness directives, service bulletins, Master Minimum Equipment List/Minimum Equipment List (MMEL/MEL), inspections and flight permits.
  - Demonstrate professional decision making and judgment during flight operations.
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## ***Course Materials and Texts***

### **REQUIRED TEXT**

- Commercial Practical Test Standards, FAA-S-8081-12B
- FAR/AIM 2024-25
- PHAK Pilots Handbook of Aeronautical Knowledge FAA-H-8083-25

### **SUPPLEMENTAL MATERIALS**

Airplane Flying Handbook FAA-H-8083-3,

[http://www.faa.gov/regulations\\_policies/handbooks\\_manuals/aircraft/airplane\\_handbook/](http://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/airplane_handbook/)

Operating Manual for the Aircraft you will fly

AC 00-6 – Aviation Weather

AC 00-45 – Aviation Weather Services

AC 60-22 – Aeronautical Decision Making

AC 61-84B – Role of Preflight Preparation

AC 61-107A – High Altitude Operations

AC 90-42F – Traffic at Non-Towered Airports

AC 90-48C – Pilot's Role in Collision Avoidance

AC 90-66A – Traffic Patterns at Uncontrolled Airports

Access to current Chart Supplements

VFR Sectional and Terminal Area Charts – National Aeronautical Charting Office (NACO).

Instrument/Commercial Manual, Jeppesen Sanderson JS302027 (ISBN: 0-88487-2742)

### **Technology Tools**

- Internet browsers such as Google Chrome or Firefox are preferred. Web browser compatibility can be found at [Canvas Questions and Answers](#).
  - Turning Technologies response cards- furnished by instructor.
  - Microsoft Office (Word, PowerPoint, and Excel) is required. UVU students have free access to Microsoft 365. See [UVU Microsoft Office 365](#).
  - A laptop or desktop computer with a camera and microphone may be required for Kaltura video submission assignments. Instructions for downloading and using Kaltura can be found in the modules where a camera and microphone are necessary. [Computer requirements for Kaltura Capture](#).
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## ***Course Requirements***

### **Course Assignments, Assessments, and Grading Policy**

For this three (3) credit-hour course students should expect to spend up to 9+ hours a week completing course activities. As a student, you can expect this course to challenge and engage you as a learner. You will be expected to: engage in weekly discussions, complete reading assignments, quizzes, and additional assignments as required, and succeed as a student in this course.

Canvas is where course content, grades, and communications will reside for this course.

It contains all modules, assignments and copies of presentations.

**Copyleaks:** Assignments have a plagiarism detector that checks your work's originality. Should your instructor have any concerns about plagiarism they will contact you directly. Please refer to [Copyleaks Ltd's Privacy Statement](#) to read how Copyleaks cares about your rights and personal data.

Discussions will be opportunities to explore topics together. Posts to the discussion should add significantly to the conversation and support your point of view. Comments that do not add significantly to a discussion will receive no credit. It is okay to disagree in a discussion. In fact much learning happens when we disagree. However we need to be respectful and keep our online classroom a safe place to learn.

Due dates for discussions correspond with the initial post date which is usually a Wednesday. Follow up comments are due by Sunday. Follow up posts are expected to be after the due date and are not marked late. Discussions conclude by the Sunday following the due date. After this, posts will be marked late.

Assessments:

Reading reviews are short quizzes that are administered online through Canvas. Their purpose is to assess your understanding of the reading material.

| Grade   | A      | A-    | B+    | B     | B-    | C+    | C     | C-    | D+    | D     | D-    | E    |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Percent | 94-100 | 90-93 | 87-89 | 83-86 | 80-82 | 77-79 | 73-76 | 70-72 | 67-69 | 63-66 | 60-62 | 0-59 |

| <u>Test or Assignment</u> | <u>Points Possible</u> |
|---------------------------|------------------------|
| Worksheet                 | 10 (extra credit)      |
| Oral Qs/Daily Pts         | 100                    |
| Quizzes (3)               | 150 (see schedule)     |
| Presentation (wx haz)     | 50                     |
| Practice FAA Exam         | 100                    |
| FAA Written Exam          | 300                    |
| <u>Final Exam</u>         | <u>100</u>             |
|                           | 800                    |

Exams will administered in class. They are due on the date indicated.

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### **Required or Recommended Reading Assignments**

Commercial Practical Test Standards, FAA-S-8081-12B, FAR/AIM 2024-25, PHAK Pilots Handbook of Aeronautical Knowledge FAA-H-8083-25

### **General Description of the Subject Matter of Each Lecture or Discussion**

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| Week | Subject Area                                                                                      | Reading Assignment |
|------|---------------------------------------------------------------------------------------------------|--------------------|
| 1    | Introduction, Syllabus                                                                            | P-Chap 1           |
|      | Systems: Airframe, Flight Controls, Heating & Vent<br>Wheels and Brakes, Seatbelts, Bags          | P-Chap 2, A-7      |
| 2    | Systems: Powerplant, Fuel, Electrical<br>(Detonation, Preignition, Turbocharging, Fuel Injection) | P-Chap 6, A-7      |

|           |                                                                                                                                                                                                     |                                    |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|           | Systems: Engine Controls, Landing Gear, Constant Speed Propellers                                                                                                                                   | P-Chap 3 - 5                       |
| <b>3</b>  | <b>Basic Aerodynamics &amp; Principles of Flight:</b><br>Newton's Laws, 4 Forces, Lift, Drag, Maneuvering, Control +Stability                                                                       | P-Chap 3 - 5                       |
|           | <b>Basic Aerodynamics &amp; Principles of Flight</b><br>Axes, Spins, Types of Stability, Stability & Design                                                                                         | P-Chap 3 - 5                       |
| <b>4</b>  | <b>Weight &amp; Balance, Aircraft Performance:</b><br>Performance Definitions, Factors Affecting Performance                                                                                        | P-Chap 9 & 10<br>A-5, 6,12         |
|           | <b>Weight &amp; Balance, Aircraft Performance:</b><br>Transport Category Performance                                                                                                                | P-Chap 9 & 10<br>A-5, 6,12         |
| <b>5</b>  | <b>Weight &amp; Balance, Aircraft Performance:</b><br>Weight & Balance, Weight & Balance (Weight Shifts)                                                                                            | P-Chap 9 & 10<br>A-5, 6,12         |
|           | <b>Aeromedical Factors:</b><br>Medical Certificate, Physiological Hazards, Vision, Decompression, sickness, Squeeze, IAMSAFE                                                                        | P-Chap 16<br>AIM, AC, C SYLL.      |
| <b>6</b>  | <b>Night Operations:</b><br>Night Operations Review, Night Illusions, Equip, Prep & Emergencies                                                                                                     | P-Chap 6,7 AC61<br>FARAIM, C SYLL. |
|           | <b>Weather Theory &amp; Hazards:</b><br>The Atmosphere, Wind, Fog, Clouds & Precip, Atmospheric Stability, Air Masses & Fronts                                                                      | P-Chap 11<br>AIM, AC, C SYLL.      |
| <b>7</b>  | <b>Weather Theory &amp; Hazards</b><br>Hazard Recognition & Avoidance, Lightning, Hail, T-Storms, Precip, Wind & WindShear, Dust, Vol Ash                                                           | P-Chap 11<br>AIM, AC, C SYLL       |
|           | <b>Weather Information Resources &amp; Services</b><br>Observations & Reports, Forecasts,                                                                                                           | P-Chap 12<br>AIM, AC, C SYLL       |
| <b>8</b>  | <b>Weather Information Resources &amp; Services</b><br>Advisories, Alerts, Warnings & Information Resources                                                                                         | P-Chap 12<br>AIM, AC, C SYLL       |
|           | <b>STAGE V QUIZ #1</b>                                                                                                                                                                              | G18-23                             |
| <b>9</b>  | <b>High Altitude Ops, Oxygen &amp; Pressurization Sys.</b><br>Useful Consciousness, Decompression Sickness, Transport Category                                                                      | P-Chap 6, AIM,<br>FAR, AC, C Syll  |
|           | <b>Airport Ops &amp; Runway Incursion Avoidance</b><br>Airport Info, Airport Lighting, ATC Light Signals, Signage, Runway Incursion Avoidance, LAHSO, Wake Turbulence Avoidance                     | P-Chap 13, AIM,<br>FAR, AFD.C Syll |
|           | <b>Spring Break!</b>                                                                                                                                                                                |                                    |
| <b>11</b> | <b>Airspace, Radar Services &amp; Collision Avoidance,</b><br>Regulatory Airspace, Non-Regulatory Airspace, ATC Service, Collision Avoidance                                                        | P-Chap 13,14, AIM, FAR C Syll      |
|           | <b>Navigation and Radio Navigation Systems:</b><br>Charts, Radio Nav Sys, Nav Defs,                                                                                                                 | P-Chap 15,17 AIM, FAR, CSyll       |
| <b>12</b> | <b>Navigation and Radio Navigation Systems:</b><br>Dead Reckoning, Pilotage, Lost, Diversions                                                                                                       | P-Chap 15,17 AIM, FAR, CSyll       |
|           | <b>Cross Country Flight Planning (Scenario)</b><br>Preflight, Route & Alt, Weather, Airports, Notams, Cruise, FltPl                                                                                 | P-Chap 15, AIM<br>FAR C Syllabus   |
| <b>13</b> | <b>Quiz #2 Stage VI</b>                                                                                                                                                                             | Study !!!                          |
|           | <b>Commercial Operations:</b><br>Footprints for Success                                                                                                                                             |                                    |
| <b>14</b> | <b>Commercial Operations/ FARs for Com. Ops,</b><br>Definitions, Commercial Operators 121, 135, 125, 91, CommFARs                                                                                   | AC120-12A<br>FARs Listed           |
|           | <b>FARs for Com. Ops, Safe Efficient Ops, NTSB 830</b><br>Comm FARs, NTSB 830, Safe & Efficient Operations                                                                                          | FARs                               |
| <b>15</b> | <b>Airworthiness &amp; Maintenance Requirements</b><br>Maintenance Req., Airworthiness Req., Special Permits, Other                                                                                 | FARs                               |
|           | <b>Commercial Privileges, Docs &amp; Recent Experience</b><br>Comm Privileges & Limitations, Required Documents, Recent Flight Experience Reqs, Other PIC Reqs, Private Pilot Privileges & Lims.IFR | P-Chap 8<br>FARs                   |

|           |                                                 |                          |
|-----------|-------------------------------------------------|--------------------------|
|           | Start Comprehensive Review                      |                          |
| <b>16</b> | Comprehensive Review (see Commercial Syllabus)  | P-Chap 8<br>FARs, C Syll |
|           | Comprehensive Review (On Demand-Transition Day) | All of the Above         |
| <b>17</b> | <b>Quiz #3 Stage VII Due</b>                    |                          |
|           | <b>FAA Commercial Written Due Today</b>         |                          |
|           | <b>Final Exam (09:00-10:50)</b>                 |                          |

## ***Required Course Syllabus Statements***

### **Generative AI**

You may use AI programs e.g. ChatGPT to help generate ideas and brainstorm. However, you should note that the material generated by these programs may be inaccurate, incomplete, or otherwise problematic. For example, AI-generated language programs are known to "hallucinate", i.e. create references to non-existent resources. Beware that use of AI may also stifle your own independent thinking and creativity.

You may not submit any work generated by an AI program as your own. If you include material generated by an AI program, it should be cited like any other reference material (with due consideration for the quality of the reference, which may be poor).

Any plagiarism or other form of cheating will be dealt with severely under relevant UVU Plagiarism policies as described in the [UVU Student Code of Conduct](#), UVU Policy [541](#).

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### **Using Remote Testing Software**

☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

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## ***Required University Syllabus Statements***

### **Accommodations/Students with Disabilities**

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at [accessibilityservices@uvu.edu](mailto:accessibilityservices@uvu.edu) or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at [DHHservices@uvu.edu](mailto:DHHservices@uvu.edu)

DHH is located on the Orem Campus in BA 112.

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### **Academic Integrity**

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

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### **Equity and Title IX**

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – [TitleIX@uvu.edu](mailto:TitleIX@uvu.edu) – 800 W University Pkwy, Orem, 84058, Suite BA 203.

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### **Religious Accommodation**

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at [accessibilityservices@uvu.edu](mailto:accessibilityservices@uvu.edu). If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.