

# DOSWELL SCHOOL OF AERONAUTICAL SCIENCES

**Web Site:** <https://twu.edu/aviation/>

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The Doswell School of Aeronautical Sciences was created to prepare students for careers in the dynamic and ever-evolving aviation industry.

Currently, students can pursue two pathway options in our Bachelor of Science in Aviation Science – a Professional Pilot option or a Flight Operations option.

Students enrolled in the Professional Pilot option will gain the flight skills and classroom knowledge necessary to succeed in the aviation industry, specifically in the professional pilot sector. The requirements of this program, which have been closely mapped to the needs and demands of the aviation industry, provide the foundation for students to become safe and proficient pilots. Students will complete Private, Commercial, Certified Flight Instructor-Airplane (CFI-A), and Certified Flight Instructor-Instrument (CFI-I) along with the instrument and multi-engine ratings. Graduates are eligible to pursue employment as flight instructors, corporate pilots, or private industry pilots after gaining the flight hours and experience needed to become an airline pilot.

The Flight Operations option begins with the same degree requirements, but after obtaining their commercial pilot certificate, students focus on aviation business and management careers. Coursework will include topics such as global flight planning, human resources, and principles of management. Graduates from this pathway will be eligible to manage and oversee airports and airport operations, planning, and scheduling.

## Undergraduate Degrees Offered

- B.S. in Aviation Science (<https://catalog.twu.edu/undergraduate/arts-sciences/aeronautical-sciences/aviation-science-bs/>)

## Admissions

All applicants must meet the general undergraduate admission requirements (<https://catalog.twu.edu/undergraduate/admission-information/>). The following degrees have additional secondary admission criteria:

- B.S. in Aviation Science (<https://catalog.twu.edu/undergraduate/arts-sciences/aeronautical-sciences/aviation-science-bs/>)

## Faculty

We need Clint Grant's and Brittany Dinsmore's credentials. Are there any other FT/PT Contracted faculty? Please submit by following the instructions on our help site (<https://sites.google.com/twu.edu/cim-cat-guide/catalog-edits/faculty-information/>).

## Courses

**Contact hours identified in the course descriptions are based on a 15-week term. Students who enroll in Summer or mini-terms are expected to meet the same total number of contact hours as a 15-week term.**

**AVS 1012. Private Pilot Ground I.** Ground-based aeronautical training requirements in preparation for the FAA Airmen Certification Standards focusing on the Private Pilot Certificate per CFR Title 14 § 61 and §141. Aeronautical topics required to perform pilot's initial supervised solo flight stage. Prerequisites: Aviation major and permission of instructor. Two lecture hours a week. Credit: Two hours.

**AVS 1021. Private Pilot Ground II.** Ground-based aeronautical knowledge training requirements in preparation for the FAA Airmen Certification Standards on the Private Pilot Certificate per CFR Title 14 § 61 and 141. Aeronautical topics required for FAA Knowledge and Practical examinations. Prerequisites: AVS 1012, Aviation major, and permission of instructor. One lecture hour a week. Credit: One hours.

**AVS 1112. Private Pilot Flight Lab I.** Introduction to flight training requirements in preparation for the FAA Airmen Certification Standards. Focus on Private Pilot Certificate per CFR Title 14 § 61 and §141 with emphasis on beginning flight requirements, including completing the student-pilot initial supervised solo operation leading to the Private Pilot Certification per CFR Title 14 § 61 and §141. Prerequisites: Permission of instructor; must be at least 17 years old; able to read, speak, write, and understand the English language; hold at least a valid 3rd class medical certificate (1st class medical certificate is recommended); possess a valid Student Pilot certificate prior to solo flight; and Aviation major. Minimum 30 flight hours. Credit: Two hours.

**AVS 1121. Private Pilot Flight Lab II.** Introduction to flight training requirements in preparation for the FAA Airmen Certification Standards. Emphasis on flight requirements leading to the Private Pilot Certification per CFR Title 14 § 61 and §141. Prerequisites: AVS 1012, Aviation major, and permission of instructor. Minimum 15 flight hours required and preparation for required oral and practical examinations. Credit: One hour.

**AVS 1133. Instrument Flight Lab.** Flight training requirements in preparation for the FAA Airmen Certification Standards with focus on the Instrument Rating per CFR Title 14 § 61 and 141. Prerequisites: Permission of instructor, Aviation major, and Private Pilot Certification. Minimum 45 flight hours and preparation for required oral and practical examinations. Credit: Three hours.

**AVS 1213. Aircraft Systems I.** Introduction to the theory and application of basic systems found in conventional aircraft with a focus on light (less than 12,500 lbs) single and multi-engine types; and the systems found in aircraft for purposes of operational, navigation, and environmental control. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 1223. Aerodynamics and Aircraft Performance.** Introduction to the theory and application of the basic forces of flight including an analysis of aerodynamic considerations such as wing and aircraft design that impact operational parameters such as speed, stability, and other flight characteristics. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 1233. Aviation Weather and Meteorology.** Interpretation and analysis of meteorology reports for conducting safe flight operations. Analysis and use of weather data sources for operational flight planning. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 2033. Instrument Ground.** Ground-based aeronautical knowledge training requirements in preparation for the FAA Airmen Certification Standards. Focus on the Instrument rating for the Private Pilot Certificate per CFR Title 14 §61 and §141. Prerequisites: Aviation major and permission of instructor. Three lecture hours a week. Credit: Three hours.

**AVS 2043. Commercial Ground.** Ground-based aeronautical knowledge training requirements in preparation for the FAA Airmen Certification Standards. Focus on the Commercial Pilot Certificate per CFR Title 14 §61 and §141. Prerequisites: Permission of instructor, Aviation major, and AVS 1121 or FAA Private Pilot Certificate. Recommended co-requisite: AVS 2112. Three lecture hours a week. Credit: Three hours.

**AVS 2112. Commercial Flight Lab I.** Flight training requirements in preparation for the FAA Airmen Certification Standards with focus on the Commercial Pilot Certificate per CFR Title 14 § 61 and §141. Prerequisites: Permission of instructor, Aviation major, and Private Pilot Certification. Minimum 65 flight hours Credit: Two hours.

**AVS 2123. Commercial Flight Lab II.** Flight training requirements in preparation for the FAA Airmen Certification Standards with focus on the Commercial Pilot Certificate per CFR Title 14 § 61 and 141 and completion. Prerequisites: Permission of instructor, Aviation major, and Private Pilot Certification. Minimum 55 flight hours and preparation for required oral and practical examinations. Credit: Three hours.

**AVS 2131. Multi-Engine Flight Lab.** Flight training requirements in preparation for the FAA Airmen Certification Standards with focus on the completion requirements for the Multi-Engine Class Rating for the Commercial Pilot Certification per CFR Title 14 § 61 and §141. Prerequisites: Permission of instructor, Private Pilot certification, and Aviation major. Recommended co-requisite: AVS 2123. Minimum 15 flight hours. Credit: One hour.

**AVS 2213. Air Traffic Control and the National Airspace System.** Analysis of flight operations within the National Airspace System (NAS) including both Visual and Instrument Flight Rules (VFR and IFR) and the role of the FAA Air Traffic Control System (ATC). Flight planning and use of required FAA and other publications. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 2223. Aviation Safety.** Safety program development and management systems for flight operations, including security analysis, risk management, decision-making factors, and accident prevention. Survey of the aviation industry and accident case-studies. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 2233. Aviation Law and Regulations.** Legal principles and governing authorities related to the rules, regulation, safety, and security of the aviation industry, including aviation operations and individual and employee rights. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 3013. Certified Flight Instructor Ground.** Ground-based aeronautical knowledge training requirements in preparation for the FAA Airmen Certification Standards. Focus on Certified Flight Instructor (CFI) and Certified Flight Instructor-Instrument per CFR Title 14 §61 and §141. Prerequisites: Permission of instructor, Aviation major, AVS 1122, AVS 1133 and AVS 2123, or Commercial Pilot Certificate with Instrument Rating. Three lecture hours a week. Credit; Three hours.

**AVS 3112. Certified Flight Instructor Flight Lab.** Flight training requirements in preparation for the FAA Airmen Certification Standards with focus on the Flight Instructor Certification per CFR Title 14 § 61 and §141. Prerequisites: Permission of instructor, Aviation major, and Commercial Pilot certificate. Minimum 25 flight hours and preparation for required oral and practical examinations. Credit: Two hours.

**AVS 3121. Certified Flight Instructor-Instrument Flight Lab.** Flight training requirements in preparation for the FAA Airmen Certification Standards with focus on the Flight Instructor-Instrument Certification per CFR Title 14 § 61 and §141. Prerequisites: Permission of instructor, Aviation major, AVS 2033, AVS 3013, and AVS 3112; or Certified Flight Instructor with Instrument Rating. Minimum 15 flight hours and preparation for required oral and practical examinations. Credit: One hour.

**AVS 3213. Aircraft Systems II.** Theory, operation, and application of systems found in advanced conventional aircraft with a focus on heavy (greater than 12,500 lbs) turbine and transport category aircraft. Prerequisites: AVS 1213 and Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 3223. Human Factors.** Human behavior and the decision-making process related to aircraft flight operations, including analysis of flight physiology, physical and mental health of flight crew members, social and leadership structures of flight crews (past and present), communications, and other aspects of flight deck performance. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 3233. Advanced Power Plant and Turbine Engine Systems.** Design and operations of high-altitude and high-performance reciprocating engines, gas turbine engines, and their relationship with aircraft systems and engine indication. Prerequisites: AVS 3213 and Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 3243. Advanced Autoflight and Flight Management Systems.** Advanced autopilot and flight management systems typically found in advanced private, charter, and commercial aircraft. Instrument flight operations, including departure, en route, and terminal procedures. Prerequisites: Permission of instructor, Aviation major, AVS 1121, and AVS 1133; or FAA Private Pilot Certificate with Instrument Rating. Three lecture hours a week. Credit: Three hours.

**AVS 3313. Flight Operations Management.** Management principles and practices in the aviation industry and flight operations with a focus on practical skills and knowledge required to supervise and manage commercial, corporate, or air charter aviation operations. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 3323. Global Navigation and Flight Planning.** International operations focusing on advanced navigation and long-range flight dispatch for corporate and commercial operations. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.

**AVS 4013. Aviation, Space, & American Society.** Influences of aviation on social, political, cultural, and economic life in America, including the role of women in the history of US aviation. Prerequisite: Aviation major. Three lecture hours a week. Credit: Three hours.