

# AVIATION SCIENCE TECHNOLOGY (AVST)

## AVST 101 Introduction To Aviation/History (3 Credits)

The course covers a brief historical review of early aviation, the freedom and the power of flight from the 15th. Century drawings and manuscripts of Leonardo de Vinci to modern times, discussing the fundamentals of flight and aeronautical technology, and an introduction to aircraft systems and operations. The dynamics of safety of flight, human factors, interpreting aeronautical graphic representation, introductory navigation, air traffic control and airspace, and aviation weather aspects are topics of discussion. Three hours of lecture per week

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 103 Private Pilot Ground (3 Credits)

Private Pilot Ground (3) Private pilot ground covers the cockpit instruments and system, fundamentals off light, aircraft performance charts, and cross country planning. Three hours of lecture per week.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 105 Private Pilot Flight (3 Credits)

Private Pilot Flight (3) This course prepares the student for the FAA Private Pilot Practical Examination. Successful completion of this course will permit the student to perform as pilot in command of single engine aircraft transport of passengers or property without recompense, whether fees or employment. Three hours of lecture per week. FAA approved.

Prerequisite: AVST103. Co-requisite: AVST105L

**Prerequisite(s):** (AWS 103)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 105L Private Pilot Lab (3 Credits)

Private Pilot Flight Lab (3) Practical application of aeronautical skills in a laboratory setting. Three hours of laboratory per week. Prerequisite: AVST103. Co-requisite: AVST105.

**Prerequisite(s):** (AVST 103)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 113 Introduction to Flight (3 Credits)

Introduction to Flight (3) Introduction to Flight covers the fundamentals of flight. Three hours of lecture per week. Co-requisite: AVST113L

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 113L Introduction to Flight Lab (1 Credits)

Practical application of aeronautical skills in a laboratory setting. One hour of lab per week. Co-requisite AVST 113.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 120 Transportation Survey (3 Credits)

Transportation Survey (3) Transportation system and their impact on society. Standard research practices will be introduced. Three hours of lecture per week.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 200 Basics of Communications (3 Credits)

Basics of Communications (3) In accordance with FAA orders 7110.65 and 7110.10, the student will identify basic radio and interphone communications, ICAO phonetics, numbers usage, basic phraseology, coordination procedures, purpose and steps of the position relief briefing. Three hours of lecture per week.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 201 Flight Meteorology (3 Credits)

Flight Meteorology (3) This course provides detailed knowledge of the environmental factors critical to safe flight operations. The course covers weather systems, upper-air characteristics, flight hazards, weather-related topics in flight safety, meteorological flight planning, use of weather information systems, and their ports and charts used for aviation weather reporting and forecasting. Survey of atmospheric and weather-related phenomena and their impact on flight operations including the interface of airmen and flight service stations. Three hours of lecture per week. Pre-requisite: AVST 105, AVST 105L.

**Prerequisite(s):** AVST 101

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 203 Introduction to Air Traffic Control (3 Credits)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 214 Intro to Homeland Security (3 Credits)

Introduction to Homeland Security (3) This course provides a survey of historical events, practices, and policies of the Emergency management system in the aviation industry. Three hours of lecture per week.

Prerequisite: AVST101 and AVST371.

**Prerequisite(s):** (AVST 120)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 218 Instrument Ground (3 Credits)

Instrument Airplane examination. Numerous topics in instrument flight techniques will be presented. Three lecture hours per week.

**Prerequisite(s):** (AVST 103 and AVST 105L) and (AVST 218L (may be taken concurrently))

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 218L Instrument Ground Lab (1 Credits)

Instrument Flight (1) Students will attain the knowledge and skill necessary for Instrument ground and flight rating and exercise the privileges of rating. Completion of the FAA knowledge exam is necessary for this rating. Pre-requisite: AVST103 and AVST105. Co-requisite: AVST218.

**Prerequisite(s):** (AVST 103 and AVST 105)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 222 Laws & Ethics in HSEM (3 Credits)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

## AVST 305 Fundamentals of Avionics (3 Credits)

Understanding the principles of theory, and technology of modern avionics systems. Mathematical and conceptual approaches for various subsystems including, but not limited to sensory, display, navigation, air data, autopilots, and flight management are examined individually and as an integrated whole. 3 credits.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 310 Emergency Planning Mitigation (3 Credits)**

Airport Emergency Planning and Mitigation (3) Provides foundation knowledge and develops skills in emergency planning, hazard mitigation, and incident management in aviation environments. Three hours of lecture per week. Prerequisite: AVST371.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 311 Intermediate Flight Practicum (3 Credits)**

Course is required for students to accumulate flight hours and experience. Consists of 36 hours of total flying time, to include 25 hours of solo instruction and 11 hours of dual flying time. Instruction shall be accomplished in an approved single engine fixed gear aircraft. 5 hours of pre-flight and post-flight instruction and briefing.

**Prerequisite(s):** (AVST 105 and AVST 105L)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 311L Intermediate Aviation Lab I (3 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 312 Commercial Pilot Certification (3 Credits)**

Commercial Pilot Certification (3) Successful completion of the course will certify the pilot to perform as a hired or compensated pilot in command of single engine aircraft. Course includes advanced aerodynamics, aircraft performance, precision maneuvers, extended cross-country and night flight, FAA regulations, and an introduction to advanced systems of highly developed futuristic aircraft. FAA approved. Three hours of lecture per week. Prerequisite: AVST 218 and AVST 218L. Co-requisite: AVST 312L.

**Prerequisite(s):** AVST 312L (may be taken concurrently)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 312L Commercial Pilot Cert. Lab (1 Credits)**

Commercial Pilot Certification Lab (1) Laboratory course providing students opportunities to learn the advanced aerodynamics, aircraft performance, precision maneuvers, extended cross-country, night flight, and FAA regulations.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 313 Int Flight Theory (3 Credits)**

International Flight Theory (3) This course provides descriptions and familiarization of large transport category air craft and their on-board systems from electrical power systems to oxygen systems, to communication systems, and beyond. This course also contains general information and guidance for operators planning oceanic flights, including authorizations needed for operations out side the continental United States. This includes Special Areas of Operation (SAO) such as North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS), Reduced Vertical Separation Minimums (RVSM), Area Navigation (RNAV), and Required Navigation Performance (RNP) air space. Prerequisite: AVST 312.

**Prerequisite(s):** (AVST 312)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 315 Multi-Engine Rating (3 Credits)**

Multi-Engine Rating (3) This course is designed to prepare the student for the FAA Multiengine Rating Practical Examination. Successful completion of this course will permit the student to operate as a pilot in command of a multiengine airplane. FAA Approved. Three hours of lecture per week. Prerequisite: AVST 312.

**Prerequisite(s):** AVST 315L (may be taken concurrently)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 315L Multi-Engine Rating Lab (1 Credits)**

Provides the student with flight time and instruction to complete all maneuvers and operations required in preparation to earn the Federal Aviation (FAA) Multiengine Airplane Class Rating. 1 credit hour.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 316L Intermediate Aviation Lab II (3 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 317L Intermediate Aviation Lab III (3 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 318 Crew Resource (2 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 319 Crew Resource Management (0 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 321 Air Traffic Control (3 Credits)**

Air Traffic Control (3) This course provides an overview of the development and application of Air Traffic Control (ATC) separation standards and procedures for the control of instrument flight in controlled airspace. A study of the national air traffic control system is discussed with an emphasis on basic air traffic control procedures; the roles of Center, Approach Control, Tower, and Flight Service Station. Includes communications, navigation procedures, radar operations, and facilities. Three hours lecture per week. Co-requisite: AVST321L.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 321L Air Traffic Control Lab (1 Credits)**

Air Traffic Control Lab (1) Practical application of air traffic control skills in a laboratory setting. Two hours of laboratory per week. Co-requisite: AVST321.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 325 Airport Design & Operation (3 Credits)**

Airport Design and Operation (3) The study of planning, design construction of airports. Three hours of lecture per week.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 345 Principles Aviation Property (3 Credits)**

Principles of Aviation Property (3) Study of the processes of planning, organizing, directing, and controlling aviation property at fixed based operations. Three hours of lecture per week. Prerequisite: AVST 371.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 351 Aviation Law (3 Credits)**

Aviation Law (3) Chronological development of aviation law, federal and state regulatory functions, rights and liabilities of aviators, commercial air carrier operations, and the traveling public. Includes FAA regulation and directives governing airport operations, air carrier safety, and aviation security. Three hours of lecture per week.

**Prerequisite(s):** (AVST 101 and AVST 120)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 352 Aviation Business Org Mgmt (3 Credits)**

Aviation Business Organization Management (3) A study of the role of business operations and technique at small and large airports. Three hours of lecture per week. Prerequisite: AVST 371.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 371 Airport Management (3 Credits)**

Airport Management (3) Origin of early legislation shaping development of present National Airport System, procedures for financing airport construction, phases of airport master planning, daily operations, and contractual provisions governing the operations of an airline. Three hours of lecture per week.

**Prerequisite(s):** (AVST 351)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 380 Flight Instruction Airplane (3 Credits)**

Flight Instruction Airplane (3) This course is a study of the fundamental so far plane flight instruction involving educational principles of the learning and teaching process, communication, teaching methods, critiquing, evaluating, and planning instruction activity. Three hours of lecture per week. Prerequisite: AVST 315.

**Prerequisite(s):** AVST 380L (may be taken concurrently)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 380L Certified Flight Instructor-Airplane Lab (1 Credits)**

Provides student the flight time and instruction needed to demonstrate, teach, and evaluate their performance in all maneuvers and operations required to earn the Private Pilot Commercial Pilot Certificates. 1.00 credit hour.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 381 Air Carrier Management (3 Credits)**

Air Carrier Management (3) Historical development of U.S. trunk carrier operations and regulatory interfaces with the federal government, International Civil Aviation Organization (ICAO), and the International Air Transport Association (IATA). Three hours of lecture per week.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 400 Flight Instructor Instrument (3 Credits)**

Flight Instructor Instrument (3) Instruction, flight training and practice teaching to obtain the aeronautical skills and knowledge necessary for FAA Certified Flight Instructor, Instruments. Three hours of lecture per week. Prerequisite: AVST 315.

**Prerequisite(s):** AVST 400L (may be taken concurrently)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 400L Certified Flight Instructor Instrument Lab (1 Credits)**

Flight time and instruction to demonstrate, teach, and evaluate performance of students in all maneuvers and operations required to earn the FAA instrument rating. The student will be prepared to for the administration of the oral and practical examinations administered by the FAA. 1 credit hour.

**Prerequisite(s):** AVST 315

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 401 Advanced Aerodynamics (3 Credits)**

Advanced Aerodynamics (3) Advanced the ories of flight and flight factors including air foil shape, drag velocity, lift and thrust, stability and control; advanced principles of performance including capabilities and limitations, performance and design criteria, load factors, weight and balance charts, comparative analysis of aircraft, and certification of aircraft. Three hours of lecture per week. Prerequisite: AVST 312.

**Prerequisite(s):** (AVST 312)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 402 Effective HSEM CM & Leadership (3 Credits)**

Effective HSEM Communications & Leadership (3) Prepares future aviation professionals with communication and leadership skills to fulfill team-building roles with government and non-government agencies during times of aviation disasters. Three hours of lecture per week. Prerequisite or Co-requisite: AVST 310.

**Prerequisite(s):** (AVST 310)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 403 TurboProp Familiarization (3 Credits)**

Turbo prop Familiarization (3) This course studies Turbo prop and turbo jet engines and their operation. Electrical, pressurization, hydraulic, and fuel systems will be examined. Three hours of lecture per week. Prerequisite: AVST 315.

**Prerequisite(s):** (AVST 315)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 404 Flight Safety (3 Credits)**

Flight Safety (3) Instruction emphasizing personal and institutional safety goals within the framework of the FAA. Three hours of lecture per week. Prerequisite: AVST 312.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 406 The National Airspace System (3 Credits)**

The National Airspace System (3) Overview of the proposed NAS Plan including problems such as airspace allocation, airspace usage, facilities and safety. Three hours of lecture per week. Prerequisite: AVST 218.

**Prerequisite(s):** AVST 321

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 407 Aviation Services Opers (3 Credits)**

Aviation Service Operations (3) Study of different aviation services at airports such as fueling services, ramp operators, and environmental management. The course will also cover operational management issues including Fixed Based Operations, general aviation, and relationship between private and governmental partners in the industry. Three hours of lecture per week. Prerequisite: AVST 371.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 408 Multi Engine-CFI (3 Credits)**

Provides the student with the flight time and instructions to demonstrate, teach and evaluate performance of students in all maneuvers and operations required to earn the FAA Multiengine Rating. 1.00 Credit hour.

**Prerequisite(s):** AVST 408L (may be taken concurrently)

**College/School:** Col of Science, Engr & Tech

**Department:** (R)Dept of Engineering Tech

**AVST 408L Multi Engine CFI lab (1 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** (R)Dept of Engineering Tech

**AVST 409 Gen Aviation Mgmt (3 Credits)**

General Aviation Management (Fixed Based Ops) (3) A study of fixed based operations and its function and responsibilities of managing the facility. The course will also examine sources of profit, management, maintenance and operations. Three hours of lecture per week. Prerequisite: AVST 371.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 410 FAR CFR PART 139 (3 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 412 Aviation Capstone Project (2 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 412L Aviation Capstone Proj Lab (1 Credits)**

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 415 Aeronautical Charts & Publicat (3 Credits)**

Aeronautical Charts and Publications (3) The student will become familiar with VFR Charts, FAA publications, en-route IFR Charts, SIDs & STARS, approach plates, and emergency rescue procedures. Three hours of lecture per week. Prerequisite: AVST 312.

**Prerequisite(s):** (AVST 312)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 425 Flight Physiology (3 Credits)**

Flight Physiology (3) A study of the causes, symptoms, treatment, and prevention of medical issues associated with flight. Three hours of lecture per week. Prerequisite: AVST 105, AVST 105L, and AVST 315.

**Prerequisite(s):** (AVST 105 and AVST 105L and AVST 315)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 444 Aviation Pro System Mgmt (3 Credits)**

Aviation Project System Management (3) A study of the role of project managers using software programs and systems analysis techniques. Three hours of lecture per week. Prerequisite: AVST 371. Co-requisite: 444L.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 444L Aviation Proj System Mgmt Lab (1 Credits)**

Aviation Project System Management Lab (1) Laboratory training of the role of project managers using software programs and systems analysis techniques. Prerequisite: AVST 371. Co-requisite: AWS 444.

**Prerequisite(s):** (AVST 371)

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud

**AVST 495 Fld Work Pract in AVS (3 Credits)**

Field Work Practicum in Aviation Science (3-6) Directed study involving field placement which provide students with practical exposure to present operational and managerial practices in aviation. This course also provides internal and external classroom work to develop skills in research, proposal, and grant writing. Prerequisite: Permission of the Chair.

**College/School:** Col of Science, Engr & Tech

**Department:** Dept of TransportStud