AVIATION AND SPACE EDUCATION

Aviation and Space Program

The Aviation and Space Program prepares students for careers in the aerospace industry. The BS in Aerospace Administration and Operations degree program offers five options: Professional Pilot, Aviation Management, Technical Services Management, Aerospace Security, and Aerospace Logistics.

The Professional Pilot option prepares students for careers in flight operations in both the general aviation and the air carrier segments of the aviation industry. In addition to high quality aviation related coursework, the student will attain FAA certifications for Private Pilot, Commercial Pilot-Instrument Rated for both single-engine and multi-engine aircraft and Certified Flight Instructor. The Professional Pilot option is compliant with Title 14 CFR of the Code of Federal Regulations Part 141 and accredited by Aviation Accreditation Board International (AABI).

The Aviation Management option prepares students for management positions in the aerospace industry. Employment opportunities include positions with fixed-base operators, air carriers, corporate flight departments, commuter and air taxi operations and a variety of career areas associated with airport operations, manufacturing, maintenance and government aviation and aerospace organizations. The Aviation Management option is accredited by Aviation Accreditation Board International (AABI).

The Technical Services Management option builds on an individual’s technical experience in aircraft maintenance or avionics to prepare the students for management positions in all segments of the industry. Twenty-five hours of technical training may be credited toward this option if received from an accredited institution.

The Aerospace Security option prepares students for careers in homeland defense and aerospace security fields. Employment opportunities include governmental agencies and private industry that deal with aerospace security operations.

The Aerospace Logistics option prepares students to work in the aerospace logistics sector. Employment opportunities include positions with military and civilian maintenance, repair and overhaul (MRO) facilities worldwide as well as any aerospace organization involved in supply-chain management activities.

The Aviation and Space Program has an extensive industry-based management internship program established with aerospace industries, major and regional air carriers and a variety of other companies within the aerospace industry.

OSU is an educator member of the Aviation Accreditation Board International (AABI). The AVED Program is also an institutional member of University Aviation Association (UAA).

AVED 1114 Theory of Flight
Description: Private pilot ground school. Course includes theory of flight, principles of navigation, meteorology, and Federal Aviation Regulations. Preparation for FAA private pilot computer-based knowledge exam. Previously offered as AVED 1113.
Credit hours: 4
Contact hours: Lecture: 4
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 1222 Private Flight Laboratory I
Description: Flight lab for beginning pilots. Course contains first part of FAA Private Pilot Certification. Training conducted under 14 CFR 141. Course previously offered as AVED 1221. Additional flat fee of $260.00 applies.
Credit hours: 2
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 1232 Private Flight Laboratory II
Prerequisites: AVED 1222.
Description: Course contains second part of FAA Private Pilot Certification. Training conducted under 14 CFR 141.
Credit hours: 2
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 1403 Advanced Theory of Flight
Prerequisites: AVED 1114 and passed FAA Private Pilot Examination.
Description: Advanced navigation, aircraft performance and meteorology, and introduction to crew resource management.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 2113 History of Aviation
Description: History of aviation from its early developments to the present. Historic events and the role of government as they relate to the evolution of the regulatory infrastructure of the aviation industry.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 2122 Intermediate Flight Lab
Prerequisites: AVED 2133.
Description: Professional Pilot Course emphasizing IFR cross country operations. Flight instruction conducted under FAR Part 141. Special fee required. Additional flat fee of $260.00 applies.
Credit hours: 2
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies
AVED 2133 Instrument Flight Laboratory
Prerequisites: AVED 1222 and AVED 1232.
Description: Professional Pilot Course required for FAA instrument rating. Flight instruction conducted under FAR Part 141. Additional flat fee of $260.00 applies. Previously offered as AVED 2132.
Credit hours: 3
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 2142 Commercial Maneuvers Flight Lab
Prerequisites: AVED 2122.
Description: Professional Pilot Course emphasizing Commercial practical test maneuvers. Flight instruction conducted under FAR Part 141. Additional flat fee of $260.00 applies.
Credit hours: 2
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 2213 Theory of Instrument Flight
Prerequisites: AVED 1403.
Description: Instrument flight rules, the air traffic system and procedures, the elements of forecasting weather trends. Preparation for FAA instrument computer-based knowledge exam. Previously offered as AVED 2214.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 2313 Theory of Commercial Flight
Prerequisites: Passed Private Pilot Knowledge Exam.
Description: Advanced aircraft systems, aerodynamics, federal aviation regulations, airports and airspace, navigation, and performance. Preparation for FAA Commercial Pilot Written Examination.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 2513 Aviation Career Planning and Development
Description: Assessment of career interests and aviation job opportunities that match those interests. Development of an academic and career learning and development plan consistent with identified interests.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3231 Theory of Multi-Engine Flight
Prerequisites: Private Pilot Certificate.
Description: Aeronautical theory and information required for operating the multi-engine airplane safely, efficiently and within its specified limitations. Emphasis on aerodynamics and multi-engine emergencies.
Credit hours: 1
Contact hours: Lecture: 1
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3243 Human Factors in Aviation
Description: The study of people interacting with the aviation environment. Individual and group performance, equipment design, physical environment and procedure development.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3333 Advanced Aircraft Systems
Prerequisites: AVED 2313.
Description: Professional Pilot Course emphasizing multiengine operations, including Commercial certification with Multiengine Rating. Flight instruction conducted under FAR Part 141. Special fee required.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3341 Multi-Engine Flight Laboratory
Prerequisites: AVED 2142.
Description: Professional Pilot Course emphasizing multiengine operations, including Commercial certification with Multiengine Rating. Flight instruction conducted under FAR Part 141. Additional flat fee of $260.00 applies.
Credit hours: 1
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 3433 Aviation/Aerospace Ethics
Description: Ethical decision-making as applied to the aviation and aerospace industry, an industry with narrow tolerance for error in terms of human life and economic impact. Awareness of aviation ethical issues and associated decision-making skills.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3443 Aviation Legal and Regulatory Issues
Description: Insight pertinent to federal governing bodies in addition to local and international laws forming the present structure of aviation law. Practices and pitfalls in aviation activities and a basic legal research capability.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 3453 Aviation/Aerospace Security Issues
Description: Analysis of the legal and regulatory responses to changing threats to aerospace security. Review of technological solutions for airports and aircraft.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3463 Aerospace Maintenance and Safety
Description: Identification and management of the human errors encountered in all aspects of aircraft maintenance operations. Case studies of maintenance-related accidents: line, hangar, and overhaul maintenance. The role of quality control and quality assurance are also examined as tools in reducing maintenance error.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3473 OSHA for Aerospace Managers
Description: Occupational safety and health requirements within the aerospace industry. History of OSHA, OSHA regulations relative to aerospace organizations along with recent inspection results and published violations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3483 Airport Passenger and Baggage Screening
Description: The history of airport security, the laws and agencies tasked with aviation security and the passenger and baggage screening technologies currently in use or being tested in airports. The role of technology in the aviation layered security program will be discussed.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3493 Analysis of Aviation Security Countermeasures
Description: A comprehensive approach to identification and analysis of security countermeasures in the Aviation industry.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3513 Aviation/Aerospace Management Principles
Description: Managing the major elements of the aviation/aerospace industry, including aircraft manufacturing and air transportation system.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3523 Airport Planning and Management
Description: Overview of the major functions of airport management, including master planning. Study of the socio-economic effects of airports on the communities they serve.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3533 Aircraft Turbine Engine Operation
Description: Principles of physics and gas laws pertaining to turbine powered aircraft operation. Turbine power plant systems theory with emphasis on safe and efficient operation of turbine powered aircraft.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3543 Aerospace Organizational Communications
Description: Aerospace communication to aid aviation students in proper use of written and verbal skills needed in various aerospace leadership roles.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3563 Aviation Marketing
Description: Marketing aviation products for the major elements of the aviation industry.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3573 Aviation/Aerospace Finance
Description: Financing the major elements of the aerospace industry, including general aviation, aircraft manufacturing and airports.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3623 Airport Network Security
Description: Comprehensive evaluation of the airport network landscape to include evaluation and mitigation of potential threats to the overall airport environment.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 3663 Aerospace and Air Carrier Industry
Description: Broad understanding of the air transportation industry and an in-depth knowledge of the organizational structures, managerial functions and operational aspects of today's major, national, and regional air carriers. Historical perspectives, regulators and associations, economic characteristics, labor relations and marketing of modern air carriers.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 3883 Space Flight
Description: A broad understanding and an in-depth knowledge of space flight and exploration of outer space. Emphasis will be placed on a thorough historical review and examination of the types of people and technological advancements involved in space exploration and flight.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4100 Specialized Studies in Aviation
Description: Independent studies, seminars, and training within selected areas of aviation. Offered for variable credit, 1-3 credit hours, maximum of 6 credit hours.
Credit hours: 1-3
Contact hours: Other: 1
Levels: Graduate, Undergraduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 4103 Aerospace Distribution, Warehousing and Transportation
Description: Aerospace logistics concepts and the management of aerospace distribution activities ranging from top management planning to warehousing and shipping.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4113 Aviation Safety
Description: Flight safety including studies in human factors, weather, aircraft crashworthiness, accident investigation, and aviation safety programs. Elements of aviation safety and flight operations (private flying, flight instruction, and business flying) and commercial aviation.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4123 Aerospace Depot Maintenance
Description: Aerospace depot maintenance operational and budget issues related to Economic Order Quality, Materials Requirement Planning, Benefit Cost Analysis, repair expenditures, fleet flight hours, transport modules, handling, shipping and other activities.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4133 Principles of Flight Instruction
Description: Preparation for the FAA Fundamentals of Instructing and Flight Instructor Knowledge Exams, as well as preparation for the CFI Initial Practical Test.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4143 Government Operations and Interfaces in Aerospace Management
Description: Government and its impact on aerospace management decisions related to logistics, inventory management, production, and operations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4153 Aerospace Sustainment
Prerequisites: Senior standing.
Description: A capstone course requiring application of all elements of the supply-chain management process to an aerospace organizational problem or project.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4163 FAA and Aerospace Logistics Regulations and Requirements
Description: Government regulations and requirements and the impact of those requirements on the aerospace supply chain management processes using case scenarios related to logistics, aviation, operations, procurement and the environment.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4173 Aerospace Logistics Quality Programs
Description: Logistics quality programs, including TQM, Kaizen, Lean, Six Sigma, and ISO 9000 in aerospace organizations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4183 Aerospace Human Resource Management and Aerospace Workforce Acquisition
Description: Workforce planning techniques to strengthen knowledge retention practices within the aerospace industry.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 4200 Internship in Aviation  
**Description:** Individually supervised internship in aviation career areas. Directed field experience related to the participant’s area of concentration. Offered for variable credit, 1-12 credit hours, maximum of 12 credit hours.  
**Credit hours:** 1-12  
**Contact hours:** Other: 1  
**Levels:** Undergraduate  
**Schedule types:** Independent Study  
**Department/School:** Educational Studies  

AVED 4223 Turbine Aircraft Transition  
**Prerequisites:** AVED 3341, AVED 3333, AVED 4353 and AVED 4703.  
**Description:** Fundamental flight and operating procedures of turbine engine aircraft.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Educational Studies  

AVED 4231 Flight Instructor: Airplane Flight Laboratory  
**Credit hours:** 1  
**Contact hours:** Lab:  
**Levels:** Undergraduate  
**Schedule types:** Lab  
**Department/School:** Educational Studies  

AVED 4232 Flight Instructor: Airplane Flight Laboratory  
**Prerequisites:** AVED 2142, AVED 4133.  
**Description:** Dual flight instruction to meet the requirements for the FAA flight instructor: airplane certificate. Flight instruction conducted under FAR Part 141. Additional flat fee of $260.00 applies. Previously offered as AVED 4231.  
**Credit hours:** 2  
**Contact hours:** Lecture: 3  
**Levels:** Undergraduate  
**Schedule types:** Lab  
**Department/School:** Educational Studies  

AVED 4233 Advanced Aircraft Performance  
**Description:** A study of advanced aircraft performance including appropriate physical laws, atmospheric properties and power plant technology.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Graduate, Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Educational Studies  

AVED 4234 Geospatial Technologies for Aerospace Managers  
**Description:** Using geographic information systems (GIS) and other geospatial technologies to effectively manage airports, including project management, maintenance, safety and security, noise and obstruction management, and environmental management.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Graduate, Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Educational Studies  

AVED 4413 Aviation Terrorism and Asymmetrical Warfare  
**Description:** Origins of modern terrorism and asymmetrical warfare as it related to current aviation security issues. A historical perspective to the headlines of today providing an understanding needed in making future security decisions.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Graduate, Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Educational Studies  

AVED 4433 Airport Safety Inspections  
**Description:** Safety requirements of U.S. general aviation airports. Elements of the 5010 airport inspection program, FAA advisory circulars, and other pertinent documents.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Educational Studies
AVED 4523 Airport Certified Member Preparation
Prerequisites: AVED 3523.
Description: Course focus is to earn knowledge necessary to successfully complete the AAAE Certified Member (CM) designation examination. Comprehensive evaluation of airport management and leadership issues to include administration, air service development, construction, finance, legislative affairs, maintenance, marketing and communications, operations, planning, and security.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4643 Aviation Navigation Global Positioning Systems
Description: Overview of the theory and operation of the GPS in the private and public sector.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4653 International Aerospace Issues (I)
Description: Fundamental knowledge, comprehension and abilities to apply, analyze, synthesize and evaluate international aerospace issues, including trends in security, safety, technology, and organizations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

General Education and other Course Attributes: International Dimension

AVED 4663 Aerospace Leadership
Description: Leadership theories and practices applicable to the aerospace environment and the types of leadership skills required for 21st Century aerospace organizational leaders.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4703 Crew Resource Management
Prerequisites: AVED 2142 and AVED 3243.
Description: Discovering how resource management applies to crew behavior in aviation. Special emphasis on decision-making, judgment, teamwork, stress management, situation awareness, leadership, and workload management. Ten hours in a dual flight control multi-engine simulator. Special fee required.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4713 Unmanned Aircraft Pilot Laboratory
Prerequisites: AVED 1114.
Description: Aeronautical theory, information and piloting skills will be utilized for operating an unmanned aircraft safely, efficiently and within its specified limitations. Classroom and laboratory experiences are designed for the students to gain the necessary skills to operate an unmanned aircraft safely.
Credit hours: 3
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 4771 Flight Instructor: Multi-Engine Flight Laboratory
Prerequisites: AVED 4232.
Description: Dual flight instruction to meet the requirement for adding a multi-engine flight instructor rating to the flight instructor certificate. Flight instruction conducted under FAR Part 141. Special fee required.
Credit hours: 1
Contact hours: Lab:
Levels: Undergraduate
Schedule types: Lab
Department/School: Educational Studies

AVED 4813 Air Transportation Compliance
Description: Regulatory requirements in the management of air transportation and logistics operations including the shipment of hazardous materials in domestic and international transport, U.S. Customs import/export compliance, and Transportation Safety Administration (TSA) requirements.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4883 Capstone Course in Aviation Management
Prerequisites: Aviation Management major with senior status.
Description: Applies knowledge and issues obtained in prior aviation courses.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4943 Basic Aircraft Accident Investigation
Description: A study of statutes, regulations and regulatory agency requirements that influence aircraft accident investigation.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4953 Corporate and General Aviation Management
Description: Study of management principles and practices of corporate and general aviation. Equipment acquisition, legal requirements, government regulations, flight operations, aircraft maintenance, management and investment decision-making.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 4963 Airport Design
Description: Overview of airport planning and development parameters, airport design considerations, economic impact of airport development, and a global examination of airport expansion projects.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4983 Aerospace Industry Hazardous Materials or Dangerous Goods
Description: Regulatory requirements and compliance issues in managing aerospace industry hazardous materials and dangerous goods.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 4990 Pilot Proficiency Flight
Description: Required for students entering the aviation education program who possess all FAA certificates/ratings required for the aviation sciences degree. Offered for variable credit, 1-2 credit hours, maximum of 4 credit hours.
Credit hours: 1-2
Contact hours: Other: 1
Levels: Undergraduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 4993 Aviation Labor Relations
Description: Aviation industry laws, regulations, and procedures for management and organized labor from historical through current perspectives. Focus on economic, legal, political, and public policy factors in aviation.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5000 Master’s Report or Thesis
Prerequisites: Consent of adviser.
Description: Students studying for a master’s degree enroll in this course for a total of 3 credit hours if writing a report or 6 hours if writing a thesis. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.
Credit hours: 1-6
Contact hours: Other: 1
Levels: Graduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 5020 Seminar in Aerospace Education
Prerequisites: Consent of instructor.
Description: Individual research problems in aerospace education. Offered for variable credit, 1-3 credit hours, maximum of 6 credit hours.
Credit hours: 1-3
Contact hours: Other: 1
Levels: Graduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 5053 Guided Reading and Research
Prerequisites: Consent of instructor.
Description: Guidance in reading and research required for the MS in aviation and space program.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5103 Aviation Career Development
Description: Aviation career development in private and public aviation organizations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5113 Aviation Safety Program Development
Prerequisites: AVED 4113.
Description: A detailed examination of risk management and accident prevention in the aviation industry. Organization and operation of safety programs including OSHA requirements, performance measurements, cost analysis, and systems safety analysis.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5113 Aviation Safety Program Development
Prerequisites: AVED 4113.
Description: A detailed examination of risk management and accident prevention in the aviation industry. Organization and operation of safety programs including OSHA requirements, performance measurements, cost analysis, and systems safety analysis.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5153 Capstone in Aerospace Research
Prerequisites: AVED 5053.
Description: The final culminating project intended to be an in-depth application of the knowledge and skills acquired from the MS Aerospace Education curriculum.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5200 Graduate Internship in Aviation and Space
Description: Directed field experiences in aerospace education for master’s students. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.
Credit hours: 1-6
Contact hours: Other: 1
Levels: Graduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 5203 Aeromedical Factors
Prerequisites: AVED 3243
Description: The study of aeromedical factors that influence pilot performance. The study of life support equipment designed to increase aviation safety.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 5303 Aviation and Space Quality Issues
Description: A study of the practice and research involved in implementing aviation and space quality issues.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5333 Aircraft Performance
Description: Operational flight performance issues, especially transition from propeller-driven to jet aircraft. Use of flight simulation software to determine optimal speeds for climb, descent, range and maximum endurance of a specific aircraft model.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5363 Aircraft Systems
Description: Flight management systems, data exchange busses, computerized flight control systems, airframe environmental systems, electrical, pressurization, fuel and icing. Earlier generation aircraft systems contrasted with modern aircraft systems.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5403 Passenger Screening Technology
Description: Understanding of the technologies currently in use or being tested in airports. Passenger screening technologies and their role in establishing a layered security program.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5413 Landside Security Technologies
Description: Technologies available for protecting the landside of the airport. Access control systems, blast protection and mitigation planning, perimeter security technologies and biometric technologies.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5423 Security Planning Audits and NIMS
Description: The management of a security program. Written security plans, security audits, emergency management, and the National Incident Management System.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5433 General Aviation and Cargo Security
Description: Overview of airport operations: regulatory history of air transportation, aviation forecasting, capacity and delay issues at airports, environmental issues, airport emergency procedures and aircraft rescue and fire-fighting, and airport system and master planning.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5443 International Aviation Security
Description: Civil aviation security structure required of all airports and airlines engaged in international civil aviation operations. Focuses on the requirements of the International Civil Aviation Organization, specifically ICAO Annex 17.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5453 Advanced Aviation Security
Prerequisites: Graduate standing.
Description: In-depth look at aviation security. Development of a greater understanding of problems associated with maintaining a secure aviation transportation industry. Familiarity with the history of attacks against aircraft, airports and other aviation facilities.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5463 Aerospace Risk Assessment
Description: The risks, threats, and vulnerabilities associated with aviation/aerospace assets, and associated decision-making processes. Risk management principles and utilizing cost-benefit analysis and other tools and methodologies applicable to aviation and aerospace challenges.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5473 Aerospace Education and Training Effectiveness
Description: Curriculum design and instructional effectiveness for aviation/aerospace educators and training professionals.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 5543 Advanced Aerospace Communications
**Description:** Interdisciplinary area of study drawing from previous knowledge and experience in effective management and leadership communication to meet the unique demands of the field of aviation. A broad range of academic disciplines and technical experience guiding aviation professionals in the refinement of personal, team and organizational communications.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5553 Aerospace Proposal and Procurement
**Description:** Analysis of aerospace proposal writing and federal grant development including the basics of government acquisition and procurement.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5563 Aerospace Leadership and Management
**Description:** Introductory course on leadership and management issues in the highly volatile aerospace environment. Introduction to management and leadership theory of the past, and exploration of the aviation environment of the future.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5573 Aerospace Defense Acquisition
**Description:** Analysis of the Department of Defense (DoD) acquisition process, including the basics of acquisition management and the life cycle of a defense contract from inception to disposal. Phases of acquisition include: concept exploration, development, production, fielding and deployment.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5593 Influencing Public Policy in the Aerospace Industry
**Description:** The aerospace legislative process, researching draft legislation, tracking state and federal legislation, communicating with legislators identifying the fiscal impact and benefits.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5663 Issues in the Airline/Aerospace Industry
**Description:** The components, participants, activities, characteristics, scope and economic significance of the air carrier industry and its major segments. The effects of regulation, competition, marketing, manufacturing and environmental control.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5720 Current Issues in Aerospace Education

AVED 5773 Historical Significance of Aviation
**Description:** Humankind’s attempt to conquer the skies from the earliest accomplishments in aviation to the aircraft of tomorrow. Profiles the way people, technology, and events have shaped the modern world of aviation.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5813 Earth Observation Systems
**Prerequisites:** GEOG 4333.
**Description:** A study of systems orbiting earth that collect data on the land and atmosphere.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5823 Space Science
**Description:** A study of the sun, inner and outer planets, asteroid belt, space probe exploration, orbital mechanics and missions.
**Credit hours:** 3
**Contact hours:** Lecture: 3
**Levels:** Graduate
**Schedule types:** Lecture
**Department/School:** Educational Studies

AVED 5850 Directed Readings in Aerospace Education
**Prerequisites:** Consent of instructor.
**Description:** Directed studies in aerospace education. Offered for variable credit, 1-3 credit hours, maximum of 6 credit hours.
**Credit hours:** 1-3
**Contact hours:** Other: 1
**Levels:** Graduate
**Schedule types:** Independent Study
**Department/School:** Educational Studies
AVED 5883 Aviation Economics
Description: The economic significance of the air carrier industry and its major segments. The effects of regulation, competition, schedules, marketing and environmental control.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5893 Aerospace Executive Decision Making
Description: Application of concepts and lessons of executive decision leadership within the context of the aerospace environment. Utilization of problem solving skills and leadership lessons of the 21st century aerospace leader.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5910 Practicum in Aerospace Education
Prerequisites: Consent of instructor.
Description: Directed observation and supervised clinical experiences in aerospace education. Offered for variable credit, 1-3 credit hours, maximum of 6 credit hours.
Credit hours: 1-3
Contact hours: Other: 1
Levels: Graduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 5953 Labor Relations in Aviation and Aerospace
Description: Labor laws, regulations, and labor-management relations in the U.S. aviation and aerospace industry, underlying the air carriers, public airport infrastructure, and related government employers.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5963 Airport Operations
Prerequisites: Graduate standing.
Description: Extensive overview of airport operations. Familiarity with the regulatory history of air transportation, airports, the Federal Aviation Administration, and the Transportation Security Agency. Introduction to a wide variety of organizational structures found at U.S. airports.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5973 Aerospace Law
Description: Study of the legal system as it relates to aerospace law and governance of the aviation industry. Previously offered as AVED 4973.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 5993 Ethics in Aviation
Description: Learning how to protect vital interests and maintain ethical control in highly regulated environments.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6000 Doctoral Thesis
Description: Required of all candidates for the EdD in applied educational studies. Credit awarded upon completion of the thesis. Offered for variable credit, 1-15 credit hours, maximum of 15 credit hours.
Credit hours: 1-15
Contact hours: Other: 1
Levels: Graduate
Schedule types: Independent Study
Department/School: Educational Studies

AVED 6103 Doctoral Seminar in Aerospace Education
Description: Individual research problems in aerospace education.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6203 Aviation Physiology
Prerequisites: AVED 5203 or equivalent.
Description: The study of the complexities of pilot performance as it relates to human physiology, human factors and aviation safety.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6303 Aviation and Space Safety Data Analysis
Description: A doctoral seminar in the practical application and research of aerospace databases. Qualitative and mixed method tools common to research in the fields of aviation and aerospace are emphasized.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6313 Administration of Aviation Institutions
Description: A study of the organization and administration of public and private aviation institutions. Study of the impact of economic and governmental system on these institutions.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6317 Development of Air and Space Flight
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies
AVED 6423 Certification of Airplanes
Description: A study of the practices and research involved in the certification of airplanes.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6443 Certification of Rotorcraft
Description: A study of the practices and research involved in the certification of rotorcraft.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6443 Certification of Rotorcraft
Description: A study of the practices and research involved in the certification of rotorcraft.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6613 Aviation Executive Development
Description: A study of the styles of aviation executives in private and public aviation organizations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6773 Applied Aviation and Space Research
Prerequisites: Consent of instructor and approval of student’s advisory committee.
Description: Action research topics in aviation and space identified by the aerospace industry with emphasis upon publications in aviation and space refereed journals and trade publications. Previously offered as AVED 6774.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6773 Applied Aviation and Space Research
Prerequisites: Consent of instructor and approval of student’s advisory committee.
Description: Action research topics in aviation and space identified by the aerospace industry with emphasis upon publications in aviation and space refereed journals and trade publications. Previously offered as AVED 6774.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

AVED 6963 Advanced Aircraft Accident Investigation
Prerequisites: AVED 4943.
Description: Application and practice of the different statutes, regulations, and regulatory agency requirements that influence aircraft accident investigations.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Educational Studies

- Aerospace Administration and Operations - Aviation Management (AAAM), Minor (http://catalog.okstate.edu/education-health-aviation/aviation-space/aerospace-administration-operations-aviation-management-minor)
- Aerospace Administration and Operations - Professional Pilot (AAPP), Minor (http://catalog.okstate.edu/education-health-aviation/aviation-space/aerospace-administration-operations-professional-pilot-minor)
- Aerospace Administration and Operations: Aerospace Logistics, BS (http://catalog.okstate.edu/education-health-aviation/aviation-space/aerospace-administration-operations-logistics-bs)
- Aerospace Administration and Operations: Aviation Management, BS (http://catalog.okstate.edu/education-health-aviation/aviation-space/aerospace-administration-operations-management-bs)
- Aerospace Administration and Operations: Professional Pilot, BS (http://catalog.okstate.edu/education-health-aviation/aviation-space/aerospace-administration-operations-professional-pilot-bs)
- Unmanned Aircraft Pilot (UAP), Minor (http://catalog.okstate.edu/education-health-aviation/aviation-space/unmanned-aircraft-pilot-minor)

**MS Degree Program**

The Master of Science in the Aviation and Space degree emphasizes aviation/aerospace management and leadership, legal and regulatory issues, aviation finance and economics, labor relations in aviation/aerospace, issues in the airline industry, and additional content regarding the aviation/aerospace industry and related government programs and missions. Students participating in this program come from a variety of academic and/or professional backgrounds including aviation, military, and government. The scope of this degree program is designed to prepare professional leaders for positions in the aviation/aerospace industry. To be considered for admission to the master's program, students must be admitted to both the OSU graduate college and the AVED program. Applicants are required to provide a statement of personal goals and objectives, two letters of recommendation addressing the applicant’s abilities, interest, motivation, etc., and a copy of a current resume. All MS students must complete course work from research, core requirements, program emphasis, and elective courses to total 33
Aviation and Space Education

hours. At least 21 hours must be completed at the graduate level (5000 or above) and no pass/fail courses may be used. Master’s students must also complete a Creative Component for committee approval.

EdD Degree Program

The Doctor of Education (EdD) in Applied Educational Studies with the Aviation and Space Education emphasizes aviation leadership and executive development, administration of aviation institutions, aviation law, air carrier industry, international aviation issues, and applied aviation and space research. The Space portion emphasizes the development of air and space flight; the earth’s air, land and water systems; and the solar systems to include the sun, planets, and probes. Aviation and Space Program seeks doctoral candidates with strong intellects, proper educational preparation, breadth and depth of Aviation and Space experiences and the capacity for disciplined investigations. The Aviation and Space program provides advanced courses in the specific field of aviation and space for successful practice in the aerospace industry. Either the MAT or GRE test must be taken within five years prior to application to the program. All applicants are required to submit a statement of personal goals and objectives, two letters of recommendation addressing the applicant’s experiences, abilities, interest, motivation, etc., and a current resume/vita. Course work must be completed from the professional core, program emphasis, field experiences, and research in addition to 10 hours of Doctoral Dissertation, for a total of 60 hours of course work beyond the Master’s degree. The EdD degree requires a dissertation that is research-based in the student’s field of specialization. Basic principles are used to emphasize the practical application of research.

The mission of the Aviation and Space program has three essential components:

1. Cultivate exemplary undergraduate and graduate instruction through a professional atmosphere in which students learn, develop, promote integrity, and contribute to the broader aerospace community.
2. Engage in applied aerospace research and scholarly initiatives that benefit industry, general aviation, government, and the public.
3. Provide leadership, expertise, and professional development opportunities for aviation and aerospace professionals and the aerospace industry, and to promote a greater understanding of aerospace among the general public

Additional information can be found at the FLYOSU.okstate.edu website.

Chad Depperschmidt, EdD—Associate Professor and Program Leader
Timm Bliss, EdD—Professor and Program Coordinator
Jon Loffi, EdD—Assistant Professor and Program Coordinator
Matt Vance, PhD—Assistant Professor and Program Coordinator
Mallory Casebolt, PhD—Assistant Professor