

# AVIATION (AV)

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## **AV102: Aviation Business**

This course discusses the contextual background of the aviation industry, including aircraft and aerospace design parameters, as well as industrial processes. You will learn about the overall structure of the aviation industry, including aviation history, the current status of aerospace manufacturers, commercial airlines, and general aviation, as well as governmental aviation agencies and international aviation. Finally, you will learn about the commercialization of space and current issues in aviation.

Quarter Credit Hours: 5 | Prerequisite: None

## **AV144: Private Pilot Lectures**

This course provides a study of the subject areas and information needed to operate as a private pilot in the aviation environment. You will examine regulatory oversight, flight planning and the assessment of weather, aircraft and system design, and aeronautical decision-making.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

## **AV145: Private Pilot Flight**

You will receive the necessary dual flight instruction and solo flight time to qualify for the FAA Private Pilot Certificate under Part 141 of the Federal Aviation Regulations.

Quarter Credit Hours: 3 | Prerequisite: Open to BS in Professional Flight students only

## **AV203: Aviation Operations Management**

This course introduces you to current aviation management principles and elemental aviation business planning. Major topics include flight and maintenance in operations management, safety management, financial management, and human resource management.

Quarter Credit Hours: 5 | Prerequisite: None

## **AV210: Ground Trainer**

In this course, you will continue to work on VOR, ADF, and ILS holding and approaches. Additionally, there will be a minimum of three instrument cross-countries flown in the ground trainer. The final portion of the course will be to increase the proficiency level of instrument flying.

Quarter Credit Hours: 1.5 | Prerequisite: Open to BS in Professional Flight students only

## **AV243: Commercial Pilot Flight I**

This course is designed to develop a higher degree of coordination and judgment through additional experience in more advanced flight maneuvers and cross-country flying under Part 141 of the Federal Aviation Regulations. Students are required to complete 60 hours of flight.

Quarter Credit Hours: 3 | Prerequisite: Open to BS in Professional Flight students only

## **AV248: Commercial Pilot Flight II**

This course is a continuation of the flight training received in AV243: Commercial Pilot Flight I and focuses on honing your skills and preparing for your checkride. Students are required to complete 60 hours of flight.

Quarter Credit Hours: 3 | Prerequisite: Open to BS in Professional Flight students only

## **AV249: Instrument Flight Lectures**

This course provides a study of the operation of flight instruments and navigation aids, Federal Aviation Regulations pertinent to instrument flight, meteorology, instrument charts, instrument flight planning, and air traffic control procedures.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

## **AV253: Instrument Flight Training**

This course is designed to prepare you for the FAA Instrument Rating under Part 141 of the Federal Aviation Regulations.

Quarter Credit Hours: 4.5 | Prerequisite: Open to BS in Professional Flight students only

## **AV254: Commercial Flight Lectures**

This course is designed to review the principles of flight, aircraft systems, pertinent federal aviation regulations, and airman publications and service.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

## **AV298: Aviation Technology Practicum**

The Aviation Technology Practicum encourages teamwork in small groups on a substantial project. This course intends to provide a practicum experience that integrates the material and your previous experiences with the curriculum. The course also offers an opportunity for you to recognize and evaluate the interrelationship of your general education courses with the courses completed for your major.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

## **AV325: Advanced Aviation Meteorology**

This course is designed for students who are preparing for careers as professional pilots or others who require advanced knowledge of weather and its impact on aviation operations. Topics include the atmospheric processes causing wind, cloud cover, precipitation, icing, turbulence, thunderstorms, low-visibility phenomena, and other atmospheric hazards to aviation. The course also addresses pressure and altimetry, instrument flight rule weather and operations, radar and satellite imagery, and obtaining, evaluating, and using weather data.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

## **AV327: Advanced Transport Flight Operations**

This course addresses topics related to the operation of turbine aircraft to include aircraft systems, performance, weight and balance, high altitude flight, weather, and normal and abnormal operations.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students or BS in Aviation Management students

## **AV338: Business Aviation Management**

This course provides an in-depth study of the knowledge areas necessary to effectively manage the operations of a business aviation organization. Topics include an overview of the business aviation industry, aircraft acquisition and financing, business and flight operations management, maintenance, and safety.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students or BS in Aviation Management students

**AV340: Aerospace Business Statistics**

This course provides an introduction to business statistics with a specific focus on managerial decision-making as it relates to airline performance statistics. Topics will include descriptive statistics, probability models, estimation, hypothesis testing, and regression analysis. You will use software to perform analysis.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students or BS in Aviation Management students

**AV346: Transport Category Aircraft Systems I**

This course provides an in-depth study of the components and operation of primary systems found on modern transport category aircraft utilizing Boeing 737 aircraft. The cockpit layout is introduced with an emphasis on how pilots can operate and control the various systems discussed. Aircraft and system limitations are stressed to highlight the operation parameters of the aircraft.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

**AV351: Flight Instructor Flight**

This course is flight training in preparation for flight instructor certification. Instructional techniques are demonstrated and practiced by the student. Heavy emphasis is placed on student practice teaching of all maneuvers.

Quarter Credit Hours: 2.5 | Prerequisite: Open to BS in Professional Flight students only

**AV352: Flight Instructor Lectures**

This course teaches the fundamentals of flight instruction including human behavior, learning, effective communication, teaching, lesson plans, and professionalism. Additionally, the course brings together technical knowledge and regulations. Some practice teaching will be required.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

**AV353: Multiengine Flight**

This course prepares you for the FAA multiengine rating. Dual flight instruction is conducted in a multiengine aircraft.

Quarter Credit Hours: 2.5 | Prerequisite: Open to BS in Professional Flight students only

**AV354: Advanced Flight Path Management**

This course studies the various modes of modern aircraft automation available to pilots and the appropriate use of automation for efficient and safe operations within the national airspace system. Energy management is explored throughout all phases of flight. Students gain literacy with the Flight Management Computer (FMC) and are familiarized with the displays of navigation, communication, and automation information.

Quarter Credit Hours: 5 | Prerequisite: AV254; open to BS in Professional Flight students only

**AV388: Transport Category Aircraft Systems II**

This course covers the operational nature of the Boeing 737 aircraft and introduces the management of normal, abnormal, and emergency checklists. Applied system management is integrated into various scenario-based events. Operating procedures through various phases of flight are discussed. The basic philosophy of multi-crew coordination and decision-making models are emphasized.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only; AV346

**AV412: Aviation Finance**

This course will focus on the financial knowledge needed to operate and evaluate aviation businesses. Content will address the impact of financial decisions on operational outcomes that increase/decrease value to/from an aviation company's bottom line. Case studies will be used to demonstrate practical aspects of financial decisions as they relate to organizational performance and profitability.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students, BS in Business Administration - Aviation Management Concentration students, or BS in Aviation Management students

**AV421: Managerial Economics in Aviation**

This course explores the process of making managerial decisions based on modern economic principles and concepts and provides you with a set of tools that can be used to make such decisions. Marginal analysis, forecasting, and cost-analysis concepts are introduced, as are game-theoretic and probabilistic decision-making models. Bargaining strategies and linear programming tools are addressed as well.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students or BS in Aviation Management students

**AV438: Airline Operations**

This course offers an in-depth study of the functions of air carrier operations with an emphasis on the system control center. Topics include the following key air carrier operations: station operations, maintenance operations, flight operations, network operations, and irregular operations.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students, BS in Business Administration - Aviation Management Concentration students, or BS in Aviation Management students

**AV454: Human Factors in Aviation**

This course explores the fundamental concepts of human factors in aviation. Capabilities and limitations of human physiology and psychology, as they apply to the safe operation and maintenance of aircraft, are presented. Specific topics include physiological factors, aeronautical decision-making, human factors/human error, crew resource management, and threat and error management.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

**AV475: Aviation Law**

Aviation Law provides a study of the fundamental legal and aviation law principles as they apply to various stakeholders in the aviation industry. Emphasis will be placed on contemporary aviation law concepts such as airman liability and enforcement actions; air carrier and government liability; accident reporting; aircraft transactions and insurance; labor law; unmanned aircraft systems; and commercial spaceflight operations.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students, BS in Business Administration - Aviation Management Concentration students, or BS in Aviation Management students

**AV481: Safety Management Systems**

This course provides an introduction to Safety Management Systems (SMS) and their application within the aviation industry. You will learn about the history and evolution of SMS. In addition, you will examine the principles of change management, ethical decision-making, processing hazards and managing risk, and implementing SMS in an aviation organization.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students or BS in Aviation Management students

**AV498: Aviation Technology Capstone**

The Aviation Technology Capstone encourages teamwork in small groups on a substantial project. This course intends to provide a capstone experience that integrates the material and your previous experiences with the curriculum. It also offers an opportunity for you to recognize and evaluate the interrelationship of your general education courses with the courses taken for your major.

Quarter Credit Hours: 5 | Prerequisite: Open to BS in Professional Flight students only

**AV499: Bachelor's Capstone in Aviation Management**

The Bachelor of Science in Aviation Management provides you with the necessary knowledge and skills to pursue a variety of managerial positions within the multifaceted aviation industry. The curriculum is designed to provide a solid foundation in business management with an emphasis on managerial-level decision-making and problem-solving to develop the skill sets necessary to enable an aviation workforce to function effectively while maximizing profitability. In addition to developing a thorough understanding of the business of aviation, you will also develop the leadership skills necessary to motivate others and communicate effectively.

Quarter Credit Hours: 6 | Prerequisite: Completion of all program-specific courses