
AVIATION SCIENCE (AVSC)

AVSC 100 Private Pilot Flight (3 credits)*

Prerequisite: AVSC 105 which may be taken concurrently

This course consists of flight instruction and ground tutoring, aircraft systems, flight planning, solo and cross-country flight, flight maneuvers, VFR navigation, introduction to night flight, and emergency operations. The Private Pilot Flight course prepares the student for the FAA Private Pilot Certificate.

AVSC 105 Private Pilot Ground School (6 credits)

Topics include basic performance and aerodynamics of the airplane, airplane structure and systems, flight control and instruments, weight and balance, airports, communications, air traffic control, meteorology and Federal Aviation Regulations. Aeronautical charts, airspace, radio navigation including VOR, DME, ADF, radar and transponders A.I.M. are considered, as well as use of the flight computer, cross-country flight planning and medical factors of flight. Students who meet Federal Aviation Administration (FAA) requirements will be qualified to take the FAA written examination. *Either semester*

AVSC 200 Instrument Flight (4 credits)*

Prerequisite: AVSC 100; and AVSC 212 which may be taken concurrently

A review and practice of basic, advanced and precision flight maneuvers. Concentrated instrument flight instruction including IFR navigation. An emphasis on aircraft control, IFR flight planning, departure, enroute, holding and arrival procedures, instrument approaches, IFR procedures and regulations.

AVSC 211 Commercial Pilot Ground School (3 credits)

Prerequisite: AVSC 200 and AVSC 212

Subject matter involves advanced treatment of the airplane systems, performance and control, the National Airspace System, Federal Aviation Regulations, meteorology, radio navigation and the physiology of flight. Students who meet Federal Aviation Administration (FAA) requirements will be qualified to take the FAA written examination. *Either semester*

AVSC 212 Instrument Pilot Ground School (3 credits)

Prerequisite: AVSC 100 and AVSC 105

Topics include discussion of aircraft environmental control systems and commercial flight planning, study of instrument flight charts, IFR departure, enroute and approach procedures. FARs, IFR Flight Planning. Students who meet Federal Aviation Administration (FAA) requirements will be qualified to take the FAA written examination. *Either semester*

AVSC 215 Single Engine Flight Simulator Instruction (1-3 credits)

Prerequisite: AVSC 105 or consent of the instructor

Single engine flight simulated instruction is conducted with the use of a flight simulator. The course content will be determined in accordance with the flight experience of the student. A student must enroll for a minimum of one credit. The course may be repeated for a maximum of three credits. (Fifteen hours of instruction are required for one credit.)

Either semester

AVSC 217 Air Traffic Control (3 credits)

Prerequisite: AVSC 105 and AVSC 100 both of which may be taken concurrently

This course deals with the U.S. air traffic and airway system as it exists today. Topics of discussion will include: components of the system; air route traffic control centers; towers; flight service stations; navigational aids; and the low/high altitude Federal airway structure. *Spring semester*

AVSC 300 Commercial Flight (4 credits)*

Prerequisite: AVSC 200; and AVSC 211, which may be taken concurrently

Lessons include a review of basic flight maneuvers, as well as concentrated instruction and solo proficiency practice in precision flight maneuvers. Introduction to flight in complex aircraft, experience in night and cross-country flying, with altitude instrument flying. This course also consists of a complete review of all commercial maneuvers, instrument flying techniques, procedures and regulations. The Commercial Flight course prepares the student for FAA Commercial Pilot and Instrument ratings.

AVSC 303 Flight Instructor Ground School (3 credits)

Prerequisite: AVSC 200, AVSC 212, AVSC 300 and AVSC 211

Provides aviation instructors with easily understood learning and teaching information and its use in their task of conveying aeronautical knowledge and skills to students. Topics include aspects of human behavior, teaching methods and communication, evaluation and criticism, instructional planning, instructor characteristics and responsibilities. Students who meet Federal Aviation Administration (FAA) requirements will be qualified to take the FAA written examination. *Either semester*

AVSC 305 Introduction to General Aviation Management (3 credits)

Prerequisite: MGMT 130 and junior status or consent of the instructor

An in-depth study of Fixed Base Operations (FBO) business management and operations including financial aspects, human resources, MIS, flight line, flight operations, marketing, maintenance and facilities. *Either semester*

* Additional fee required

Note: This section is arranged in course number order. See course prefix key for assistance in locating department sections.

AVSC 307 Air Carrier Operations (3 credits)

Prerequisite: MGMT 130 and junior status or consent of the instructor

An in-depth study of the U.S. air carrier industry, its structure and its place in the aerospace industry. The history, economics, management and regulation of the domestic air carrier industry are examined in detail. *Fall semester*

AVSC 310 Aviation Safety (3 credits)

Prerequisite: AVSC 100 and AVSC 105

The primary emphasis of this course is to instill safety consciousness. It encompasses the role of federal organizations involved with aviation safety and stresses their contributions to the aerospace industry. The course will explore flight physiology, utilization of aeronautical services and facilities, an historical perspective and analyzing documented case studies. *Spring semester*

AVSC 316 Multi-Engine Flight Simulator Instruction (1-3 credits)

Prerequisite: AVSC 413 or consent of the instructor

Multi-engine flight simulated instruction is conducted with the use of a flight simulator. The course content will be determined in accordance with the flight experience of the student. Students must enroll for a minimum of one credit. The course may be repeated for a maximum of three credits. (Fifteen hours of instruction are required for one credit) *Either semester*

AVSC 320 Aviation Regulatory Process (3 credits)

Prerequisites: AVSC 105, junior status or consent of instructor

A study of the development of the United States aviation regulatory process, its current structure, the rule making process, the appeals process, ICAO, etc., as well as an exposure to current aviation law as it applies to aviators and operators in the airspace system. *Either semester*

AVSC 330 Aircraft Systems (3 credits)

Prerequisites: AVSC 211, junior status or consent of instructor

An examination of current aircraft systems moving from the more elementary systems found in smaller general aviation aircraft to the more complex systems found in current turbine powered transport category aircraft. These systems will include power plant, electrical, flight control, air conditioning and pressurization, ice and rain protection, oxygen, avionics, and emergency equipment. *Fall semester*

AVSC 350 Airport Management (3 credits)

Prerequisite: MGMT 130 and junior status or consent of the instructor

A study of managerial challenges associated with the operations of an airport. The course examines the history of airport development in the U.S., pertinent developments in legislation, planning, funding, local controlling authorities, growth management, regulatory aspects and public relations. *Spring semester*

* *Additional fee required*

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Note: *See Catalog Web Addenda at www.bridgew.edu/catalog/addenda/ as that information supersedes the published version of this catalog.*

AVSC 400 Instructional Flight (3 credits)

Prerequisite: AVSC 200, AVSC 211, AVSC 212, AVSC 300, and AVSC 303 which may be taken concurrently

This course includes analysis of flight maneuvers, take-off, landings, stalls, emergencies and procedures, as well as analysis and practice instruction of advanced maneuver, altitude instrument flying, considerations of night flight, aircraft performance cross-country flight and navigation. Practice flight and ground instruction. Prepares the student for the FAA Certified Flight Instructor rating.

AVSC 402 Insurance and Risk Management in Aviation (3 credits)

Prerequisite: AVSC 305

A practical study of U.S. regulations governing aviation. A survey of appropriate risk management policies of aviation. The case method is employed to present practical applications of principles under consideration. *Fall semester*

AVSC 407 Aviation Marketing Management (3 credits)

Prerequisite: AVSC 100, AVSC 305

Selling and pricing business aviation services and creative marketing strategy are studied in an analytical approach to advertising, sales force administration, promotion, distribution, retailing, logistics, wholesaling, product planning, price policies, market research and consumer behavior. *Spring semester*

AVSC 411 Instrument Flight Instructor Ground School (2 credits)

Prerequisite: AVSC 300 and AVSC 211; and AVSC 303 which may be taken concurrently

Techniques of teaching instrument flight, analysis of instrument maneuvers and approaches, enroute operations and lesson planning. This course will prepare students for the Federal Aviation Administration (FAA) instrument flight and ground instructor written examinations.

AVSC 412 Instrument Flight Instructor Flight Training (2 credits)*

Prerequisite: AVSC 411 which may be taken concurrently

Teaching analysis of altitude instruments, instrument approaches, and enroute operations. This course will prepare students for the Federal Aviation Administration (FAA) practical test. Two two-hour lecture/demonstration periods weekly for one quarter. *Either semester*

AVSC 413 Multi-Engine Rating Ground School (1 credit)

Prerequisite: AVSC 211 and AVSC 300

This course prepares the prospective multi-engine pilot for the flight portion of the Federal Aviation Administration (FAA) multi-engine certification, including an in-depth study of multi-engine aerodynamics, systems, weight and balance, performance and emergencies.

AVSC 414 Multi-Engine Flight Training (1 credit)*

Prerequisite: AVSC 413

This course prepares the prospective multi-engine pilot for the Federal Aviation Administration (FAA) multi-engine flight test. It includes multi-engine maneuvers, systems, weight and balance and emergencies. Two one-hour lecture/demonstration periods weekly for one quarter. *Either semester*

AVSC 415 Corporate Aviation Management (3 credits)

Prerequisite: AVSC 305

This course provides an in-depth examination of the history and management practices of commuter airline and corporate aviation. Commuter airline certification, aircraft selection and operations will be analyzed, as well as corporate flight department economics and operations. *Spring semester*

AVSC 416 Multi-Engine Instructor Ground School (2 credits)

Prerequisite: AVSC 303, AVSC 400, AVSC 413, and AVSC 414

This course involves techniques of teaching multi-engine flight, multi-engine operations and systems, aerodynamics of multi-engine flight, environmental systems and multi-engine airplane instruction. One two-hour lecture/demonstration period weekly.

AVSC 417 Multi-Engine Instructor Flight Training (2 credits)*

Prerequisite: AVSC 303, AVSC 400, AVSC 413, and AVSC 414; and AVSC 416 which may be taken concurrently

This course covers the development of aeronautical skill and experience in multi-engine aircraft as well as acquisition of teaching proficiency from right seat of multi-engine airplane. One two-hour lecture/demonstration period weekly for one quarter. *Either semester*

AVSC 430 Airport Operations (3 credits)

Prerequisite: AVSC 350 and junior status or consent of instructor

An in-depth study of the operational aspects of airports including demand/capacity analysis, pavement management, throughput of traffic (passenger, cargo, aircraft operations), noise abatement and mitigation, environmental considerations, etc. *Fall semester*

AVSC 471 Aviation Management (3 credits)

Prerequisite: AVSC 307, AVSC 402, AVSC 407, and senior status or consent of instructor

This capstone course uses the tools and concepts mastered in each of the previous aviation courses to look at current business problems and topics related to the aviation industry.

AVSC 498 Internship in Aviation Science (3-15 credits)

Prerequisite: Consent of the department chairperson of aviation science; formal application is required

Instructive endeavor in the aviation industry or an aviation related business, which complements the academic program. The student will receive meaningful and practical work experience conducted at an airline, a Fixed Base Operation (FBO), the FAA, an aviation consulting firm or other aviation related firms. *Either semester*

AVSC 499 Directed Study in Aviation Science (1-3 credits)

Prerequisite: Junior status and consent of the department; formal application required

Open to junior and senior majors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits. *Either semester*

Other Approved Courses:

AVSC 101 Primary Flight I
 AVSC 102 Primary Flight II
 AVSC 103 Primary Flight III
 AVSC 201 Commercial Flight I
 AVSC 202 Commercial Flight II
 AVSC 203 Instrument Flight I
 AVSC 204 Instrument Flight II
 AVSC 205 Advanced Commercial and Instrument Flight
 AVSC 216 National Airspace System
 AVSC 301 Instructional Flight I
 AVSC 302 Instructional Flight II
 AVSC 399 Special Topics in Aviation
 AVSC 450 Human Factors in Aviation
 AVSC 460 Aviation Weather
 AVSC 470 Economics of Air Transportation

* Additional fee required

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