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## AVIATION SCIENCE (AVSC)

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### 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 135/136 Freshman Honors Colloquium (1 credit each semester)

*Prerequisite:* Open to Commonwealth Honors students and to others at the discretion of the instructor

Freshman Honors Colloquia in aviation allow exceptionally able students to explore a challenging topic in small classes under close faculty supervision. Colloquia meet once a week for 50 minutes and culminate in a paper or scientific project, which provides the major part of the grade. Topics vary from semester to semester.

### AVSC 199 First Year Seminar (3 credits)

*Prerequisite:* Open to all freshmen with a writing placement score of 3 or above or a SAT score of 500 or above. Students with 24 or more transfer credits will have this requirement waived.

First Year Seminars (FYS) are writing-intensive topic courses that introduce students to academic thought, discourse and practices. FYS courses prepare and orient students toward productive and fulfilling college careers by actively engaging them in a specific academic area of interest. Students will improve their writing, reading, research and basic information and technology skills while learning to work both collaboratively and independently. These courses will fulfill the First Year Seminar requirement and may fulfill other requirements for the core curriculum. Each course may fulfill different requirements and topics may change each semester. Only one FYS course may be taken for credit. (CFYS)

### AVSC 200 Instrument Flight (4 credits)

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

This course is a review and practice of basic, advanced and precision flight maneuvers and concentrated instrument flight instruction including IFR navigation. Emphasis is placed 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 and 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 instructor

Single engine flight simulated instruction is conducted with the use of a flight simulator located at the New Bedford airport. 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 286/287 Sophomore Honors Colloquium (1 credit each semester)

*Prerequisite:* Open to all Commonwealth Honors students and to others at the discretion of the instructor

Sophomore Honors Colloquia in aviation allow exceptionally able students to explore a challenging topic in small classes under close faculty supervision. Colloquia meet once a week for fifty minutes and culminate in a paper or scientific project, which provides the major part of the grade. Topics vary from semester to semester.

### AVSC 298 Second Year Seminar (Speaking Intensive) (3 credits)

*Prerequisite:* \_\_\_\_199; Open to all sophomores and juniors who have completed ENGL 101, and the speaking skills requirement. Students with 54 or more transfer credits will have this requirement waived. Cannot be taken if \_\_\_\_299 is taken for credit.

Second Year Seminars (SYS) are speaking-intensive topic courses that build on the academic skills and habits introduced in the First Year Seminar. SYS courses engage students in a specific academic area of interest and provide them with the opportunity to reinforce, share and interpret knowledge. Students will improve their speaking, reading, research and basic information and technology skills while building the connections between

scholarship and action that are required for lifelong learning. These courses will fulfill the Second Year Seminar requirement and may fulfill other requirements for the core curriculum. Each course may fulfill different requirements and topics may change each semester. Only one SYS course may be taken for credit. (CSYS)

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### **AVSC 299 Second Year Seminar (Writing Intensive) (3 credits)**

*Prerequisite:* \_\_\_\_199; *Open to all sophomores and juniors who have completed ENGL 101, and ENGL 102. Students with 54 or more transfer credits will have this requirement waived. Cannot be taken if \_\_\_\_298 is taken for credit.*

Second Year Seminars (SYS) are writing-intensive topic courses that build on the academic skills and habits introduced in the First Year Seminar. SYS courses engage students in a specific academic area of interest and provide them with the opportunity to reinforce, share and interpret knowledge. Students will improve their writing, reading, research and basic information and technology skills while building the connections between scholarship and action that are required for lifelong learning. These courses will fulfill the Second Year Seminar requirement and may fulfill other requirements for the core curriculum. Each course may fulfill different requirements and topics may change each semester. Only one SYS course may be taken for credit. (CSYS)

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### **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.\*

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### **AVSC 303 Flight Instructor Ground School (3 credits)**

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

This course 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*

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### **AVSC 305 Introduction to General Aviation Management (3 credits)**

*Prerequisite:* MGMT 130 and junior status; or consent of instructor

This course is 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*

*tMay be taken for graduate-level credit*

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### **AVSC 307 Air Carrier Operations (3 credits)**

*Prerequisite:* MGMT 130 and junior status; or consent of instructor  
This course is 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*

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### **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, a historical perspective and analyzing documented case studies. *Spring semester*

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

*Prerequisite:* AVSC 413 or consent of instructor

Multi-engine flight simulated instruction is conducted with the use of a flight simulator at the New Bedford airport. 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*

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### **AVSC 320 Aviation Regulatory Process (3 credits)**

*Prerequisites:* AVSC 105 and junior status; or consent of instructor

This course is 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*

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### **AVSC 330 Aircraft Systems (3 credits)**

*Prerequisites:* AVSC 211 and junior status; or consent of instructor

This course is 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*

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### **AVSC 399 Special Topics in Aviation (3 credits)**

*Prerequisite:* AVSC 105

This course will cover timely and important aviation issues not offered in other courses. Topics will change semester by semester and will be announced prior to registration. This course may be repeated with permission of department.

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### **AVSC 400 Instructional Flight (3 credits)**

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

This course includes analysis of flight maneuvers, take-offs, 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. It prepares the student for the FAA Certified Flight Instructor rating.\*

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

*Prerequisite:* AVSC 305

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

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### **AVSC 407 Aviation Marketing Management (3 credits)**

*Prerequisite:* AVSC 100 and 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*

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### **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 are covered. This course will prepare students for the Federal Aviation Administration (FAA) instrument flight and ground instructor written examinations.

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### **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 are covered. 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*

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### **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.

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### **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*

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

*Prerequisite:* AVSC 303 and AVSC 400 and 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*

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### **AVSC 471 Aviation Management (3 credits)**

*Prerequisite:* AVSC 307 and AVSC 402 and 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.

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### **AVSC 485 Honors Thesis (3 credits)**

*Prerequisite:* Open to all Commonwealth and Departmental Honors students and to others at the discretion of the instructor

This course is open to All-College and Departmental Honors students. One-hour weekly meetings with the thesis director will culminate in an honors thesis. With the consent of the Departmental Honors Committee and the thesis director, this course may be extended into a second semester for three additional credits depending upon the scope of the project. Whether the final version of the thesis qualifies the student to graduate with honors will be determined by the Departmental Honors Committee.

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

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

The internship is an 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*

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

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

Directed study is open to junior and senior majors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. This course may be taken twice for a maximum of six credits. *Either semester*

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### **Other Approved Courses**

AVSC 102 Primary Flight II  
 AVSC 103 Primary Flight III  
 AVSC 217 Air Traffic Control  
 AVSC 350 Airport Management  
 AVSC 415 Corporate Aviation Management  
 AVSC 416 Multi-Engine Instructor Ground School  
 AVSC 430 Airport Operations  
 AVSC 450 Human Factors in Aviation

*\*May be taken for graduate-level credit*