Aviation Administration

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Aviation Department
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School of Engineering Technology

Bachelor of Science Degree

The Aviation Administration major is a specialized aviation management program accredited by the Aviation Accreditation Board International (AABI) through February, 2023. The program prepares graduates for entry-level managerial positions in the Airport and Air Cargo segments of the air transportation industry, the Airline Industry, the FAA and the General Aviation Industry.

A grade of “C” or better is required in all AVN courses (including electives) for graduation from the Aviation Administration Program. Students who are unable to obtain a minimum grade of “C” after the second attempt in any AVN classes must obtain permission from the Chairperson of the department to remain in the program. This will apply for each course that needs to be retaken for the third time.

Aviation Administration (BS) Program Outcomes:

Graduates will possess the necessary knowledge, skills and attitudes to competently and ethically function as a manager in the aviation industry.

Specifically, the graduate of the Aviation Administration degree program will have:

• an understanding of the impact of aviation and technology in a global/societal context
• an ability to apply the techniques, skills, and modern aviation management tools to perform business related tasks
• an ability to function on a multi-disciplinary management team which includes technical and management issues
• an ability to apply knowledge of mathematics and science to ensure safe and efficient operations
• an ability to accurately analyze and interpret data, and design experiments for a variety of problems
• an understanding of professional and ethical responsibility
• an ability to communicate with agency representatives, superiors, subordinates, and peers with precision and clarity
• recognition of the need for the ability to engage in lifelong learning
• knowledge of contemporary aviation industry issues

The program prepares students to be marketable in the following areas: Finance and Public Relations, Accounting and Marketing, Aviation Laws and interaction between the aviation industry and government and Management of all aspects of airports.

Compliance with AABI Policy 3.4.2 Assessment Plan
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<tr>
<th>Requirement</th>
<th>Courses/Description</th>
<th>Credits</th>
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<tr>
<td>Liberal Arts and Sciences (60 credits)</td>
<td>EGL 101 Composition I: College Writing (GE)</td>
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<td>EGL 102 Composition II: Writing About Literature</td>
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<td>Basic Communication (GE)</td>
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<td>American/Other World/Western Civilization History (GE)</td>
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<td>ECO 156 Economics (Macro) (GE)</td>
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<td>ECO 157 Economics (Micro)</td>
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<td>PHY 116 Meteorology</td>
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<td>Natural Science (GE)</td>
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<td>PSY 101 Introduction to Psychology</td>
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<td>MTH 110 Statistics (GE)</td>
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<td>MTH 130 Calculus I with Applications</td>
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<td>The Arts (GE)</td>
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<td>Humanities (GE)</td>
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<td>Liberal Arts &amp; Sciences Electives</td>
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<td>Required Support Courses (18 credits)</td>
<td>BUS 101 Accounting I</td>
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<td>BUS 102 Accounting II</td>
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<td>BUS 109 or BUS 111</td>
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<td>BUS 301 Corporate Finance</td>
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<td>BUS 259 Public Relations</td>
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<td>BCS 300 Management Information Systems</td>
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<td>Required Aviation (27 credits)</td>
<td>AVN 101 Aviation Industry: A History Perspective</td>
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<td>AVN 201W Safety Ethics</td>
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<td>AVN 300 or 300W Government in Aviation</td>
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<td>AVN 326 Aviation Security Management</td>
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AVN 330 Airline Marketing 3
AVN 350 Air Traffic Management 3
AVN 400 Aviation Law 3
AVN 401 Aviation Economics and Marketing 3
AVN 471 Aviation Administration Senior Seminar 3
AVN Elective (Includes RAM 303) 3

Concentration: (Choose one)

Air Cargo (15 credits)
AVN 280 Intro to Air Cargo Operations - Basic 3
AVN 281 Air Cargo Govt & Industry Regulations 3
AVN 380 Air Cargo Sales & Marketing Techniques 3
AVN 381 Air Cargo Mgmt Techniques 3
AVN 480 Air Cargo Operations - Advanced 3

Airport Management (15 credits)
AVN 270 Intro to Airports Management 3
AVN 271 Airport Capacity/Delay/Airspace 3
AVN 370 Airport Management and Finance 3
AVN 371 Airport Planning 3
AVN 470 Airport Operations 3

Total Credits: 120

Degree Type: BS
Total Required Credits: 120

Please refer to the General Education, Applied Learning, and Writing Intensive requirement sections of the College Catalog and consult with your advisor to ensure that graduation requirements are satisfied.

Course Descriptions

EGL 101 Composition I: College Writing (GE)
This is the first part of a required sequence in college essay writing. Students learn to view writing as a process that involves generating ideas, formulating and developing a thesis, structuring paragraphs and essays, as well as revising and editing drafts. The focus is on the development of critical and analytical thinking. Students also learn the correct and ethical use of print and electronic sources. At least one research paper is required. A grade of C or higher is a graduation requirement. Note: Students passing a departmental diagnostic exam given on the first day of class will remain in EGL 101; all others will be placed in EGL 097. Prerequisite is any of the following: successful completion of EGL 097; an SAT essay score (taken prior to March 1, 2016) of 7 or higher; an SAT essay score (taken after March 1, 2016) of 5 or higher; on-campus placement testing.
EGL 102 Composition II: Writing About Literature
This is the second part of the required introductory English composition sequence. This course builds on writing skills developed in EGL 101, specifically the ability to write analytical and persuasive essays and to use research materials correctly and effectively. Students read selections from different literary genres (poetry, drama, and narrative fiction). Selections from the literature provide the basis for analytical and critical essays that explore the ways writers use works of the imagination to explore human experience. Grade of C or higher is a graduation requirement. Prerequisite(s): EGL 101

ECO 156 Economics (Macro) (GE)
This course is designed to introduce classic macroeconomic issues such as unemployment, inflation, national income and economic growth. The course will provide a unified framework to address these issues and to study the impact of different policies, such as monetary and fiscal policies, on the aggregate behavior of the economy. Analytical tools will be used to understand the experiences of the United States and other countries, and to address how current policy initiatives affect their macroeconomic performance.

ECO 157 Economics (Micro)
This course introduces students to fundamental economic concepts and theory, including demand, supply, and the formation of equilibrium prices in product and resource markets. Students will learn a specific set of analytical tools as well as how to apply them to current policy issues. In addition, the course offers an introduction to applied fields such as industrial organization (market structures), labor economics, international trade, and market failure.

PHY 116 Meteorology
A descriptive course in elementary meteorology that will introduce the student to weather analysis and forecasting. Topics covered will be Temperature, Pressure, Wind Radiation, Clouds, Precipitation, Synoptic weather charts, Air Masses, Low and High Pressure Areas, Frontal Systems, Thunderstorms, Weather Forecasting, and Local Weather. Weather charts will be analyzed and students will make their own weather forecasts.

PSY 101 Introduction to Psychology
This course is designed to present basic psychological concepts and to introduce students to the scientific study of behavior. Core topics include methods of psychological research, the biological bases of behavior, principles of learning, memory and cognition, personality, and psychopathology. Other selected topics to be covered would include the following: motivation and emotion, life-span development, social psychology, health psychology, sensation and perception, intelligence, human sexuality, statistics, and altered states of consciousness.

MTH 110 Statistics (GE)
Basic concepts of probability and statistical inference. Included are the binominal, normal, and chi-square distributions. Practical applications are examined. Computer assignments using Minitab form an integral part of the course. Prerequisite(s): MP2 or MTH 015

MTH 129 Precalculus (GE)
In this course, the topics introduced in College Algebra course will be extended. The course will provide a comprehensive study of functions, which are the basis of calculus and other higher-level mathematics courses. The students will study the properties, graphs, and some applications of polynomial, rational, inverse, exponential, logarithmic, and trigonometric functions. Note: Students completing this course may not receive credit for MTH 117. Prerequisite(s): MP3 or MTH 116

MTH 130 Calculus I with Applications
This is a calculus course for those not majoring in Mathematics, Engineering Science or Computer Science. Topics include the derivative, differentiation of algebraic, trigonometric, exponential and logarithmic functions, applications of the derivative and the definite integral. Applications are taken from technology, science, and business. Problem solving is stressed. A
graphing calculator is required. Note: Students completing this course will not receive credit for MTH 150. Prerequisite(s): MP4 or MTH 117 or 129

BUS 101 Accounting I
Fundamental accounting concepts and principles are covered through an understanding of the following topics: accounting as an information system; analyzing a transaction; the accounting cycle; accounting for both service enterprises and merchandising businesses; deferrals and accruals; reversing entries; systems design; accounting for cash, receivables, temporary investments and inventory; payroll accounting. Students apply concepts to the preparation of special journals, subsidiary ledgers, worksheets and financial statements.

BUS 102 Accounting II
Continued development of the principles and concepts introduced in Accounting I. The following topics are included: emphasis on further understanding of generally accepted accounting principles; plant assets; intangible assets; determination of depreciation, depletion and amortization; accounting for partnerships and corporations; long term liabilities; investments in bonds and stock; statement of cash flows; managerial accounting; accounting for manufacturing operations; budgeting and standard costs systems. Prerequisite(s): BUS 101 with a grade of C or higher

BUS 109 or BUS 111
This introductory course covers management principles pertaining to human resources, individual behavior in organizations, employee motivation and performance, and business ethics. Topics also include managing and the manager’s job; planning and decision making; employee performance appraisal and feedback; leadership and influence processes; interpersonal relations and communication; and managing work groups and teams.

BUS 259 Public Relations
Principles and practices of building good public relations between industry and employees, stockholders, consumers, suppliers and the press. The development of public relations as a top-management function.

BCS 300 Management Information Systems
Managers have increasing responsibility for determining their information system needs and for designing and implementing information systems that support these needs. Management information systems integrate, for purposes of information requirements, the accounting, finance, and operations management functions of an organization. This course will examine the various levels and types of software and information systems required by an organization to integrate these functions. Prerequisite(s): BUS 109 or BUS 111 or BCS 160 or BCS 109

AVN 101 Aviation Industry: A History Perspective
This course is a basic survey of the aviation industry viewed from a historical perspective. Topics covered will range from the early days of aviation to the present. The course will also examine the chronology of aviation laws and regulations and how they have changed from aviation beginnings in the United States to present day. At the conclusion of this course, the student will have a comprehensive knowledge of the U.S. air transportation industry and will understand its significant social/economic impact upon the nation and the world.

AVN 201W Safety Ethics
This course emphasizes ethical decision making as it applies to Complex Systems, aviation and aerospace, nuclear power plant, civil and IT engineering and the medical field. These systems have an extremely narrow tolerance for error, often resulting in monumental impact on the public, the economy of the nation and human life. This course seeks to increase the awareness levels of ethical issue for industry professionals and to provide the necessary skills to effectively deal with such critical problem solving issues. Topics include complex systems ethical decision making, safety with human factors emphasis, applied ethics for members of complex systems, corporate culture and risk management theory, moral and values. Students
cannot get credit for AVN 201 and 201W; AVN 201W can be used to fulfill the writing intensive requirement. Prerequisite(s): EGL 102 with a grade of C or higher

**AVN 300 or 300W Government in Aviation**
This course expands and focuses on many of the regulatory subjects in AVN 101 (Aviation History). It is a study of the constitutional, legislative, executive and judicial control of aviation from the local, state, federal and international perspective. This course forms the foundation for AVN 400 Aviation Law. Students who take AVN 300W cannot receive credit for AVN 300. AVN 300W can be used to fulfill the writing intensive requirement. Prerequisite(s): AVN 101 with a grade of C or better or CRJ 100, Junior or Senior status required.

**AVN 326 Aviation Security Management**
The aviation industry is one of the most highly targeted industries for acts of terrorism. This course enables students to develop the skills necessary to effectively manage and maintain security systems and measures vital to airports. Students will assess current mandates by the Transportation Security Administration (TSA), Department of Homeland Security (DHS) and Federal Aviation Administration (FAA) and critique their effectiveness. Practical exposure to screening techniques such as the use of Explosive Trace Detection (ETD) systems, X-ray systems, wanding and other new developmental technologies will be covered. Note: students who have received credit for AVN 126 cannot receive credit for this course. Prerequisite(s): AVN 300 with a grade of C or higher

**AVN 330 Airline Marketing**
This course examines the principles of marketing used by the major U.S. airlines and how they are applied for long term financial success in the industry. There will be an initial review of the structure of the air transport market and the industry marketing environment. This will be followed by a detailed study examining the airline business and marketing strategies, product design, pricing, revenue management, distribution channels, and selling and advertising policies. Prerequisite(s): AVN 101 with a grade of C or higher

**AVN 350 Air Traffic Management**
In this course, students will gain an in-depth understanding of the National Airspace System (NAS) through the introduction of the functions, rules, phraseology, and publications utilized within the Air Traffic Control (ATC) system. Topics include airborne and ground navigational aids, GPS, radar and communications applied by the ATC system. Students will demonstrate proper aircraft sequencing and separation techniques through the use of simulation, while building upon Crew Resource Management (CRM) concepts traditionally used by aircrews. Prerequisite(s): (AVN 100 or AVN101) and (AVN 202 or PHY 116) with a grade of C or higher.

**AVN 400 Aviation Law**
Aviation Law develops the student's knowledge to the application level of learning by emphasis on real cases to demonstrate the legal, regulatory and government theory previously discussed in AVN 101 and AVN 300. Emphasis will be on the FAA's roles in regulating aviation including the rule making process, certification of airmen, medical certification and enforcement. Prerequisite(s): AVN 300 or AVN 300W with a grade of C or higher.

**AVN 401 Aviation Economics and Marketing**
This course covers the economic development and marketing principles of the air carrier industry. Details of the transition from regulation to deregulation are explored as well as the marketing and financial practices as they exist today under deregulation. The current economic environment is studied along with a detailed examination of airline business and marketing strategies, product design, pricing, revenue management, and distribution channels. Prerequisite(s): ECO 156 and AVN 300 with a grade of C or higher.

**AVN 471 Aviation Administration Senior Seminar**
This seminar is the capstone course for students majoring in Aviation Administration. It is designed to integrate all the topics that students have learned during their courses of study. The class will include practical preparation for a career in aviation, and students will have opportunities during the semester to participate in industry visits/observations in order to get a better understanding of future job options and placement. The students’ main focus during the semester will be a detailed research project which will allow them to demonstrate what they have learned throughout the program. The research project will culminate in a formal presentation of results to members of the university community and also representatives from industry.

Prerequisite(s): AVN 470 or AVN 480 with a grade of C or higher

AVN 280 Intro to Air Cargo Operations - Basic
The course introduces the student to the growing, technical and multi-faceted air cargo industry. The student will understand the role that air cargo has played in the development of the air carrier industry, contractual and legally binding regulations, and national and international trade. A visit to off-campus air cargo facilities will compliment classroom discussions, lectures and videos. Prerequisite(s): AVN 101 with a grade of C or higher or CRJ 100

AVN 281 Air Cargo Govt & Industry Regulations
This course exposes the student to the study and process of regulations of the Air Cargo Industry. It includes a study of and compliance with government and air carrier regulations; with practical applications of the specialized manuals and penalties of non-compliance. It includes the influence that organizations such as ICACO and IATA have on the Air Cargo industry. Prerequisite(s): AVN 101 with a grade of C or higher

AVN 380 Air Cargo Sales & Marketing Techniques
The students will be introduced to the topic through a variety of pedagogical methods that will include lectures, hands-on use of the most prominent manuals, regulations related to the industry, group discussions and videos. Prerequisite(s): AVN 280

AVN 381 Air Cargo Mgmt Techniques
This course will provide students with an overview of the air cargo management in relation to leadership, safety, cost effectiveness, and problem solving. This course will cover various managerial topics that pertain to air cargo operations, with a particular focus on identifying staffing needs, providing acceptable customer service, determining practical goals for maintaining service levels over an extended period of time. This course will also review IATA rules and regulations, and provide students with practical in-class exercises which will focus on developing operational flight schedules for an air cargo operator while maintaining the objective of remaining compliant with various human resources and labor regulations. Prerequisite(s): AVN 280

AVN 480 Air Cargo Operations - Advanced
The course will expand upon the introductory concepts learned in AVN 280. Students will be exposed to various in-class exercises that will address the importance of identifying the variables involved in the flow of typical air cargo operations. Students will gain expertise in "troubleshooting" and solving problematic situations such as flight delay due to mechanical and/or weather; late delivery of high priced cargo products; emergency response to live animal and/or perishable equipment; damage to aircraft and/or cargo ULDs or other equipment; and employee injury. The real world applications of Quality Work Programs (QWP) and current advances in air cargo automation and/or computer controlled processes will be explored. Communication skills in air cargo operations management will also be stressed. Prerequisite(s): AVN 280

AVN 270 Intro to Airports Management
An introductory course, which provides foundational information and strategic concepts about the air transport/airport system. Topics include: Overview of Air Transport/ Airport system, Department of Transportation/Federal Aviation Administration, Intro to Airports/Management, Organizational Development, Management Roles and Theories, Motivational and Communications Principles/Processes. Prerequisite(s): AVN 101 with a grade of C or higher
AVN 271 Airport Capacity/Delay/Airspace
This course covers the following topics: Airport Capacity and Delay, Technological and Weather Solutions, Air Traffic Control, U.S. Airspace, Air Navigation and Navigational Aids Runway Lighting Systems, FAA FAR Part 77, Environmental Regulations and Airport Noise, Land Use Compatibility. Prerequisite(s): AVN 101 with a grade of C or higher.

AVN 370 Airport Management and Finance
In this course students will analyze airport management with an emphasis on financial strategies and practices. Topics include relevant regulations, components of airport terminals and ground access, airport fees and revenue strategies, Airport Improvement Program (AIP), state grant programs, Passenger Facility Charge (PFC) funding, financing, and private investment. Prerequisite(s): BUS 102, AVN 271 with a grade of C or higher. Corequisite(s): BUS 201.

AVN 371 Airport Planning
This course covers the following topics: Airport System Planning, National Plan of Integrated Airport Systems (NPIAS), Metropolitan Airport System Planning, State Airport System Planning, Airport Master Planning, Airport Layout Plans, Airport Design, Design of Other Landing Facilities, Industrial Park Design, Terminal Planning/Design/Operation, Other Terminal Area Buildings, Americans with Disability Act Access. Prerequisite(s): AVN 270 with a grade of C or higher.

AVN 470 Airport Operations
This course covers the following topics: Airport Operations and FAA FAR Part 139, FAR Part 139, Airport Self Inspection, Pavement Surfaces, Movement and Safety Areas, Airfield Lighting and Pavement Marking, Snow and Ice Control, Snow Removal Equipment, Airport Condition Reporting, Ground Vehicles, Public Protection, Wildlife Hazard Management, Airport Emergency Plan and Response, Airport Air Carrier Security. Prerequisite(s): AVN 270 with a grade of C or higher.

Admission to Farmingdale State College - State University of New York is based on the qualifications of the applicant without regard to age, sex, marital or military status, race, color, creed, religion, national origin, disability or sexual orientation.