

# AVIATION

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## College Vision Statement

### Mission/Vision

The mission of the Aviation Institute is to:

- provide an environment where students are supported and challenged as they develop the skills, knowledge, and experiences that prepare them for personally and professionally rewarding careers in aviation and transportation;
- conduct research that enhances the safety, security, efficiency, reliability, and sustainability of aviation and transportation services, and improves mobility and quality of life for the citizens of the State of Nebraska;
- engage the community through partnerships and other collaborative initiatives that improve the lives of the citizens of the State of Nebraska and others through innovative education, training, research, and service projects; and
- maintain the highest standards of integrity and transparency in the conduct of the Institute's business and the management and stewardship of its resources.

## Accreditation Information

One of the concentrations in the Bachelor of Science in Aviation, the Air Transport Administration Specialization, is accredited by the Aviation Accreditation Board, International

## General Information

### Maximum/Minimum Credits

Students are required to complete a minimum of 120 credit hours to complete a Bachelor of Science in Aviation.

### Residency Requirement

Default to College

### Transfer Credit Policy

See the Academic Advisor

### Unacceptable Credits

See the Academic Advisor

### Dean's List

Default to College

### Honors

Default to College

### Quality of Work

For purposes of meeting general education requirements, distribution requirements, and prerequisite requirements for courses, a grade of "C-" performs the role of a grade of "C", and a grade of "D-" performs the role of a grade of "D". A minimum grade of "C" (2.0) must be earned in each of the required courses within the major area of study.

### Completion of Incomplete Grade

Students who receive instructor permission to take an incomplete must have the incomplete resolved the following semester or the incomplete changes to withdraw. If a student has a question in regard to this policy, they should see their academic adviser for clarification

## Repeating Courses

n/a

## Grade Appeal Policy

Default to College

## Probation/Suspension

Default to College

## Academic Amnesty

Default to College

## Academic Advising

The Aviation Institute offers both academic and career advising to students. The academic advisor is available to assist students in meeting their career requirements and to interpret Institute and University policies regarding academic requirements. Students are encouraged to contact their advisor whenever questions arise concerning their academic program. As a minimum, students should see an advisor before registering for the next semester and review their academic progress, when choosing an area of specialty, and prior to registering for their senior year. The Aviation Institute faculty are also available to discuss career planning, opportunities, and advising. The faculty have a strong connection to the aviation industry and students are encouraged to use the faculty as a resource in determining their career goals. Students are encouraged to make an appointment as a freshman or sophomore with the Aviation Institute faculty to discuss their career path. For more information or to setup and appointment contact the Aviation Institute.

## Senior Check

See your Academic Advisor

## Application for Degree

Students apply for graduation through MavLINK.

## Scholarship and Internship Opportunities

There are several scholarship and internship opportunities available to students within the Aviation Institute. Scholarships for current UNOAI students are awarded annually through an application process. The applications for these scholarships are available in November and are awarded at the Aviation Institute's annual honors convocation in April. Close partnerships with a number of Omaha metro organizations allow for several internship opportunities to current Aviation Institute students each semester. To apply for an internship, students must contact the internship coordinator, CPACS 120. A list of all UNOAI scholarships and internships can be found on the Aviation Institute Website (<https://www.unomaha.edu/college-of-public-affairs-and-community-service/aviation/academics/>).

## Advanced Simulation Facility

Flight students will use the Advanced Simulation Facility on a regular basis. Simulator fees are built into their student fees and are paid directly to the University of Nebraska at Omaha. The amount of time a student spends in the simulator will vary per semester depending on the flight lab requirements. Students will need to work with the Flight Training Coordinator to provide all necessary TSA documentation in order to use the flight simulators. The Aviation Institute currently has two Redbird MCX Simulators, one motion, one non-motion.

## Aviation Resource Center

The Aviation Resource Center is available to all Aviation students. In the Aviation Resource Center, students can utilize the many resources offered to help them achieve academic success. Resources available are: computers

for research, testing, and personal use, printing services, FAA Practical Test Study Guides, Gleim Test Prep Software, Jeppesen Study Materials, King CD-Rom Study Courses, free use of PC-ATD simulator, Current Trade Magazines and Publications, Complete AOPA Air Facts DVD Series, Sporty's Training DVDs, ASA Study Guides, complete collections of Jeppesen Training Videos, current copies of FAA's FAR/AIM, tutoring, various aviation related referencing textbooks, ASA-JSCH PP2 headsets, Garmin 396, and a Garmin 295.

In addition, the Aviation Resource Center is a certified FAA Testing Center, where students can take FAA Practical Exams.

## Financial Aid

Students should apply for financial aid as directed by the Office of Financial Support and Scholarships and at the beginning of each calendar year thereafter. Priority is given to applicants who apply early. Additional financial aid may be available to qualified students to pay for the added cost of flight training. See the Aviation Institute academic advisor for information regarding additional financial aid for flight training. Flight training is optional and not required for students working toward the Air Transport Administration or Unmanned Aircraft Systems concentrations.

## Language Fluency

International and other students enrolling in the Aviation Institute for whom English is not their primary language will be required to be sufficiently fluent in English as a second language. This requirement is particularly critical for successfully completing the flight training portion of the Institute's curriculum.

## Program Contact Information

402.554.3424

unoaviation@unomaha.edu

Program Website (<https://www.unomaha.edu/college-of-public-affairs-and-community-service/aviation/academics/>)

## Admission Requirements

Incoming students who are not considered transfer students are guaranteed admission to the Bachelor of Science in Aviation program upon admission to the University of Nebraska at Omaha. Transfer students who want to complete the Bachelor of Science in Aviation Program must have a cumulative GPA of 2.5 to be accepted into the College of Public Affairs and Community Service. Current UNO students accepted for admission to any of the University's colleges may enroll in the Institute's aviation courses for elective credit.

## Degrees Offered

- Aviation, Bachelor of Science (<http://catalog.unomaha.edu/undergraduate/college-public-affairs-community-service/aviation-department/aviation-bs/>)

## Writing in the Discipline

The writing in the discipline course in aviation is: AVN 3060 Writing in Aviation

## Overview of Degree Programs

### Air Transport Administration Concentration

The Air Transport Administration area of concentration is conferred under the Bachelor of Science in Aviation degree program. This option is oriented toward the public/private sector interface of individuals looking for administration careers. Potential career opportunities exist within the

Federal Aviation Administration, Transportation Security Administration, National Transportation Safety Board, state aviation organizations, local and regional aviation organizations, airport administration, fixed-based operators, aviation consulting firms, airline operations, flight department operations, aircraft manufacturing companies, aviation marketing firms, and non-profit organizations such as Aircraft Owners and Pilot Association, National Business Aviation Association, and the Experimental Aircraft Association. The Air Transport Administration specialization gives the student the opportunity to gain knowledge in several aspects of the aviation and aerospace industry. Students will take specific classes in areas of general aviation, airport planning, statistical analysis, security, and airline operations. Students will also have the opportunity to become involved in an internship or cooperative education experience. This experience will expose students to working in an area that relates to their potential career path; both local and national programs are available. Students who are looking to work in these highly competitive and regulated areas should choose the Air Transport Administration specialization program for their course of study.

### Professional Flight Concentration

The Aviation Institute offers flight training from private pilot to certified flight instructor. Flight training is closely coordinated through local flight schools. Students who successfully complete any of the training under UNO requirements courses will receive appropriate academic credit. The Aviation Institute's Professional Flight curriculum is approved by the FAA to grant the Restricted Airline Transport Pilot (R-ATP) authorization to graduates. With the R-ATP, a pilot can be hired by a FAA Part 121 scheduled airline at age 21 with 1,000 flight hours versus at age 23 and 1,500 flight hours. Students who plan on enrollment in a flight training course should be able to successfully complete a first class aviation medical examination conducted by an FAA designated Aviation Medical Examiner accordance with Federal Aviation Regulation Part 67, *Medical Standards and Certification*. **Flight costs are paid directly to the flight provider where you conduct your training and are in addition to regular University tuition and fees.** Approximate costs for flight training are available in the Aviation Student Handbook. Costs for each training phase are based on the average number of hours required by the FAA for that particular phase. If a student requires additional flying or ground training to complete a particular training phase course, the student will be obligated to pay for the extra training. Additional financial aid is available for flight training, but does not cover 100% of flight training costs.

Flight training schedules are arranged by the student and flight instructor at each flight center. Students are responsible for contacting the flight training provider and establishing a schedule that will allow for completion of course requirements within the time allowed. It is suggested that students plan to fly three times a week. Instructors are available day, night, and weekends. For a current list of flight providers, see the Aviation Institute Web site at [ai.unomaha.edu](http://ai.unomaha.edu) (<http://ai.unomaha.edu/>). Consult with an aviation academic adviser for additional information.

### Unmanned Aircraft Systems Operations Concentration

The Unmanned Aircraft Systems Operations area of concentration is conferred under the Bachelor of Science in Aviation degree program. This concentration will prepare a student for a career in operating unmanned aircraft as well as management and operations of a company or organization that utilizes unmanned aircraft.

## Minors

- Minor in Aviation (<http://catalog.unomaha.edu/undergraduate/college-public-affairs-community-service/aviation-department/minor-aviation/>)
- Uncrewed Aircraft System (UAS) Drone Technology (<http://catalog.unomaha.edu/undergraduate/college-public-affairs-community-service/aviation-department/uncrewed-aircraft-minor/>)

## Bachelor of Science in Aviation-Air Transport Administration Concentration

The Bachelor of Science in Aviation-Air Transport Administration prepares students for careers in airport administration, corporate and general aviation, operations management, airline operations, consulting and federal government opportunities.

### Career Opportunities

- Airline Management
- Airline Operations
- Airport Management
- Airport Operations
- Airport Planning
- Government (FAA, TSA, NTSB)
- Corporate Aviation Management
- Client Services
- Fleet Planning
- Safety & Security
- Aircraft Sales/Aviation Parts & Avionics Sales
- FBO Operations
- FBO Management

## Bachelor of Science in Aviation-Professional Flight Specialization

The Bachelor of Science in Aviation-Professional Flight is designed for students interested in becoming a professional pilot. The program will prepare the student with a comprehensive general education program, aviation core of classes and take them through their Private, Instrument, Commercial, Certified Flight Instructor and Multi Engine Ratings. Graduates of this program will qualify for the Restricted Airline Transport Pilot program through the FAA.

### Career Opportunities

- Airline Pilot
- Corporate Pilot
- Cargo Pilot
- Charter Pilot
- Certified Flight Instructor

## Bachelor of Science in Aviation-Unmanned Aircraft Systems Operations Specialization

The Bachelor of Science in Aviation-Unmanned Aircraft Systems Operations is designed for students who would like to build a career in the new and developing world of UAS Operations. Courses will include a comprehensive general education curriculum, aviation core classes and concentrated areas in unmanned aircrafts. Students will not only focus on flying unmanned aircraft, but also developing the skills to manage a full operation and learn to utilize the data and imagery collected.

### Career Opportunities

- Drone Operator
- Agriculture
- Aerial Systems Logistics
- Emergency Management
- Photography/Videography

- Transportation Industry (Aviation, Rail, etc.)
- Real Estate

### AVN 1000 INTRODUCTION TO AVIATION AND AEROSPACE (3 credits)

This course provides a broad understanding of all aspects of the air transportation and aerospace industries. Lectures will cover what has happened in the industry to date, with emphasis on present and future developments in air transportation. The course will include the impact the airline industry is making on airports and other segments of aviation and aerospace.

**Prerequisite(s):** Not open to non-degree graduate students.

**Distribution:** Social Science General Education course

### AVN 1020 PRIVATE PILOT THEORY (3 credits)

This course will familiarize the student with theories associated with flight. These include aerodynamics, weather, Federal Aviation Administration (FAA) regulations, navigation, airports, airspace, and aviation safety. There is no flight requirement associated with this course.

### AVN 1024 PRIVATE PILOT FLIGHT LABORATORY (1 credit)

This laboratory course is designed for students pursuing flight requirements for the Federal Aviation Administration private pilot certificate. The student will complete all flight requirements for solo flight. Course will include flight in aircraft simulators and single-engine aircraft. Class is conducted off campus. Special fees apply.

**Prerequisite(s):** Completion of or concurrent enrollment in AVN 1020, or successful completion of the Federal Aviation Administration Private Knowledge Test.

### AVN 1030 PRIVATE PILOT FLIGHT CERTIFICATE (2 credits)

This course will prepare the student for the Federal Aviation Administration practical flight examination for the private pilot certificate. Course involves flight in personal computer assisted training device and single-engine aircraft. Student is required to successfully complete all FAA certification requirements and obtain a private pilot certificate. Classes will be conducted off campus. Special fees apply.

**Prerequisite(s):** AVN 1020 and AVN 1024.

### AVN 1040 HISTORY OF AVIATION AND AEROSPACE (3 credits)

The course introduces students to the history of aviation and aerospace with emphasis on the evolution of technologies, policies, business models, and transportation.

**Distribution:** Social Science General Education course

### AVN 1160 AVIATION SAFETY (3 credits)

This course provides the student with a detailed introduction to aspects of aviation safety as well as the associated components of flight human factors, aircraft technology, weather related accidents and accident investigation.

**Prerequisite(s):** AVN 1000

### AVN 1500 INTRODUCTION TO UNMANNED AIRCRAFT SYSTEMS (3 credits)

This course is an introductory overview of Unmanned Aircraft Systems including the regulatory process, history, application and career opportunities, ethical concerns, and safety management of UAS operations.

**Prerequisite(s):** Not open to non-degree graduate students.

### AVN 2020 AIRLINE OPERATIONS (3 credits)

The purpose of this course is to introduce the student to operational aspects of airline management. Topics to be covered include management, leadership, labor relations, marketing, forecasting, and fleet planning.

**Prerequisite(s):** AVN 1000

**AVN 2050 INTRODUCTION TO AIRPORT ADMINISTRATION (3 credits)**

This course examines airport operations, safety and security, various administrative roles within the airport community, and the impact airports can have on local and regional economies. Students will explore the unique role public airports play as an interface between the traveling public and private airlines.

**Prerequisite(s):** AVN 1000

**AVN 2100 FLIGHT TEAM (1 credit)**

Students will learn and master the skills associated with the 9 different events associated with the National Intercollegiate Flying Association Regional and National Safety and Flight Evaluation Conferences or SAFECONs. The events include: Computer Accuracy, Simulated Comprehensive Aircraft Navigation (SCAN), Aircraft Recognition, Preflight Inspection, Ground Trainer, Message Drop, Navigation, Short-Field Landing, and Power-Off Landing.

**Prerequisite(s):** Permission of the Flight Team Advisor is required

**AVN 2104 INSTRUMENT RATING 1 (2 credits)**

The student will complete approximately 25 hours of training in a single-engine aircraft at a UNO-approved Fixed Base Operator and FAA-approved Advanced Aviation Training Devices on the UNO Main Campus; objective is to complete the first portion of training needed for the FAA Instrument Rating. Special fees, FAA medical examination and TSA clearance required. (AC 61-139 Area 1)

**Prerequisite(s):** Concurrent enrollment in AVN 2170 or instructor permission. Not open to non-degree graduate students.

**AVN 2114 INSTRUMENT RATING 2 (1 credit)**

The student will complete approximately 20 hours of training in a single-engine aircraft at a UNO-approved Fixed Base Operator; objective is to complete the final portion of training needed for the FAA Instrument Rating. Special fees, FAA medical examination and TSA clearance required. (AC 61-139 Area 1)

**Prerequisite(s):** AVN 2170 and AVN 2104 or instructor permission. Not open to non-degree graduate students.

**AVN 2124 COMMERCIAL PILOT CERTIFICATE 1 (2 credits)**

The student will complete approximately 40 hours of training in a single-engine aircraft at a UNO-approved Fixed Base Operator and FAA-approved Advanced Aviation Training Devices on the UNO Main Campus; objective is to complete the first of three sections of training needed for the FAA Commercial Pilot Certificate. Special fees, FAA medical examination and TSA clearance required. (AC 61-139 Area 1)

**Prerequisite(s):** Concurrent enrollment in AVN 2180 or instructor permission. Not open to non-degree graduate students.

**AVN 2134 COMMERCIAL PILOT CERTIFICATE 2 (2 credits)**

The student will complete approximately 40 hours of training in a single-engine aircraft at a UNO-approved Fixed Base Operator; objective is to complete the second of three sections of training needed for the FAA Commercial Pilot Certificate. Special fees, FAA medical examination and TSA clearance required. (AC 61-139 Area 1)

**Prerequisite(s):** AVN 2124 or instructor permission. Not open to non-degree graduate students.

**AVN 2144 COMMERCIAL PILOT CERTIFICATE 3 (2 credits)**

The student will complete approximately 40 hours of training in a single-engine aircraft at a UNO-approved Fixed Base Operator; objective is to complete the final third of training needed for the FAA Commercial Pilot Certificate. Special fees, FAA medical examination and TSA clearance required. (AC 61-139 Area 1)

**Prerequisite(s):** AVN 2134 or instructor permission. Not open to non-degree graduate students.

**AVN 2164 PROFESSIONAL PILOT DEVELOPMENT (2 credits)**

This course is intended to supplement the Instrument Rating and Commercial Certificate courses by providing flight experience and simulator training in the areas of instrument flying, complex airplane/multiengine operations, abnormal and emergency situations, and crew resource management.

**Prerequisite(s):** AVN 1030 or hold a valid US Private Pilot Certificate.

**AVN 2170 INSTRUMENT FLIGHT THEORY (3 credits)**

This course will provide the student with an understanding of theory and procedures required to be a safe and competent instrument pilot. It will include the study of flight instruments, aerodynamics, instrument flight maneuvers, navigation, flight planning, the national airspace system, air traffic control, weather, regulations, human factors and emergency operations. There is no formal flight training involved with this course.

**Prerequisite(s):** AVN 1030 or hold a valid U.S. Private Pilot Certificate; or instructor permission.

**AVN 2180 COMMERCIAL PILOT THEORY (3 credits)**

This course provides the student with an understanding of the theories involved in flight at the commercial level. Course will include extensive review and study of VFR and IFR cross-country procedures and night flight procedures to prepare the student for the FAA commercial Pilot Knowledge Test. There is no flight training involved in this course.

**Prerequisite(s):** AVN 2114 or possess a U.S. FAA issued Instrument Pilot Certificate; or instructor permission.

**AVN 2500 UNMANNED AIRCRAFT SYSTEMS FLIGHT OPERATIONS (3 credits)**

This course will give students hands-on flight training experience with small unmanned aircraft including mission planning, operational control, and working with different types of payloads.

**Prerequisite(s):** AVN 1500 and FAA Remote Pilot Certificate. Not open to non-degree graduate students.

**AVN 2510 DIVERSITY IN AVIATION (3 credits)**

This course provides an overview of the contributions women and minorities have made to the field of aviation. Emphasis is placed on past, present and future roles of women and minorities in aviation. The course includes other topics such as international aspects and issues of aviation.

**Prerequisite(s):** Not open to non-degree graduate students.

**Distribution:** Social Science General Education course

**AVN 2750 AVIATION METEOROLOGY (3 credits)**

An introductory study of the key elements of the atmosphere's structure from the earth's surface to the upper levels; weather systems and hazards to aviation operations plus impact of adverse weather on aeronautical operations. Course will include review of air mass characteristics, frontal weather, and pressure system structure.

**Prerequisite(s):** AVN 1020, and MATH 1310 or MATH 1220 or equivalent.

**AVN 2900 INDEPENDENT STUDY IN GENERAL AVIATION (3 credits)**

This course will cover various topics in aviation to be determined with the instructor and student. Possible topics include Ground Instructor Ratings, crew resource management, airline airport analysis, military history, effects of privatization, etc.

**AVN 3000 BUSINESS AND CORPORATE AVIATION (3 credits)**

This course will provide a broad understanding of aspects related to the field of business and corporate aviation. Information that will be covered includes: the history of business and corporate aviation; regulations and associations; the value of using business aircraft; aircraft selection; the differences between corporate flight department, fractional ownership, and charter departments; insurance requirements; and safety and security issues.

**Prerequisite(s):** AVN 1000 and Junior or Senior standing

**AVN 3040 HUMAN FACTORS IN AVIATION SAFETY (3 credits)**

The purpose of this course is to provide students with an understanding of human factors as it applies to pilots and administrators. Topics will include pilot physiological and psychological issues, work station design, crew resource management, and related public sector issues for managers.

**Prerequisite(s):** AVN 1160

**AVN 3050 UNMANNED AIRCRAFT SYSTEM DESIGN, DEVELOPMENT, AND MAINTENANCE (3 credits)**

This course offers students theoretical knowledge and hands-on experience with small unmanned aircraft system design, development, and maintenance. Students will learn principles of UAS design, development, and maintenance, and will apply interdisciplinary knowledge to build small UAS.

**Prerequisite(s):** AVN 2500. Not open to non-degree graduate students.

**AVN 3060 WRITING IN AVIATION (3 credits)**

This course will further develop the communication skills of aviation students through various forms of writing. Students will compose a research paper and other writing assignments.

**Prerequisite(s):** ENGL 1160 and AVN 1000

**AVN 3070 AIR TRAFFIC CONTROL (3 credits)**

The purpose of this course is to introduce students to the Federal Aviation Administration (FAA) Air Traffic Control system. Elements and requirements of the course will include: basic air traffic control procedures for pilots, navigation aids, control tower operations, radar approach and departure regulations, and airport traffic control (ATC).

**AVN 3090 AIRPORT ADMINISTRATION AND PLANNING (3 credits)**

This course covers the nation's airspace design, navigation and air traffic systems and their effect on airport capacity. Additionally, the national airport system will be investigated as well as airport design and development parameters, fiscal processes, and management considerations.

**Prerequisite(s):** AVN 2050

**AVN 3150 AVIATION LAW (3 credits)**

This course will increase the student's knowledge of aviation law. Particular attention will focus on the manner in which legal forces affect the aviation system.

**Prerequisite(s):** AVN 1000 and junior standing.

**AVN 3190 CERTIFIED FLIGHT INSTRUCTOR THEORY (3 credits)**

Provide the student with an understanding of the theories involved in flight instruction. Course will include extensive oral presentation of complex aeronautical information and use of the personal computer assisted training device. Students are expected to pass FAA Fundamentals of Instructing and Federal Aviation Administration (FAA) Flight Ground Instructor Knowledge tests. There is no flight training in this course.

**Prerequisite(s):** AVN 2144 and CMST 1110.

**AVN 3194 CERTIFIED FLIGHT INSTRUCTOR I (2 credits)**

This course consists of approximately 25 hours of flight training in flight instruction procedures required to obtain the FAA flight instructor certificate. Special Fees apply.

**Prerequisite(s):** AVN 2144 and AVN 3190 (may enroll concurrently).

**AVN 3200 COOPERATIVE EDUCATION IN AVIATION (1-6 credits)**

This course will complement course work with a relevant professional work experience or practicum in aviation. The practicum/field experience may be a special project in an aviation organization to be coordinated by the instructor. Offered as a credit/no-credit course.

**Prerequisite(s):** AVN 3060, junior/senior standing, aviation major, instructor permission by written proposal (contract), and approval of proposed work/field experience by instructor.

**AVN 3304 CERTIFIED FLIGHT INSTRUCTOR II (2 credits)**

Using a combination of lab session training at UNO and ground / flight instruction at the student's selected Flight Training Provider (FTP), the Flight Instructor Candidate will complete the FAA Flight Instructor-Instrument Certificate.

**Prerequisite(s):** AVN 3194 and AVN 3190 or instructor permission

**AVN 3400 MULTI-ENGINE CERTIFICATION (2 credits)**

Using a combination of lab session training, Advanced Aviation Training devices at UNO and ground/flight instruction at the student's selected Flight Training Provider (FTP), the student will complete the FAA Multi-Engine Rating at the Commercial level.

**Prerequisite(s):** AVN 2180 and AVN 2144 and Federal Aviation Administration Commercial Single Engine Land

**AVN 3500 RESEARCH METHODS IN AVIATION (3 credits)**

An introductory research methods course focused on contemporary as well as historical aviation problems and topics, but from an investigative perspective. The primary focus will be the preparation of standard research documents and the use of traditional statistical methods to evaluate various data sources.

**Prerequisite(s):** 60 hours of undergraduate credit and AVN 3060 completed or in progress.

**AVN 3510 AEROSPACE SCIENCES (3 credits)**

This introductory course will provide pre-service teacher candidates, aviation students, and students at large the opportunity for a science oriented general education course. The curriculum will be focused in the areas of earth and space science, geospatial technology, and aeronautics. Key topics for this course will include the geoscience practice of Geographic Information Systems, Global Positioning System, and the NASA Jet Propulsion Laboratory/ UNO designed Data-Slate remote sensing program. Also included will be space sciences focused solar system exploration, satellite technology, and astronautics. Students will engage in aeronautic science topics inclusive of the study of aerodynamics of flight, meteorological science and weather, and flight technology. All students will be provided opportunity to apply concepts of flight in the Aviation Institute's Advanced Simulation Facility.

**AVN 3600 INTERNATIONAL AVIATION (3 credits)**

This course examines global air transport and its impact on the development of the global economy. Lectures and readings will provide a solid foundation of historical knowledge about international air transport and its development in various countries, before exploring current policy debates about liberalization, global alliances, and other critical issues.

**Prerequisite(s):** AVN 2020

**AVN 3700 TRANSPORTATION ANALYSIS (3 credits)**

This course is an extension of introductory financial courses; special emphasis on service characteristics of air carriers. Review of airline revenue and expense streams, pricing and fares, fiscal market segmentation, and fleet planning. Focused approach to understanding the monetary forces that underlie the business practices of domestic and international passenger and cargo airlines.

**Prerequisite(s):** ECON1200 or higher and junior standing

**AVN 4000 INDEPENDENT RESEARCH IN AVIATION (1-3 credits)**

The purpose of this course is to provide the aviation student an opportunity to complete an in-depth analysis of a specific aviation topic. Examples: aerodynamics, airports rates/charges analysis, cost-allocation for airside/landside, aviation marketing relating to aircraft manufacturing, airline promotion, flight component, off-airport subjects, comprehensive regional planning, environmental subject, etc.

**Prerequisite(s):** Aviation major, senior standing, and written permission of the instructor.

**AVN 4010 AERODYNAMICS AND AIRCRAFT PERFORMANCE (3 credits)**

Provides the student with an understanding of the factors affecting aircraft performance during various phases of flight. Topics will include aircraft performance requirements outlined in the Federal Aviation Administration Regulations, use of performance charts and tables, runway airport analysis, and climb cruise descent performance.

**Prerequisite(s):** AVN 1000, AVN 2144, MATH 1220 or instructor permission.

**AVN 4020 AIRCRAFT SYSTEMS (3 credits)**

Provides the student with an understanding of systems employed on technologically advanced, sophisticated aircraft. Systems covered will include electrical, hydraulic, engines, flight control and pneumatic systems.

**Prerequisite(s):** AVN 1000 and AVN 2144 or instructor permission.

**AVN 4050 GENERAL AVIATION OPERATIONS (3 credits)**

Organization and operation of general aviation facilities to include administration, aircraft maintenance considerations, flight line operations, and decision making.

**Prerequisite(s):** AVN 1000

**AVN 4060 ADVANCED AIR TRANSPORT FLIGHT OPERATIONS (3 credits)**

The course will be a capstone event in the professional pilot sequence. Specific emphasis will be on the pre-flight planning and execution of air carrier flight operations. Additional instructional segments will cover regional and corporate flight operations.

**Prerequisite(s):** AVN 4020 or instructor permission.

**AVN 4080 AIRPORT SAFETY AND SECURITY (3 credits)**

This course will explore the role of airports in relation to safety and security. Topics will include regulations, responsibilities, security issues, ramp safety, disaster preparedness, and emergency management.

**Prerequisite(s):** AVN 1000 or its equivalent or permission of the instructor.

**AVN 4200 INTERNSHIP IN AVIATION (1-6 credits)**

This course is designed to provide direct hands-on experience in the aviation industry for selected students. Students will be selected for internships competitively by a panel of Aviation Institute faculty and industry representatives from companies providing the internships. This experience will be in a full-time, preferably paid position in a highly structured environment using a syllabus designated by the faculty and industry committee.

**Prerequisite(s):** AVN 3060, junior/senior standing, aviation major, instructor permission.

**AVN 4500 ADVANCED UNMANNED AIRCRAFT SYSTEMS PROCEDURES (3 credits)**

This course will provide students with scenario based training sessions that focus on emergency procedures for inflight operations, risk assessment and mitigation tactics, and advanced communications procedures.

**Prerequisite(s):** AVN 2500. Not open to non-degree graduate students.

**AVN 4900 SPECIAL TOPICS IN AVIATION (1-3 credits)**

This course will discuss various topics in the Aviation Industry determined each time the course is offered. Possible topics include International Aviation, Current Issues, and Cockpit Resource Management along with other topics.

**Prerequisite(s):** AVN 1000 and junior standing

**AVN 4990 AIR TRANSPORTATION (3 credits)**

This course fulfills the Aviation Institute capstone projects for undergraduates. Lectures and readings will cover contemporary issues and problems in air transportation, as well as material related to research design and implementation.

**Prerequisite(s):** AVN 3700, junior or senior standing, or instructor permission.