

AVIATION SCIENCE (ASCI)

ASCI 1010 - Professional Orientation

Credit(s): 2 Credits

This course will provide an orientation to the University system, the teaching philosophy of the Department, and opportunities for professional development in specific career tracks such as professional pilot, system safety, and quality management. Opportunities such as internships, scholarships, research assistantships, and general networking and social events on campus, etc. will be discussed.

ASCI 1020 - Intro to Air Traffic Control

Credit(s): 2 Credits

This course provides instruction in basic air traffic control procedures and phraseology used by personnel providing air traffic control services. Students will become familiar with FAA handbooks and regulations that pertain to the operational responsibilities of an air traffic controller. Students will receive hands-on training on air traffic control radar simulators.

Prerequisite(s): FSCI 1250 with a grade of C or higher

ASCI 1300 - Aviation Weather

Credit(s): 3 Credits

This course will provide the fundamentals of meteorological theory with a specific application to aviation and flight. Appropriate weather services that are available to the pilot will be covered.

ASCI 1510 - The Air Transportation System

Credit(s): 3 Credits

The course is designed for the non-pilot student seeking to learn more about the U.S. air transportation system. Topics include the regulatory and operational environments of the air transportation system, the aircraft, airlines and airports used in the air transportation system, and the future challenges faced by the various entities involved in the air transportation system. Offered in spring.

ASCI 1850 - Safety Management Systems

Credit(s): 3 Credits

Safety Management Systems (SMS) is a standard throughout the worldwide aviation industry. SMS is recognized by the International Civil Aviation Organization (ICAO) as the next step in the evolution of safety in aviation. SMS is a standards based system for the management of safety. Safety Management Systems integrate risk management and safety assurance concepts into repeatable, measurable, proactive systems.

ASCI 2020 - Air Traffic Control Operations and Procedures

Credit(s): 3 Credits

A study of the history and function of the ATC system. Theory of ATC taught in the classroom will be reinforced by 10 hours of 'hands-on' instruction on the ATC radar simulators.

Prerequisite(s): ASCI 1020 with a grade of C or higher

ASCI 2200 - Concepts in Aerodynamics

Credit(s): 3 Credits

Aircraft types, theory of flight, aerodynamics of the airplane, aircraft performance, effects of atmospheric conditions on performance, theory of aircraft stability and control, effects of flight loads on aircraft structure.

Prerequisite(s): (MATH 1200 with a grade of C or higher or 0 Course from MATH 132-4999)

ASCI 2250 - Aviation and Airport Security

Credit(s): 3 Credits

This course presents advanced security issues related to aviation including passenger screening, profiling, hijacking, bomb threats, and passenger disruptions. Covers historical incidents and studies a variety of responses to threats from various countries. The course discusses the role of the Department of Homeland Security and the Transportation Security Administration. The course covers the role of pilots and other flight crew in security including the Federal Flight Deck Officers Program. Includes a discussion of regulatory issues and laws established since the 9/11 attacks. Offered fall and spring.

ASCI 2750 - Accident Investigation

Credit(s): 3 Credits

An introduction to aircraft accident investigation and its use as a tool in hazard identification, risk analysis and mishap prevention. Students will apply theory and practical skills developed in the classroom to an actual aircraft accident during the field work portion of the course.

Prerequisite(s): ASCI 2200 with a grade of C or higher and PHYS 1350 with a grade of C or higher

ASCI 2910 - Co-op with Industry

Credit(s): 1 Credit (Repeatable for credit)

A full-time supervised work experience with an agency, firm or organization that employs persons in this degree field. This course is used as an experiential learning session. Grading system is determined by department offering course.

Restrictions:

Students with a semester level of Freshman may **not** enroll.

ASCI 2930 - Special Topics in Aviation Science (Credit to be arranged)

Credit(s): 1-3 Credits (Repeatable for credit)

Prerequisites: Approval of the Department Chair.

ASCI 2980 - Independent Study

Credit(s): 1 or 3 Credits (Repeatable for credit)

ASCI 3010 - Jet Transport Systems I

Credit(s): 3 Credits

This course includes an introduction to a typical turboprop airplane currently used in commercial aviation. The systems will be covered from a pilot's perspective. Normal and emergency operating procedures will be covered as presented by the aircraft flight manual.

Prerequisite(s): PHYS 1350 with a grade of C or higher

ASCI 3020 - Jet Transport Systems II

Credit(s): 3 Credits

This course includes an introduction to a typical jet aircraft currently used in commercial aviation. The systems will be covered from a pilot's perspective. Normal and emergency operating procedures will be covered as presented by the aircraft flight manual. Recommend that students take ASCI-3010 prior to this course.

Prerequisite(s): PHYS 1350 with a grade of C or higher

ASCI 3030 - Basic Air Traffic Control: Tower and Radar

Credit(s): 3 Credits

This course will examine the principles, procedures, and regulations regarding the use of integrated flight and navigation systems for use in domestic, international, and oceanic flight.

Prerequisite(s): ASCI 2020 with a grade of C or higher

ASCI 3040 - Advanced Air Traffic Control: Tower and Radar

Credit(s): 3 Credits

Prerequisite(s): ASCI 3030

ASCI 3050 - Operations & Business Environment of Aviation**Credit(s): 3 Credits**

The course is used to guide the student into the variances of managing a corporate aviation department. Included are the business aspects of managing an aviation department including regulatory, standards and procedures, personnel, leadership, human resources, finance and customer relationship management. A common thread throughout the course is the maintaining of safety in all aspects of the organization.

ASCI 3062 - Turbine Aircraft Transition**Credit(s): 2 Credits**

This course utilizes classroom and/or lab based training to introduce turbine aircraft operations and autopilot usage. Topics include: turbine aircraft systems, FAR part 121 regulations, airline operational specifications, advanced aircraft avionics, crew resource management and airline operating procedures. (Offered every Spring)

Prerequisite(s): FSCI 2550 with a grade of C or higher and FSCI 2650 with a grade of C or higher

Restrictions:

Students with a semester level of Freshman or Sophomore may **not** enroll.

ASCI 3100 - Air Carrier Operations**Credit(s): 3 Credits**

This course includes the study of the operations of a representative air carrier in commercial aviation. All aspects of the operation important to the flight crew will be covered, including environmental, physiological, regulatory, and performance factors.

Restrictions:

Enrollment limited to students with a semester level of Junior or Senior.

ASCI 3600 - Airport Management**Credit(s): 3 Credits**

This course is designed to acquaint the student with the basic concept of airport planning and management. A comprehensive survey of a typical community with an eye toward present and future business potential is made. This includes a study of the socioeconomic characteristics, and the political and governmental influences, followed by various stages and types of airport construction.

ASCI 3910 - Co-op with Industry**Credit(s): 1 Credit (Repeatable for credit)**

A full-time supervised work experience with an agency, firm or organization that employs persons in this degree field. This course is used as an experiential learning session. Grading system is determined by department offering course.

Prerequisite(s): ASCI 2910 with a grade of C or higher

ASCI 3915 - Internship with Industry**Credit(s): 1-3 Credits (Repeatable for credit)**

A work experience with an agency, firm or organization that employs persons in this degree field. This experience may be full time or part-time as required by the industry sponsor. This course is used as an experiential learning session. Grading system is determined by department.

Restrictions:

Enrollment limited to students with a semester level of Junior or Senior.

ASCI 3930 - Special Topics**Credit(s): 3 Credits (Repeatable for credit)****ASCI 3980 - Independent Study****Credit(s): 1-3 Credits (Repeatable for credit)****ASCI 4012 - Jet Flying Tech I Lect****Credit(s): 3 Credits**

This course emphasizes effective management of technology and people in a modern flight deck through an understanding of aircraft systems, airline operating procedures, and aviation human factors under normal, extended duration, and emergency conditions. Line Oriented Flight Training (LOFT) contained in FSCI 4013 Jet Flying Techniques I Laboratory is used to relate content from this course to actual line operations. (Offered every Fall)

Prerequisite(s): FSCI 2650 with a grade of C or higher; ASCI 3062 with a grade of C or higher

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4013 - Jet Flying Tech I Lab**Credit(s): 1 Credit**

This course emphasizes effective management of technology and people in a modern flight deck through an understanding of aircraft systems, airline operating procedures, and aviation human factors under normal, extended duration and emergency conditions. Line Oriented Flight Training (LOFT) is used to relate content from FSCI 4012 Jet Flying Techniques I Lecture. Offered in fall.

Prerequisite(s): FSCI 2650 with a grade of C or higher; ASCI 3062 with a grade of C or higher

Corequisite(s): ASCI 4012

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4022 - Jet Flying Tech II Lect**Credit(s): 3 Credits**

This course emphasizes effective management of technology and people in a modern flight deck through the application of advanced aircraft systems, air carrier operating procedures, and crew resource management principles to airline flight operations. Line Oriented Flight Training (LOFT) contained in ASCI 4023 Jet Flying Techniques II Lecture is used to relate content from this course to real world airline line operations. Offered in spring.

Prerequisite(s): ASCI 4012 with a grade of C or higher; ASCI 4013 with a grade of C or higher

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4023 - Jet Flying Tech II Lab**Credit(s): 1 Credit**

This course emphasizes effective management of technology and people in a modern flight deck through the application of advanced aircraft systems, air carrier operating procedures and crew resource management principles to airline flight operations. Line Oriented Flight Training (LOFT) scenarios contained in this course are used relate content from the ASCI 4022 Jet Flying Techniques II course to real world airline line operations. Offered in spring.

Prerequisite(s): ASCI 4012 with a grade of C or higher; ASCI 4013 with a grade of C or higher

Corequisite(s): ASCI 4022

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4050 - Human Factors**Credit(s): 3 Credits**

This course will introduce the student to the concepts of human factors as applied to Flight, System Safety, and Quality Management. Particular emphasis will be placed on improving safety, judgment, and decision-making strategies. The student will make direct applications to the work environment.

Prerequisite(s): PSY 1010 with a grade of C or higher

Restrictions:

Enrollment limited to students with a semester level of Junior or Senior.

ASCI 4250 - Prof Ethics and Standards**Credit(s): 3 Credits**

Exposes the participant to various moral and ethical dilemmas inherent to business and more specifically the aviation industry. Participants will identify ethical problems, understand and evaluate differing ethical perspectives, and formulate viable policy recommendations.

Prerequisite(s): PHIL 1050 with a grade of C or higher; PHIL 2050 with a grade of C or higher

ASCI 4350 - Team Resource Management**Credit(s): 3 Credits**

This course will prepare students to build high-performance teams in critical sectors such as flight, maintenance, safety, and quality. Concepts of team building and technology management under normal as well as emergency conditions will be discussed. Case studies will be used to analyze team performance in a variety of high-consequence sectors.

Prerequisite(s): ASCI 4050 with a grade of C or higher

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4450 - Aviation Law**Credit(s): 3 Credits**

Basic principles of law which impinge on the use of the air; history of air law; principles and rules governing use of air space by aircraft; multilateral conventions pertaining to the use of air space among nations; aviation security procedures; product liability.

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4650 - Econ of Air Transportation**Credit(s): 3 Credits**

A detailed study of present and future air carrier operations including organization, operating costs and revenues, aircraft utilization and scheduled operations, equipment analysis, aircraft performance in relation to efficient and economic operation, passenger service and cargo operations as they are integrated with the overall economics of efficient air operation.

Prerequisite(s): ECON 1900 with a grade of C or higher

ASCI 4800 - International Aviation**Credit(s): 3 Credits**

This course provides in-depth examination of the history and development of the international regulatory environment governing the aviation industry. Participants will gain a knowledge of the international governing bodies and resulting regulations that impact aviation companies in the global marketplace.

ASCI 4900 - Senior Seminar**Credit(s): 3 Credits**

This seminar is the capstone experience for the B.S. in Aeronautics, Aviation Management concentration. The student will study various aspects of the aviation industry that relates to each one's particular interest area.

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4910 - Co-op with Industry**Credit(s): 1 Credit**

A full-time supervised work experience with an agency, firm or organization that employs persons in this degree field. This course is used as an experiential learning session. Grading system is determined by department offering course. Offered every semester.

Prerequisite(s): ASCI 3910 with a grade of C or higher

ASCI 4915 - Internship with Industry**Credit(s): 1-3 Credits (Repeatable for credit)**

A work experience with an agency, firm or organization that employs persons in this degree field. This experience may be full time or part-time as required by the industry sponsor. Grading system is determined by department offering course.

Prerequisite(s): ASCI 3915 with a grade of C or higher

ASCI 4930 - Special Topics**Credit(s): 3 Credits (Repeatable for credit)****ASCI 4971 - Research Problems****Credit(s): 1-3 Credits (Repeatable for credit)**

No formal class session but weekly appointment with course advisor is required. This course requires the practical use of the methods of organizing theoretical and experimental research, formulation of problems, project planning, research proposal preparation, and submission of a final research report.

Restrictions:

Enrollment limited to students with a semester level of Senior.

ASCI 4980 - Independent Study**Credit(s): 1-3 Credits (Repeatable for credit)****ASCI 5010 - Introduction to Aviation Research Methods****Credit(s): 3 Credits**

Provides the necessary strategies and tools for aviation managers to properly collect, examine, and interpret aviation operational and safety data. Special emphasis is placed on the application of statistical methods, risk management and quality assurance concepts.

ASCI 5020 - Aviation Safety Data Analysis**Credit(s): 3 Credits**

Practical application and research of aviation and aerospace safety databases.

ASCI 5030 - Aviation Security Management**Credit(s): 3 Credits**

The challenges of managing an aviation security program are addressed from the following perspectives: means, motives, and opportunities. Discussion topics include technical as well as behavioral science based approaches to detecting threats; the role of global political climate in influencing terrorism; and federal and international regulations as counter-terrorism measures.

ASCI 5040 - Human Factors in Aviation Safety**Credit(s): 3 Credits**

This course will include elements of human factors theory applied to various aviation environments. Human factors theory will be reviewed and then applied to flight operations and maintenance issues. Emphasis will be placed on the management of safety programs toward a reduction of accidents caused by human error.

Prerequisite(s): ASCI 5020; ASCI 5100

ASCI 5080 - Management of Aviation Safety Programs**Credit(s): 3 Credits**

Synergistic application of five perspectives is discussed: organizational psychology, behavioral psychology, engineering, accounting, and underwriting. Discussion topics include the following: organizational risk management, hazard identification and management, failure modes and effects analysis, fault-tree analysis, values-based safety program development, and cost analysis of safety programs.

ASCI 5100 - Aviation Safety Career and Personal Development**Credit(s): 3 Credits**

Aviation safety career and personal development in private and public aviation organizations.

ASCI 5120 - Aviation Safety Quality Issues**Credit(s): 3 Credits**

A study of the practice and research involved in implementing aviation and aerospace quality issues.

ASCI 5130 - Aviation Safety Ethics**Credit(s): 3 Credits**

A study of ethical behavior and decision making involved in implementing an aviation safety philosophy.

ASCI 5150 - Aviation Incident and Accident Analysis**Credit(s): 3 Credits**

This course emphasizes the fundamental understanding of aircraft performance and technology, regulations governing aircraft operation, aircraft maintenance, and incident/accident investigation; incident/accident investigation techniques, and comprehensive solutions to minimize future occurrences of similar incidents or accidents are also addressed.

ASCI 5210 - Aviation Organization Theory and Management**Credit(s): 3 Credits**

Explores the various models of organizational structure and culture including the implications for organizational leadership, project management and employee motivation. Topics include contingency theory, systems theory, group dynamics, and change management.

ASCI 5220 - Aviation Safety Programs**Credit(s): 3 Credits**

Explores the development and administration of safety management systems (SMS) and emergency response plans. Examination of accident related case studies are used to discuss the impact of organizational culture on safety management.

ASCI 5230 - Prof Ethics and Standards**Credit(s): 3 Credits**

Exposes the participant to various moral and ethical dilemmas inherent to business and more specifically the aviation industry. Participants will identify ethical problems, understand and evaluate differing ethical perspectives, and formulate viable policy recommendations.

ASCI 5240 - Economics of Air Transportation**Credit(s): 3 Credits**

A detailed study of present and future air carrier operations including organization, operating costs and revenues, aircraft utilization and scheduled operations, equipment analysis, aircraft performance in relation to efficient and economic operation, passenger service and cargo operations as they are integrated with the overall economics of efficient air operation.

ASCI 5460 - Qualitative Data Analysis**Credit(s): 3 Credits**

Qualitative Data Analysis will introduce the student to various methods of qualitative analysis. Students will be expected to identify various types of qualitative data, develop research approaches, identify the most appropriate data collection method, and interpret and report analysis findings.

ASCI 5470 - Quantitative Data Analysis**Credit(s): 3 Credits**

Quantitative Analysis is an introduction to the observation and application of quantitative data analysis. Students who complete this course will be capable of conducting statistical test supporting theoretical application in the current literature. Additionally, students will be capable of interpreting the results of statistical analysis found in various publications.

ASCI 5910 - Graduate Internship**Credit(s): 1-6 Credits** (Repeatable for credit)**ASCI 5930 - Special Topics****Credit(s): 1-3 Credits** (Repeatable for credit)**ASCI 5960 - Project Guidance****Credit(s): 3 Credits****ASCI 5980 - Graduate Reading Course****Credit(s): 1-3 Credits** (Repeatable for credit)**ASCI 5981 - Independent Study****Credit(s): 1-6 Credits** (Repeatable for credit)**ASCI 5990 - Thesis Research****Credit(s): 0-6 Credits** (Repeatable for credit)**ASCI 6010 - Federal & International Regs****Credit(s): 3 Credits**

This course provides in-depth examination of the history and development of domestic and international regulations governing the aviation industry. Participants will discuss the impact of domestic and international governing bodies and the resulting regulations that impact aviation companies in the global marketplace.

ASCI 6020 - Flight Op's Business & Admin**Credit(s): 3 Credits**

A survey of aviation business strategies including, the marketing of aviation products, principles of product design and management, pricing and revenue management, advertising and promotion, and product distribution channels.

ASCI 6030 - Aviation and Public Policy**Credit(s): 3 Credits**

This course explores the domestic and international regulatory, economic, legal and political environment that aviation companies operate within. The specific influences and relationships between the various market participants and regulating bodies are thoroughly explored.

ASCI 6050 - Legal and Ethical Issues in Aviation**Credit(s): 3 Credits**

The exploration and analysis of selected legal and ethical issues related to aviation education regulation, the college student, and the academic institution.

ASCI 6060 - Aviation Curriculum Dev.**Credit(s): 3 Credits**

Surveys practices and problems in the development, submission, approval and assessment of collegiate aviation curriculum in light of evolving U.S. and international pilot training considerations and requirements.

ASCI 6070 - Aviation Training Methods**Credit(s): 3 Credits**

Provides a critical analysis of practices, expectations, strategies, and responsibilities of the aviation instructor, including an in-depth study of learner-centric pedagogy and its application to collegiate flight education.

ASCI 6930 - Special Topics**Credit(s): 3 Credits** (Repeatable for credit)**ASCI 6980 - Independent Study****Credit(s): 1 or 3 Credits** (Repeatable for credit)**ASCI 6990 - Dissertation Research****Credit(s): 0-6 Credits** (Repeatable for credit)