

# AVIA-AVIATION

## AVIA 1013 Introduction to Air Traffic Control 3 Credit Hours

Prerequisite: Permission of the department. The purpose of this course is to learn about the air traffic control system from both the pilot and controller's perspectives. This course is the first of eight ATC courses required for the Air Traffic Management degree path or ATC minor and a prerequisite for basic air traffic control regulations. (F, Sp)

## AVIA 1111 Aviation Orientation 1 Credit Hour

Prerequisite: Majors only and departmental permission. Required orientation course for all declared Aviation Majors during their first semester. Orients students to the department, curriculum, resources, and provides an overview of the various aviation professions. Guest lecturers will include departmental instructors covering all aspects of the industry, as well as the advising staff. (F, Sp)

## AVIA 1113 Introduction to Aviation 3 Credit Hours

Prepares student to take the FAA private pilot written examination. Covers FAR's, meteorology, aerodynamics, flight physiology, performance charts, radio navigation techniques. (F, Sp, Su)

## AVIA 1133 Private Ground - Helicopter 3 Credit Hours

Prerequisite: departmental permission. Prepares students to take the FAA Computer Knowledge Test. Students will develop the knowledge specified by 14 CFR Section 141App B 3 (b) for a Private Pilot Rotorcraft/Helicopter certificate. (F, Sp, Su)

## AVIA 1213 Basic Air Traffic Control Regulations 3 Credit Hours

Prerequisite: AVIA 1013 and permission of the department. This course is a progressive continuation of introduction to air traffic control and a prerequisite for general air traffic control procedures. This course is more narrowly focused on study and interpretation of the FAA orders and regulations that govern the air traffic control system and the national airspace system. (Sp, Su)

## AVIA 1222 Primary Flying 2 Credit Hours

Prerequisite: 1113 or permission of department. Includes in-flight instruction with effort directed toward obtaining FAA certification as a private pilot. Third class medical must be obtained prior to flying. (F, Sp, Su)

## AVIA 1313 Introduction to Unmanned Aerial Systems 3 Credit Hours

Introduces students to Unmanned Aerial Systems (UAS). Includes the history of UAS and survey current UAS platforms, terminology, challenges to airspace integration and operational theory. This course aims to prepare students for their FAA written exam while also expanding their understanding of UAS in the national airspace system. (F, Sp)

## AVIA 1332 Private Flight - Helicopter 2 Credit Hours

Prerequisite: departmental permission. Prepares students with the knowledge, skill, and aeronautical experience necessary to meet the requirements for a private pilot certificate with a rotorcraft/helicopter category. (F, Sp, Su)

## AVIA 2013 General Air Traffic Control Procedures 3 Credit Hours

Prerequisite: AVIA 1013, 1213, and permission of the department. This course will present the study of "general control" procedures used in the terminal and en route control options as well as FAA flight service processes and procedures. This course will serve as a prerequisite for airport traffic control procedures. (F)

## AVIA 2231 Advanced Flying 1 Credit Hour

Prerequisite: AVIA 1222 or private pilot certificate. Flight instruction in preparation for FAA commercial pilot certificate. (F, Sp, Su)

## AVIA 2341 Secondary Flying 1 Credit Hour

Prerequisite: 2231. Consists of cross-country experience under the direct supervision of an instructor pilot. Part of the FAA Part 141 commercial certification course. (F, Sp, Su)

## AVIA 2413 From Runway to Screenplay: A Study of Aviation in Cinema 3 Credit Hours

This course examines the fascinating intersection of aviation and cinema. We'll analyze a diverse range of films, from classics to blockbusters, exploring how filmmakers depict flight, technology, and the human experience. Through screenings, discussions, and assignments, students develop a critical understanding of aviation films and their impact on society. (F, Sp, Su)

## AVIA 2513 The History of Aviation 3 Credit Hours

Exploring aviation's impact on Western civilization, we focus on technological advancements, cultural shifts, and socio-political contexts. Students will analyze the narratives of key figures, the societal implications of flight, and the global influence of aviation. Through lectures, discussions, and multimedia resources, students will develop a comprehensive understanding of aviation's role in shaping the modern world. (F, Sp, Su) [IV-WC].

## AVIA 2613 Aviation Safety 3 Credit Hours

Prerequisite: Sophomore standing and departmental permission. This course will examine all aspects of accidents/incidents involving airline and general aviation flights. It examines those areas from the perspective of pilots, crew members, air traffic controllers and National Transportation Safety Board (NTSB) findings. Each accident/incident is dissected with the goal of determining what went wrong and lessons that can be learned. (F, Sp)

## AVIA 2970 Special Topics/Seminar 1-3 Credit Hours

1 to 3 hours. Prerequisite: Must be a declared aviation major with permission of the department. May be repeated; Maximum credit nine hours. Special topics course for content not currently offered in regularly scheduled courses. May include library and/or laboratory research, and field projects. (Irreg.)

## AVIA 3013 Career Development for Aviation Professionals 3 Credit Hours

Prerequisite: Sophomore standing and must be a declared aviation major with permission of the department. This course will provide an overview of the career planning process for aviation students. Students will master the techniques of self-assessment, resume and letter writing, interviewing, researching companies, proper writing techniques, ethics and etiquette, and networking. This course is intended to help students prepare for internship interviews or entering the aviation industry as a professional. (F, Sp)

## AVIA 3103 Flight Deck Environmental Issues 3 Credit Hours

Prerequisite: Must be a declared aviation major and departmental permission. Human-machine interface issues in today's modern flight deck are the focus of the course. Leading to that end, the student will explore the cognitive and psychomotor domains of learning, review studies of aircrew interface problems, learn coping mechanisms used by today's best aviation trainers to overcome design-induced problems in cockpit advanced technology. (F, Sp)

## AVIA 3111 Advanced Flight Maneuvers 1 Credit Hour

Prerequisite: 1222 or FAA private pilot certificate. Increase the student's knowledge and understanding of advanced flight maneuvers. Accelerated stalls, spins, inverted flight, and recovery from unusual attitudes. Advanced aerodynamics will be discussed and demonstrated. (F, Sp, Su)

- AVIA 3113 Commercial Aviation** **3 Credit Hours**  
Prerequisite: AVIA 3133 or instrument rating and permission of the department. Course provides the student the knowledge required to obtain a commercial pilot certificate. (F, Sp, Su)
- AVIA 3123 Instrument Ground - Helicopter** **3 Credit Hours**  
Prerequisite: Sophomore standing and departmental permission; AVIA 1133 and AVIA 1332 with grade of C or better. Prepare students with the knowledge specified by 14 CFR Section 61.65 and 14 CFR Section 141 Appendix C for an Instrument Pilot Rotorcraft/Helicopter certificate. (F, Sp, Su)
- AVIA 3133 Fundamentals of Instrument Flight** **3 Credit Hours**  
Prerequisite: 2231 and private pilot license. Federal aviation regulations as pertain to instrument flight rules (IFR), weather and forecast products, interpretation of en route low altitude charts and terminal instrument approach procedures, instrument flight procedures and techniques. (F, Sp, Su)
- AVIA 3143 Commercial Ground Helicopter** **3 Credit Hours**  
Prerequisite: Sophomore standing and departmental permission; AVIA 1133, AVIA 1332, AVIA 3123 and AVIA 3532 with grade of C or better. Prepare students with the knowledge specified by 14 CFR Section 61.125 for a Commercial Pilot Rotorcraft/Helicopter certificate. (F, Sp, Su)
- AVIA 3213 Airport Traffic Procedures** **3 Credit Hours**  
Prerequisite: AVIA 1013, 1213, 2013, and permission of the department. The primary focus of this course is to study visual air traffic control procedures, specifically, to learn the principles of operation and the separation methods required in the air traffic control tower environment. This course will serve as a prerequisite for IFR Air Traffic Control Procedures. (Sp)
- AVIA 3313 IFR Air Traffic Procedures** **3 Credit Hours**  
Prerequisite: AVIA 1013, 1213, 2013, 3213, and permission of the department. Focus on the requirements and procedures used in the IFR air traffic control environment. The students will study all of the separation standards and rules used in radar and non-radar environments in the approach control and air route traffic control facilities. This course will serve as a prerequisite for Air Traffic Simulation. (F)
- AVIA 3333 Survey of Aviation Law** **3 Credit Hours**  
Prerequisite: AVIA 1113, junior standing, and permission of the department. Survey of legal issues in aviation. The student will review legislation, regulatory agencies, and case studies dealing with legal issues in the medium of airspace above the ground-predominantly over the United States. The student will be able to identify and comprehend the historical events and technical terms that describe national and international legal precedents that have shaped aviation law. (F, Sp)
- AVIA 3440 Mentored Research Experience** **3 Credit Hours**  
0 to 3 hours. Prerequisites: ENGL 1113 or equivalent, and permission of instructor. May be repeated; maximum credit 12 hours. For the inquisitive student to apply the scholarly processes of the discipline to a research or creative project under the mentorship of a faculty member. Student and instructor should complete an Undergraduate Research & Creative Projects (URCP) Mentoring Agreement and file it with the URCP office. Not for honors credit. (F, Sp, Su)
- AVIA 3513 Airport Operations Management** **3 Credit Hours**  
Prerequisite: AVIA 1113, junior standing, permission of the department, and must be a declared Aviation major. Provides the student with an in-depth analysis of airport management, operations and planning functions necessary to operate, develop, and maintain safe and efficient airport facilities as is the practice in the United States. Also introduces air traffic control (ATC) concepts. (F, Sp)
- AVIA 3532 Instrument Flying - Helicopter** **2 Credit Hours**  
Prerequisite: Sophomore standing and departmental permission; AVIA 1133 and AVIA 1332 with grades of C or better. Prepare students with the knowledge, skill, and aeronautical experience necessary to meet the requirements for an Instrument Pilot Rating with a rotorcraft/helicopter category to include Preflight Preparation, Preflight Procedures, Air Traffic Control Clearances & Procedures, Flight by Reference to Instruments, Navigation Systems, Instrument Approach Procedures, Emergency Operations and Post-flight Procedures. (F, Sp, Su)
- AVIA 3572 Instrument Flying** **2 Credit Hours**  
Prerequisite: AVIA 3113. The final stage of the FAA Part 141 commercial pilot certification course. Designed to polish pilot skills in commercial aircraft maneuvers. (F, Sp, Su)
- AVIA 3581 Multi-Engine Flying** **1 Credit Hour**  
Prerequisite: 4552 or commercial pilot certificate. A study of the design, construction and flight characteristics of multiengine aircraft. Inflight instruction in pilotage and operation of multiengine airplanes. Designed to qualify the student for certification as a multiengine pilot. (F, Sp, Su)
- AVIA 3913 Aerospace Contract Administration** **3 Credit Hours**  
Prerequisite: Junior standing, permission of the department, and must be a declared aviation major. Survey and study of specialized procedures used in the management and administration of aerospace (aviation) contracts, particularly associated with commercial and defense systems acquisitions. Students will use case study analysis, involving aerospace development and acquisition procedures, to enhance the learning experience and prepare them for future employment in the aerospace industry. (F)
- AVIA 3923 Aerospace Operational Research** **3 Credit Hours**  
Prerequisite: Junior standing, must be a declared Aviation major, and departmental permission. Students will be introduced to the fundamental methods and techniques employed by the aviation/aerospace industry when researching and analyzing operational issues. Students will be able to use specialized research methods to collect data, analyze it, and then draw logical conclusions. Knowledge, skills, and abilities learned in this course will prepare students for Senior Capstone. (F)
- AVIA 3960 Honors Reading** **1-3 Credit Hours**  
1 to 3 hours. Prerequisite: Admission to Honors Program. May be repeated; maximum credit six hours. Consists of topics designated by the instructor in keeping with the student's major program. The topics will cover materials not usually presented in the regular courses. (F, Sp, Su)
- AVIA 3970 Honors Seminar** **1-3 Credit Hours**  
1 to 3 hours. Prerequisite: admission to Honors Program. May be repeated; maximum credit six hours. Subjects covered vary. Deals with concepts not usually treated in regular courses. (Irreg.)
- AVIA 3980 Honors Research** **1-3 Credit Hours**  
1 to 3 hours. Prerequisite: Admission to Honors Program. May be repeated; maximum credit six hours. Will provide an opportunity for the gifted Honors candidate to work at a special project in the student's field. (F, Sp, Su)
- AVIA 3990 Independent Study** **1-3 Credit Hours**  
1 to 3 hours. Prerequisite: permission of instructor and junior standing. May be repeated once with change of content. Independent study may be arranged to study a subject not available through regular course offerings. (F, Sp, Su)

**AVIA 4004 Air Traffic Control Tower Simulation 4 Credit Hours**

Prerequisite: AVIA 1013, 1213, 2013, 3213, 3313, and 4013; all with minimum grade of C; and permission of the department. Provides students an opportunity to apply knowledge learned in previous air traffic control courses, specifically AVIA 3213, and expand the knowledge base of terminal ATC procedures. The application and expansion of knowledge will occur in lectures and through working in a high fidelity, simulated ATC tower environment. (F)

**AVIA 4013 En-Route Radar Lab 3 Credit Hours**

Prerequisite: AVIA 1013, 1213, 2013, 3213, 3313; all with minimum grade of C; and permission of the department. Lab to prepare student for on-the-job training in an FAA En-Route Air Traffic Control facility. Course will consist of dynamic simulation exercises in an ATC computer lab as well as classroom briefings. Students will run scenarios as the controller and as a pseudo pilot. Course objectives are based on federal guidelines by the Federal Aviation Administration. (Sp)

**AVIA 4023 Tracon Radar Lab 3 Credit Hours**

Prerequisite: AVIA 1013, 1213, 2013, 3213, 3313, 4004, and 4013; all with minimum grade of C; and permission of the department. Lab to prepare students for on-the-job training in an FAA Terminal Radar Air Traffic Control facility. Course will consist of dynamic simulation exercises in an ATC computer lab as well as classroom briefings. Students will run scenarios as the controller and as a pseudo pilot. Objectives are based on federal guidelines by the Federal Aviation Administration. (Sp)

**AVIA 4033 EnRoute Radar Lab-Enhanced Follow On 3 Credit Hours**

Prerequisite: Junior standing; AVIA 1013, AVIA 1213, AVIA 2013, AVIA 3313, and AVIA 4013, all with a minimum grade of C. Provides students an opportunity to apply knowledge learned in previous air-traffic-control courses, including AVIA 3313 and AVIA 4013, and to prepare student for on-the-job training in an FAA EnRoute Air Traffic Control facility. Course consists of simulation exercises in an ATC computer lab as well as classroom briefings. Students will run scenarios as the controller and as a pseudo pilot. (F, Sp, Su)

**AVIA 4043 ATC Tower Simulation Enhanced Follow On 3 Credit Hours**

Prerequisite: Junior standing; AVIA 1013, AVIA 1213, AVIA 2013, AVIA 3313, AVIA 4013, and AVIA 4004, all with minimum grade of C. This course provides students an opportunity to apply knowledge learned in previous air traffic control courses, specifically AVIA 4004, and expand the knowledge base of terminal ATC procedures. The application and expansion of knowledge will occur in lectures and through working in a high fidelity, simulated ATC tower environment. (F, Sp, Su)

**AVIA 4113 CFI Seminar 3 Credit Hours**

Prerequisite: 3133, 3113. Increase student knowledge of theories of learning, flight instructor authority, and responsibility and classroom and flight techniques. Emphasis on principles of instruction, student motivation and maneuver error analysis. (F, Sp, Su)

**AVIA 4123 Helicopter Flight Instructor Ground 3 Credit Hours**

Prerequisite: Junior standing and departmental permission; AVIA 1133, AVIA 1332, AVIA 3123, AVIA 3532, AVIA 3143 and AVIA 4332 with grade of C or better. Prepare student instructor candidates with the knowledge specified by 14 CFR Section 61.181 and 14 CFR Section 141 Appendix F for a Flight Instructor Pilot Rotorcraft/Helicopter certificate. (F, Sp, Su)

**AVIA 4313 Turbine Transition 3 Credit Hours**

Prerequisite: AVIA 3581, 4552, and permission of the department. Introduce the student to the procedures of flying a turbine aircraft and the concepts of crew resource management. Emphasis is placed on the basic terminology and procedures and emergency operations. (F, Sp, Su)

**AVIA 4332 Commercial Flying - Helicopter 2 Credit Hours**

Prerequisite: Sophomore standing and departmental permission; AVIA 1133, AVIA 1332, AVIA 3123 and AVIA 3532 with grade of C or better. Prepare students with the knowledge, skill, and aeronautical experience necessary to meet the requirements for a Commercial Pilot Certificate with a rotorcraft/helicopter category. (F, Sp, Su)

**AVIA 4423 Crew Resource Management 3 Credit Hours**

Prerequisite: AVIA 1113, junior standing, permission of the department, and must be a declared aviation major. To teach the student the principles and procedures of a two or more person cockpit. Includes: briefings, call-outs, and emergency procedures. (F, Sp)

**AVIA 4552 Commercial Flying 2 Credit Hours**

Prerequisite: AVIA 3113. The final stage of the FAA Part 141 commercial pilot certification course. Designed to polish pilot skills in commercial aircraft maneuvers. (F, Sp, Su)

**AVIA 4602 Flight Instructor-Airplane 2 Credit Hours**

Prerequisite: commercial pilot certificate and instrument rating. Flight instruction in preparation for FAA flight instructor certificate. (F, Sp, Su)

**AVIA 4632 Flight Instructor - Helicopter 2 Credit Hours**

Prerequisite: Junior standing and departmental permission; AVIA 1133, AVIA 1332, AVIA 3123, AVIA 3532, AVIA 3143 and AVIA 4332 with grade of C or better. Prepare students with the knowledge, skill, and aeronautical experience necessary to meet the requirements for a Certified Flight Instructor Rating with a rotorcraft/helicopter category. (F, Sp, Su)

**AVIA 4642 Instrument Instructor Helicopter Flight 2 Credit Hours**

Prerequisite: Junior standing and departmental permission; AVIA 1133, AVIA 1332, AVIA 3123, AVIA 3532, AVIA 3143, AVIA 4332, AVIA 4123 and AVIA 4632 with grade of C or better. Prepare students with the knowledge, skill, and aeronautical experience necessary to meet the requirements for an Certified Flight Instructor Instrument Pilot Rating with a rotorcraft/helicopter category to include Preflight Preparation, Preflight Procedures, Air Traffic Control Clearances & Procedures, Flight by Reference to Instruments, Navigation Systems, Instrument Approach Procedures, Emergency Operations and Post-flight Procedures. (F, Sp, Su)

**AVIA 4643 Instrument Instructor Ground - Helicopter 3 Credit Hours**

Prerequisite: Junior standing and departmental permission; AVIA 1133, AVIA 1332, AVIA 3123, AVIA 3532, AVIA 3143, AVIA 4332, AVIA 4123 and AVIA 4632 with grade of C or better. Prepare the student with the knowledge specified by 14 CFR Section 61.65 and 14 CFR Section 141 Appendix G for the Flight Instructor Instrument Rotorcraft/Helicopter Rating. (F, Sp, Su)

**AVIA 4663 Survey of Aerospace Ethical Issues 3 Credit Hours**

Prerequisite: Junior standing, permission of the department, and must be a declared aviation major. A survey of past and present ethical issues influencing the development of ethical behavior among U.S. aerospace companies and commercial and corporate aviation. Individual development of defense mechanisms to ensure ethical behavior in competitive environments. (F, Sp, Su)

**AVIA 4713 Senior Capstone 3 Credit Hours**

Prerequisite: senior standing, permission of department, and all major upper-division courses or concurrent enrollment. This project course builds on the accumulated knowledge from all courses to date. Lectures will cover problem identification, analysis, generation of alternatives, cost/benefit studies, interviews and presentations. Student teams will analyze and make recommendations on an actual problem for an aviation related organization, such as the FAA. (F, Sp) [V].

**AVIA 4803 Aviation Mental Health: Psychological Implications for Air Transportation 3 Credit Hours**

Prerequisite: junior standing, permission of the department, and must be a declared aviation major. Students will learn about mental health issues relevant to passengers, cabin crew, and flight deck crew—that have far-reaching psychological implications for all those who travel by means of air transportation—through the experiences of flight attendants, pilots, clinicians, researchers, trainers, and professors. (Sp, Su)

**AVIA 4960 Directed Readings 1-4 Credit Hours**

1 to 4 hours. Prerequisite: good standing in University; permission of instructor and dean. May be repeated; maximum credit four hours. Designed for upper-division students who need opportunity to study a specific problem in greater depth than formal course content permits. (Irreg.)

**AVIA 4970 Special Topics/Seminar 1-3 Credit Hours**

1 to 3 hours. Prerequisite: Senior standing and permission of department; May be repeated; maximum credit nine hours. Special topics or seminar course for content not currently offered in regularly scheduled courses. May include library and/or laboratory research and field projects. (Irreg.)

**AVIA G4983 Airline Management 3 Credit Hours**

Prerequisite: Junior or graduate standing, and departmental permission; must be a declared aviation major. Study of the managerial aspects of the airline industry to include economic and organizational characteristics, marketing, operational scheduling, fleet planning, and labor relations. Students participate in management simulation as senior executives of a regional domestic carrier. (F, Sp)

**AVIA 4990 Special Studies in Aviation 1-4 Credit Hours**

1 to 4 hours. Prerequisite: departmental permission. Will encompass various aviation-related topics including many specialty flight programs; such as, aerobatic instruction, multiengine training, pilot refresher training, etc. (F, Sp, Su)