Course Descriptions for Aviation

AVIA-101. INTRODUCTION TO AERONAUTICS. 3:3:0
Presents an overview of aviation, enabling the student to gain an appreciation of the complexities of the field of aeronautics. Course content includes historical background, fundamentals of flight and aeronautical technology, the social and economic impact of aerospace and future development, and government regulation. Credit, three (3) hours.

AVIA-102. PRIVATE PILOT CERTIFICATION. 3:3:3
Academic studies in preparation for the experience of flying and preparation for the Federal Aviation Administration (FAA) written and oral examinations for the Private Pilot Certification. Materials covered include basic aerodynamics, elementary aircraft systems, aviation navigation, safety, weather, aviation physiology, and FAA Regulations. Incorporates 45 hours of ground instruction and 45 hours of flight instruction. Three (3) hours lecture. Credit, three hours.

AVIA-102L. PRIVATE PILOT LAB. 1:0:1.5
Provides the students with the flight time and instruction to complete all maneuvers and operations required to earn the Federal Aviation Administration (FAA) Private Pilot Certificate. Course includes all dual and solo flights, and evaluation flights and oral and flight examinations administered by the FAA or appointed examiners. Course consists of 45 hours of flight training. Three flight hours and one and one-half hours pre- & post-flight briefing per week. Prerequisite or corequisite: Airway Science 102 or permission of department Chairperson. Credit, 1 hour.

AVIA-103. INSTRUMENT RATING. 3:3:0
Academic studies in preparation for the Federal Aviation Administration (FAA) written and oral examinations for the Instrument Rating. Information covered includes aircraft instrument systems, ground-based instrument systems, normal and emergency practices and procedures related to flying under Instrument Meteorological conditions, and FAA Regulations related to flying under Instrument Flight Rules (IFR). Consists of 45 hours of ground instruction and 45 hours of flight training. Three hours lecture per week. Credit, three hours.

AVIA-103L. INSTRUMENT RATING LAB. 1:0:1.5
Provides the student with the flight time and instruction to complete all maneuvers and operations required to earn the FAA Instrument Rating. Course includes all evaluation flights and certification and oral examinations administered by the FAA or its appointed examiners. Course consists of 45 hours of flight training. Three flight hours and one and one-half hour pre- & post-flight briefing per week. Prerequisites or corequisite: Airway Science 103 or permission of department Chairperson. Credit, one hour.

AVIA-201. BASIC AIRCRAFT SYSTEMS. 3:3:0
Academic studies in preparation for the Federal Aviation Administration (FAA) written and oral examinations for the Commercial Pilot Certificate. Materials covered include intermediate

aircraft systems, safety, aviation physiology, aircraft avionics, and CRM. Consists of 45 hours of flight instruction and 45 hours of ground instruction. Three hours lecture per week. Credit, three hours.

AVIA-201L. COMMERCIAL I LAB. 1:0:1.5
Provides the student with the flight time and instruction to learn and practice commercial pilot maneuvers and advanced cross-country flying in preparation for the FAA Commercial Pilot Certificate. Course includes an evaluation. All flights are performed in single engine airplanes with fixed landing gear. Course consists of 50 hours of flight training. Three flight hours and one and one-half hours of pre- & post-flight briefing per week. Prerequisite or corequisite: Airway Science 201 or permission of department Chairperson. Credit, 1 hour.

AVIA-202. COMMERCIAL PILOT. 3:3:0
Academic studies in preparation for the Federal Aviation Administration (FAA) written and oral examinations for the Commercial Pilot Certificate. Materials covered include intermediate aerodynamics, intermediate aircraft systems, intermediate aviation navigation under Visual Flight Rules (VFR), safety, weather, aviation physiology, and FAA Regulations related to the commercial pilot. Consists of 45 hours of flight instruction. Credit, three hours.

AVIA-202L. COMMERCIAL PILOT LAB II
Provides the student with the flight time and instruction to continue to learn and practice the commercial pilot maneuvers and advanced cross country flying in preparation for the FAA Commercial Pilot Certificate. Course includes an evaluation. Course consists of 29 hours of flight training. Prerequisite: 49-201L or permission of the program Director or department Chairperson. Credit, .67 hours.

AVIA-301. MULTIENGINE RATING. 1:1:0
Academic studies in preparation for the Federal Aviation Administration (FAA oral examination for the Multiengine Airplane Class Rating. Information covered includes multiengine aerodynamics and systems, safety, and FAA Regulations relevant to multiengine flight. Consists of 15 hours of ground instruction and 12 hours of flight training. One hour lecture per week. Prerequisite: Airway Science 227 (Commercial Pilot Flight Lab VII). Credit, one hour.

AVIA-305. ADVANCED AERODYNAMICS AND AIRCRAFT PERFORMANCE. 3:3:0
Academic studies covering advanced aerodynamic theories and their application. Includes airfoil shape, drag, velocity, lift, thrust, stability and control. Also included are advanced principles of performance including airplane capabilities and limitations, performance design criteria, load factors, weight and balance, comparative analysis of aircraft and aircraft certification. Three hours lecture per week. Credit, three hours.

AVIA-307. ADVANCED AIRCRAFT SYSTEMS. 3:3:0
The study of advanced systems currently in use in aircraft flown by the airlines. This course provides knowledge necessary to successfully complete the FAA Flight Engineer written examination. Three hours lecture per week. Credit, three hours.

AVIA-307L. COMMERCIAL PILOT LAB III
Provides the student with the flight time and instruction to complete all maneuvers required to earn the FAA Commercial Pilot Certificate. Course includes all evaluation flight and certification and oral examinations administered by the FAA or its appointed examiners. Course consists of 36 hours of flight training. Prerequisite: 49-202L or permission of the program Director or department Chairperson. Credit, 1 hour.

AVIA-310. FLIGHT SAFETY. 3:3:0

Presentation and analysis of factors and procedures relating to aviation safety. Discusses techniques for accident prevention, development of safety programs, procedures used in accident investigation, physiological and psychological factors relating to aviation safety, the role weather plays in safety. Three hours lecture per week. Credit, three hours.

AVIA-312. OPERATIONS MANAGEMENT. 3:3:0
Management techniques and administrative functions as they apply to the aviation industry. Includes planning, economic and resource considerations, problems, current issues and future trends related to aviation operations. Three hours lecture per week. Credit, three hours.

AVIA-317. HUMAN FACTORS IN AVIATION. 3:3:0
A study of cockpit resource management as applied in commercial air carriers. Includes pilot-in-command responsibilities; decision making; cockpit communications; interpersonal relationships; cockpit procedures; physiological and psychological factors and their role in accidents. A study is made of advances in aircraft and equipment and procedures to minimize human error and its effects. Credit, three hours.

AVIA-321. METEOROLOGY. 3:3:0
Basic theories of weather, atmospheric conditions, and climate, as they apply to flight. Explores the physical processes affecting the atmospheric environment and their relationships. Includes the principles of forecasting and an introduction to meteorological instrumentation. Three hours lecture per week. Credit, three hours.

AVIA-333. CREW RESOURCE MANAGEMENT
The course will examine the concepts of Crew Resource Management currently practiced in military, commercial and corporate aviation. The role of crew supervision and training, organized labor, leadership styles, and management oversight will be studied. Students will gain an understanding of the aviation operational characteristics that gave rise to the implementation of CRM training. The CRM course has the goal to familiarize students with contemporary training models used in crew education with the intent of enabling course participants to apply learned philosophies and strategies to their individual aviation experience. Credit, three hours.

AVIA-350. AIR TRAFFIC CONTROL. 3:3:0
A study of the national air traffic control system with emphasis on basic air traffic control procedures; the roles of Center, Approach Control, Tower, and Flight Service Station. Includes communications, navigation procedures, radar operations, facilities. Three hours lecture per week. Credit, three hours.

AVIA-360. THE NATIONAL AIRSPACE SYSTEM. 3:3:0
An overview of the proposed NAS. Covers problems encountered in implementing the system, airspace allocation and usage, facilities, safety considerations, new developments in electronic navigation and control systems, economic impact, social and political implications. Three hours lecture per week. Credit, three hours.

AVIA-361. MULTIENGINE FLIGHT LAB. .33:0:1.5
Provides the student with the flight time and instruction to complete all maneuvers and operations required in preparation to earn the Federal Aviation Administration (FAA) Multiengine Airplane Class Rating. Course includes an evaluation flight and Certification oral and practical examinations administered by the FAA or its appointed examiners. One hour flight, one-half hour pre- & post-flight briefing per week. Prerequisite or corequisite: Airway

Science 301. Prerequisite: Airway Science 227 (Commercial Flight Lab VII). Credit, .33 hours.

AVIA-370. AIRPORT PLANNING AND MANAGEMENT. 3:3:0
A comprehensive study of airport operations and management. Includes the analysis of the role of the airport manager in planning, finance and administration, public relations, social, political and environmental considerations; operational requirements and facility maintenance. Three hours lecture per week. Credit, three hours.

AVIA-401. CFI-AIRPLANE. 3:2:3
Academic studies in preparation for the Federal Aviation Administration (FAA) written and oral examination for the Flight Instructor Airplane Certificate. Information covered includes the fundamentals of instruction in classrooms, in one-to-one situations, and in airplane cockpits. Also included is analysis of student performance and evaluation of aviation students in academics and in practical situations and the regulatory responsibilities of the Certificated Flight Instructor (CFI). Consists of 25 hours of flight and 25 hours of ground instruction. Prerequisite: Airway Science 202. Three hours lecture per week. Credit, three hours.

AVIA-401L. CFI-AIRPLANE LAB. 66:0:2.0
Provides the student with the flight time and instruction to demonstrate, teach, and evaluate performance of students in all maneuvers and operations required to earn the Private Pilot and Commercial Pilot Certificates. The student will be prepared to successfully complete the FAA Flight Instructor-Airplanes (CFI-A) oral and practical examinations administered by the FAA or its appointed examiners. Two hours flight, one hour pre- & post-flight briefing per week. Prerequisite: Airway Science 202L, Commercial Pilot Certification or permission of department Chairperson. Credit, .66 hours each.

AVIA-402. CFI-INSTRUMENT. 3:3:1
Academic studies in preparation for the Federal Aviation Administration (FAA) written and oral examinations for the Flight Instructor (CFI) Instruments Certificate. Information covered includes a review of the body of knowledge required of the Instrument rated pilot, and methods of imparting this knowledge to students. The regulatory responsibilities of the Certificated Flight Instructor (CFI) are reviewed and emphasized. Consists of 25 hours of ground instruction and 25 hours of flight instruction. Three hours lecture per week. Prerequisite: Airway Science 202, Junior Standing. Credit, three hours.

AVIA-431. CFI-INSTRUMENT LAB. .33:0:1.5
Provides the student with the flight time and instruction to demonstrate, teach, and evaluate performance of students in all maneuvers and operations required to earn the FAA Instrument Rating. The student will be prepared to successfully complete the FAA Certificated Flight Instructor-Instrument (CFI-I) oral and practical examinations administered by the FAA or its appointed examiners. Prerequisite or corequisite Airway Science 402. Credit, .33 hours.

AVIA-440. CONCEPTS OF AIR TRANSPORT UTILIZATION. 3:3:0
A study of the factors involved in the effective use of aircraft in the transportation of passengers and cargo. Includes aircraft design, suitability, cost effectiveness, operational and marketing considerations and social implications. Three hours lecture per week. Credit, three hours.

AVIA-444. SENIOR CAPSTONE. 3:3:0
Provides the student with an understanding of the aviation professions, his/her role in professions in the near- and long-term, and strategies for gaining employment within the

profession. Three hours lecture per week. Prerequisite, Senior Standing. Credit, three hours.

AVIA-450. AIR TRANSPORTATION. 3:3:0
A survey of the historical development of the air transportation system covering facilities, impact of regulations, problems encountered in commercial air transportation, future requirements, airline operations, economics, and social implications. Three hours lecture per week. Credit, three hours.

AVIA-470. CFI-MULTIENGINE. 1:1:0
Academic studies in preparation for the Federal Aviation Administration (FAA) written and oral examinations for the Flight Instruct or Multiengine Certificate. Information covered includes a review of the body of knowledge required of the multiengine rated pilot, and methods of imparting this knowledge to students. The regulatory responsibilities of the Certificate Flight Instructor (CFI) are reviewed and emphasized. Consists of 15 hours of multiengine ground instruction and 15 hours of multiengine flight instruction. Three hours lecture per week. Prerequisite: Airway Science 301 and Airway Science 402, Senior Standing. Credit, two hours.

AVIA-471. CFI-MULTIENGINE LAB. .33:0:1.5
Provides the student with the flight time and instruction to demonstrate, teach and evaluate performance of students in all maneuvers and operations required to earn the FAA Multiengine Rating. The student will be prepared to successfully complete the FAA Certificated Flight Instructor-Multiengine (CFI-ME) oral and practical examinations administered by the FAA or its appointed examiners. One hour flight, one-half hour pre- & post-flight briefing per week. Prerequisite or Corequisite: Airway Science 470. Credit, .33 hour.

AVIA-489. AVIATION LEGISLATION. 3:3:0
This course emphasizes legal concepts concerning aviation as related to operation, contracts, insurance and liability, regulatory, statutes, law and case law. Prerequisite: Junior Standing. Three hours lecture per week. Credit, three hours.

AVIA-499. PRACTICUM. 1-3:0:0
Involves selected practical experience in aviation, appropriate to the degree option being pursued. Experience may be within the Delaware State University environment or elsewhere within the aviation industry. Prerequisite: Senior Standing. Credit, one to three hours.

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