

Aviation Flight

Aviation Flight, familiarizes students with the Department of Aviation Technology and its curricula; it includes a historic overview of the field of aviation; overview of the current aviation environment; careers and employment opportunities in aviation, including discussions relative to aircraft manufacturing, airline operations, general aviation, air-freight, airport management, government service while preparing new student pilots for the maneuvers that are required to be performed during the Practical Test portion of the Private Check Ride. In addition to these maneuvers, basic aerodynamics, aircraft systems, instrument construction and operation, weight and balance, aviation flight physiology as well as a basic working knowledge of aircraft powerplants and their construction will be covered.

- DOE Code: 5524
- Recommended Grade Level: Grade 12
- Recommended Prerequisites: None
- Credits: 1 credit per semester, maximum of 2 credits
- Counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas
- One of the courses specified in the sequence of courses for all Career Clusters and all of Indiana's College and Career Pathway Plans
- This course is aligned with postsecondary courses for Dual Credit:
 - Vincennes University
 - AFLT 100- Primary Ground School
 - AFLT 110-Ground Instruction on Primary Flight Maneuvers
 - AFLT 160-Powerplant Lecture

Dual Credit

This course provides the opportunity for dual credit for students who meet postsecondary requirements for earning dual credit and successfully complete the dual credit requirements of this course.

Application of Content and Multiple Hour Offerings

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences. When a course is offered for multiple hours per semester, the amount of laboratory application or work-based learning needs to be increased proportionally.

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in SkillsUSA, the CTSO for this area.

Content Standards

Domain – Workplace Competency

Core Standard 1- Students apply and adapt aviation processes and procedures to perform effectively in the workplace.

Standards

- AF-1.1 Allocate the appropriate resources for task completion.
- AF-1.2 Demonstrate effective interpersonal skills.
- AF-1.3 Develop leadership skills.
- AF-1.4 Establish positive relationships with people from diverse backgrounds.
- AF-1.5 Research, analyze, and use data for work assignments.
- AF-1.6 Apply effective critical thinking, decision making, and problem-solving techniques.
- AF-1.7 Select and use appropriate tools and technology
- AF-1.8 Implement quality assurance measures and safeguards.
- AF-1.9 Read and interpret written materials.
- AF-1.10 Apply written communication skills.
- AF-1.11 Demonstrate effective listening and speaking skills.
- AF-1.12 Perform appropriate mathematical calculations correctly.
- AF-1.13 Exhibit a responsible work ethic.
- AF-1.14 Demonstrate accepted standards for ethical behavior.

Domain – Career Development

Core Standard 2 Students examine career opportunities in the field of aviation to prepare for future employment or additional training.

Standards

- AF-2.1 Establish a personal career goal and develop objectives for achieving the goal.
- AF -2.2 Evaluate employment and career pathway opportunities related to established career interest(s).
- AF -2.3 Create a continuing education plan that identifies further education and training options
- AF -2.4 Prepare for exams leading to certifications recognized by business and industry
- AF -2.5 Develop skills needed to enter the workforce.
- AF -2.6 Evaluate resources that keep workers current in the career field.
- AF -2.7 Demonstrate skills and attitudes needed for lifelong learning.
- AF -2.8 Apply effective money management strategies.

Domain 3 – Flight

Core Standard 3 –Students demonstrate flight maneuvers and aircraft operations procedures to pass the Practical Test portion of the Private Check Ride.

Standards

- AF-3.1 Perform various flight maneuvers.
- AF -3.2 Apply knowledge of airplanes structures and control surfaces to operations.
- AF -3.3 Examine principles of flight and basic aerodynamics
- AF -3.4 Perform visual scanning and collision avoidance procedures.

- AF -3.5 Define the flight environment.
- AF -3.6 Explain airspeed Indicator and color-coding procedures.
- AF -3.7 Identify V-speeds, definitions and numbers.

- AF -3.8 Apply knowledge of basic aerodynamics to flight procedures.
- AF -3.9 Demonstrate aircraft operation and control procedures.
- AF -3.10 Explain the role of aircraft weight and balance on maneuvers and operations.
- AF -3.11 Examine the impact of flight on physiology.

Domain 4– Aircraft Engines

Core Standard 4 – Students analyze aircraft engine operations to troubleshoot technical problems.

Standards

- AF-4.1 Examine reciprocating engine construction and operating principles.

- AF-4.2 Explore principles of carburetion and fuel Injection.
- AF-4.3 Differentiate between turbocharging and supercharging
- AF-4.4 Explain various engine management controls and gauges.
- AF-4.5 Examine turbine engine construction and operating principle.
- AF-4.6 Explain lubrication systems.
- AF-4.7 Differentiate between Turbojet, TurboFan, and Turboprop engines and configurations.
- AF-4.8 Examine Ignition systems.