

STRANDS AND STANDARDS

PRIVATE PILOT



Course Description

The Private Pilot ground school will give students the knowledge to take and pass the FAA written exam and prepare them for flight. Some of the areas of study will include aircraft operations, airplane controls, systems, navigation, and weather. Students will also study human factors and safety.

Intended Grade Level	11-12
Units of Credit	Minimum 0.5
Core Code	40.11.00.00.040
Concurrent Enrollment Core Code	40.11.00.13.040
Prerequisite	--
Skill Certification Test Number	Industry Test 959
Test Weight	1.0
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Aviation - Flight
Endorsement 2	--
Endorsement 3	--

STRAND 1

Students will be able to understand, demonstrate, and apply fundamentals of flight.

Standard 1

Students will identify opportunities within aviation.

- Pilot training and license requirements.
- Aviation opportunities and pathways (military, commercial, private, corporate, charter, Emergency Services, cargo, etc.).
- License privileges and limitations.
- Category, class, and type.

Standard 2

Students will understand and identify aircraft systems.

- Parts of an aircraft including flight controls.
- The powerplant and related systems.
- Flight instruments (glass cockpits, steam instruments, etc.).

Standard 3

Students will collaboratively apply aerodynamic principles.

- Four forces of flight (lift, weight, drag, and thrust).
- Generation of lift (Bernoulli's Principle and Newton's Laws of Motion).
- Three axes of flight.
- Effects of center of gravity.
- How aircraft design effects stability.
- Aerodynamics of maneuvering flight.
- Recognize stalls, spins, and recovery techniques.

Standard 4

Students will understand Aviation Physiology affecting Pilot Performance.

- Medical Certificates.
- Aeronautical decision making.
- Aeromedical Factors.

Performance Skills

- Investigate and identify parts of an aircraft.
- Describe Airplane systems.
- Collaboratively engage in discussions of Aerodynamic principles (Instrument failures).

STRAND 2

Students will be able to understand and demonstrate the flight environment and Federal Aviation Regulation/Aeronautical Information Manual (FAR/AIM).

Standard 1

Students will be able to identify the components of safety of flight.

- Right of way.
- Collision Avoidance.
- Visual Scanning.
- Maneuver Safety.
- Minimum Safe Alt.

Standard 2

Students will be able to identify and interpret the airport environment.

- Controlled vs Uncontrolled airports.
- Runway markings and signs and airport lighting.
- Traffic pattern.
- Runway incursions and Land and Hold Short Operations(LAHSO).
- Sources of flight information.

Standard 3

Students will be able to operate safely and effectively within the National Airspace System.

- Controlled and Uncontrolled Airspace.
- Transponders/Automatic Dependent Surveillance-Broadcast(ADS-B).
- Pilot/equipment requirements for airspace.
- Special use airspace.
- Temporary Flight Restrictions(TFR)/Air defense identification zone (ADIZ).
- Intercept procedures.

Standard 4

Students will be able to effectively communicate throughout the flight process.

- Radar and ATC services.
- Radio procedures.
- Proper radio phraseology.
- Universal Coordinated Time (UTC or ZULU).
- Emergency procedures.
- Flight Service and filing flight plans.

Performance Skills

- Identify and describe different air space on charts
- Demonstrate communication and radio procedures in a traffic pattern

STRAND 3

Students will develop and demonstrate an ability to understand and interpret aviation weather products.

Standard 1

Students will be able to recognize meteorology for pilots.

- Basic weather theory.
- Weather patterns.
- Weather hazards.

Standard 2

Students will analyze aviation weather services.

- The forecasting process.
- Printed reports and forecasts.
- Graphic weather products (prognosis chart, surface analysis chart, etc.).
- Sources of weather information (METAR, TAF, PIREP, etc.).
- Interpret weather data.
- Importance of using official aviation weather sources.

Performance Skills

- Read and interpret weather data from reports and charts.

STRAND 4

Students will be able to understand, predict, and calculate performance.

Standard 1

Students will demonstrate and calculate airplane performance.

- Predicting performance (takeoff, climb performance, and landing data).
- Weight, balance, and proper aircraft loading.
- Flight computers (E6B).
- Calculate cross winds.

Performance Skills

Understand performance and navigation.

- Calculate weight and balance
- Calculate takeoff and landing data
- Read and interpret performance charts

STRAND 5

Students will apply navigational skills to the flight planning process.

Standard 1

Students will be able to use navigational skills while flight planning and flying.

- Navigational and aeronautical charts.
- Pilotage and dead reckoning.
- Radio-based navigation (VOR & ADF).
- Satellite/GPS-based navigation.

Standard 2

Students will be able to plan a cross-country flight.

- The flight planning process.
- Navigational Log.
- Obtain all available information in regard to the flight.
- Filing a flight plan.
- Post-flight debrief.

Performance Skills

- Read, understand, and interpret navigational and aeronautical charts
- Complete a navigational log

STRAND 6

Students will understand the importance of career readiness skills as it relates to participation in TSA (Technology Student Association), SkillsUSA, or any other related CTSO in aviation-related fields.

Performance Skills

The following aviation workplace skills should be discussed, taught, re-enforced, and modeled throughout the strands and standards of the course:

- Communication
- Teamwork
- Critical and Creative Thinking
- Problem Solving
- Dependability