Upon completion of high school courses equivalent to the following competencies:

☐ Demonstrate knowledge of the following:
  Pilot Training
  • How to Get Started
  • Role of the FAA
  • Fixed-Base Operators (FBOS)
  • Eligibility Requirements
  • Types of Training Available
  • Phases of Training
  • Private Pilot Privileges and Limitations

Aviation Opportunities
  • New Experiences
  • Aviation Organizations
  • Category/Class Ratings
  • Additional Pilot Certificates
  • Aviation Careers

Human Factors in Aviation
  • Aeronautical Decision Making
  • Crew Resources Management Training
  • Pilot-in-Command Responsibility
  • Communication
  • Resource Use
  • Workload Management
  • Situational Awareness
  • Aviation Physiology
  • Alcohol, Drugs, and Performance
  • Fitness for Flight

☐ Gain a basic understanding of the main airplane components and systems:
  • Fuselage
  • Wings
  • Empennage
  • Landing Gear
  • Engine/Propeller
  • Pilot’s Operating Handbook (POH)

☐ Demonstrate knowledge of flight instrument functions and operating characteristics, including errors and common malfunctions:
  • Pilot-Static Instruments
  • Airspeed Indicator
  • Altimeter
  • Vertical Speed Indicator
  • Gyroscopic Instruments
  • Magnetic Compass

☐ Discuss the power plant and related systems:
  • Reciprocating Engine
  • Induction Systems

Discuss the power plant and related systems (cont’d):
  • Supercharging and Turbocharging
  • Ignition Systems
  • Fuel Systems
  • Refueling
  • Oil Systems
  • Cooling Systems
  • Exhaust Systems
  • Propellers
  • Propeller Hazards
  • Electrical Systems

☐ Demonstrate knowledge of the following:
  Four Forces of Flight
  • Lift
  • Airfoils
  • Pilot Control of Lift
  • Weight
  • Thrust
  • Drag
  • Ground Effect

  Aerodynamics Principles of Stability
  • Three Axes of Flight
  • Longitudinal Stability
  • Center of Gravity Position
  • Lateral Stability
  • Directional Stability
  • Stalls
  • Spins

  Aerodynamics Principles of Maneuvering Flight
  • Climbing Flight
  • Left-Turning Tendencies
  • Descending Flight
  • Turning Flight
  • Load Factors (Study Assignment)

☐ Explain stall/spin characteristics as they relate to training airplanes.

☐ Discuss importance of prompt recognition of stall indications.

☐ Explain important safety considerations, including collision avoidance precautions, right-of-way rules and minimum safe altitudes:
  • Collision Avoidance/Visual Scanning
  • Airport Operations
  • Right-of-Way Rules
  • Minimum Safe Altitudes
  • Taxing in Wind

Reviewed: 1/2017
Explain important safety considerations, including collision avoidance precautions, right-of-way rules and minimum safe altitudes (cont’d):

- Positive Exchange of Flight Controls

- Discuss the following:
  - Airport Marking and Lighting
    - Controlled and Uncontrolled
    - Runway Layout
    - Traffic Pattern
    - Airport Visual Aids
    - Taxiway Markings
    - Ramp Area Hand Signals
    - Airport Lighting
    - Visual Glideslope Indicators
    - Approach Light Systems
    - Pilot-Controlled Lighting
  - Aeronautical Charts
    - Latitude and Longitude
    - Projections
    - Sectional Charts
    - World Aeronautical Charts
    - Chart Symbology
  - Types of Airspace
    - Classifications
    - Uncontrolled Airspace
    - Controlled Airspace
    - Class E
    - Class D
    - Class C
    - Class B
    - Class A
    - Special VFR
    - Special Use Airspace Other Airspace Areas
    - Emergency Air Traffic Rules
    - Air Defense Identification Zones
- Explain radar, transponder operations, and FAA radar equipment and services for VFR aircraft:
  - Radar
  - Transponder Operation
  - FAA Radar Systems
  - VFR Radar Services
  - Automatic Terminal Information Service (ATIS)
  - Flight Service Stations
  - VHF Direction Finder Assistance
- Explain the sources of flight information, particularly the Aeronautical Information Manual and FAA advisory circulars:
  - Airport/Facility Directory
  - Federal Aviation Regulations
  - Aeronautical Information Manual (AIM)
  - Notices to Airmen (NOTAMS)
  - Advisory Circulars
  - Jeppesen Information Services

- Comprehension of the material presented in Chapters 1 through 5 of the Private Pilot Manual:
  - Airplane Systems
  - Aerodynamic Principles
  - The Flight Environment
  - Communication and Flight Information

- Discuss various weather conditions, frontal systems, and hazardous weather phenomena:
  - Basic Weather Theory
    - The Atmosphere
    - Atmospheric Circulation
    - Atmospheric Pressure
    - Coriolis Force
    - Global Wind Patterns
    - Local Wind Patterns
  - Weather Patterns
    - Atmospheric Stability
    - Temperature Inversions
    - Moisture
    - Humidity
    - Dewpoint
    - Clouds and Fog
    - Precipitation
    - Airmasses
    - Fronts

- Explain how to recognize critical weather situations form the ground and during flight, including hazards associated with thunderstorms and wind shear:

  - Weather hazards
    - Thunderstorms
    - Turbulence
    - Wake Turbulence
    - Wind Shear
    - Microburst
    - Icing
    - Restrictions to Visibility
    - Volcanic Ash

- Discuss the conditions, which result in wind shear.

Reviewed: 11/2016
Explain the appropriate Federal Aviation Regulations in the
Private Pilot Recommended Study List.

Demonstrate specific knowledge of those FARs which govern
student solo flight operations, private pilot privileges, limitations,
and National Transportation Safety Board (NTSB) accident
reporting requirements.

Explain how to obtain and interpret weather reports, formats, and
graphic charts:
Forecasting Process
• Forecasting Methods
• Types of Forecasts
• Compiling and Processing Weather Data
• Forecasting Accuracy and Limitations

Graphic Weather Products
• Surface Analysis Chart
• Weather Depiction Chart
• Radar Summary Chart
• Satellite Weather Pictures
• Low-Level Significant Weather Prog
• Severe Weather Outlook Chart
• Forecast Winds and Temperatures Aloft Chart
• Volcanic Ash Forecast and Dispersion Chart

Discuss the sources of weather information during preflight
planning and while in flight:
Sources of Weather Information
• Preflight Weather Sources
• In-Flight Weather Sources
• Enroute Flight Advisory Service
• Weather Radar Services
• Automated Weather Reporting Systems

Recognize critical weather situations described by weather
reports and forecasts:
Printed Reports and Forecasts
• Aviation Routine Weather Report (METAR)
• Radar Weather Reports
• Pilot Weather Reports
• Terminal Aerodrome Forecast (TAF)
• Aviation Area Forecast
• Winds and Temperatures Aloft Forecast
• Severe Weather Reports and Forecasts
• AIRMET.SIGMET/Convective SIGMET

Demonstrate knowledge of the material presented in Chapters 6
and 7 of the Pilot Manual and the FARs that apply to private pilot
operations, including private pilot privileges, limitation and NTSB
accident reporting requirements.

Explain how to use data supplied by the manufacturer to predict
airplane performance, including takeoff and landing distances and
fuel requirements:
Predicting Performance
• Aircraft Performance and Design
• Chart Presentations
• Factors Affecting Performance
• Takeoff and Landing Performance

Discuss how to compute and control the weight and balance
condition of a typical training airplane:
Weight and Balance
• Importance of Weight
• Importance of Balance
• Terminology
• Principles of Weight and Balance
• Computation Method
• Table Method
• Graph Method
• Weight-Shift Formula
• Effects of Operating at High Total Weights
• Flight at Various CG Positions

Explain the basic functions of aviation computers:
Flight Computers
• Mechanical Flight Computers
• Time, Speed, and Distance
• Airspeed and Density Altitude Computations
• Wind Problems
• Conversions
• Multi-Part Problems
• Electronic Flight Computers
• Modes and Basic Operations

Discuss the effects of density altitude on takeoff and climb
performance.

Explain the basic concepts for VFR navigation using pilotage,
deck reckoning, and aircraft navigation systems:
Piloting and Dead Reckoning
• Piloting
• Dead Reckoning
• Flight Planning
• VFR Cruising Altitudes
• Flight Plan
• Lost Procedures

VOR Navigation
• VOR Operations
• Ground and Airborne Equipment
• Basic Procedures
• VOR Orientation and Navigation
• VOR Checkpoints and Test Signals
• VOR Precautions
• Horizontal Situation Indicator
• Distance Measuring Equipment (DME)

ADF Navigation
• ADF Equipment
• Orientation
• Homing
• ADF Intercepts and Tracking
• Movable-Card Indicator
• ADF Precautions

Reviewed: 11/2016
Advanced Navigation
- VORTAC-Based Area Navigation
- Long Range Navigation (LORAN)
- Inertial Navigation System
- Global Positioning System

☑ Explain VFR navigation using pilotage, dead reckoning, and navigation systems.

☑ Discuss guidelines and recommended procedures related to flight planning, use of an FAA Flight Plan, VFR cruising altitudes, and lost procedures.

☑ Discuss the important aviation physiological factors as they relate to private pilot operations:
  Aviation Physiology
  - Vision in Flight
  - Night Vision
  - Visual Illusions
  - Disorientation
  - Respiration
  - Hypoxia
  - Hyperventilation

☑ Become familiar with the accepted procedures and concepts pertaining to aeronautical decision making and judgment, including cockpit resource management and human factors training:
  Aeronautical Decision Making
  - Applying the Decision Making Process
  - Pilot-in-Command Responsibility
  - Communication
  - Workload Management
  - Situational Awareness
  - Resource Use
  - Applying Human Factors Training

☑ Discuss the planning process for a cross-country flight:
  Flight Planning Process
  - Developing the Route
  - Preflight Weather Briefing
  - Completing the Navigation Log
  - Flight Plan
  - Preflight Inspection

☑ Demonstrate knowledge with the details of flying a typical cross-country flight, including evaluation or in-flight weather and decisions for alternative actions, such as a diversion:
  The Flight
  - Departure
  - Centennial Airport to Pueblo Memorial Airport
  - Pueblo Memorial Airport to La Junta Municipal Airport
  - La Junta Municipal Airport to Centennial Airport
  - Diversion to Limon Municipal Airport
  - Return to Centennial Airport

☑ Discuss how to plan for alternatives.

☑ Demonstrate comprehension of the material presented in Chapters 8 through 11 of the Private Pilot Manual.

☑ Demonstrate comprehension of the material presented in this course in preparation for the FAA Private Pilot Airmen Knowledge Test.

☑ Demonstrate comprehension of the academic material presented in this course and the student’s readiness to complete the FAA Private Pilot Airmen Knowledge Test.

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A student earning a “B” grade or better may earn college credit at the following college:

<table>
<thead>
<tr>
<th>College</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clover Park Technical College</td>
<td>AVP 105 (CIP Code: 490102)</td>
<td>4</td>
</tr>
</tbody>
</table>

Reviewed: 11/2016