

Aviation Flight Endorsement

Specifications, Competencies & Requirements

PURPOSE

This endorsement is meant for certified teachers interested in teaching **Aviation Flight** courses. It is attached to a current Utah Educator License with a license area of concentration in **Secondary** or **Career and Technical Education (CTE)** Education.

Upon attachment of this endorsement to a Utah educator license, educators will be approved to teach the following USBE courses:

Unmanned Aircraft Systems
Aviation History
Aviation Weather
Flight Simulator

Aircraft Systems
Air Transportation
Private Pilot

ENDORSEMENT TYPES

Prerequisite

Demonstrate an understanding of CTE basics.

CTE Knowledge

Associate Level Requirements

Applicants must complete **THREE** of the following competency requirements. The associate level endorsement is valid for up to three school years before it expires. Associate-level endorsements are non-renewable.

Aviation Meteorology
Aircraft Systems
Basic Aerodynamics
Federal Aviation Regulations
Flight Operations
Aviation Psychology & Physiology
Airspace & ATC Services
Flight Planning
CTSO Knowledge

Professional Level Requirements

The applicant must meet **ALL** the competency areas listed above for the professional level.

COMPETENCY DETAILS & DESCRIPTIONS

Prerequisite

1. CTE Knowledge

Demonstrate an understanding of CTE basics:

- Explain how CTE links learning to specific Utah industries and what its main goals are.
- Know the licenses and endorsements needed to teach specific CTE courses.
- Describe how CTE is organized into clusters and pathways at the state, district (LEA), and school levels, and how this helps students succeed after graduation.

- Locate and use the state's strands and standards in lesson plans.
- Explore CTE student organizations (CTSOs) and professional groups and explain how they support students and teachers.
- Explain how advisory boards, with industry members, make sure programs meet job market needs and maintain safe learning environments.
- Understand the basics of securing funding, planning for the future of the program, and participating in the state Program of Quality Review (PQR) to ensure program excellence.

Select one of the following options:

- **USBE Course:** [CTE Orientation](#)
- **Complete THREE years of full-time CTE Teaching in Utah**
- **Currently hold a professional-level CTE endorsement**

Endorsement Competencies

2. Aviation Meteorology

Show knowledge of aviation weather and interpret weather reports. Demonstrate understanding of how weather affects aircraft and flight safety. Provide evidence of analyzing weather data, such as METARs, TAFs, and radar, to understand current and future conditions. Use weather data for flight planning and safe decision-making. Make informed choices based on weather, understand aviation weather impacts, and prepare for aviation careers through practical experience.

Select one of the following options:

- **USBE Microcredential:** Aviation Meteorology
- **AV 2040 - Aviation Weather** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc.), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

Documentation Requirements: (Provide one or more of the following)

- A letter of recommendation or verification on company letterhead that includes all of the following:
 - Detailed job duties related to aviation weather and reports, the effect of weather on aircraft and flight safety, and the use of current weather data and forecasts in flight planning and ADM.
 - Dates of employment.
 - Supervisor contact information.

- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to aviation weather and reports, the effect of weather on aircraft and flight safety, and the use of current weather data and forecasts in flight planning and ADM.

3. Aircraft Systems

Demonstrate understanding of the parts and operation of modern aircraft. This includes demonstrating key systems, such as engines, fuel, oil, and electrical systems, and explaining how they work together to ensure a safe flight. Provide evidence of applying real-world examples, connecting theory to practice. Show troubleshooting and problem-solving to handle system problems and improve flight safety.

Select one of the following options:

- **USBE Microcredential:** Aircraft Systems
- **AV 2170 - Aircraft Systems** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Current FAA Airframe & Powerplant License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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 - Dates of employment.
 - Supervisor contact information.
- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to troubleshooting and a detailed understanding of the parts and operation of modern aircraft, including key systems like engines, fuel, oil, and electrical systems, and how they work together for safe flight.

4. Basic Aerodynamics

Demonstrate the basics of how airplanes fly and perform, including key forces that affect flight: lift, drag, thrust, and weight, and how these forces interact. Provide an understanding of theory in application with real-world examples. Analyze performance data and understand how factors such as temperature, altitude, and humidity affect flight performance.

Select one of the following options:

- **USBE Microcredential:** Basic Aerodynamics
- **AV 1130 - Flight Principles** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Current FAA Airframe & Powerplant License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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 - Dates of employment.
 - Supervisor contact information.
- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to how airplanes fly and perform, including the physical forces that affect flight and how they interact, and external factors such as temperature, altitude, and humidity.

5. Federal Aviation Regulations

Demonstrate an understanding of the Federal Aviation Regulations (FARs) that apply to private pilots.

This includes:

- Pilot licensing
- Medical requirements
- Limits on what private pilots can do
- Required airplane equipment
- NTSB Regulations

Show how to acquire and maintain a private pilot's license, pilot responsibilities during flight, and required paperwork.

Select one of the following options:

- **USBE Microcredential:** Federal Aviation Regulations
- **AV 3120 - Aviation Law** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**

- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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 - Detailed job duties related to aviation weather and reports, the effect of weather on aircraft and flight safety, and the use of current weather data and forecasts in flight planning and ADM.
 - Dates of employment.
 - Supervisor contact information.
- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to the FARs that apply to private pilots, including licensing, medical requirements, operational limitations, equipment, documentation, recurrent training, and NTSB regulations.

6. Flight Operations

Show an understanding of how airports work day-to-day and the rules for running them. This includes:

- Night operations
- Airport lights and markings
- Signs
- Traffic patterns
- How to avoid accidents and incidents

Select one of the following options:

- **USBE Microcredential:** Flight Operations
- **AV 2320 - Intro to Private Pilot Requirements** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Current FAA Airframe & Powerplant License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc.), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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- Dates of employment.
- Supervisor contact information.

150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to operational aspects of aviation, including night operations, airport lights and markings, signs, traffic patterns, risk mitigation, and the rules associated with day-to-day airport operations.

7. Aviation Psychology & Physiology

Demonstrate knowledge of the mental and physical factors of flight for a pilot and crew. Show an understanding of concepts related to aviation psychology, including human factors, Aeronautical Decision Making (ADM), stress and fatigue management, risk management, and Crew Resource Management (CRM). Demonstrate knowledge in aviation physiology, including effects of altitude and hypoxia, G-forces, spatial disorientation, physical fitness and vision, and the body's response to stress.

Select one of the following options:

- **USBE Microcredential:** Aviation Psychology & Physiology
- **AVSC 3200 - Flight Physiology** (Utah Valley University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc.), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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 - Detailed job duties related to aviation weather and reports, the effect of weather on aircraft and flight safety, and the use of current weather data and forecasts in flight planning and ADM.
 - Dates of employment.
 - Supervisor contact information.
- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to the mental and physiological factors of flight for a pilot and crew, including human factors, ADM, stress and fatigue management, CRM, the effects of altitude and hypoxia, G-forces, spatial disorientation, physical fitness and vision, and physical manifestations of stress.

8. Airspace and ATC Services

Demonstrate knowledge of Air Traffic Control (ATC) and airspace:

- ATC's job in keeping air traffic safe and organized, including how to talk to ATC, spacing rules, and emergency plans.

- The different types of airspace (A, B, C, D, E, and G), special use airspace, and temporary flight restrictions, and how controlled and uncontrolled airspace affect flights.
- Reading aviation charts
- Language and clearances
- Plan flights
- Flight behavior in controlled spaces

Select **one of the following options:**

- **USBE Microcredential:** Airspace and ATC Services
- **AV 1710 - Air Traffic Control Fundamentals** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc.), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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 - Detailed job duties related to aviation weather and reports, the effect of weather on aircraft and flight safety, and the use of current weather data and forecasts in flight planning and ADM.
 - Dates of employment.
 - Supervisor contact information.
- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to ATC and airspace, including keeping air traffic safe and organized, radio etiquette, spacing rules, emergency plans, different types of airspace and restrictions, aviation charts, clearances, flight plans, and flight behavior in controlled spaces.

9. Flight Planning

Demonstrate understanding of flight planning, including:

- Checking the weather
- Choosing flight paths
- Understanding airspace rules

Provide evidence of knowledge related to flight planning:

- Calculate fuel needs
- Estimate flight time
- Consider wind, altitude, and aircraft performance
- Pick backup airports
- Read aviation charts
- Follow weight and balance rules
- Use navigation tools

- Create flight logs
- Plan for emergencies

Select one of the following options:

- **USBE Microcredential:** Flight Planning
- **AV 2620 - Commercial Pilot Ground School** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Current FAA Basic Ground Instructor License**
- **Current FAA Advanced Ground Instructor License**
- **Current FAA Certified Flight Instructor License**
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience in commercial, private, or military aviation or at least 150 logged flight hours (examples: commercial pilot, ATC personnel, etc.), such that it demonstrates to USBE that you possess the depth of content knowledge required to meet all competencies outlined in the strands and standards for courses authorized by this endorsement.

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 - Dates of employment.
 - Supervisor contact information.
- 150+ hours in a Flight Log or equivalent evidence demonstrating professional work related to flight planning, including weather and its impact on flight performance and limitations, flight paths, airspace rules, calculating fuel and flight time, emergency plans, aviation charts, navigation tools, flight logs, and aircraft loading and balance.

10. **CTSO Knowledge**

Demonstrate Career and Technical Student Organization (CTSO) knowledge:

- **Help students lead:** Give students opportunities to build their leadership abilities and take charge.
- **Mentor students:** Offer guidance to help students set goals and overcome difficulties as they grow.
- **Manage the organization:** Coordinate meetings, events, and budgets, and handle administrative tasks smoothly.
- **Create helpful programs:** Develop activities that match the CTSO's goals of building leadership, exploring careers, and developing skills.
- **Communicate effectively:** Clearly talk with students, school leaders, and community members, and promote the CTSO.
- **Work with others:** Partner with teachers, businesses, and other organizations to create opportunities like internships and community service.
- **Advocate for CTE:** Promote Career and Technical Education and work to get the resources and recognition it needs.
- **Keep learning:** Stay up-to-date on CTSO management and trends in CTE.

- **Focus on student success:** Support students' interests and celebrate their accomplishments.

Select one of the following options:

- **Attend a CTSO Fall Leadership Conference:** Reflected on MIDAS transcripts.
- **USBE Course:** [SkillsUSA Utah Advisor Training](#)
- **USBE Microcredential:** [Career & Technical Student Organizations](#)