Unmanned Aircraft Systems Endorsement

Specifications, Competencies & Requirements

PURPOSE

This endorsement is meant for certified teachers interested in teaching Unmanned Aircraft Systems (**UAS**) courses. It attaches 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:

UAS: Intro to Drones
UAS: Design & Maintain
UAS: Remote Pilot Certification
UAS: Photo & Video
UAS: Capstone
Aviation History

ENDORSEMENT TYPES

Prerequisite
Demonstrate an understanding of CTE basics
CTE Knowledge

Associate Level Requirements

Candidates must complete the following requirements. The associate level endorsement is valid for up to three school years before it expires. Associate-level endorsements are non-renewable. Please complete:

FAA Remote Pilot Certification

**Schools and educators must adhere to the Federal Aviation Administration's regulations for the education of students and the operation of drone technologies.
CFR: Title 14, Chapter I, Subchapter F, Part 107

Professional Level Requirements
The applicant must meet **ALL** the competency areas listed below.
UAS Flight & Flight Logs
UAS Operations, Mission Planning, & Deliverables
UAS Design, Build, & Maintenance
CTSO Knowledge

COMPETENCY DETAILS & DESCRIPTIONS

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**

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2. FAA Remote Pilot Certification

Demonstrate competency of FAA standards by passing the FAA knowledge exam and obtaining an FAA Part 107 Certificate. These federally regulated standards determine competency for airspace classifications, operating requirements, aviation weather sources and effects, small unmanned aircraft loading and performance, emergency procedures, crew resource management, radio communication procedures, and physiological effects of drugs and alcohol. Additionally, the exam covers airport operations and traffic patterns, as well as maintenance and preflight inspection procedures. Successful completion of the exam and obtaining the Remote Pilot Certificate is required for individuals to obtain a Remote Pilot Certificate under Part 107

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Complete the following: Current FAA Remote Pilot License under Part 107

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3. UAS Flight & Flight Log

Demonstrate competency to manually (non-autonomously) operate a drone. Show skill in drone operation, understanding flight controls, and navigating various flight modes/techniques to conduct

safe and precise flights for the given mission. Possess knowledge of airspace regulations and maintain meticulous flight logs documenting mission details, flight parameters, maintenance activities, and equipment status for regulatory compliance and operational transparency.

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*Select **one** of the following options:*
- **USBE Microcredential:** UAS Flight & Flight Log (Unmanned Aircraft Systems Endorsement Pathway)
- **UAS 2050 - Unmanned Aircraft Systems Pilot in Command** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience (6 years if it was not a full-time job responsibility) in the UAS industry (examples: remote pilot, UAS technician, or aerial imaging specialist) and at least 50 logged flight hours, 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 flight log and one or more of the following)
  - Flight log documenting at least 50 hours of UAS operation. (Required)
    and
  - A letter of recommendation or verification on company letterhead that includes:
    - Detailed job duties related to manual and autonomous operation of a drone, flight controls, flight modes, safe and mission-specific flight planning, documentation, and regulatory compliance.
    - Dates of employment
    - Supervisor contact information.
  - Redacted tax returns or other official documentation showing business ownership in the UAS industry.
  - Professional portfolio showcasing UAS-related projects (e.g., aerial photography, mapping, inspection work).

4. UAS Operations, Mission Planning, & Deliverables

Demonstrate mission planning and complete a flight mission effectively appropriate to deliverables while maintaining accurate logs, utilizing CRM and ADM, and processing deliverables. Demonstrate strong situational awareness, decision-making skills, and effective communication with ground personnel and other stakeholders to plan and execute flight missions safely and efficiently.

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*Select **one** of the following options:*

- **USBE Microcredential:** UAS Operations, Mission Planning, & Deliverables (Unmanned Aircraft Systems Endorsement Stack)
- **UAS 3650 - Drones for Projects** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.
- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience (6 years if it was not a full-time job responsibility) in the UAS industry (examples: remote pilot, UAS technician, or aerial imaging specialist) and at least 50 logged flight hours, 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 flight log and one or more of the following)
  - <u>Flight log documenting at least 50 hours of UAS operation. (Required)</u>
    and
  - A letter of recommendation or verification on company letterhead that includes:
    - o Detailed job duties related to manual and autonomous operation of a drone, flight controls, flight modes, safe and mission-specific flight planning, documentation, and regulatory compliance.
    - o Dates of employment
    - o Supervisor contact information.
  - Redacted tax returns or other official documentation showing business ownership in the UAS industry.
- Professional portfolio showcasing UAS-related projects (e.g., aerial photography, mapping, inspection work).

5. UAS Design, Build, & Maintenance

Demonstrate a comprehensive understanding of UAS fixed-wing and multirotor construction, technology, aerodynamic principles, and components and systems. Exhibit proficiency in soldering, wiring, lab management, tools knowledge, and basic assembly techniques for applying building skills to various types of UAS construction, repair, or modification. Maintain knowledge of battery technology and safety, motor and systems specifications, and flight controllers for selecting and integrating components. Effectively communicate and document preventative maintenance procedures, proper repair procedures, and basic maintenance logs.

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*Select **one** of the following options:*
- **USBE Microcredential:** UAS Design, Build, & Maintain (Unmanned Aircraft Systems Endorsement Stack)
- **UAS 1500 - Introduction to Unmanned Aircraft Systems Maintenance and Components** (Utah State University)
- **College Course:** Transcripts showing passing grade of relevant course(s), and course description covering the required competency skills.

- **Work Experience:** Minimum of 3 years of documented, directly related, full-time occupational experience (6 years if it was not a full-time job responsibility) in the UAS industry (examples: remote pilot, UAS technician, or aerial imaging specialist) and at least 50 logged flight hours, 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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        o Dates of employment
        o Supervisor contact information.
    - Redacted tax returns or other official documentation showing business ownership in the UAS industry.
- Professional portfolio showcasing UAS-related projects (e.g., aerial photography, mapping, inspection work).

6. 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