STRANDS AND STANDARDS
UNMANNED AERIAL SYSTEMS

Learning that works for Utah
CTE®

Course Description

This course covers the history, safety, rules, and regulations, as well as the design and construction of Small Unmanned Aerial Systems (UAS). Students fly both rotary and fixed wing UAS in preparation for certification.

Intended Grade Level	9-12
Units of Credit	0.5
Core Code	40.11.00.00.050
Concurrent Enrollment Core Code	40.11.00.13.050
Prerequisite	N/A
Skill Certification Test Number	670
Test Weight	0.5
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Aviation-Flight
Endorsement 2	Unmanned Aerial Systems

STRAND 1

Students will gain an understanding of current Federal Aviation Administration (FAA) Small Unmanned Aerial Systems (UAS) laws and standards required to fly drones legally in the National Air Space (NAS).

Standard 1

Understand the organization of 14 CFR Part 107:
- General
- Operating Rules
- Remote Pilot Certification
- Waivers
- Airspace

Standard 2

Use Crew Resource Management (CRM) principles to provide a safe environment for UAS operations:
- Aeronautical Decision Making (ADM)
- Risk Management (RM)
- Situational Awareness (SA)text
- Hazardous Attitudes
- Safety Management Systems (SMS)

Standard 3

Understand FAA forms and incident reporting requirements:
- Integrated Airman Certification and Rating Application (IACRA)
- Part 107 Waivers/Authorizations
- Part 107 Safety Event Report

Performance Skills
- Demonstrate appropriate CRM to provide a safe environment for UAS operations.
- Prepare an FAA incident report.

STRAND 2
Students will understand how weather impacts UAS flight and sources of aviation weather information.

Standard 1
Understand the basics of how weather forms and affects aviation.

Standard 2
Read and interpret sources of aviation weather reports:
- Meteorological Terminal Aerodrome Report (METAR)
- Terminal Aerodrome Forecast (TAF)
- Aviation Weather Briefings (abbreviated, standard, outlook)

Standard 3
Understand and apply the minimum weather rules (14 CFR 107):
- Visibility – 3SM
- Distance – 500' below clouds, 2000' horizontally from clouds

Performance Skills
- Identify Cloud Types
- Calculate Density Altitudes

STRAND 3
Students will discover the new and upcoming technologies being used in UAS applications.

Standard 1
Research applicable current UAS technologies:
- Fixed wing
- Rotor
- VTOL
- Other

Standard 2
Research applicable new and emerging UAS technologies
- Battery Technologies

Performance Skills
- Present new and emerging technologies findings.

STRAND 4
Students will understand ethical and social responsibilities associated with UAS operation.

Standard 1
Understand state and local rules and statutes regarding privacy:
- Model release
- Voyeurism

Standard 2
Understand copyright law with respect to photography:
- Title 17 United States Code (USC) – Copyright Law
- Fair Use Doctrine
- Procedure for securing copyright for photographic image capture

Standard 3
Understand the pilot's responsibility to the UAS community

Standard 4
Understand responsible flight operations:
- Flight operation insurance
- Crew Resource Management (CRM)
- Go/No-go decision making

STRAND 5

Students will understand how drones are used in the real world, the related jobs, and requirements for those jobs.

Standard 1

Know the state of the primary industrial applications of UAS:

Standard 2

Understand the requirements for UAS operations careers:

- Logbook
- Resume
- Portfolio

Standard 3

Develop a business plan with UAS usage as a primary operation

Performance Skills

- Present a UAS simplified business plan.

STRAND 6
Students will learn flight operations skills: preflight, safety checks, flight and post-flight assessments, and any minor maintenance required.

Standard 1
Develop an appreciation of being extremely aware of details.

Standard 2
Understand the purpose of pre-flight checklists.

Standard 3
Perform safety checks on a variety of equipment.

Standard 4
Conduct post-flight assessments.

Performance Skills
- Identify Aircraft parts
- Demonstrate clear and direct Aviation Communication
- Teamwork (run an airport environment)
- Detail orientation
- Follow pre-flight checklists
- Use a compass to find direction
- Demonstrate ability to fly a sUAS

Skill Certification Test Points by Strand

Test Name	Test #	Number of Test Points by Strand										Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10		