STRANDS AND STANDARDS

UNMANNED AERIAL SYSTEMS: DRONES, INTRO

Learning that works for Utah CTE®

Course Description

This course introduces students to various aspects of drones including: rules and regulations, flight logs, flight operations, flight skills, equipment maintenance, and industry pathways.

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
Skill Certification Cut Score	**60%**
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 Aircraft Systems (UAS)

Updated: December 2025

STRAND 1: RULES & REGULATIONS

Recognize Federal Aviation Administration (FAA) recreational pilot privileges and limitations as outlined in the Exception for Recreational Flyers.

Standard 1

Recall FAA recreational flying requirements of The Recreational UAS Safety Test (TRUST) including but not limited to:

- General
- FAA-recognized Community Based Organization (CBO)
- Visual line of sight
- Use of a visual observer (VO) co-located and in direct communication with the pilot
- Give way and do not interfere with other aircraft
- Fly at or below FAA-authorized altitudes in controlled airspace only with prior authorization
- Fly at or below 400 feet in Class G airspace
- Low Altitude Authorization and Notification Capability (LAANC)
- DroneZone
- B4UFLY
- Drone registration
- Remote Identification
- Do not operate your drone in a manner that endangers the safety of the National Airspace System (NAS)
- Remain current on TRUST regulations per annual updates

Standard 2

Understand the pilot's responsibility to the UAS community.

Performance Skills

- Earn an FAA TRUST certificate for recreational flyers.
- Have an FAA TRUST certificate accessible while operating UAS.
- Demonstrate recreational flying requirements in accordance with FAA regulations.

STRAND 2: FLIGHT LOGS

Students will utilize a flight log as related to aviation standards and industry expectations.

Standard 1

Identify the purpose of flight log books.

- Tracking Pilot Progress and Performance
- Investigating Accidents and Incidents
- Improving Operational Efficiency
- Ensuring Data Accuracy and Security

Standard 2

Demonstrate logging flight as related to aviation standards and industry expectations.

Standard 3

Identify elements of a basic flight log.

- Date
- Aircraft type (including FAA registration number)
- Pilot Name
- Flight time (in 10ths)
- Post-flight observations/roles
- Location

Performance Skills

- Demonstrate accountability by accurately logging drone flight data.
- Show flight experience through logging flight data from multiple flights.

STRAND 3: FLIGHT OPERATIONS

Students will use aviation checklists for safety throughout all phases of flight operations, including pre, during, and post-flight.

Standard 1

Summarize the importance of a preflight checklist as related to aviation and industry standards.

- Pilot, Aircraft, Environment, External pressures (PAVE)
  - Illness, Medication, Stress, Alcohol, Fatigue, Eating/Emotion (IMSAFE)
  - Manufacturer's guidelines
  - Weather minimums
  - Risk assessment
    - Emergency procedures
    - Preflight safety meeting

Standard 2

Summarize the importance of an inflight checklist as related to aviation and industry standards.

- FAA TRUST regulations and operating limitations
  - CBO guideline compliance
- Situational Awareness
  - Battery levels
  - Visual line of sight (VLOS)
  - Changing weather conditions
  - Collision avoidance

Standard 3

Summarize the importance of a post-flight checklist as related to aviation and industry standards.

- Drone and equipment condition
- Manufacturer's guidelines for storage and repairs
- Flight logs completed

Performance Skills

- Based on aviation checklists, make informed and safe decisions throughout all phases of flight.
- Lead a preflight safety briefing.

STRAND 4: FLIGHT SKILLS

Students will recognize and show proficiency in introductory, advanced, and communication skills related to flight in relation to manual flight and aviation industry standards.

Standard 1

Recognize the purpose and application of basic flight maneuvers.

- Basic flight controls
- Squares
- Circles
- Parallel searches

Standard 2

Recognize the purpose and application of introductory flight skills.

- Manual control
- Obstacle avoidance
- Payload utilization

Standard 3

Recognize the purpose and application of advanced flight skills.

- Patterns
  - Search and rescue
  - Grid
- First Person View (FPV)
- Fixed Wing Control
- Vertical Take-off and Landing (VTOL)
- Autonomous missions

Standard 4

Relate the importance of appropriate communication skills to aviation standards.

- Team coordination
- Aviation terminology

Performance Skills

- Demonstrate effective communication while performing flight skills as part of a team.
- Safely and successfully demonstrate a minimum of three basic maneuvers.
- Safely and successfully demonstrate at least one advanced flight skill.

STRAND 5: EQUIPMENT MAINTENANCE

Students will recognize UAS-related maintenance concepts and show the importance of maintenance practices related to drones.

Standard 1

Identify the location of UAS components and their functions.

- Airframe
- Landing surface/gear
- Propellers
- Motors
- Propeller guard
- Battery
- Transmitter (and phone/tablet)
- Receiver

Standard 2

Illustrate the effect regular maintenance has on aircraft performance over time.

- Firmware (drone)
- Software (app)
- Propeller replacement
- Calibration
- Component checks
- Battery

Standard 3

Explain proper methods of battery disposal.

Performance Skills

- Identify damaged UAS components.
- Replace basic components (propellers, propeller guards, battery, etc.).
- Perform a pre- and post-flight inspection.
- Demonstrate safe LiPo battery practices (charging/discharging, replacing, and storage).

STRAND 6: INDUSTRY

Students will explore how Unmanned Aircraft Systems are used in the real world and what qualifications must be met for related careers.

Standard 1

Explore careers in Unmanned Aircraft Systems.

- Drone Pilot
  - Commercial
  - survey/mapping
- UAS Technician
  - Maintenance
  - Deployment
- Data analyst
- Software developer
- Regulatory specialist

Standard 2

Investigate industry opportunities in Unmanned Aircraft Systems related to student interests.

- Aviation
- Agriculture
- Construction and infrastructure
- Public safety
- Environmental monitoring
- Media & entertainment
- Logistics & delivery

Standard 3

Identify the requirements for UAS operations careers.

- Logbook
- Resume
- Portfolio
- Certification

Performance Skills

- Present a personalized UAS post-secondary plan (college or career).

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		
UAS: Drones, Intro	670							-	-	-	-		