

UAS: Introduction to Drones

Exam Information	Description
Exam number 670 Items 32 National Career Cluster Supply Chain & Transportation Certification available No, in Pilot status	This course introduces students to various aspects of drones including: rules and regulations, flight logs, flight operations, flight skills, equipment maintenance, and industry pathways.

Exam Blueprint and Performance Skills

Standard	Percentage of exam score
1. Rules and Regulations	20%
2. Flight Logs	5%
3. Flight Operations	32%
4. Flight Skills	18%
5. Equipment Maintenance	20%
6. Industry	5%

Standard 1 - Rules & Regulations (20% of exam score)

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

Objective 1 Recall FAA recreational flying requirements of The Recreational UAS Safety Test (TRUST) including but not limited to:

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

Objective 2 Understand the pilot's responsibility to the UAS community.

Performance Skills

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

Standard 2 - Flight Logs (5%)

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

Objective 1 Identify the purpose of flight log books.

1. Tracking Pilot Progress and Performance
2. Investigating Accidents and Incidents
3. Improving Operational Efficiency
4. Ensuring Data Accuracy and Security

Objective 2 Demonstrate logging flight as related to aviation standards and industry expectations.

Objective 3 Identify elements of a basic flight log.

1. Date
2. Aircraft type (including FAA registration number)
3. Pilot Name
4. Flight time (in 10ths)
5. Post-flight observations/roles
6. Location

Performance Skills

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

Standard 3 - Fight Operations (32%)

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

Objective 1 Summarize the importance of a preflight checklist as related to aviation and industry standards.

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

Objective 2 Summarize the importance of an inflight checklist as related to aviation and industry standards.

1. FAA TRUST regulations and operating limitations
 - a. CBO guideline compliance
2. Situational Awareness
 - a. Battery levels
 - b. Visual line of sight (VLOS)
 - c. Changing weather conditions
 - d. Collision avoidance

Objective 3 Summarize the importance of a post-flight checklist as related to aviation and industry standards.

1. Drone and equipment condition
2. Manufacturer's guidelines for storage and repairs
3. Flight logs completed

Performance Skills

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

Standard 4 - Flight Skills (18%)

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

Objective 1 Recognize the purpose and application of basic flight maneuvers.

1. Basic flight controls
2. Squares
3. Circles
4. Parallel searches

Objective 2 Recognize the purpose and application of introductory flight skills.

1. Manual control
2. Obstacle avoidance
3. Payload utilization

Objective 3 Recognize the purpose and application of advanced flight skills.

1. Patterns
 - a. Search and rescue
 - b. Grid
2. First Person View (FPV)
3. Fixed Wing Control
4. Vertical Take-off and Landing (VTOL)
5. Autonomous missions

Objective 4 Relate the importance of appropriate communication skills to aviation standards.

1. Team coordination
2. Aviation terminology

Performance Skills

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

Standard 5 - Equipment Maintenance (20%)

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

Objective 1 Identify the location of UAS components and their functions.

1. Airframe
2. Landing surface/gear
3. Propellers
4. Motors
5. Propeller guard
6. Battery
7. Transmitter (and phone/tablet)
8. Receiver

Objective 2 Illustrate the effect regular maintenance has on aircraft performance over time.

1. Firmware (drone)
2. Software (app)
3. Propeller replacement
4. Calibration
5. Component checks
6. Battery

Objective 3 Explain battery disposal in terms of global awareness.

Performance Skills

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

Standard 6 - Industry (5%)

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

Objective 1 Explore careers in Unmanned Aircraft Systems.

1. Drone Pilot
 - a. Commercial
 - b. survey/mapping
2. UAS Technician
 - a. Maintenance
 - b. Deployment

3. Data analyst
4. Software developer
5. Regulatory specialist

Objective 2 Investigate industry opportunities in Unmanned Aircraft Systems related to candidate interests.

1. Aviation
2. Agriculture
3. Construction and infrastructure
4. Public safety
5. Environmental monitoring
6. Media & entertainment
7. Logistics & delivery

Objective 3 Identify the requirements for UAS operations careers.

1. Logbook
2. Resume
3. Portfolio
4. Certification

Performance Skills

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