



# DRONES

This competency-based course is designed to prepare students with the knowledge and skills to obtain the Federal Aviation Administration Remote Pilot Certificate. In this course, students will engage in virtual reality and interactive videos designed to teach students the skills and qualities of a pilot. Students will learn how weather affects the drone and will develop an understanding of the physics involved with flying, and much more! Students are immersed in topics that include emergency procedures, preflight inspection, radio communication, VLOS operations, sectional charts, aerial photography and search and rescue operations. Upon completion of this course, the students will be equipped with the knowledge and skills necessary to earn a digital badge in Drones, and will be better prepared to obtain a Remote Pilot Certificate.

Title	Objective
History of Unmanned Aircraft	Explain the history of unmanned aircraft systems (UAS).
The Newest and Greatest in the UAS World	Discuss the recent developments in UAS technology.
The UAS System	Explain the UAS flight as a system of people.
Fixed Wing UAS	Identify Fixed wing UAS.
Rotary Wing UAS	Identify Rotary wing UAS.
VTOL UAS	Explain vertical take off and landing(VTOL) UAS.
Preflight Inspection	Perform preflight inspection procedures.
Preflight Inspection	Discuss maintenance requirements
Emergency Procedures	Discuss emergency procedures in operating an unmanned aircraft.
Crew Risk Management	Discuss crew risk management.
Aerodynamics of Flight	Identify the aerodynamics of flight
Four Forces of Flight	Explain the four forces acting during flight.

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Force of Lift	Describe the effects of lift on flight.
Loading	Explain unmanned aircraft loading.
Force of Weight	Describe the effects of weight on flight.
Force of Thrust	Describe effects of thrust on flight.
Force of Drag	Describe the effects of drag on flight.
Center of Gravity	Explain the center of gravity and its effects on flight.
VLOS Operations	Explain Visual Line of Sight (VLOS) operations.
Radio Communications	Discuss radio and communication procedures for operating a unmanned aircraft.
UAS Regulations	Identify regulatory requirements for UAS use.
Personal License Requirements	Explain personal license requirements.
Small UAS Requirements	Identify what constitutes a small UAS.
Part 107 Waiver	Explain Part 107 waiver.
Flight Restrictions	Identify flight restrictions around airports.
VFR	Identify visual flight rules (VFR) terms and symbols.
Requesting NOTAMS	Explain how to request a NOTAM when flight planning.
Requesting TFR's	Explain how to request a Temporary Flight Restriction(TFR).
Sectional Charts (Controlled Airspace)	Demonstrate how to use a sectional chart for awareness of controlled airspace.
Sectional Charts (Uncontrolled Airspace)	Demonstrate how to use a sectional chart for awareness of uncontrolled airspace.
Sectional Charts (Other Airspace)	Demonstrate how to use a sectional chart for awareness of other airspace.
Weight and Balance	Explain how weight and balance are critical for flight safety.
Physiological Factors	Explain the physiological factors affecting pilot performance.
Getting a Weather Brief	Explain how to request a weather brief when flight planning.
Should you risk it?	Interpret weather phenomenon affecting UAS flight.
Effects of Pressure on Performance	Explain how pressure has effects on performance of an unmanned aircraft.
Temperature -vs- Lift	Explain how temperature change affects lift.
Wind	Explain the effects of wind on an unmanned aircraft.

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Density	Explain the effects of density when flying an unmanned aircraft.
Thunderstorms	Explain how thunderstorms work.
Aerial Photography Uses	Discuss how UAS is used in Aerial Photography.
Aerial Inspection Uses	Describe applications for UAS in bridge inspection.
Search and Rescue Uses	Describe applications for UAS in search and rescue.
Tactical Applications	Identify UAS use in tactical applications.
Looking to the Future	Interpret the future of UAS Development.

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