

Drones: Remote Pilot

Syllabus

» Course Overview

This course prepares students to take the Federal Aviation Administration’s Part 107 exam, which is a key step to becoming a commercial drone pilot. The field of unmanned aerial vehicles is growing rapidly, as the opportunities to use them for search and rescue, photography, recreation, inspection, and many others continue to multiply. Students will learn the critical facts to prepare for the test’s topics, which include regulations, airspace & requirements, weather, loading & performance, and operations. The course will conclude with a look at the most promising careers in the field of drones.

» Course Outline by Module

Module 1	Introduction to the Drone Remote Pilot Exam	Module 5	Weather
Module 2	Regulations Part 1	Module 6	Loading & Performance
Module 3	Regulations Part 2	Module 7	Operations
Module 4	Airspace & Requirements	Module 8	Drone Careers

» Module Overview and Learning Objectives

| Module 1. Introduction to the Drone Remote Pilot Exam

Every day, more and more drones are taking off! Not just for hobbyists, but for photographers, businesses, and search and rescue. But how can you register and operate a drone legally? This introduction module will preview the topics covered throughout this course, which will prepare students to take the remote pilot exam by the Federal Aviation Administration. Students will also discuss some basic topics regarding safety, following rules, and insurance requirements.

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Learning Objectives: In this module, students will:

- Describe personal and commercial uses of drones as well as potential careers in the drone industry
- Define key terms related to drones
- Outline the structure and topics covered in the remote pilot exam
- Identify where to take a remote pilot exam and locate their nearest testing center
- List the eligibility requirements to take the knowledge test
- Discuss the importance of flying legally, following rules, and safety
- Describe the steps to register a drone as well as the penalties for failing to register
- Evaluate whether drone insurance is necessary and describe the cost and coverage of drone insurance

| Module 2. Regulations Part 1

In this module, students will begin to learn the specifics about remote pilot certification and the associated regulations. The module will outline the eligibility requirements that remote pilot candidates must meet. Students will also become familiar with some of the pertinent terms related to the Part 107 exam and small unmanned aircraft use in general. The module will also discuss the role of the remote pilot-in-command as well as the other crew member positions. Students will also learn how and when to report an accident to the FAA as well as understand the FAA's stance on falsification, reproduction, or fraudulent reports and records of any kind. Finally, the module will conclude with the process for documenting FAA inspection, sUAS registration, and pre-flight action and inspection.

Learning Objectives: In this module, students will:

- Evaluate the necessity of regulations for the FAA and their benefits.
- Define the eligibility requirements and pertinent terms to the Part 107 remote pilot.
- Discuss the roles of the remote pilot and supporting crew.
- Analyze the necessity of a penalty for falsification, reproduction, or fraudulent reproduction of certificates, reports, logbooks, or records as well as accident reporting.
- Understand the documentation required for FAA inspections, sUAS registration, and pre-flight action and inspection.

| Module 3. Regulations Part 2

This module continues the examination of rules and regulations as outlined by the FAA. It will analyze the importance of understanding what constitutes hazardous material and what is considered daylight operation. The module will examine requirements associated with visual line of sight and right-of-way. It will also explore flying over people and operations from moving vehicles. Privacy and safety will be addressed. Finally, the module will conclude with an examination of the laws and rules of alcohol and drug use while operating a drone.

Learning Objectives: In this module, students will:

- Analyze the importance of understanding the requirements surrounding hazardous material carriage and daylight operation.
- Identify the rules and requirements associated with visual line of sight and right of way.
- Discuss the rules surrounding operation over people, change of address requirements, and operation from moving vehicles or an aircraft.
- Discuss the importance of privacy and safety operations when operating a drone.
- Understand the laws and rules surrounding alcohol and drugs associated with operating a drone.

| Module 4. Airspace & Requirements

This module will take a close look at the National Airspace System. It will cover what resources to use to gather information about the airspace classification of any given area. Then it will look at the different airspace classifications, areas, and routes. The module will address utilizing longitude and latitude to find a specific location on a globe. Finally, it will examine the requirements surrounding airport operations and how to identify and interpret airport markings and signs..

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Learning Objectives: In this module, students will:

- Identify the various airspace resources.
- Compare and contrast the various airspace classifications, areas, and routes.
- Use longitude and latitude to find a specific point on the globe.
- Understand the requirements surrounding airport operations.
- Identify airport markings and signs.

| Module 5. Weather

This module on weather begins with an overview on inflight hazards and proper collision avoidance procedures. Attention will then turn to weather where students will understand the impact of wind, air masses, and fronts on aviation. It will then explain atmospheric stability, visibility, and clouds. The impact of thunderstorms, icing, and fog will be evaluated. The module will look at different weather briefings and reports for planning drone operations.

Learning Objectives: In this module, students will:

- Employ active collision avoidance procedures.
- Understand the ramifications of wind, air masses, and fronts.
- Analyze atmospheric stability, visibility, and clouds.
- Evaluate the impact of thunderstorms, icing, and fog to operating a drone.
- Use weather briefings, reports, forecasts, and charts to plan drone piloting.

| Module 6. Loading & Performance

This module covers what students need to know for the Part 107 Exam regarding loading and performance. The speed and altitude regulations will be discussed as well as loading requirements for drones. The module will explain the load factor and what causes stalls. Finally, students will understand the importance of the performance and operational information provided by the manufacturer of a specific drone.

Learning Objectives: In this module, students will:

- Determine speed and altitude and follow regulations surrounding them.
- Understand the loading requirements for drones.
- Identify the load factor requirements for an unmanned aircraft.
- Discuss stalls in an unmanned aircraft.
- Argue the importance of understanding the performance or operational information provided by the manufacturer of a specific drone.

| Module 7. Operations

The Remote PIC has the responsibility to make sure the sUAS and crew operate as safely as possible. This module will discuss the requirements for a pre-flight inspection and how to perform one thoroughly. It will also cover appropriate pre-flight and in-flight communication procedures to help new remote PICs understand and communicate with the aviation community. Next, the module will identify appropriate in-flight emergency procedures and aeronautical decision-making strategies to encourage remote PICs to make the safest decisions possible. Finally, the module will analyze maintenance and inspection procedures to make sure an sUAS offers the longest service life possible.

Learning Objectives: In this module, students will:

- Understand the requirements for a pre-flight inspection.
- Use appropriate pre-flight and in-flight communication procedures.
- Identify appropriate in-flight emergency procedures.
- Use aeronautical decision-making strategies.
- Analyze maintenance and inspection procedures.

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| Module 8. Drone Careers

More and more industries are beginning to incorporate drone use into their business model. Drones typically cost less and are less dangerous than manned aircraft. Of course, to utilize drones, there needs to be a drone pilot involved. In this module we will look at some of the options drone pilots have as well as other career avenues such as drone instructor, drone photographer, drone operation in the military, and drone technician.

Learning Objectives: In this module, students will:

- Understand the requirements and responsibilities associated with becoming a drone instructor.
- Understand the requirements and responsibilities associated with becoming a drone pilot.
- Discuss the requirements and responsibilities associated with becoming a drone photographer.
- Identify the requirements and responsibilities associated with drone operation in the military.
- Evaluate the requirements and responsibilities associated with becoming a drone technician.