



FlightInsight Commercial Ground School

**COMMERCIAL
PILOT
2024 Edition**

Learning Outcomes

Welcome to Commercial Pilot Ground School! This course covers the aeronautical knowledge required to operate an airplane as a commercial pilot. The lectures in this course draw on materials used to train flight students for decades and include topics such as: navigation, flight planning, maneuvers, weather, communications, regulations, aeromedical factors, and decision-making.

Each of the thirteen topics includes a series of video lectures and animations illustrating concepts. **All the course material is available online once you're enrolled on the [FlightInsight](#) course page.** You can supplement the lectures by reading up on the material using the assigned readings listed in the table on the next page. After some of the video lectures, there is a series of practice questions modeled on the actual FAA test. You can take a 100-question timed **practice test** at any time as a dress rehearsal for the real thing!

After successfully completing this course you will be able to:

- Apply your knowledge toward conducting safe, efficient flight as a commercial pilot;
- Take the Commercial Pilot – Airplane Knowledge Examination administered by the Federal Aviation Administration (FAA) for pilot certification. **Completion of the course entitles you to an endorsement to take this exam.**

Resources Used in the Course

The following materials can be used to accompany the online resources for this course. A [list of resources](#) recommended for further knowledge is available further below.



[Pilot's Handbook of Aeronautical Knowledge](#)

This serves as the "textbook" for the course. You can access this FAA publication free online, or purchase your own



[Airplane Flying Handbook](#)

Basic pilot skills and knowledge are demonstrated in this handbook. The maneuvers covered in this course are explained within this book



[Aviation Weather](#)

The FAA also publishes an excellent primer on aviation weather available free on its website

Your Instructor

Dan George is a Certified Flight Instructor-Instrument (CFII) based in Maryland. He has accumulated over 4,000 flight hours, mostly through instructing students.

He has guided dozens of pilots through the challenging process of attaining their Private or advanced ratings.

Dan serves as a Lecturer at the University of Maryland, teaching Aviation in the Aerospace Engineering Department.

He is an instrument rated Commercial Pilot with Single and Multiengine Land ratings and is an FAA Gold Seal Flight Instructor and Instrument Instructor.

Email Dan at training@flight-insight.com

Lecture Listing

PHAK = Pilot's Handbook of Aeronautical Knowledge

AW = Aviation Weather

AFM = Airplane Flying Handbook

FAR = Federal Aviation Regulations

AIM = Aeronautical Information Manual

MODULE	READINGS	LECTURE SUBJECT	TIME TO COMPLETE
Module 1		Introduction Welcome to FlightInsight! Introduction to Commercial Maneuvers FAA Knowledge Test Prep	10 minutes
Module 2	FAR 61,91,119	The Commercial Rating Commercial Rating Requirements Commercial Pilot Privileges The Technically Advanced Aircraft (TAA)	25 minutes
Module 3	<u>PHAK 6</u> <u>PHAK 7</u> <u>AFM 12</u>	Complex Aircraft Retractable Landing Gear Constant Speed Propeller Using a Constant Speed Propeller Flaps	35 minutes
Module 4	<u>PHAK 7</u> <u>AFM 15</u>	Aircraft Systems Turbochargers Cabin Pressurization Oxygen Systems Ice Control Systems Fuel Injectors	30 minutes
Module 5	<u>AFM 7</u> <u>AFM 9</u> <u>AFM 10</u> <u>AFM 18</u>	Commercial Maneuvers Chandelles Lazy Eights Eights on Pylons Steep Spirals Steep Turns/Accelerated Stalls Emergency Descents Engine Out Procedures Short Field Landings and the Power Off 180°	60 minutes
Module 6	<u>PHAK 5</u>	Aerodynamics The Four Forces of Flight – Lift Lift Equation Explained The Four Forces of Flight - Weight & Thrust Center of Gravity The Four Forces of Flight – Drag Stability and Control Maneuvering Speed Critical Mach Number	25 minutes
Module 7	<u>PHAK 15</u>	The Flight Environment Charts Airspace The Airport Environment	20 minutes

MODULE	READINGS	LECTURE SUBJECT	TIME TO COMPLETE
Module 8	<u>PHAK 11</u>	Performance V Speeds Best Angle of Climb Best Rate of Climb V _x and V _y at Altitude Pressure and Density Altitude Takeoff, Landing and Cruise Performance Weight and Balance	30 minutes
Module 9	FAR 61,91	Regulations Certification Preflight Requirements Operating Rules	15 minutes
Module 10	<u>AW</u>	Weather Heating Effects Wind Clouds and Precipitation Air Masses and Fronts Weather Hazards	10 minutes
Module 11	<u>PHAK 13</u>	Sources of Flight Information Weather Observations and Forecasts Weather Charts and NOTAMs The Standard Weather Briefing	8 minutes
Module 12	<u>PHAK 16</u>	Navigation Pilotage and Dead Reckoning Practice with the E6-B VOR and GPS Navigation	30 minutes
Module 13	<u>PHAK 17</u>	Human Factors The Lungs and Circulatory System Vision and Spatial Orientation Aeronautical Decisionmaking	6 minutes

Knowledge Test Prep

FlightInsight Ground Schools include comprehensive prep resources to get you ready for the FAA Knowledge Test. Some of the lecture modules will include a practice quiz with questions from the subject you just learned. Not all the lecture modules have questions associated with them. You might come across some questions that weren't covered in the lecture. The primary purpose of the lecture is to make you a smarter, safer pilot, not to "teach to the test" so to speak. Instead, every question has detailed answer feedback that will give you an edge in your studying. See the module on [Test Prep](#) to learn more!