



# Commercial Pilot Ground School and CPAER Preparation Course Outline

## Course Introduction

- Navigating the Course
- The CPAER Exam
- Exam Tips

## Theory of Flight

- Theories Debunked (Video)
- Forces on an Airplane
- Airfoil Theory
- Angle of Attack Theory
- Flight Control Theory
- Stability

## Flight Instruments

- Overview
- Principles of Gyroscopes
- Airspeed Indicator
- Attitude Indicator
- Altimeter
- Turn Coordinator
- Heading Indicator
- Vertical Speed Indicator
- Compass

## Airframes and Engines

- Airframes
- Landing Gear and Brakes
- Piston Engines
- Engine and Engine Instruments
- Diesel Engines
- Propellers
- Variable Pitch Propellers
- Carburetors

## Airframes and Engines Continued

- Manifold Pressure
- Electrical Systems
- Oil
- Fuel
- Fuel Injection
- Turbine Engines
- More Turbine Engines

## Air Law – General Review

- CARs Basics Review
- CPL Licensing
- General CARs
- Airspace
- Airports
- Onboard Emergency Equip
- Emergencies and TSB

## Air Law - Aircraft

- Aircraft Equip Requirements
- Documents Required
- Commercial Maintenance
- Maintenance and Tech Logs

## Air Law for VFR CPL Holders

- VFR Rules
- Radio Communications
- SFOC
- Emergency Communications



## Air Law – Commercial Operations

Commercial Flight Ops

Part 702

Part 703

Part 604

Flight Duty Times

SMS

## Flight Operations

General Flight Ops

Wake Turbulence

Search and Rescue

Controlled Airspace Ops

Air Traffic Service

ATS Communication

VFR Near an Airport

## Meteorology

Summary

Moisture

Atmosphere

Temperature

Stability

Atmospheric Pressure

## Performance

Terms

Weight and Balance

Overview

Practical Charts

Practical Graphs (Video)

Weight Shift

## Meteorology 2

Air Masses

Fronts

Clouds

Wind

Low Level Visibility

Thunderstorms

Turbulence

Jet Streams

## PDM and Human Factors

Physiology

Pilot Decision Making

Relationships

Fatigue and Stress

Threat and Error Management

Visual Illusions

Yourself and Others

## Practical Meteorology

Sources of Information

Reports

Forecasts

GFA

Weather Maps

## Navigation

Introduction to Terms

Charts and Maps

CFS

Chart Legends

ICAO Flight Plan

LO Charts

Navigational Basics

NOTAMs

Time

Triangle of Velocities



## Practical Navigation

- E6B
- Flight Prep
- Navigational Log

In order to be issued a record of ground school, all topics must be completed. All quizzes, excluding the final exams, must be corrected to 100%.

## Radio Navigation

- Theory of Nav Aids
- Surveillance
- VOR
- Practical VOR Navigation
- ADF
- Practical ADF Navigation
- DME
- GPS
- RMI
- Additional Equipment

In order to obtain a letter of recommendation for the CPAER Exam, a minimum of three (3) exams must be completed to a minimum pass of 80% on the first attempt.

One letter of recommendation is issued per student. The letter of recommendation is valid for 60 days from the date of issue.

## CFIT Prevention

- Overview
- Risks
- Flight Crew and CFIT Prevention

## Icing and Winter Operations

- Cold Wx and Icing
- Ground Operations
- Inflight Icing

## Final Exams