

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

XX Transfer Course    XX A.A. Degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:**

AERONAUTICAL SCIENCES 107 - Instrument Pilot Ground School

**UNIT VALUE:** 3

**MINIMUM NUMBER OF SEMESTER HOURS:** 48

**BASIC SKILLS REQUIREMENTS:**

Appropriate language skills.

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** Private Pilot Certificate or AERO 105 with concurrent or prior flight training.

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

The rules and regulations for instrument flight, interpretation of flight instruments, air navigation, meteorology, instrument flight techniques, air traffic control, and flight planning. Prepares the student for the Federal Aviation Administration's Instrument written examination.

**SPECIFIC COURSE OBJECTIVES:**

The successful student will be able to:

1. pass the Federal Aviation Administration's written text for Instrument Rating Airplane.
2. apply principles learned in class to the practical flight test for instrument rating airplane.
3. analyze the factors and regulations as they apply to planning and making a safe instrument flight.
4. pose problems which may occur during an instrument flight and arrive at safe and satisfactory solutions.
5. analyze weather reports & forecasts to determine the best course of action for an instrument flight.

## CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

### I. FLIGHT PLANNING

- A. Certificates and Ratings
- B. Preflight Action for Flight
- C. Preflight Action for Aircraft
- D. Flight Plan
- E. Route Planning
- F. Flight Planning Computer Operation
- G. Aircraft Performance
- H. Aircraft Operating Limitations
- I. Aircraft Systems
- J. Fundamentals of Weather
- K. IFR Weather Hazards
- L. Aviation Weather Observations and Reports
- M. Aviation Weather Forecasts
- N. Weather Tables and Conversion Graphs
- O. Weather Facilities

### II. DEPARTURE

- A. Authority and Limitation of Pilot
- B. Flight Plan
- C. Departure Clearance
- D. Taxi and Takeoff Procedures
- E. Departure Procedure
- F. VOR Accuracy Check
- G. Pre-take off Instrument Check
- H. Transponder
- I. Airport Facilities
- J. FSS Facility
- K. Departure Control Facility

### III. EN ROUTE

- A. En Route Limitations
- B. En Route Procedures
- C. ATC Clearances
- D. Oxygen Requirements
- E. Emergencies
- F. Radio Orientation
- G. Establishing Radio Fixes and Waypoints
- H. En Route Computer Operations
- I. Attitude Instrument Flying
- J. Unusual Flight Conditions
- K. Radio Navigation Facilities
- L. Airway Route System
- M. Special Use Airspace
- N. ARTCC Facility
- O. En Route Weather Services
- P. Fixed-Wing Aerodynamic Factors
- Q. Physiological Factors

### IV. ARRIVAL

- A. Approach Control
- B. Holding Procedures
- C. Precision Approaches

- D. Non-Precision Approaches
- E. Missed Approach
- F. Landing Procedures
- G. Logging of Flight Time
- H. Radio Orientation on Approach
- I. Wake Turbulence
- J. Terminal Area
- K. Instrument Approach Procedure Chart--Planview
- L. Instrument Approach Procedure Chart
- M. Instrument Approach Procedure Chart Aerodrome Sketch
- N. Instrument Approach Procedure Chart--Minimums Section
- O. Approach Facilities

### **REQUIRED READING:**

FAA. Airmans Information Manual. Washington, D.C:  
United States Government Printing Office, 2001.

Gleim, I. Instrument Pilot FAA Written Exam. Gainesville,  
FL: Gleim Publications. 2001.

Houser, J. A Guide to Aviation Weather Services. San Marcos,  
CA: Palomar College. 2001.

Houser, J. Summary of Federal Aviation Regulations. San Marcos,  
CA: Palomar College. 2001.

Thom, T. The Pilot's Manual Instrument Flying. 4<sup>th</sup> ed. Frederick,  
MD: AOPA Air Safety Foundation. 1997.

### **SUGGESTED READING:**

FAA. Instrument Flying Handbook. FAA-H-8083-15. Washington, D.C:  
United States Government Printing Office, 2000.

FAA. Aviation Weather. ACOO-6A. Washington, D.C: United  
States Government Printing Office, 1985.

### **REQUIRED WRITING:**

Problem solving exercises of approximately 1 page are more appropriate. Problems include planning of instrument flights which includes fuel requirements, length of primary and alternate routes, time enroute, and time/fuel to alternate airports.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.**

Outside assignments will include reading the required texts and materials, working problems in the study guide and studying class notes.

**INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

**DISTANCE LEARNING:**

**This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

**If yes, check all that apply:**

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Four tests and a comprehensive final exam. All items will be averaged.

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No  Number of times course may be taken for credit: \_\_\_\_\_

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:**

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SIGNATURES ON FILE