For a listing of chief and assistant chief flight instructors authorized to give stage checks for flight courses, see Appendix II of this syllabus

II. ENROLLMENT PREREQUISITES

A. The student must hold a Commercial Pilot Certificate or Airline Transport Pilot with at least a single engine land class rating and an Instrument-Airplane rating. Must also have a flight instructor airplane single engine land certificate. The student must hold a current flight instructor certificate with an airplane class rating and a valid Class Two Medical Certificate.

B. The student must be issued a Certificate of Enrollment.

III. OVERALL OR GENERAL OBJECTIVES OF THE COURSE

The student will be instructed in the proper techniques for teaching instrument trainee’s in all aspects of flight under IFR and to give effective ground school to instrument trainee’s.

IV. INSTRUCTIONAL MATERIALS

The instructional materials identified for this course are viewable through February 2007
V. COMPLETION STANDARDS

At the completion of the course the student should satisfactorily demonstrate that he has the knowledge and skill to teach the Instrument Trainee Attitude Instrument flying and all operations required when operating under IFR and to evaluate student performance. For the purpose of this course (IR) means Instrument Reference and (VR) means Visual Reference.

VI. ADA STATEMENT:

Disability Support Services provide services to students who have appropriate documentation of a disability. Students requiring accommodations for class are responsible for contacting the Office of Disability Support Services (DSS) located on the central campus. This service is available to all students, regardless of location. Explore the website at www.ctcd.edu/disability-support for further information. Reasonable accommodations will be given in accordance with the federal and state laws through the DSS office.
APPENDIX I

STAGE ONE - PERFORMANCE AND ANALYSIS OF INSTRUMENT FLIGHT MANEUVERS AND PROCEDURES

STAGE ONE OBJECTIVES: The student will be instructed in the performance and analysis of Instrument Training Maneuvers and procedures for Certification as an Instrument Flight Instructor.

STAGE ONE COMPLETION STANDARDS: This stage will be completed when the student satisfactorily passes an oral and flight check on the performance and analysis of Instrument Flying maneuvers.

LESSON ONE - DUAL FLIGHT

A. OBJECTIVES: This period will be used by the Flight Instructor to introduce the student to the methods, teaching and analyzing Basic Instrument flight maneuvers with emphasis on primary and supporting instruments. The lesson will include pre-flight duties, certificates and documents. A/C performance and limitations, line inspection, systems pre-flight check and the use of the Instrument Check List.

CONTENT:

1. Pre-flight Discussion
2. Introduction
   a. Pre-flight Duties
   b. Certificates and Documents
   c. A/C Performance and Limitations
   d. Engine and systems pre-flight checks
   e. Instrument cockpit check
   f. Straight and level flight (high cruise airspeed) (IR and VR)
   g. Straight and level flight (low cruise) (IR and VR)
   h. Constant airspeed climbs and descents (IR and VR)
   i. Standard Rate Turns (IR)
   j. Vertical “S” (IR)
   k. Pattern “A” and “B” (IR)
3. Post-flight Critique and Preview Next Lesson

B. COMPLETION STANDARDS: The student will be able to maintain proper airspeed and rate during climbs and descents, make standard rate turns while maintaining a constant altitude and execute the Vertical “S” and fly Pattern “A” and “B”.

LESSON TWO - GROUND SCHOOL

A. OBJECTIVE: To acquaint the student with the physiological factors related to instrument flying.

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CONTENT:

1. Introduction
   a. Effect of Pressure Altitude, Partial Pressure and Physiological Altitude
   b. Effects of Reduced Pressure
   c. Effect and Symptoms of Carbon Monoxide Poisoning
   d. Effect of Alcohol on Pilot Performance
   e. Hyperventilation
   f. Effect of use of Drugs
   g. Sensations of Instrument Flying and Spatial Disorientation

2. Discussion and Preview Next Lesson

B. COMPLETION STANDARDS: The lesson is complete when the student can satisfactorily explain the physiological factors introduced during the lesson.

LESSON THREE - DUAL FLIGHT

B. OBJECTIVES: To teach the student the proper methods of teaching and analyzing the basic flight maneuver, using primary and supporting instruments.

CONTENT:

1. Pre-flight Discussion
2. Introduction
   a. Constant Airspeed Climbing and Descending Turns (IR)
   b. Constant Rate Climbing and Descending Turns (IR)
   c. Timed Turns (IR)
   d. Turns using the Magnetic Compass (IR and VR)
3. Review
   a. Straight and Level flight at both high and low cruise (IR)
   b. Constant Airspeed and Constant Rate Climbs and Descents (IR)
   c. Vertical “S” (IR)
   d. Pattern “A” and “B” (IR)
4. Post Flight Critique and Preview Next Lesson

C. COMPLETION STANDARDS: The student will be able to maintain proper airspeed and rate during climbing and descending turns, vertical “S” and while flying Pattern “A” and “B”.

LESSON FOUR - GROUND SCHOOL

A. OBJECTIVES: To acquaint the student with the aerodynamic factors related to Instrument Flying.

CONTENT:
1. Introduction
   a. Aerodynamic Forces
   b. Forces acting on aircraft in turn.
   c. Changes in lift in a turn.
   d. Angle of Bank and Rate of Turn.
   e. Drag Factors in Turns
   f. Load Factors in Turns
   g. Slips and Skids
   h. Coordination of Rudder and Aileron Control
   i. Trim

2. Discussion and Preview Next Lesson

B. COMPLETION STANDARDS: The lesson is complete when the student can satisfactorily explain the aerodynamic factors related to attitude instrument flying.

LESSON FIVE - DUAL FLIGHT

A. OBJECTIVES: To teach the student proper Instructional Technique used in teaching attitude instrument flying using Primary and supporting instruments.

CONTENT:

1. Pre-flight Discussion
2. Introduction
   a. Steep Turns (IR)
   b. Recovery From Unusual Attitudes, Partial Panel (IR)
   c. Stalls and Stall Recovery (IR)
   d. Vertical “S₁” and “S₂” (IR)
   e. VOR Tracking (IR)
3. Review
   a. Climbing and Descending Turns Both Constant Airspeed and Constant Rate Partial Panel (IR)
   b. Level Off from Climbs and Descents, Partial Panel (IR)
4. Post Flight Critique and Preview Next Lesson

B. COMPLETION STANDARDS: The student will have satisfactorily demonstrated that he can maintain proper airspeed, rate of climb, recover from unusual flight attitudes and maintain orientation in VOR tracking.

LESSON SIX - GROUND SCHOOL

A. OBJECTIVES: To acquaint the student with the operation of the basic flight instruments, their principal of operation, operational limits, instrument errors and the proper use of each instrument.
CONTENT:

A. Discussion

B. Introduction
1. Gyroscopic Instruments and Principles of Operation
2. Power sources for Gyro Operation
3. Attitude Indicators - Operation, Limits and Errors
4. Integrated Flight System and Operation and Use
5. Turn and Slip Indicator / Turn Coordinator - Operation, Limitations and Errors
6. Heading Indicators - Operation, Limitations and Errors
7. Magnetic Compass - Operation, Limitations and Errors
8. R.M.I - Operation
9. Pitot Static System - Operation and Errors
10. Altitude and Height Measurement and Terms
11. Altimeters - Operation, Limitations and Errors
12. Vertical Speed Indicator - Operation, Limitations and Errors
13. Airspeed Indicators - Operation, Limitation and Errors

C. Discussion and Preview of Next Lesson

B. COMPLETION STANDARDS: The lesson is complete when the applicant can satisfactorily explain the principals of operation, limitations and errors associated with the Gyro and Pitot Static Instruments.

LESSON SEVEN - DUAL FLIGHT

A. OBJECTIVES: To teach the student proper instructional technique used in teaching VOR and ADF. Tracking, Holding, Intersection holding and Approaches

CONTENT:

1. Pre-flight Discussion
2. Introduction
   a. VOR Tracking
   b. Intersection Holding - Entry Procedures and Course Corrections
   c. VOR Holding - Entry Procedures and Course Corrections
   d. VOR and VOR-DME Approaches
   e. ADF Tracking and Holding - Entry Procedures and Course Correction
   f. ADF Approaches
   g. VOR and ADF Missed Approach Procedures
3. Review
   a. Steep Turns
   b. Recovery From Unusual Attitudes - Partial Panel
   c. Stalls and Stall Recovery
   d. Vertical “S1” and “S2”
4. Post Flight Critique and Preview of Next Lesson
B. COMPLETION STANDARDS: The lesson is complete when the student satisfactorily demonstrates the ability to maintain proper A/C control, Entry to Holding, approaches and missed approach procedures.

LESSON EIGHT - GROUND SCHOOL

A. OBJECTIVES: To acquaint the student with attitude instrument flying, Chapter Five of Instrument Flying Handbook, AC 61-27

CONTENT:

1. Discussion
2. Introduction
   a. Instrument Group: Pitch Instruments, Bank Instruments, Power Instruments
   b. Primary and Supporting Instruments
   c. Fundamental Skills - Cross Check, Instrument Interpretation and Aircraft Control
   d. Pre-flight Instrument Check - Before and After Starting Engine
   e. Basic Maneuvers - Straight and Level, Straight Climbs and Descents, Turns, Unusual Attitudes and Recoveries and Instrument Take-offs.
3. Discussion and Preview Next Lesson

A. COMPLETION STANDARDS: The lesson is complete when the student can satisfactorily explain attitude instrument flying and the maneuvers covered in the lesson.

LESSON NINE - DUAL FLIGHT

A. OBJECTIVES: To teach the student proper instructional technique used in teaching localizer holding, localizer approaches, and ILS approaches.

CONTENT:

1. Pre-flight Discussion
2. Introduction
   a. Localizer Holding - Entry Procedures and Course Corrections
   b. Localizer Approaches
   c. ILS Approaches
   d. Missed Approach Procedures
3. Review
   a. VOR Holding
   b. VOR and VOR DME Approaches
   c. ADF Holding
d. ADF Approaches
4. Post-flight Critique and Preview of Next Lesson

A. COMPLETION STANDARDS: The lesson is complete when the student satisfactorily demonstrates the ability to maintain proper A/C control, airspeed, holding and approach procedures.

LESSON TEN - DUAL: STAGE ONE STAGE CHECK

A. OBJECTIVES: The lesson will be used by the Chief Flight Instructor or his Assistant to determine by oral exam and flight check whether or not the student has the necessary knowledge and skill to advance to the next stage of training.
B. COMPLETION STANDARDS: The lesson and stage is complete when the student satisfactorily completes the oral exam and demonstrates that he can perform and analyze the instrument flight maneuvers of Stage One.

STAGE TWO - PRACTICE INSTRUCTION

STAGE TWO OBJECTIVE: To give the student the opportunity to perform and analyze the required maneuvers as the Instrument Flight Instructor, while the instructor assumes the role of student.

STAGE TWO COMPLETION STANDARDS: The stage will be complete when the student successfully demonstrates the ability to perform and analyze the maneuvers and procedures required as an Instrument Instructor. The student will be required to pass the practical test.

LESSON ONE - DUAL FLIGHT

A. OBJECTIVES: This flight period will be used by the student to perform and analyze the maneuvers. The student will give instruction in Basic Instrument with emphasis on primary and supporting instruments. The lesson will also include pre-flight duties, line inspection, A/C performance and limitations, systems check, and use of the instrument check list.

CONTENT:

1. Pre-flight Discussion
2. Student Demonstrates, Performs and Analyze Maneuvers
   a. Preflight Duties
   b. Line Inspection
   c. A/C Performance and Limitation
   d. System Check and Instrument Check List
   e. Basic Instrument - Primary and Supporting
   f. Vertical “S1” and “S2"
3. Post-flight Critique and Preview of Next Lesson
B. COMPLETION STANDARDS: The lesson is complete when the student can perform and analyze the maneuvers, maintain A/C control, airspeed and heading.

LESSON TWO - GROUND INSTRUCTION

A. OBJECTIVES: This lesson will be used by the Instructor to further the students knowledge in the use and limitation of electronic aids to instrument flying in accordance with Chapter VI and VII of the Instrument Flying Handbook AC 61-27

CONTENT:

1. Introduction
   a. Basic Radio Principles and Disturbances to Reception
   b. Radio Navigation System
   c. Very High Frequency Omirange
   d. Distance Measuring Equipment
   e. Area Navigation
   f. Radar Systems
   g. Low Frequency Nondirectional Homing Beacons
   h. Instrument Landing Systems
   i. VOR and ADF Orientation and Tracking
   j. Common Errors in the use of Navigation Instruments

2. Discussion and Preview Next Lesson

A. COMPLETION STANDARDS: This lesson is complete when the student can satisfactorily explain the use and limitation of electronic aids to instrument flying.

LESSON THREE - DUAL FLIGHT

A. OBJECTIVES: The lesson will be used by the student functioning as the Flight Instructor to perform and analyze the basic flight maneuvers using Primary and Supporting Instruments (instructor assumes role of student).

CONTENT:

1. Pre-flight Discussion
2. Student Performs, Analyze and Demonstrates
   a. Constant airspeed climbing and descending turns (IR)
   b. Constant rate climbing and descending turns (IR)
   c. Time turns (IR)
   d. Turns using the Magnetic Compass (IR and VR)
3. Review
   a. Straight and Level flight at High and Low Cruise (IR)
   b. Constant airspeed and Constant Rate Climbs and Descents (IR)
   c. Vertical “S1” and “S2”
4. Post Flight Critique and Preview Next Lesson

A. COMPLETION STANDARDS: The student will have completed this lesson when he successfully demonstrates the ability to perform and analyze the maneuvers.

LESSON FOUR - GROUND INSTRUCTION

A. OBJECTIVES: This lesson will be used by the Instructor to further the student’s knowledge of the Federal Airway System and Controlled Airspace, including FAR Part 71, Part 91, Part 97, SID’s, DP’s and Terps, in accordance with Chapter IX of the Instrument Flying Handbook AC 61-27. And the use of the Instrument Instructor Lesson Guide.

CONTENT:

1. Introduction
   a. Federal Airways
   b. Controlled Airspace
   c. Radio Navigation Charts
   d. FAR’s Part 71, 91, 95
   e. FAR Part 97, Approach Procedures Charts
   f. SID’s
   g. DP’s
   h. Terps (AC 90-1A)

2. Discussion and Preview of Next Lesson

A. COMPLETION STANDARDS: The lesson is complete when the student can satisfactorily explain and prepare a lesson on the required material.

LESSON FIVE - DUAL FLIGHT

A. OBJECTIVES: This lesson will be used by the student functioning as the Flight Instructor to perform and analyze VOR and ADF approaches and procedures. (Instructor assumes role of student)

CONTENT:

1. Pre-flight Discussion
2. Student Performs, Analyze and Demonstrates
   a. VOR Tracking
   b. Intercepting Radials
   c. VOR Orientation
   d. Intersection Holding - Entry Procedures and Course Correction
   e. VOR and VOR-DME Approaches
   f. ADF Tracking and Intercepting Bearings
g. ADF Holding - Entry Procedures and Course Corrections
h. ADF Approaches
i. VOR and ADF Missed Approach Procedures
j. Lost Communications and Radio Navigation Failure Procedures

3. Review
   a. Vertical “S1” and “S2"
   b. Pattern “A” and “B”
   c. Stalls and Stall Recovery
   d. Recovery from Unusual Attitudes - Partial Panel

4. Post-flight Critique and Preview Next Lesson

A. COMPLETION STANDARDS: This lesson will be complete when the student demonstrates the ability and knowledge to perform and analyze the required maneuvers.

LESSON SIX - GROUND INSTRUCTION

A. OBJECTIVES: This lesson will be used by the instructor to further the student’s knowledge of the function and use of Air Traffic Control and associated facilities in accordance with Chapter X of AC62-27. AIM Part I and the Instrument Instructor Lesson Guide.

CONTENT:

1. Introduction
   a. Organization and Functions of Air Traffic Service
   b. Airport Traffic Control Towers and Operation
   c. Air Route Traffic Control Centers
   d. Flight Service Stations
   e. IFR Control Sequence

2. Discussion and Preview of Next Lesson

A. COMPLETION STANDARDS: The lesson is complete when the student satisfactorily demonstrates the ability to explain and prepare a lesson on the required material.

LESSON SEVEN - DUAL FLIGHT

A. OBJECTIVES: This lesson will be used by the student functioning as the flight instructor to perform and analyze and give instruction on localizer holding, localizer approaches and ILS approaches (instructor assumes role of student).

CONTENT:

1. Pre-flight discussion
2. Student Performs, Analyze and Demonstrates:
a. Localizer Holding - Entry Procedures and Course Correction  
b. Localizer Approaches  
c. ILS Approaches  
d. Published Missed Approach Procedures  

3. Review  
a. VOR Approaches  
b. ADF Approaches  
c. Intersection Holding  
d. Radio Navigation Failure and Lost Communications Procedures  

4. Post-flight Critique and Preview Next Lesson  

A. COMPLETION STANDARDS: The lesson is complete when the student satisfactorily demonstrates the ability and knowledge to perform and analyze the required maneuvers.  

LESSON EIGHT - GROUND INSTRUCTION  

A. OBJECTIVES: The lesson will be used by the instructor to further the student’s knowledge in the area of ATC operation, procedures and instrument flight planning in accordance with Chapter XI and XII of AC61-27 and Aeronautical Information Manual.  

CONTENT:  

1. Introduction  
a. Using the System and IFR Flight Plan  
b. In-flight Filing  
c. Clearance  
d. Departure, En route and Arrival Procedures  
e. Approaches and Missed Approach Procedures  
f. Emergency Procedures  
g. Computer Operations  
h. NOTAM’s  
i. Flight Log  
j. Instrument Weather Flying  
k. Weight and Balance  
l. Instrument Flight Instructor Lesson Guide  

2. Discussion and Preview of Next Lesson  

B. COMPLETION STANDARDS: The lesson is complete when the student satisfactorily demonstrates the ability to explain and prepare a lesson on the required material.  

LESSON NINE - DUAL FLIGHT
A. OBJECTIVES: This period will be used by the instructor to review the maneuvers and procedures in which the student shows deficiency, in preparation for the final stage check.

CONTENT:

1. Pre-flight Discussion
2. Review Maneuvers and Procedure
3. Post Flight Critique and Preview of Next Lesson

A. COMPLETION STANDARDS: The lesson is complete when the student successfully demonstrates the ability to demonstrate, perform and analyze the required maneuvers and procedures.

LESSON TEN - DUAL: STAGE TWO STAGE CHECK

A. OBJECTIVES: This lesson will be used by the Chief Flight Instructor or the Assistant to determine by oral exam and flight check, to evaluate the student for recommendation for certification as an Instrument Instructor.

B. COMPLETION STANDARDS: The less is complete when the student satisfactorily completes the oral exam and demonstrates the ability to perform and analyze the Instrument Flight Maneuvers and IFR procedures.