MASTER COURSE OUTLINE
Prepared By: Gregory Crane Date: January 2014

COURSE TITLE
ATP: MULTI-ENGINE

GENERAL COURSE INFORMATION

Dept.: AVF	Course Num: 292	(Formerly:)
CIP Code: 49.0102	Intent Code: 22	Program Code:
Credits: 1		
Total Contact Hrs Per Qtr.: 17		
Lecture Hrs: 17	Lab Hrs:	Other Hrs:

Distribution Designation: General Elective (GE)

COURSE DESCRIPTION (as it will appear in the catalog)
Prepares the student for FAA ATP flight check.

PREREQUISITES
Commercial/Instrument. M.E., 1500 hours, ATP knowledge test passed.

TEXTBOOK GUIDELINES
Aircraft POH
FAR/AIM

COURSE LEARNING OUTCOMES
Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Obtain the aeronautical skill necessary to pass the practical test for Multi ATP

INSTITUTIONAL OUTCOMES
IO2 **Quantitative Reasoning**: Students will be able to reason mathematically

COURSE CONTENT OUTLINE

Lessons:	Dual	Pre&Post
1. Multi-Engine Aircraft review, systems, and maneuvers	1.4	1.0
2. Single-Engine Procedures	1.4	1.0
3. Single Engine Procedures	1.4	1.0
4. Instrument Flight	1.4	1.0
5. Single Engine Instrument Procedures	1.5	1.0
6. Review (Ref: FAR Part 61 Appendix F)	1.5	1.0
7. ATP Practical Test (Ref: FAA-S-8081-5B)	1.4	1.0
Total	10.0	7.0

Lesson 1: Multi-Engine Aircraft Review; Systems & Maneuvers
Objective: Re-establish proper multi-engine procedures. Review aircraft systems.
1. Pre-flight discussion

2. Aircraft Pre-flight
3. Normal T. O. & Climb
4. Stalls
5. Steep turns
6. Slow flight
7. Review systems
    a. Emergency landing gear extension
    b. Cross-feed
    c. Wing flap system emergency operation (asymmetry)
    d. Heater operation
    e. Vacuum system
    f. Alternate air induction system
    g. Emergency static pressure source
    h. Anti-ice systems
    i. Pilot hear
    j. Auto-Pilot
    k. Avionics
8. Practice normal and crosswind landings
9. Post flight critique

Completion standards: The student shall show proficiency in execution of normal procedures and familiarity with training aircraft systems.

Lesson 2: Single Engine Procedures

Objective: Development of single engine procedures. Emphasis on conditioned response to identification and verification of failed engine, and proper use of checklist.

1. Pre-flight discussion
2. Take-off and climb to at least 300' AGL
3. Fail Engine
    a. Identify failed engine (Dead foot-Dead engine)
    b. Verify failed engine with throttle
4. Set up zero side slip
5. Trouble shoot the failure - use of checklist
6. Feather and restart
7. Practice unexpected engine failures
8. Practice single engine approach and landing (simulated feather)
9. Post flight critique

Completion standards: The student will be able to apply correct single engine-out procedures in response to simulated engine failure occurring.

Lesson 3: Single Engine Procedures

Objective: Refine Single Engine Procedures. Develop proper response to random engine failures under various flight conditions.

1. Pre-flight discussion
2. Pre-flight, take-off and climb
3. Random unexpected engine failures
4. Engine failure while simulating missed approach: gear and flaps down
5. Practice Single Engine approach and landings
6. Practice engine failure in various flight conditions and/or aircraft configuration
    a. Failure on take-off roll
    b. Failure on initial climb below V_{mc} (discussion only)
    c. Failure on initial climb-sufficient runway to land
    d. Failure on initial climb above V_{mc}, no runway remaining
    e. Cruise climb, or cruise

f. Descent
g. Landing pattern
h. Go around

Completion standards: The student will be able to apply and/or discuss, with understanding, correct single engine-out procedures in response to engine failures occurring under simulate critical flight conditions.

Lesson 4: Instrument Flight
Objective: Refine normal instrument procedures
1. Pre-flight discussion
2. Pre-flight, instrument take-off and climb
3. A.T.C. procedures
4. Enroute
5. Holding patterns
6. Approach
    a. NDB
    b. VOR
    c. ILS
7. DME Arcs
8. Missed approach
9. Circle to land
10. Landing

Completion Standards: Student shall show proficiency in normal IFR procedures while interacting with ATC.

Lesson 5: Single Engine Instrument Procedures
Objective: Proficiency in maintaining control of the aircraft during IFR procedures with one engine inoperative.
1. Pre-flight discussion
2. Engine failure during IFR procedures
    a. Climb
    b. Enroute
    c. Holding
    d. Approach
    e. Missed approach
3. Landings
4. Single-engine taxi

Completion standards: The student will be able to perform single engine emergency procedures while maintaining control of aircraft under IFR conditions within the limits listed in the A.T.P. practical test standards guide.

Lesson 6: Review (Ref: FAR Part 61 Appendix F)
Objective: Proficiency in all required maneuvers
1. Pre-flight
2. Take offs & Landings
3. Instrument procedures
4. Instrument approaches
5. In-flight maneuvers
6. Rejected Landings
7. Normal and abnormal procedures
8. Emergency procedures

Completion standards: The student will be able to perform all normal and emergency procedures typical of Multi-Engine Instrument flight within the guidelines listed in the A.T.P. practical test standards.

Lesson 7: ATP Practical Test
As Per FAR Part 61 Appendix F and FAA ATP Practical Test Standard FAA-S-8081-5 as appropriate

DEPARTMENTAL GUIDELINES *(optional)*
Evaluation is by in-flight demonstration of maneuvers.

Grading:
All maneuvers satisfactory I/A/W ATP Practical Test Standard: _____Pass

Unsatisfactory performance of any required maneuver or procedure: _____Fail

_____ _____

DIVISION CHAIR APPROVAL **DATE**