



## MASTER COURSE OUTLINE

Prepared By: Erik Borg

Date: April 2016

### COURSE TITLE

Airframe Mechanic III

### GENERAL COURSE INFORMATION

Dept.: AMT

Course Num: 153

(Formerly: )

CIP Code: 47.0607

Intent Code: 21

Program Code: 718

Credits: 4-24

Total Contact Hrs Per Qtr.: 66-396

Lecture Hrs: 22-132

Lab Hrs: 44-264

Other Hrs:

Distribution Designation: General Elective (GE)

### COURSE DESCRIPTION (as it will appear in the catalog)

As required by the Federal Aviation Administration, the airframe program is a minimum of 750 hr. of instruction with approximately 25% of the instruction in a class room environment and 75% of the instruction in a lab environment. AMT 153 is designed to allow students more time to achieve FAA required proficiency levels and to allow students to further their proficiency levels in aviation airframe related studies. This course will cover any area of the FAA required airframe curriculum that the student is deficient in, or if all required competencies have been met, the student may further their proficiency levels in any airframe related area of study. This course is FAA approved under 14 CFR part 147.

### PREREQUISITES

AMT 150, 151, 152, MPC 090, and Instructor Approval

### TEXTBOOK GUIDELINES

Airframe & Powerplant Technician Airframe Textbook (FAA H-8083-31-ATB)

Airframe & Powerplant Mechanics, Airframe Workbook (FAA H-8083-31-ATB)

Airframe & Powerplant Mechanics, Airframe FAA Airmen Knowledge Test (FAA H-8083-ATB)

Airframe & Powerplant Mechanics, General Textbook (FAA H-8083-30-ATB)

Airframe & Powerplant Mechanics, General Workbook (FAA H-8083-30-ATB)

Airframe & Powerplant Mechanics, General FAA Airmen Knowledge Test Guide

AC 43.13-1B & -2B Acceptable Methods Technique/Alterations

Federal Aviation Regulation Handbook for Aviation Maintenance Technicians

### COURSE LEARNING OUTCOMES

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

1. Service and repair wood structures
2. Identify wood defects
3. Inspect wood structures
4. Select and apply fabric and fiberglass covering material
5. Inspect, test and repair fabric and fiberglass
6. Apply trim, letters, and touchup paint
7. Identify and select aircraft finishing material
8. Apply finishing materials

9. Inspect finishes and identify defects
10. Select, install and remove special fasteners for metallic, bonded, and composite structure.
11. Inspect bonded structures
12. Inspect, test, and repair fiberglass plastics, honeycomb, composite, and laminated primary and secondary structures
13. Inspect, check, service, and repair windows doors, and Interior furnishings
14. Inspect and repair sheet-metal structures
15. Install conventional rivets
16. Form, lay out, and bend sheet metal
17. Rig rotary-wing aircraft
18. Rig fixed-wing aircraft
19. Check alignment of structures
20. Assemble aircraft components, including flight controls surfaces
21. Balance, rig, and inspect movable primary and secondary flight control surfaces
22. Jack aircraft
23. Inspect, check, service, and repair landing gear, retraction systems, shock struts, brakes, wheels, tires, and steering systems
24. Repair hydraulic and pneumatic power systems components
25. Identify and select hydraulic fluids
26. Inspect service, troubleshoot, and repair hydraulic and pneumatic power systems
27. Inspect, check, troubleshoot, service, and repair heating, cooling, air conditioning, pressurization systems, and air-cycle machines
28. Inspect, check, troubleshoot, service, and repair oxygen systems
29. Inspect, check, service, troubleshoot, and repair electronic flight instrument systems and both mechanical and electrical heading, speed, altitude, temperature, pressure, and position indicating systems to include the use of built-in test equipment
30. Install instruments and perform a static pressure system leak test
31. Inspect, check, and troubleshoot autopilot servos and approach coupling system
32. Inspect, check, and service aircraft electronic communication and navigation systems, including VHF passenger address interphones and static discharge devices, aircraft VOR, ILS, Omega, flight management computers, and GPWS
33. Inspect and repair antenna and electronic equipment installations
34. Check and service fuel dump systems
35. Perform fuel management, transfer and defueling
36. Inspect, check, and repair pressure fueling systems
37. Repair aircraft fuel system components
38. Inspect and repair fluid quantity indicating systems
39. Troubleshoot, service, and repair fluid pressure and temperature warning systems
40. Inspect, check, service, troubleshoot and repair aircraft fuel systems
41. Repair and inspect aircraft electrical system components; crimp and splice wiring to manufacturers' specifications; and repair pins and sockets of aircraft connectors
42. Install, check, and service airframe electrical wiring, controls, switches, indicators, and protective devices
43. Inspect, check, troubleshoot, service, and repair alternating current and direct current electrical systems and constant speed and integrated drive generators
44. Inspect, check, and service speed and takeoff warning systems, electrical brake controls, and antiskid systems
45. Inspect, check, troubleshoot, and service landing gear position indicating and warning systems
46. Inspect, check, troubleshoot, service, and repair airframe ice and rain control systems
47. Inspect, check, and service smoke and carbon monoxide detection systems
48. Inspect, check, and service, troubleshoot, and repair aircraft fire detection and extinguishing systems

## **INSTITUTIONAL OUTCOMES**

- IO1 **Communication:** Students will be able to identify and explain a variety of airframe and/or powerplant systems and components as evaluated by the completion of the FAA written, oral and practical exams

IO3 **Human Relations/Workplace Skills:** Students will be able to demonstrate teamwork, ethics, appropriate safety awareness and/or workplace specific skills

### **COURSE CONTENT OUTLINE**

1. Wood Structures
2. Aircraft Covering
3. Aircraft Finishes
4. Sheet Metal and Non-Metallic Structures
5. Assembly and Rigging
6. Airframe Inspection
7. Aircraft Landing Gear Systems
8. Hydraulic and Pneumatic Power Systems
9. Cabin Atmosphere Control Systems
10. Aircraft Instrument Systems
11. Communication and Navigation Systems
12. Aircraft Fuel Systems
13. Aircraft Electrical Systems
14. Position and warning systems
15. Ice and Rain Control Systems
16. Fire Protection Systems

### **DEPARTMENTAL GUIDELINES** *(optional)*

Student grades are based on the following items:

- |                                  |     |
|----------------------------------|-----|
| 1. Classroom/lecture assignments | 50% |
| a. Written assignments           | 25% |
| b. Tests                         | 25% |
| c. Final exam                    | 50% |

Examinations will be given to ensure the understanding and/or retention of the subject material. An appropriate exam will be given to each student who completes each subject area. A quarter final review exam will be given during the last three days of each quarter. Any other testing or quizzes may be given at the instructor's discretion. Each student is given only 3 attempts at passing an exam. The first exam attempt must be passed with a 70% or better, 75% or better for the second and 80% on the third attempt. If the student fails to pass any exam with an acceptable score after three attempts the student will be required to surrender all credits, hours, lab projects, and classroom theory for the subject or subjects failed. The final recorded score will be that of the first attempted exam. Missed or failed exams will be given only with prior arrangements with the instructor.

- |  |     |
|--|-----|
| 2. Performance completing lab/shop assignments | 50% |
| a. Quality of work                             | 50% |
| b. Work habits                                 | 50% |
| i. Follows instructions.                       |     |
| ii. Follow safety rules                        |     |
| iii. Completes assignments in a timely manner. |     |
| iv. Stays productive.                          |     |

Laboratory performance will be graded at the completion of each practical assignment by observation, oral examination, or written examination. Practical projects must be completed in a timely manner. A minimum passing grade of 80% must be obtained by each student in order to receive a final Letter of Completion from this course.

<b>Letter Grade</b>	<b>%</b>	<b>Numeric Grade</b>
A	97-100	3.8-4.0
A-	93-96	3.5-3.7

B+	89-92	3.2-3.4
B	85-88	2.9-3.1
B-	81-84	2.5-2.8
C+	77-80	2.2-2.4
C	73-76	1.9-2.1
C-	69-72	1.5-1.8
D+	65-68	1.2-1.4
D	61-64	.9-1.1
D-	58-60	.7-.8
F	0-57	0.0

**ATTENDANCE:**

The AMT courses are offered as scheduled below.

07:30 to 16:00 Monday through Thursday.

A minimum of 400 hours of attendance is mandatory for the completion of the AMT General program at BBCC. Upon successful completion of 1150 hours of instruction (which includes 400 hours of General and 750 hours of Airframe/Powerplant), a certificate of completion is granted and the student is eligible to take the FAA written exams for the Airframe/Powerplant Mechanic certificate.

The Instructor will monitor absenteeism by use of the student time cards. A student enrolled in the AMT program at BBCC will be allowed to miss a maximum of twenty-four (24) hours of class time per quarter. Those students who miss more than 24 hours of class time may be required to reduce their credits for that quarter.

**MAKE-UP PROVISIONS**

Make-up time must be arranged with the appropriate instructor and will be completed by the student on his/her own time under the instructor's supervision at the end of the quarter. Make-up hours will be documented through the use of time cards, using time clock procedures, and must be signed by the appropriate instructor. Make-up time and projects will be related directly to those areas of instruction missed by the students.

If time missed is due to school closure caused by weather, power outages, or other unforeseen events, the missed time must be made up during scheduled make-up days at the end of the quarter.

When a student is dropped from a class due to excessive absenteeism, failing grades, or not making up missed time in accordance with the above policies, all recorded attendance hours will be forfeited from the class and considered non-transferable if the student repeats the class.

---

**DIVISION CHAIR APPROVAL**

---

**DATE**