



MASTER COURSE OUTLINE

Prepared By: Erik Borg

Date: October 2011

COURSE TITLE

Beginning AMT Welding

GENERAL COURSE INFORMATION

Dept.: WLD

Course Num: 103

(Formerly:)

CIP Code: 48.0508

Intent Code: 21

Program Code: 814

Credits: 2

Total Contact Hrs Per Qtr.: 33

Lecture Hrs: 11

Lab Hrs:22

Other Hrs: 33-99

Distribution Designation: General Elective (GE)

COURSE DESCRIPTION (as it will appear in the catalog)

Fundamentals of oxy-acetylene welding with carbon steel and aluminum, as well as brazing and braze welding with carbon steel; soldering with stainless steel and carbon steel; GTAW with aluminum, stainless steel and carbon steel. Practical knowledge of safety in the use and handling of the equipment and compressed gases will be stressed throughout the quarter. This course is FAA approved under 14 CFR Part 147.

PREREQUISITES

Enrollment in AMT 151 or AMT 152

TEXTBOOK GUIDELINES

Text and materials as decided by faculty. (Example: A & P Technician Airframe Textbook (Jeppesen), AC 43-13. 1B & 2 Acceptable Methods Techniques and Practices.)

COURSE LEARNING OUTCOMES

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

1. The student will be able to prepare airframe tubing and weld a variety of joints using oxy-acetylene, GTAW and soldering techniques

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE

1. Introduction
 - a. Personal gear
 - b. Equipment safety
 - c. Metal Classification
 - d. Filler wire classification
 - e. Tubular repair specifications
 - f. Welding processes
2. Oxy-fuel welding

3. Shielded metal arc welding
4. Gas metal arc welding
5. Gas tungsten arc welding

6. Oxy-Acetylene
 - a. Equipment and set-up
 - b. Carbon steel
7. Fusion weld
8. Stringer beads
9. Open butt weld
10. Lab weld
11. Inside corner weld
 - a. Brazing and braze welding
12. Open butt weld
13. Lap weld
14. Inside corner weld
 - a. Aluminum
15. Open butt weld
16. Lap weld
 - a. Cutting (freehand)
17. Straight
 - a. square edge
 - b. bevel edge
18. Circle cut and hole piercing
19. Round and square bar
20. Sheet metal
21. Tubular welding
 - a. Butt weld
 - b. Tee weld
 - c. Cluster weld
 - d. Welded patch repair
22. Surface patch
23. Reinforcing sleeve
24. Soldering
 - a. Equipment
 - b. Soft soldering
 - c. Hard soldering
 - d. Sweat soldering
25. GTAW welding
 - a. Equipment and set-up
 - b. Aluminum
26. Stringer beads
27. Butt weld
28. Lap weld
 - a. Stainless steel
29. Stringer beads

- 30. Open butt weld
- 31. Lap weld
- 32. Inside corner (or Tee)

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%
 - 1) Follows instructions.
 - 2) Follow safety rules
 - 3) Completes assignments in a timely manner.
 - 4) 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.

Letter Grade	Percentage	BCC Grade
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=	0.9 - 1.1
D-=	58 - 60=	0.7 - 0.8
F=	0 - 57=	0.0

A minimum passing grade of 80% must be obtained by each student in order to receive a final Letter of Completion from this course.

NOTE: the attendance hours accrued in this course are necessary to satisfy the total number of hours required by Federal Aviation Regulation, Part 147.

DIVISION CHAIR APPROVAL

DATE