HARDWARE/PRECISION MEASURE
Course Syllabus

Course Number: TRGA-1106
OHLAP Credit: No
OCAS Code: None
Course Length: 42 Hours
Career Cluster: Transportation, Distribution & Logistics
Career Pathway: Aviation Maintenance Technology
Career Major(s): General Aviation

Pre-requisite(s):

Course Description:
In this course, the student will identify and select aircraft hardware, determine proper torque limits and determine proper materials for aircraft and engine repairs. The student will perform measurements using micrometers, calipers, and dial indicators.

Textbooks:
Dale Crane, Dictionary of Aviation Terms, Aviation Supplies and Academics, 1997

Course Objectives:

A. Lesson: AIRCRAFT HARDWARE
1. Define terms related to aircraft hardware.
2. § Identify aircraft rivets by alloy, specification code, symbol, and head marking. (Level 3) (App. B,E,17) (Gen.E13)
3. Discuss usage of common aircraft rivets.
4. Describe special rivets.
5. Discuss standard aircraft bolt types, thread fits, specific numbers, applications and install.
6. § Identify common aircraft bolts by head markings and head shapes. (Level 3) (App. B,E,17) (Gen.E4)
7. § Identify nuts used in aircraft construction. (Level 3) (App. B,E,17)
8. § Identify washers by specification numbers and state their uses. (Level 3) (App. B,E,17)
9. § Identify types of screws used in aircraft construction. (Level 3) (App. B,E,17)
10. § Identify types of pins used in aircraft construction. (Level 3) (App. B,E,17)
11. Discuss the usage of inserts for repairing threaded and unthreaded holes.
12. Discuss Dzus, airlock, and Camlock fasteners.
13. § Identify aircraft cable and cable terminals. (Gen.E10)
14. Discuss aircraft turnbuckles.
15. Discuss safety methods used in aircraft construction.
16. § Identify, select, and install aircraft hardware. (Level 3) (App. B,E,17)
17. § Safety aircraft hardware. (Gen.E9,E18)

B. Lesson: PRECISION MEASURING INSTRUMENTS
1. Discuss nonprecision measuring instruments and their usage.
2. § Use a rule.
3. Discuss precision measuring instruments and their usage. (Gen-C2)
4. Interpret drawings of micrometer readings.
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5. § Use a micrometer caliper. (Level 3) (App. B,E,19)
6. § Use an inside micrometer. (Level 3) (App. B,E,19)
7. § Use a depth micrometer. (Level 3) (App. B,E,19)
8. § Use a vernier caliper to take inside, outside, and depth measurements. (Level 3) (App. B,E,19) (Gen.E7)

Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures:
1. Students are graded on theory and shop practice and performance.
2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, F=0-69%.

Description of Classroom, Laboratories, and Equipment:
Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit
The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

College Credit Eligibility:
The student must maintain a grade point average of 2.0 or better.