I. Course Number: AERM 1203

II. Course Title: Shop Practices

III. Instructional Time:

   Semester ------ 2 hours
   Lecture -------- 14 hours
   Lab ************ 56 hours
   Final Test ------ 1 hour
   Total Clock -- 71 hours

IV. Course Description:

   An introduction to the correct use of hand tools and equipment and precision measurement; identification of aircraft hardware; and the fabrication of fluid lines and tubing. Emphasis on procedures for testing, heat treating, and inspection of aircraft structures.

V. Course Learning Outcomes:

   The student will demonstrate basic shop operations and precision measurement procedures; identify and select appropriate non-destructive testing methods; and perform non-destructive testing and heat treating procedures. The student will identify and select aircraft hardware and materials; fabricate and install fluid lines and fittings; and inspect and check welds.

VI. Program Objectives:

   Level 1 A. Perform basic heat-treating processes.

   Level 3 B. Perform precision measurements.

   Level 1 C. Identify and select appropriate nondestructive testing methods.

   Level 2 D. Perform dye penetrant, eddy current, ultrasonic, and magnetic particle inspections.

   Level 3 E. Identify and select aircraft hardware and materials.

   Level 3 F. Fabricate and install rigid and flexible fluid lines and fittings.

   Level 3 G. Inspect and check welds.
VII. Practical Projects:

A. Research heat-treatment processes.
B. Perform precision measurements.
C. Research nondestructive testing methods.
D. Simulate nondestructive testing methods.
E. Perform aircraft hardware and materials identification and selection.
F. Perform fabrication of fluid lines.
G. Perform inspection and checking of welds.

VIII. Teaching Methods:

To include lecture, discussion, audio/visual aids, computer based training, hand outs, and reference materials.

IX. Evaluation:

Evaluation methods for this course are as follows:

A. Quizzes: Informal quizzes may be administered periodically to measure student progress and to identify significant learning problems. The quiz type (multiple choice, oral, essay, etc.) and the frequency of administration shall be at the discretion of the instructor. Quiz grades are not used in computing course grades.

B. Practical Projects and Mid-term Tests: At the completion of instruction of an objective, the students performance will be evaluated by a knowledge test and/or a practical project. Mid-term tests grades are averaged with Practical Projects grades.

C. Final Examination: A final exam will be administered at the conclusion of the course and shall be comprehensive of the entire course.

D. Grading: A percentage grading system shall be used and the student's final grade shall be computed as follows:

<table>
<thead>
<tr>
<th>Practical Projects and Mid-term Test</th>
<th>65%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Examination</td>
<td>35%</td>
</tr>
</tbody>
</table>
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E. Final percentage grades shall be converted to letter grades as follows:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>59-0</td>
<td>F</td>
</tr>
</tbody>
</table>

X. Tools and Equipment:

Special tools and equipment required for this unit are to be furnished by Coastal Bend College. All hand tools, however, are to be furnished by the individual student and shall be immediately available to the student at the beginning of this course of instruction.

XI. Attendance Policy:

Refer to the Coastal Bend College Airframe & Power Technology Program attendance policy.

XII. Bibliography:

A. Required Text:


B. Supplementary Text:


8. Aircraft Manufacturers Specifications and/or Support Material.