I. Course Number: AERM 1456

II. Course Title: Aircraft Powerplant Electrical

III. Instructional Time:

   Semester ------ 4 hours
   Lecture -------- 28 hours
   Lab ----------- 84 hours
   Final Test ----- 1 hour
   Total Clock -- 113 hours

IV. Course Description:

   Theory, operation, and maintenance of powerplants including electrical, ignition, starting, and fire protection systems.

V. Course Learning Outcomes:

   Maintain powerplant electrical systems and components to industry standards; and maintain powerplant ignition, starting, and fire protection systems to industry standards.

VI. Program Objectives:

   Level 2 A. Repair engine electrical system components.

   Level 3 B. Install, check, and service engine electrical wiring, controls, switches, indicators, and protective devices.

   Level 2 C. Overhaul magneto and ignition harness.

   Level 2 D. Inspect, service, troubleshoot, and repair reciprocating engine ignition and starting systems and components.

   Level 3 E. Inspect, check, service, troubleshoot, and repair engine fire detection and extinguishing systems.
VII. Practical Projects:

A. Simulate repair of engine electrical system components.

B. Perform maintenance on engine electrical systems.

C. Simulate magneto and ignition harness overhaul.

D. Simulate maintenance of reciprocating engine ignition and starting systems and components.

E. Perform maintenance on engine fire detection and extinguishing systems.

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

<table>
<thead>
<tr>
<th>Percentage</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:


2. AC 43.13-1B/2A, Acceptable Methods, Techniques, and Practices, Aircraft Inspection and Repair, Department of Transportation, Federal Aviation Administration, Jeppesen Sanderson, Inc.

B. Supplementary Text:


5. A&P Technician Powerplant Workbook, Jeppesen Sanderson, Inc.

6. Aircraft Manufacturers Specifications and/or Support Material.