SOLID STATE CIRCUITS
Course Syllabus

Course Number: TRGA-1204
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: Students will identify solid state symbols. Semi-conductors, digital logic, indication circuits and arming circuits will be discussed. The student will focus on the precautions required to prevent static damage. Electrical units will be assembled using approved soldering procedures.

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

Course Objectives:

A. Lesson: SOLID STATE CIRCUITS SAFETY AND TERMS
1. List and practice safety precautions related to solid-state.
2. List and practice safety precautions to be used when soldering.
3. Define terms related to solid-state.
4. Identify solid-state symbols. (Level 3) (App. B,A,5)

B. Lesson: VACUUM TUBES
1. Discuss vacuum tube construction.
2. Identify types of vacuum tubes.

C. Lesson: SEMI-CONDUCTORS
1. Discuss semi-conductor construction.
2. Identify types of semi-conductors and their operation.

D. Lesson: SOLDERING
1. Discuss soldering safety.
2. Describe soldering practices, procedures, and techniques.

E. Lesson: DIGITAL LOGIC CIRCUITS
1. Discuss digital logic symbols and definitions.
2. Identify digital logic circuits. (Level 3) (App. B,A,5)
3. Discuss digital logic circuits.

F. Lesson: MAGNETO TIMING LIGHT
1. Inventory magneto timing light component parts.
2. Assemble components using approved soldering procedures.
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3. Perform operational check.

G. Lesson: INDICATING AND ARMING CIRCUITS
1. Explain latching circuits.
2. Discuss proximity switches.
3. Explain the use of SCR.
4. Discuss Flip-Flop circuits.

H. Lesson: STATIC PROTECTION
1. Demonstrate precautions required to prevent static damage.

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.