

## Master Syllabus

### AVT 1131 - Basic Aviation Electricity

**Division:** Science, Mathematics and Engineering

**Department:** Aviation Technology

**Credit Hour Total:** 3.0

**Lecture Hrs:** 2.0 **Lab Hrs:** 3.0

**Date Revised:** October 2012

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### Course Description:

Basic electrical principles to include the following: alternating and direct current (A/C and D/C) circuits, production of electricity, batteries, Ohm's law, capacitance, load analysis, electrical load circuits, integrated circuits, parallel, series, and compound circuits, and A/C and D/C motors. Two classroom, three lab hours per week.

### General Education Outcomes:

- ▣ Oral Communication Competency
- ▣ Critical Thinking/Problem Solving Competency
- ▣ Values/Citizenship/Community Competency
- ▣ Computer Literacy Competency
- ▣ Information Literacy Competency
- ▣ Written Communication Competency

### Course Outcomes:

#### Lead acid and nickel cadmium batteries

Demonstrate knowledge of converting chemical energy into electrical energy. Demonstrate knowledge of battery servicing techniques, charging methods, and maintenance procedures. Demonstrate the ability to determine cell condition. Demonstrate knowledge of lead acid and nickel cadmium safety considerations.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** 70% or higher on exams

#### Series and parallel circuits

Demonstrate knowledge of series and parallel circuits, solid state devices, circuit components, and logic devices.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** 70% or higher on exams

#### Direct and alternating current motors

Demonstrate knowledge of direct current, alternating current, and compound motors. Demonstrate knowledge of repair and inspection techniques of motors and components. Demonstrate knowledge of inspection techniques of armatures, field, and brush assemblies.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** 70% or higher on exams

### Outline:

Electrical theory and basic laws  
Series and parallel circuits  
Lead acid and nickel cadmium batteries  
Measuring voltage, current, and resistance in circuits  
Direct and alternating current motors