Sinclair Community College
444 E. Third St.
Dayton, OH 45402

Master Syllabus

AUT 1114 - Automotive Electrical/Electronic Systems I

Division: Science, Mathematics and Engineering

Department: Automotive Technology

Credit Hour Total: 3.0 **Lecture Hrs:** 1.4 **Lab Hrs:** 4.8

Date Revised: June 2014

Course Description:

Comprehension of Ohm's law, basic electrical circuits, digital meter usage, batteries, starting and charging system operation. Diagnosis of wire harness repair procedures and service. One classroom, six lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving
- Information Literacy

Course Outcomes:

Automotive electrical schematics
Assess automotive electrical schematics both electronically and manually, utilizing printed repair manual information, to comprehend vehicle circuits and predict circuit electrical values.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students will score 70% correct responses on a written exam

Assessment Method: Performance appraisals
Performance Criteria: Score 3 of 4 on a rubric

Assessment Method: Simulations
Performance Criteria: Score 3 of 4 on a rubric

Ohm's Law and basic electrical circuits
Diagnose electrical circuits using Ohm's law.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students will provide 70% correct responses on a written exam

Digital multimeter usage
Diagnose electrical circuits utilizing a digital multimeter.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students will score 70% correct on a written exam

Assessment Method: Performance appraisals
Performance Criteria: Students will score 3 of 4 points on a rubric

Assessment Method: Simulations
Performance Criteria: Students will score 3 of 4 points on a rubric

Battery, starting and charging systems
Understand and test basic battery, starting and charging systems utilizing a digital multimeter and available test equipment.

Assessment Method: Locally developed exams
Performance Criteria: 70% of students will score 70% correct on writen exam

Assessment Method: Performance appraisals
Performance Criteria: Students will score 3 of 4 on a rubric

Outline:

Definition of electricityUnits of electricityOhm's lawUnderstanding circuitsSeries circuitsParallel circuitsAutomotive circuit schematicsDigital meter usageWire and wire harness repairMagnetismMagnetic field interactionElectro magnetic inductionRelay & Solenoids Electrical circuit componentsBattery construction and testingStarter construction and testingCharging system construction and testing