Eastern West Virginia Community and Technical College
COURSE ASSESSMENT REPORT

Course Title and Number: ATT 124 Automotive Electricity/Electronics I (4 credits)	**Academic Term and Year of Assessment Activity (Ex: Fall, 2010)** Spring 2010
Report Submitted By: Doug Swick	**Number of Students Assessed:** 11 students completed assessment (Note: 12 students began the process, but 1 withdrew due to work schedule .)
Date Reported Submitted: November 19, 2010	**Number of Sections Included:** 1
Course Delivery Format (list all modalities used in sections assessed. Ex: web based, VDL, traditional section, hybrid course, etc.): lecture/lab course, traditional course delivery	

Course Role in Curriculum **Provide a description of the role the course serves in the curriculum (i.e. general education requirement, program technical core, restricted elective, etc.) Note all as appropriate.**
ATT 124 is a technical core requirement (4 credits) for automotive students in both the certificate and associate degree programs. This course introduces students to the fundamentals and technology for diagnosis and repair of automotive electrical and electronic systems, including wiring diagrams, symbols and functions of the systems.

Assessment Methods **Provide a description of the assessment process used. Include description of instrument and performance standards in description. Note all methods.**
The ATT 124 course assessment report focuses specifically on electrical and electronic principles, and the diagnostic and service skills. Lab based task sheets were used as the basic data collection instruments for this assessment. Fourteen learning outcomes were assessed by analyzing results of classroom/lab observation based task sheets. The task sheets were completed for each student by directly observing the student performing each designated task. All task sheets were NATEF based for adherence to national automotive repair standard. The 15 learning outcomes were assessed through the application of 16 task sheets. In total, 75 scoring items were incorporated into this assessment report. Each item was weighted equally with a score of one point. Students could attain a total composite score of 75, a minimum composite score of 60 was necessary to meet the established performance standard of 80%. Scores were further analyzed in two broad categories: 1.) basic electrical/electronic principles-minimum score 28 out of 34; and 2.) diagnostic and service skills- minimum score 33 out of 41 The outcomes assessed are categorized into the 2 categories and are listed below: **Electrical/Electronic Principles** 7. Define electrical symbols utilized in manufacturer's wiring diagram. 9. Define and apply principles of electricity, i.e., Ohm's Law. 11. Demonstrate the proper use of a digital multimeter during diagnosis of electrical circuit problems. 12. Check electrical wiring/circuits for continuity; determine necessary action. 26. Perform battery state-of-charge test; determine necessary action. 35. Identify electronic modules, security systems, radios, and other accessories that require reinitialization. 42. Perform charging system output test; determine necessary action. **Electrical/Electronic diagnosis and service** 8. Use wiring diagrams during diagnosis of electrical circuit problems. 16. Measure and diagnose the cause(s) of excessive parasitic draw; determine necessary action. 24. Perform solder repair of wiring. 31. Perform battery charge. 41. Differentiate between electrical and engine mechanical problems that cause a slow or no-crank condition. 47. Remove, inspect and install alternator. 51. Replace headlight assemblies, bulbs, taillight assemblies and circuit boards. 57. Diagnose incorrect horn operation.

Assessment Results

Provide a summary of results including tables/charts. Incorporate information from previous assessments as appropriate. Append additional pages if necessary. If appending, include notation in box to "See Attached."

See Attachment for Task Sheets

Electrical/Electronic Principles: 100% of the students completed all 34 tasks correctly as denoted through the Task Sheets.

Diagnosis and Service: 100% of the students completed 33-41 out of the 41 tasks correctly, exceeding or meeting the minimum standard of 33 (i.e. 80% of the tasks).

Distribution of Scores for Outcomes and Composite Score per Task Sheet Analysis
N=5

Student ID #	Principle Score (Standard: 28 out of 34)	Diagnosis Score (Standard 33 out of 41)	Composite Score (Standard 60 out of 75)
1	34	41	75
2	34	37	71
3	34	41	75
4	34	33	67
5	34	41	75
6	34	41	75
7	34	41	75
8	34	41	75
9	34	41	75
10	34	41	75
11	34	41	75
Total Sample for Points	374	439	813
% at Minimum Standard	100%	100%	100%

Course Level Assessment Summary of Outcomes, Indicators and Results
Course Title and Number
Number of students in assessment sample = 11
Number of Sections in Assessment = 1
Add additional rows to table if necessary

Learning Outcomes (Insert learning outcomes assessed during this cycle	Indicator (Insert indicators used for each outcome: exam question, scoring rubric, etc. Be specific)	Percent of Correct Responses	Percent of Incorrect Responses	Performance Standard Met (80%)* (yes or no)
Composite Score	Total composite score: minimum of 60 out of 75 points for completed task sheets (Total points for sample=825, 813 answered correctly)	98%	2%	Yes
Outcome 1: Electrical/Electronic Principles	Task Sheets for: Ohm's Law Use of Digital Multimeter Checking Continuity Perform Battery State of Charge Test Reinitialization Charging System Output Test Performance Standard: minimum of 28 out of 34 points Total points for sample=374; 374 answered correctly.	100%	0%	Yes
Outcome 2: Electrical/Electronic Diagnosis and Service	Task Sheets for: Wiring Diagrams in Diagnosis Measuring and Diagnosing parasitic draw Solder Repair of Wires Perform Battery Charge Diagnose Electrical Slow or No Crank Remove and Install Alternator	97%	3%	Yes

	Replace Lighting Components Diagnose Incorrect Horn Operation Performance Standard: minimum of 33 out of 41 points. (Total points for sample=451; 439 answered correctly).			

*Please note if using a different minimum performance standard.

Conclusions and Action Plan **Provide a brief summary of conclusions derived based on analysis of data. Identify action plan for improvement or maintaining current performance levels. Append additional pages if necessary. If appending, include notation in box to "See Attached."**
Based on an analysis of the completed task sheets for the designated learning outcomes, the results indicate that the learning outcomes have been met successfully by those students completing the assessment activities. While the sampling results are significant and indicate success, it should be noted that program materials and training equipment in support of the learning outcomes could be more effective. Trainers purchased from MegaTech provide more extensive teaching/learning strategies than could be delivered. The company has yet to provide the extended training promised. Improvements for future classes hopefully will include more extensive use of those trainers resulting in better hands on demonstration and specific problem solving scenarios.

Effective Date for Changes or Curriculum Proposal Submission to LOT (if recommended)	**Proposed Date for Reassessment**
	Spring 2012

Assessment Committee Approval **(To be posted by Assessment Committee Chair)**	**LOT Review** **(To be posted by Assessment Committee Chair)**
Date: 12-6-10 (SB-G)	**Date: 12-13-10 (SB-G)**