Eastern West Virginia Community and Technical College
COURSE ASSESSMENT REPORT

Course Title and Number: ATT 103 Engine Repair (4 credits)	**Academic Term and Year of Assessment Activity (Ex: Fall, 2014)** Fall 2014
Report Submitted By: Doug Swick;	**Number of Students Assessed:** 7
Date Reported Submitted: April 16, 2015	**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 103 is a technical core requirement (4 credits) for automotive students in both the certificate and associate degree programs. This course introduces students to basic engine concepts, skills, technology and service of passenger vehicles. Students learn general diagnosis and repair of engines, cylinder heads and valve trains, and cooling and lubrication 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 103 course assessment report focuses specifically on engine mechanical principles, and the diagnostic and service skills. Lab based task sheets were used as the basic data collection instruments for this assessment. Fifteen 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 are NATEF based for adherence to national automotive repair standards. The 15 learning outcomes were assessed through the application of 15 task sheets. In total, 121 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 121, a minimum composite score of 97 was necessary to meet the established performance standard of 80%. Scores were further analyzed in two broad categories: 1) engine mechanical principles-minimum score 53 out of 66; and 2) engine mechanical diagnosis and service skills- minimum score 44 out of 55. The outcomes assessed are grouped into the 2 categories and are listed below: **Engine mechanical principles** 19. Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition. 23. Check valve spring assembled height and valve stem height; determine necessary action. 28. Inspect and/or measure camshaft for runout, journal wear and lobe wear. 33. Inspect and measure cylinder walls/sleeves damage, wear, and ridges; determine necessary action. 39. Identify piston and bearing wear patterns that indicate a connecting rod alignment and main bearing bore problems; determine necessary action. 42. Determine piston to bore clearance. 57. Inspect and test fan(s) (electrical and mechanical), fan clutch, fan shroud, and air dams. 58. Inspect auxiliary coolers; determine necessary action. **Engine mechanical diagnosis and service** 11. Perform cylinder cranking and running compression tests. 15. Perform common fastener and thread repair to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert. 18. Install cylinder head and gasket; tighten according to manufacturer's specifications and procedures. 26. Adjust valve (mechanical or hydraulic lifters). 41. Remove and replace piston pin. 50. Inspect and replace engine cooling and heater system hoses 56. Remove and replace radiator.

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

Engine Mechanical Principles: 100% of the students completed 58-66 of the 66 tasks correctly, exceeding the minimum standard of 53 (i.e. 80% of the tasks).

Engine Mechanical Diagnosis and Service: 100% of the students completed 46-54 of the 55 tasks correctly, exceeding the minimum standard of 44 (i.e. 80% of the tasks).

Distribution of Scores for Outcomes and Composite Score per Task Sheet Analysis
N=7

Student ID #	Principle Score (Standard: 53 out of 66)	Diagnosis Score (Standard 44 out of 55)	Composite Score (Standard 97 out of 121)
1	55	48	103
2	66	55	121
3	61	50	111
4	60	55	115
5	54	50	104
6	63	49	112
7	63	51	114
Total Sample for Points	422	358	780
% 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 = 7
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 97 out of 121 points for completed task sheets (Total points for sample=847, 780 answered correctly)	92%	8%	Yes
Outcome 1: Engine Mechanical Principles	Task Sheets for: Cylinder Head Inspection Valve Spring and Stem Height Measure Camshaft Inspect and Measure Cylinder Walls Piston and Bearing Wear Piston to Bore Clearance Fans, Fan Clutch, Fan Shroud and Air Dams Auxiliary Coolers Inspection Performance Standard: minimum of 53 out of 66 points Total points for sample=462; 422 answered correctly.	92%	8%	Yes
Outcome 2: Engine Mechanical Diagnosis and Service	Task Sheets for: Cylinder Compression Tests Fastener and Thread Repair Cylinder Head Installation Valve Adjustment Piston Pin Engine Cooling and Heater Hoses Radiator Replacement	92%	8%	Yes

	Performance Standard: minimum of 44 out of 55 points. (Total points for sample=385; 358 answered correctly).			

*Please note if using a different minimum performance standard.

Conclusions **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. Both large and small samplings produced similar results. The principles and mechanics of this course lay a mandatory foundation for other courses within the program. Consequently, successfully completing these learning outcomes promote success throughout the program.

Previous Assessment Reports and Results **Date of Previous Assessment: Fall 2012** **List of Outcomes Not Met: none** **Summary of Actions Taken to Address Unmet Learning Outcomes: Append additional pages if necessary. If appending, include notation in box to "See Attached."**
NA

Action Plan and Date for Reassessment **Identify action plan for improvement or maintaining current performance levels including outcomes identified for reassessment, curriculum revision, LOT proposal, new or revised course activities to reinforce learning outcomes, etc. Append additional pages if necessary. If appending, include notation in box to "See Attached."**
Next assessment is due for Fall 2016. Maintaining knowledge of mechanical changes is necessary.

Assessment Committee Recommendation/Approval **(To be posted by Assessment Committee Chair)**
X Approved as presented ☐ Approved with recommendations for future reports (Explanation Required) ☐ Resubmission Required. Reason for resubmission: **Date: 5/19/16**