

Eastern West Virginia Community and Technical College COURSE ASSESSMENT REPORT

Course Title and Number: ATT 107 Suspension and Steering (4 credits)	Academic Term and Year of Assessment Activity (Ex: Fall, 2010) Fall 2013
Report Submitted By: Doug Swick	Number of Students Assessed: 9
Date Reported Submitted: April 17, 2014	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 107 is a technical core requirement (4 credits) for automotive students in both the certificate and associate degree programs. This course introduces students to the diagnosis and repair for rack and pinion and other steering systems, front and rear suspension systems including MacPherson struts, wheel alignment (camber, caster, toe and steering axis inclination), and tires and wheels.

Assessment Methods
Provide a description of the assessment process used. Include description of instrument and performance standards in description. Note all methods.
<p>The ATT 107 course assessment report focuses specifically on wheel alignment 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 14 learning outcomes were assessed through the application of 12 task sheets. In total, 117 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 117, a minimum composite score of 94 was necessary to meet the established performance standard of 80%. Scores were further analyzed in two broad categories:</p> <ol style="list-style-type: none"> 1.) basic alignment principles-minimum score 53 out of 66; and 2.) diagnostic and service skills- minimum score 41 out of 51 <p>The outcomes assessed are categorized into the 2 categories and are listed below:</p> <p>Wheel alignment principles</p> <ol style="list-style-type: none"> 47. Check toe-out-on-turns (turning radius); determine necessary action. 48. Check SAI (Steering axis inclination) and included angle; determine necessary action. 49. Check rear wheel thrust angle; determine necessary action. 50. Check front wheel setback; determine necessary action. 51. Check front and/or rear cradle (subframe) alignment; determine necessary action. 52. Inspect tire condition; identify tire wear patterns; check and adjust air pressure; determine necessary action. 54. Rotate tires according to manufacturer's recommendations. 55. Measure wheel, tire, axle flange, and hub runout; determine necessary action. <p>Alignment diagnosis and service</p> <ol style="list-style-type: none"> 44. Diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine necessary action. 45. Perform prealignment inspection and measure vehicle ride height; perform necessary action. 46. Prepare vehicle for wheel alignment on the alignment machine; perform four wheel alignments by checking and adjusting rear and front wheel caster, camber, and toe as required; center steering wheel. 53. Diagnose wheel/tire vibration, shimmy, and noise; determine necessary action. 56. Diagnose tire pull problems; determine necessary action. 57. Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic).

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

Alignment Principles: 89% of the students completed 53-66 tasks correctly exceeding the minimum standard of 80% as denoted through the Task Sheets.

Alignment Diagnosis and Service: 89% of the students completed 41-51 of the 51 tasks correctly, exceeding the minimum standard of 41 (i.e. 80% of the tasks).

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

N=9

Student ID #	Principle Score (Standard: 53 out of 66)	Diagnosis Score (Standard 41 out of 51)	Composite Score (Standard 94 out of 117)
1	23	12	35
2	65	51	116
3	64	49	113
4	64	49	113
5	66	51	117
6	63	50	113
7	65	47	112
8	61	47	108
9	62	47	109
Total Sample for Points	533	403	936
% at Minimum Standard	89%	89%	89%

Course Level Assessment Summary of Outcomes, Indicators and Results

Course Title and Number

Number of students in assessment sample = 9

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 94 out of 117 points for completed task sheets (Total points for sample=1053, 936 answered correctly)	89%	11%	Yes
Outcome 1: Alignment Basic Principles	Task Sheets for: Steering and Suspension Concerns Alignment Specifications Performance Standard: minimum of 53 out of 66 points Total points for sample=594; 533 answered correctly.	90%	10%	Yes
Outcome 2: Alignment Diagnosis and Service	Task Sheets for: Alignment Angle Readings Four-Wheel Alignment Vehicle Handling Diagnosis Pre-Alignment Inspection Ride Height Measurement Front and Rear Wheel Camber Check and Adjust Camber Front Wheel Toe Centering Steering Wheel Toe-Out on Turns Steering Axis Inclination Rear Wheel Toe	88%	11%	Yes

	Rear Wheel Thrust Angle Front Wheel Setback Front Cradle Alignment Performance Standard: minimum of 41 out of 51 points. (Total points for sample=459; 403 answered correctly).			
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*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 task sheets for the designated learning outcomes, the results indicate that the learning outcomes have been met successfully. This is the third assessment of this course. The sampling for this assessment is the largest to date. The redesigning of the lab area proved a significant improvement for instructional and monitoring activities.

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

Assessment Committee Approval (To be posted by Assessment Committee Chair)	LOT Review (To be posted by Assessment Committee Chair)
Date: 5-14-14 (SB-G)	Date: 5-19-14