

Assessment Guide

Program or Discipline: Diesel Technology Division: Advanced Technology

Faculty preparing plan: Steve Webb and Al Hill

This guide is intended as a tool to help you plan assessments of student learning for the purpose of planning improvements—to identify where students may hit bumps in the road, or where course scope or sequence may not be aligned with program learning outcomes or the core abilities. You may want to start with concerns about some part of your curriculum. The assessment process may also help you identify where students are achieving outcomes at higher rates than you expected.

Part 1: Student Learning Outcomes – Determine Expectations (CONTENT to be assessed)

Process	Program or discipline response
A. List expected learning outcomes. (Describe knowledge, skills, abilities, or attitudes upon completion of program or significant discipline work)	<p>The graduate will:</p> <ul style="list-style-type: none">• be able to explain and identify various technologies used in the repair of on- and off-highway vehicles.• use lab station simulators to diagnose and troubleshoot system components.• demonstrate checks and adjustments on heavy equipment chassis and power trains, including on highway automatic transmissions.• demonstrate diesel engine overhaul procedures using industry standard tooling and equipment including disassembly, failure analysis, assembly, and operation of engine on a dynamometer.• demonstrate industry troubleshooting procedures to diagnose electrical systems including starting, charging, air conditioning, electronic control systems and lighting.• demonstrate industry troubleshooting procedures to diagnose hydraulic systems used on off- and on-highway vehicles including forklifts, crawlers, excavators, backhoes, skidsteers, and powershift transmissions.• demonstrate and use industry safety standards.• access library, computing, and communications services and obtain information and data from regional and national networks.• demonstrate basic math skills using formulas to find force, pressure, area, and volume. <p>The lift-truck material handling option graduate will also:</p> <ul style="list-style-type: none">• demonstrate general maintenance, diagnosis, and testing of hydraulic systems on forklifts, loaders, and equipment with hydraulic assist transmissions.

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B. Identify where expected outcomes are addressed in the curriculum. In which courses will students demonstrate each program/discipline outcome?	<table><tr><th>Diesel Technology</th><th>DS 155 Heavy Equipment Hydraulics</th><th>DS 154 Heavy Duty Braking Systems</th><th>DS 158 Chassis & Power Trains</th><th>DS 256 Diesel & Auxiliary Fuel Systems</th><th>DS 257 Diesel Electrical Systems</th><th>DS 259 Diesel Engines and Overhauls</th><th>DS 290 Cooperative Education (suggested)</th><th>WLD 121 Shielded Metal Arc Welding</th><th>WLD 143 Wire Drive Welding 1</th><th>WLD 122 SMAW2 or MFG 197 Manufacturing Arts and Letters</th><th>CS 120 Concepts of Computing</th><th>HE 125 Workplace Safety *</th><th>Human Relations</th><th>MTH 076 Applied Geometry for Technicians</th><th>MTH 066 Applied Algebra for Technicians</th><th>MWR 115W Introduction to College Writing</th></tr><tr><td>Associate Degree Credit Hours (108 Total 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Part 2: Assessment Methods – Determine Timing, Cohort(s), Assign Responsibility (PEOPLE assignments)

Process	Program or discipline response
C. Determine at least two methods to assess each outcome at the end of the program with at least one direct assessment of learning.	<p>Students are directly assessed using quiz and test scores that relate to diesel theory and operation. Homework and interactive problem solving assignments are given and graded through online data base.</p> <p>Students are also assessed using the AED task list as a guide. Each task involves hands on diagnosis and repair of vehicles. As a student completes a task they are graded on their performance as follows.</p> <p><u>Performance and Standards:</u> A student performance is graded with the following letter grade system.</p> <p>A= Exceeds industry standards minimal supervision required B= Meets industry standards has practiced tasks independently C=Limited Exposure additional training required D/F= No Exposure no training in this area</p> <p>Indirect assessment will come from employers involved with students in Cooperative work program or internship.</p>
D. Describe level of expected performance, including conditions of assessment and criteria for success.	<p>The graduate will use diesel industry service resources to complete lab projects and become familiar with computer accessed information, internet accessed information and information available in print related to diesel industry repair procedures.</p> <p>The graduate will be able to perform computations for gear ratios, engine geometry, electrical circuits, Hydraulic circuits, power output, vehicle alignment angles, conversion between the metric system and standard system, and use of precision measuring tools.</p> <p>The graduate will be able to diagnose and repair current model equipment using advanced diagnostic tools.</p> <p>The graduate will be prepared to successfully complete ASE/AED standards.</p> <p>The graduate will be able to demonstrate all tasks while adhering to industry safety standards.</p>
E. If appropriate for key course sequences, identify assessment methods for learning outcomes.	<p>The student will be graded on research assignments, handouts, weekly quizzes, test scores, mid terms, final exams, lab scores, performance, quantity and quality of work completed.</p> <p>Theory: Research assignments, handouts, weekly quizzes, test scores, mid terms,</p>

	<p>final exams 45% of the final grade.</p> <p>Lab :Weekly lab projects lab scores, performance, quantity and quality of work completed will represent 55% of the final grade.</p> <p>Performance: Demonstrate efficient and productive work habits in the shop and classroom.</p> <p>Specific Outcomes: Upon successful completion of this course the student should be able to: Comply with personal and environmental safety practices in accordance with local, state, and federal regulations when performing industry tasks at the entry level AED apprentice standards.</p>
F. If appropriate, identify and collect baseline information on entering students.	All students are given one or more pretests at the beginning of each term this allows the instructors to identify the different learning needs of individual students.
<p>G. Establish a 3-5 year schedule for assessment, including who will interpret results.</p> <p>Which students will be assessed?</p> <p>When will the assessments take place?</p> <p>Which outcomes will you assess this year?</p> <p>(Suggestion: assess a maximum of 3 outcomes per year, except in specially accredited career technical programs)</p>	Long term assessment will come from employer and graduate feedback. Both participate in the advisory committee and report back as a group several times a year. AED certification is expected 1-2 years after graduation once the student has met the work experience requirements.
<p>H. Determine how you will assess outcomes on an annual basis.</p> <p>Who will conduct the assessments?</p> <p>Who will tabulate data?</p> <p>Who will analyze the results?</p> <p>When will the work be completed?</p>	Long term assessment will come from employer and graduate feedback. Both participate in the advisory committee and report back as a group several times a year. AED certification is expected 1-2 years after graduation once the student has met the work experience requirements.

3. Now you have a plan to implement—go forth and assess!

Part 4: Closing the Loop – Interpreting and Sharing Results to Enhance Institutional Effectiveness (COMMUNICATION)

Process	Program or discipline response
I. Identify the next steps, including any planned changes to curriculum or pedagogy. What do you expect to learn from these assessment efforts? Determine how and with whom you will share interpretations.	These interpretations will be shared with fellow faculty members and the Division Dean