

Minnesota Articulated College Credit (ACC) Agreement

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Agreement Name **Automotive Basic Engine Performance**

Agreement Last Reviewed **Fall 2024**
Next Review Date **Fall 2026**

College Courses			
Class	Title	School	Credits
TRAN 1145	Engine Performance I	Minnesota West Community & Technical College	1.0 of 2.0
AUTO 1212	Engine Diagnosis	Ridgewater College	1.0 of 2.0
AND			
AUTO 1182	Engine Performance I	Ridgewater College	1.0 of 2.0
AST 2752	Engine Performance & Driveability	South Central College	1.0 of 2.0
ABCT 1840	Auto Collision Mechanical I	South Central College	1.0 of 3.0
AMT 1810	Engine Repair Theory	Rochester Community & Technical College	1.0 of 3.0

Curriculum Content Objectives

To receive credit, students will perform each of the following content objectives:

Objectives 1 – 16 are required for articulation.

1. Demonstrate professional automotive technician behavior, and acceptable attendance and demonstrate shop safety.
2. Explain and demonstrate safety procedures.
3. Explain the internal combustion engine four-cycle theory.
4. Perform engine cranking and running vacuum test.
5. Perform cylinder compression and leakage test.
6. Perform cylinder power balance test.
7. Diagnose unusual exhaust color/odor/sound.
8. Demonstrate an understanding of the need for emission controls.
9. Test PCV, EGR, and EVAP systems.
10. Understand various purposes of EFE and AIR systems.
11. Analyze catalytic converter operation.
12. Explain ignition systems operations.
13. Describe and measure pulse width, duty cycle, and frequency (DVOM).
14. Test secondary ignition system.
15. Replace spark plugs.
16. Understand ignition timing.

Objectives 17 – 26 are encouraged.

17. Demonstrate safe fuel pressure testing techniques.
18. Perform battery load, starter draw, and charging systems tests.
19. Test magnetic pick-up and Hall effect switch.
20. Diagnose and/or replace ignition system sensors.
21. Test the electronic ignition system control unit.
22. Test primary electronic ignition wiring harness and connectors.
23. Verify idle control operation.
24. Replace air and fuel filters.
25. Demonstrate proper use of a scan tool for retrieval of codes and data.
26. Demonstrate ability to use the service information system.

Assessments

Students must achieve no less than 80% or B for a final grade in the high school course to receive ACC. For partial earned college credits, students must take the course at the college with a tuition discount.

ACC Concept

Through Articulated College Credit (ACC), specific college curriculum content goals and assessments are embedded in participating high school career and technical education (CTE) programs as specified in this agreement. Relevant knowledge, skills, and standards are taught by qualified CTE high school instructor(s) in one or more high school courses. ACC is awarded if the student meets the college equivalency standards and later enrolls in the college(s) listed below requiring the course in a specific program.