

Minnesota

Articulated College Credit (ACC) Agreement

www.CTEcreditMn.com

Agreement Name **Automotive Starting and Charging Systems**

Agreement Last Reviewed **Fall 2024**

Next Review Date **Fall 2026**

These credits are valid for two years upon high school graduation when the student is accepted and enrolled at one of the colleges listed below.

College Courses			
Class	Title	School	Credits
TRAN 1111	Electrical Fundamentals	Minnesota West Community & Technical College	1.0 of 3.0
AUTO 1364	Electrical Systems 2	Ridgewater College	2.0 of 4.0
AMT 1725	Service & Electrical Lab	Rochester Community & Technical College	1.0 of 3.0
AST 1233	Starting & Charging Systems - Regional	South Central College	1.0 of 3.0
ABCT 2870	Auto Collision Mechanical II	South Central College	1.0 of 3.0

Curriculum Content Objectives

To receive credit, students will perform 80% of the following content objectives:

General Requirements

1. Demonstrate professional automotive technician behavior, acceptable attendance, and participation.
2. Explain and demonstrate electrical and shop safety procedures.

Starting Systems

1. Identify starting system components and principles of operation
2. Connect and operate the remote starter switch
3. Trace starter motor circuits
4. Describe and perform starter motor control circuit tests
5. Perform starter draw tests
6. Inspect various starter motors
7. Remove and replace one type of starter
8. Explain the neutral safety switch operation
9. Measure insulated circuit voltage drop
10. Measure ground circuit voltage drop

Charging Systems

1. Identify and explain alternator/generator operation principles
2. Explain the voltage regulator operation
3. Test alternator/generator output
4. Remove and install various alternators/generators
5. Test regulator operation
6. Test parasitic drain
7. Measure insulated circuit voltage drop
8. Measure ground circuit voltage drop
9. Explain battery overcharge
10. Inspect and explain charging system protection
11. Perform battery safety, testing, diagnostics, and charging

Assessment

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.