

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES & SKILLED TRADES DIVISION
AUTOMOTIVE TECHNOLOGY
COURSE SYLLABUS
October 31, 2025

I. CATALOG DESCRIPTION

Course Number: AUTT1026
Course Title: Automotive Electrical Service
Pre/Co-Requisite(s): AUTT 1016

Catalog Description: This course covers specific electrical systems, components and service tools used to service vehicles. Cranking motors, charging systems, lighting and many other accessory circuits are covered.

Credit Hour: 3.0
Classroom Hours: 23
Lab Hours: 68
Total Contact Hours: 91

II. COURSE OBJECTIVES: *Course will:*

- A.** Cover theory, design, and operation of the starting system
- B.** Cover theory, design, and operation of the charging system
- C.** Cover diagnosis and repair of the starting system
- D.** Cover diagnosis and repair of the charging system
- E.** Cover wiring diagram components
- F.** Introduce automotive scan-tool function and usage
- G.** Cover theory and operation of automotive input sensors and output devices
- H.** Cover testing and repair of the automotive wiring systems
- I.** Cover testing, diagnosis, and repair of automotive electrical systems
- J.** Introduce Oscilloscopes

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. STUDENT LEARNING OUTCOMES: *Student will be able to:*

1. Describe the theory of starting system operation, identify and test the major components, and demonstrate correct no-load testing procedures using all designated test equipment.
2. Demonstrate correct testing procedures on complete charging systems and components.
3. Utilize wiring diagrams to troubleshoot electrical circuits.
4. Diagnose the electrical system and its individual components.
5. Diagnose the electrical system and its individual components.
6. Utilize wiring diagrams and automotive service information to troubleshoot electrical circuits.

7. Explain the function and operation of various automotive sensors and/or outputs.
8. Test and repair the electrical system and its individual components and accessories using industry service equipment.
9. Demonstrate the use of an oscilloscope.
10. Connect and use a scan-tool to retrieve vehicle information

B. GELO #3: Critical Thinking & Problem Solving

Outcomes:

- 1: Collect, Identify, Interpret and analyze data.

IV. CONTENT/UNIT OF INSTRUCTION

- A. Charging systems
- B. Starting systems
- C. Load testing
- D. Wiring diagrams Scan-tools
- E. Lab scopes
- F. Wiring diagrams
- G. Automotive electrical devices
- H. Strategic diagnosis processes

V. INSTRUCTIONAL MATERIALS

The Course Information Document lists the current text(s) required for this class. The list is also available in the campus bookstore. The Course Information Document also lists the tools/equipment or other supplies required for this class.

VI. METHODS OF PRESENTATION / INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Lecture
2. Small and large group discussion
3. Video presentation
4. Demonstrations
5. Project boards
6. Handouts
7. Observations
8. Assigned lab projects
9. Online information

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Notebook (if required)
2. Quizzes
3. Tests
4. Lab grades
5. Attendance/class conduct

Letter grades will be based on the SCC Standard Grade Scale Policy. **Note:** See Course Information Document for specific details on how the course grades will be calculated.

VIII. SPECIFIC COURSE REQUIREMENTS

A. Student must:

1. Complete all tests, projects, assignments, and notebook (if required).
2. Earn a final grade of 70% (2.0) or higher.

B. Attendance as stated in the college student handbook, automotive lab and classroom policies handbook or Course Information Document.

C. Shop safety rules will be followed.

D. Additional course requirements.