

**SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
AUTO COLLISION REPAIR TECHNOLOGY
COURSE SYLLABUS
February 28, 2025**

I. CATALOG DESCRIPTION

Course Number: AUTB2350
Course Title: Automotive Electrical Repair/Safety Systems
Prerequisite(s): AUTB 1254, AUTB 1252

Catalog Description: Theory of the automobile electrical storage, lighting systems, and wiring repairs including proper usage of diagnostic procedures including flow charts, wiring diagrams, scan tools (pre and post scan processes), digital and analog multimeters. This will include identification of programmable electrical, electronic components, including servicing precautions of body electronic and body computers. Introduction to automotive safety systems, operation and basic troubleshooting of safety systems.

Credit Hour: 3.0
Classroom Hours: 38
Lab Hours: 23
Total Contact Hours: 61

II. COURSE OBJECTIVES: *Course will:*

- A. Cover safety consciousness of repair procedures and equipment.
- B. Cover automotive electrical wiring, wiring connectors and their place in the repair process.
- C. Cover automotive lighting systems and their place in the repair process.
- D. Cover proper procedure of aiming headlamps and how it is utilized in a typical repair.
- E. Cover reading wiring diagrams in the repair process.
- F. Cover equipment utilized during a typical steering column repair.
- G. Cover how to select and use scan tools during the repair process.
- H. Cover the proper handling of components that they will be utilizing during a typical repair both with a deployed and undeployed airbag. Different types of systems and test procedures and deactivating the system to insure safety in the repair process

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. STUDENT LEARNING OUTCOMES: *The student will be able to:*

- 1. Work safely during repair procedures utilizing tools and equipment during the repair procedure.
- 2. Have an understanding to identify different wiring, connectors, and servicing those during a typical repair.
- 3. Identify different lighting systems and troubleshoot problem and make repairs.
- 4. Have an understanding to determine the type of lighting system and identify proper headlamp aiming process.
- 5. Follow the proper procedures of reading wiring diagrams in the repair process.
- 6. Determine the proper use of the equipment utilized during a typical steering column repair.
- 7. Have an understanding to select and use scan tools during the repair process.

8. Follow proper use of the equipment and handling that they will be utilizing during a typical repair both with a deployed and undeployed air bag. Be able to determine different types of systems and test procedures and deactivating the system to insure safety in the repair process.

B. GENERAL EDUCATION LEARNING OUTCOMES:

GELO #3: Critical Thinking & Problem Solving

Outcomes:

1. Collect, identify, interpret and analyze data.
2. Synthesize information to arrive at reasoned solutions to problems.
3. Evaluate ideas presented in writing, medial, speech, or artistic presentations.
4. Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
5. Acquire and integrate knowledge and construct relationships across disciplines.

IV. CONTENT/TOPICAL OUTLINE

- A. Course Introduction
- B. Battery Service
- C. Wiring Circuits
- D. Lighting Systems
- E. Wiring Diagrams
- F. Equipment (Usage, Types, and Safety Procedures)
- G. Amperage (Unit of Measurement)
- H. Voltage (Unit of Measurement)
- I. Resistance Measured in Ohms (Unit of Measurement)
- J. Active Restraint Systems
- K. Passive Restraint Systems
- L. Scan Tools
- M. Flash Code Diagnostics
- N. Shop Safety

V. INSTRUCTIONAL MATERIALS

Required Text(s): Auto Body Repair Technology, current edition. ISBN-13: 978-1133702856, ISBN-10:1133702856

Other Resources: Computer/Multimedia Projector
Videos/TV & VCR Batteries
Miscellaneous Sealed Beam Headlamps Composite Headlamps
Hopkins Headlamp Aimers
Packard Electric Terminal & Wiring Repair Kit Wiring Solder

Student Required Material: Notebook Pen or Pencil

Outside Homework Required: See Course Information Document as assigned by the instructor.

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. Transparencies
5. Demonstrations
6. Project boards
7. Flip charts
8. Handouts

9. Observations
10. Assigned lab projects
11. Field trips.

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 60% or higher.

B. Attendance:

1. Student must follow the Attendance Policy as stated in the college student handbook and the Auto Collision Repair Technology Attendance Policy.

C. Program shop safety rules will be followed.

D. Please see the course information document for any additional safety rules established by the instructor.