SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
AUTOMOTIVE TECHNOLOGY
COURSE SYLLABUS
January 24, 2023

I. CATALOG DESCRIPTION

Course Number: AUTT2135
Course Title: Advanced Control Systems
Prerequisite(s): AUTT1111, AUTT1116

Catalog Description: Theory, diagnosis and practical experience of automotive networking and communication systems, supplemental restraint systems, Blue Tooth communications systems, global positioning systems and other emerging entertainment systems. Hybrid vehicles and their systems diagnosis and practical experience of automotive active braking, traction and stability control systems are also covered.

Credit Hour: 4.0
Classroom Hours: 30
Lab Hours: 90
Total Contact Hours: 120

II. COURSE OBJECTIVES: *Course will:*

A. Covers the operation, diagnosis and service of the following:

1. Automobile networking
2. CAN Communication System
3. Infotainment systems
4. Hybrid vehicles and systems
5. Supplemental restraint systems
6. The Anti-Lock Brake System
7. The Traction Control System
8. The Stability Control System

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

1. Diagnose, remove and repair vehicle network components and systems.
2. Diagnose, remove and repair CAN system components.
3. Diagnose, and setup of modern infotainment systems.
4. Diagnose, and repair of supplemental restraint systems.
5. Diagnose, and services associated with Hybrid vehicles.
6. Diagnose, remove and repair anti-lock brake system components.
7. Diagnose, remove and repair traction control system components.
8. Diagnose, remove and repair stability control system components.

B. GENERAL EDUCATION LEARNING OUTCOMES
GELO #3: Critical Thinking & Problem Solving

1. Collect, identify, interpret and analyze data.

IV. CONTENT/TOPICAL OUTLINE

A. Control Area Networking
B. On-board Global positioning systems
C. Blue tooth connection, On-Star, Sync, U-connect
D. Hybrid vehicle systems and components
E. ABS, TCS, Stability Control theory of operation
F. Anti-Lock Brake System Diagnosis and Repair
G. TCS System Diagnosis and Repair
H. Stability Control System Diagnosis and Repair

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
10. 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).

B. Attendance:

1. Students must follow the Attendance Policy 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. **Any additional course requirements as stipulated by the Instructor.**