

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES & SKILLED TRADES DIVISION
AUTOMOTIVE TECHNOLOGY
COURSE SYLLABUS
November 3, 2025

I. CATALOG DESCRIPTION

Course Number: AUTT1214
Course Title: Steering, Suspension and Brakes
Prerequisite(s): AUTT1007, AUTT1016, AUTT1026, and AUTT1110

Catalog Description: Theory, diagnosis and practical experience of automotive steering and suspension systems. This class includes suspension components, wheel and tire service and wheel alignments. Theory, diagnosis and practical experience of automotive brake system applications. This class includes diagnosis and repair of brake systems, R & R of brake pads and shoes and the proper method of bleeding of standard and anti-lock brake systems.

Credit Hour: 6
Classroom Hours: 30
Lab Hours: 180
Total Contact Hours: 210

II. COURSE OBJECTIVES: *Course will:*

- A. Cover the theory, diagnosis and repair of steering gears.
- B. Cover the theory, diagnosis and repair of wheels and tires.
- C. Cover the theory, diagnosis and repair of steering components.
- D. Cover the theory, diagnosis and hands on use of 2- and 4-wheel alignment equipment.
- E. Cover the hydraulic brake system.
- F. Cover brake components.
- G. Cover the parking brake system.
- H. Cover the disc brake system.
- I. Cover the drum brake system.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

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

- 1. Inspect, diagnose, service and repair wheels, tires and bearings.
- 2. Explain the ratings, sizing and wear indication of wheels and tires.
- 3. Diagnose, service, repair and identify front and rear suspension systems.
- 4. Diagnose, service, repair and identify various steering systems and their individual components.
- 5. Perform complete alignment and service on front and rear wheel drive vehicles using industry standard equipment.
- 6. Diagnose, remove and repair a master cylinder and the hydraulic system components.
- 7. Diagnose, remove and repair drum brake systems.
- 8. Diagnose, remove and repair disc brake systems.
- 9. Diagnose, remove and repair parking brake systems.
- 10. Machine brake systems components according to manufacturer standards.
- 11. Diagnose, remove and repair brake booster systems.

B. GENERAL EDUCATION LEARNING OUTCOMES:

GELO #3: Critical Thinking & Problem Solving

Outcomes:

1. Collect, identify, interpret and analyze data.

IV. CONTENT/UNIT OF INSTRUCTION

- A. Conventional Steering
- B. Power Steering
- C. Wheels
- D. Tires
- E. Balancing
- F. Steering Components
- G. Two Wheel Alignment
- H. Four Wheel Alignment
- I. Front/Rear Suspensions
- J. Service Procedures
- K. Lab Exercises
 1. Hydraulic and mechanical brake theory of operation
 2. Drum Brake Diagnosis and Repair
 3. Disc Brake Diagnosis and Repair
 4. Brake Master Cylinder Diagnosis and Repair
 5. Brake Service Procedures Including Adjustments and System Bleeding
 6. Power Brake Diagnosis and Repair
 7. Component Measurement/Machining Diagnosis and Repair
 8. Complete Vehicle Brake 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.