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

## I. CATALOG DESCRIPTION

Course Number: AUTT2103
Course Title: Drivetrains
Prerequisite: AUTT1111, AUTT1116

Catalog Description: Theory, operation, diagnosis, evaluation and repair of manual transmissions, clutches, front and rear drive axles, transfer cases, drive lines and CV shafts.

Credit Hours: 3.5
Class Hours: 30
Lab Hours: 68
Total Contact Hours: 98

## II. COURSE OBJECTIVES: *Course will:*

**A.** Cover the theory and operation of manual transmissions.
**B.** Cover the theory and operation of clutch systems and components.
**C.** Cover clutch linkage adjustment, service and repair.
**D.** Cover manual transmission/transaxle theory, operation, diagnosis, service and repair.
**E.** Cover drive line and CV shaft theory, operation, diagnosis, service and repair.
**F.** Cover transfer case system theory, operation, diagnosis, service and repair.
**G.** Cover 4WD components theory, operation, diagnosis, service and repair.
**H.** Cover differential theory, operation, diagnosis, service and repair.

## III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

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

1. Explain the operation of a clutch system.
2. Explain the operation of a differential.
3. Explain the operation and service of transfer case and 4-wheel drive components.
4. Diagnosis, repair, and replace clutch components.
5. Properly remove and reinstall a manual transmission/transaxle.
6. Properly, disassemble, diagnosis and repair a manual transmission/transaxle.
7. Properly service drive line, including universal joint(s) and CV Shaft(s)

### B. GENERAL EDUCATION LEARNING OUTCOMES

**GELO #3: Critical Thinking & Problem Solving**

1. Collect, Identify, Interpret and analyze data.

## IV. CONTENT/TOPICAL OUTLINE

**A.** Clutch service & repair
**B.** Manual transmission/transaxle remove and replace

**C.** Manual transmission/transaxle service and repair
**D.** Drive line service and repair
**E.** Transfer case service and repair
**F.** 4WD components service 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.**