SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
AUTOMOTIVE TECHNOLOGY
COURSE SYLLABUS
November 14, 2022

I. CATALOG DESCRIPTION

Course Number: ASEP1111
Course Title: Transportation Maintenance & Repair Fundamentals
Prerequisite: None

Catalog Description: This course covers the introduction to the service and repair shop practices found in the transportation industry. Many of the basic elements of repair and the proper use of tools. It covers safety, OSHA hazard communication standards/right-to-know laws. Also covered are thread repair, tube flaring, fasteners, micrometers and a variety of equipment used by the professional technician. This course will prepare individuals with vehicle maintenance and minor repair techniques.

Credit Hours: 6.0
Classroom Hours: 45
Lab Hours: 135
Total Contact Hours: 180

II. COURSE OBJECTIVES: *Course will:*

A. Cover shop safety
B. Cover OSHA Hazard Communication
C. Cover hoist safety and use
D. Cover Chemical Right to Know
E. Teach identification and use of hand tools
F. Teach identification and use of power tools
G. Teach identification use of special service tools
H. Cover shop procedures and repair
I. Cover tubing and fastener use
J. Cover precision measurement (English & metric)
K. Cover fasteners and thread repair
L. Cover Capstone Hand Tool Project
M. Teach how to locate and apply service information
N. Teach how to review vehicle service history
O. Discuss vehicle repair order documentation
P. Cover vehicle labels and identification
Q. Teach pre-delivery inspection (PDI)
R. Cover theory and principles of engine operation
S. Teach lubrication maintenance
T. Cover vehicle inspections
U. Teach basic under-hood service
V. Teach basic under-vehicle service
W. Cover theory and principles of wheels and tires
X. Cover tire and wheel inspection and service

Y. Cover brake inspection and evaluation
Z. Teach waste handling, recycling, and/or disposal

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

1. Discuss and understand the school and laboratory policies of SCC transportation division and the Automotive/Powersports Technology program.
2. Distinguish between the areas of specialization and the employment opportunities in the service and repair field. This included skills required of technicians, and service advisors.
3. Understand licensing and certification requirements for service technicians.
4. Demonstrate ability to locate service information.
5. Identify potential safety hazards in the service shop, identify unsafe shop practices and be able to explain precautionary preventative measures in vehicle service.
6. Explain the importance of current OSHA standards as they relate to vehicle service.
7. Demonstrate the proper use of Metric and Standard measuring instruments used in the service and repair industry.
8. Demonstrate the ability to use hand tools including safe handling practices.
9. Demonstrate knowledge of fastener design and construction, thread repair and torqueing techniques.
10. Identify engine components and their function.
11. Demonstrate the ability to properly perform a basic oil and filter change and inspection.
12. Inspect and maintain and service vehicle fluid and lubrication systems.
13. Demonstrate ability to remove and install engine maintenance components.
14. Preform a predelivery inspection.
15. Preform a brake inspection and evaluation
16. Tire identification and ratings.
17. Tire repairs.
18. Tire mounting and balance.

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. Course introduction/service and repair industry
B. Career opportunities
C. Technician certification and licensing
D. Common technician skill levels and pay schedules – hourly vs. flat rate
E. Areas of specialization
F. Safety
G. OSHA – Hazard Communications/Chemical right-to-know
H. Hand tools/power tools
I. Precision measuring instruments
J. Fasteners/thread repair/tube flaring
K. Using vehicle and component lifts, jacks, and hoists
L. Locating service information

M. Locating vehicle labels

N. Servicing a vehicle

1. Checking fluids
2. Checking lights
3. Fluid and lubrication maintenance
4. Replacing wipers
5. Replacing air cleaners
6. Vehicle inspections
7. Belts and hoses
8. Wheels
9. Tire rotation
10. Tire replacement
11. Tire balancing
12. Basic brake inspections and minor 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).
2. Earn a final grade of 70% (2.0) or higher to progress in the program.

B. Attendance:

1. Student 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.