SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
AG EQUIPMENT SERVICE TECHNOLOGY
COURSE SYLLABUS
November 11, 2022

I. CATALOG DESCRIPTION

Course Number: AGST1111
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 is covered. It covers safety, OSHA hazard communication standards/right-to-know laws. Also covered are thread repair, tube flaring, fasteners, precision measuring instruments 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. Discuss Chemical Right to Know
E. Cover ID and use of hand tools
F. Cover ID and use of power tools
G. Cover ID and use of special service tools
H. Teach 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. Locate and apply service information
N. Review vehicle service history
O. Cover vehicle repair order documentation
P. Locate vehicle labels and IDs
Q. Cover theory and principles of engine operation
R. Cover lubrication maintenance
S. Cover vehicle inspections
T. Teach basic under-hood service
U. Teach basic under-vehicle service
V. Cover theory and principles of wheels and tires
W. Cover tire and wheel inspection and service
X. Cover brake inspection and evaluation

Y. Cover 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 Diesel Technology programs.
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. Perform a predelivery inspection.
15. Perform a brake inspection and evaluation
16. Show tire identification and ratings.
17. Perform tire repairs.
18. Perform 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

Required Text(s): See Course Identification Document for current textbook.

Tools: See current required tool list.

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. Flip charts
7. Handouts
8. Observations
9. Assigned lab projects
10. Field trips

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Quizzes
2. Tests
3. Lab grades
4. 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.

B. Attendance:

1. Attendance is required for successful completion of this course.

2. This is an Engaged Learning course and students are expected to complete pre-class preparation assignments/homework and attend sessions for class, lab, including assignments missed due to absence.
3. Each instructor will inform students by means of a syllabus and Course Information Document of attendance requirements at the first-class meeting.
4. It is expected that students will be on time and present for all scheduled class / lab times unless PRIOR arrangements have been made with the instructor.
5. Missed class or lab sessions, regardless of cause, reduces the opportunity for learning and may affect student achievement of course learning outcomes and the student's grades.
6. Students are responsible for all content missed, regardless of the reason for the absence.
7. Students must, whenever possible, notify the instructor if unable to attend any class/lab session.
8. Emergency absences will be considered on an individual basis to determine if learning activities can reasonably be rescheduled during the current session.

C. Participation:

1. For every hour of classroom learning students are expected to perform two hours of related studies as homework or hands-on / simulated/on-line activities outside the classroom.
2. Students are expected to be responsible for meeting scheduled class/lab/ homework & assigned due dates unless prior arrangements have been made with the instructor 24 hours before the due date.
3. Students are expected to complete all exams, quizzes, lab activities and assignments / homework at the scheduled times unless PRIOR arrangements have been made with the instructor before the due date and time.
4. When reasonably possible, and only when prior arrangements have been made, students may ask the instructor to have a test or exam rescheduled prior to 24 hours before the activities scheduled date and time.
5. Unscheduled Quizzes may be given at any time and may not be repeated or taken at a later time, unless approved by the instructor.
6. Exceptions due to emergency absences will be considered on an individual basis.

D. Program shop safety rules will be followed. Please see the course outline for any additional safety rules established by the instructor.