SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES & SKILLED TRADES DIVISION
DIESEL TECHNOLOGY - TRUCK
COURSE SYLLABUS
November 14, 2025

I. CATALOG DESCRIPTION

Course Number: DESL2511
Course Title: Automatic Transmissions & HVAC Systems
Prerequisite(s): DESL1111, DESL1116

Catalog Description: Principles, design, and construction of Allison automatic truck transmissions. Lab work in disassembly, inspection, reassembly, adjustment, repair and testing of the automatic transmission. Principles of operation, construction and design, maintenance, diagnosis and repair of heating, air conditioning and ventilation systems. Auxiliary bunk systems will also be discussed as well as introduction to trailer refrigeration systems.

Credit Hour: 6.0
Class Hours: 45
Lab Hours: 135
Total Contact Hours: 180

II. COURSE OBJECTIVES: *Course will:*

- **A.** Cover safety procedures related to the Hazard Communication and Globally Harmonized Systems as well as specific program rules for tool and equipment use.
- **B.** Cover torque converters design and operation.
- **C.** Cover construction and operation of automatic transmissions.
- **D.** Cover disassembly and evaluation of automatic transmissions.
- **E.** Cover measuring and reassembly of automatic transmissions.
- **F.** Cover troubleshooting and testing of the transmission.
- **G.** Cover HVAC system design and operation.
- **H.** Cover environmental rules associated with HVAC systems.
- **I.** Cover Section 609 certification.
- **J.** Cover proper reclaiming, evacuation and charging.
- **K.** Cover proper refrigerant/sealant identifier use.
- **L.** Cover proper leak testing and proper repairs.
- **M.** Cover proper HVAC diagnostic procedures.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

1. Abide by safety procedures related to the Hazard Communication and Globally Harmonized Systems, as well as, specific program rules for tool and equipment use.
2. Properly use the hand tools, measuring instruments, special tools and equipment, inspection sheets and manuals required to perform the course objectives.

B. GENERAL EDUCATIONAL LEARNING OUTCOMES:

GELO 3: Critical Thinking & Problem Solving

Outcome(s):

1. Collect, identify, interpret and analyze data.
2. Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

A. General shop safety
B. Torque converters
C. Automatic transmission fundamentals of operation
D. Automatic transmission disassembly and evaluation
E. Automatic transmission assembly and testing
F. Automatic transmission troubleshooting and repair
G. Heating system components and operation
H. Air conditioning theory
I. A/C system component identification and location
J. System operation
K. Recovery/recycling & recharging
L. Leak testing and repair
M. Diagnostics of HVAC systems
N. Section 609 Certification

V. INSTRUCTIONAL MATERIALS

The Course Information Document lists the current text(s), tools/equipment, and/or supplies required for this course. This list is also available from the campus bookstore.

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 presentations
4. Demonstrations
5. Project boards
6. Handouts
7. Observations
8. Assigned lab projects
9. Field trips

VII. METHODS OF EVALUATION

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

1. Notebook
2. Quizzes
3. Tests
4. Lab grades
5. Class conduct

Letter grades will be based on the SCC Standard Grade Scale Policy. 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.