SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES AND SKILLED TRADES DIVISION
DIESEL–AG EQUIPMENT SERVICE TECH
COURSE SYLLABUS
October 27, 2025

I. CATALOG DESCRIPTION

Course Number: AGST1231
Course Title: Fuel Systems, Spraying Equipment, Precision Guidance & Controls
Prerequisite(s): AGST1111, AGST1116

Catalog Description: Diesel fuel systems theory, operation, diagnosis and repair. Spraying equipment safety, theory, design principles of operation, set-up, operation, calibration, troubleshooting and repair is included. Precision guidance and control systems are included.

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 theory, operation, diagnosis and repair of diesel fuel systems used in ag equipment.
C. Cover component location and identification and operation principles of the spraying system.
D. Teach operator and technician safety notices, warnings and procedures.
E. Cover diagnosis, calibration, maintenance and repair of the spraying system.
F. Cover theory, operation, setup, diagnosis and repair of precision positioning systems used in ag equipment.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. STUDENT LEARNING OUTCOMES: *The student will be able to:*

1. Follow safety procedures related to the Hazard Communication and Globally Harmonized Systems as well as specific program rules for tool and equipment use.
2. Locate, read and comprehend technical information
3. Identify, diagnose and repair Diesel fuel systems.
4. Identify, diagnose and repair various types of spraying equipment.
5. Explain how GPS works and how it relates to modern farming operations.
6. Identify, setup, calibrate, diagnose and repair precision positioning systems.

B. GENERAL EDUCATION LEARNING OUCOMES:

GELO #3: Critical Thinking and Problem Solving

Outcomes:

1. Collect, identify, interpret and analyze data.
2. Synthesize information to arrive at reasoned solutions to problems.
3. Evaluate ideas presented in writing, medial, speech, or artistic presentations.

4. Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
5. Acquire and integrate knowledge and construct relationships across disciplines.

IV. CONTENT/TOPICAL OUTLINE

- **A.** Fuel system design and operation
- **B.** Fuel system diagnosis and repair
- **C.** Sprayer component identification/location
- **D.** Sprayer set-up
- **E.** Sprayer maintenance
- **F.** Sprayer calibration
- **G.** Guidance and control systems

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. 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. 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 to progress through the program.

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.