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

I. CATALOG DESCRIPTION

Course Number: AGST2461
Course Title: Planting, Harvesting and Haying Equipment Systems
Prerequisite(s): AGST1111, AGST1116

Catalog Description: Theory, design, principles of operation, set-up, adjustments, and diagnostics, and repair of row-crop planting and seeding equipment. Theory, testing and repair of precision guidance and electronic monitoring and control systems.
Theory, design, principles of operation, set-up, adjustment, diagnostics, and repair of hay and forage harvesting equipment. Theory, design, principles of operation, diagnostics, and repair of combines, headers and attachments. Safety protocol and safe operation while servicing equipment is emphasized.

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

II. COURSE OBJECTIVES: *Course will:*

A. Cover various types of planting and seeding equipment.
B. Cover metering systems used for planting and seeding.
C. Cover diagnostics, service and repair of monitors and electronic control systems.
D. Cover guidance systems and controls.
E. Show how to calculate the capacities and efficiencies of planting and seeding implements.
F. Show sizes, types, and functions of combines
G. Define the six (6) operational areas and functions of each on a combine.
H. Cover engine, power transmission, drivetrain, hydraulic and electrical systems on combines.
I. Cover sizes, types, and functions of hay and forage harvesting equipment.
J. Teach safe operation of machines in lab and in field as necessary

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

1. Read and comprehend technical information found in textbooks, manuals, and operating instructions used in the classroom and lab
2. Use basic hand tools to perform service and repair operations in the lab
3. Use a row unit test stand to test and adjust metering units
4. Test monitors, controllers and guidance systems used on modern planting and harvesting equipment.

5. Demonstrate safety procedures and precautions on and around planting and harvesting equipment.
6. Demonstrate proper maintenance, diagnostics and repair of planting and harvesting equipment.

B. GENERAL EDUCATION LEARNING OUTCOMES:

GELO #3: Critical Thinking & 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. Safety
B. Planter/drill function and operation
C. Metering
D. Seed placement
E. Planter attachments
F. Monitoring/guidance
G. Combine/harvester function and operation
H. Combine/harvester history, types, and sizes
I. Combine/harvester controls, settings, and adjustments
J. Hay equipment function, operation, adjustments and repair
K. Preventative maintenance and inspections

I. INSTRUCTIONAL MATERIALS

Required Text(s): See Course Identification Document for current textbook.
Tools: See current required tool list.

II. 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

III. 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.

I. 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.