SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
DIESEL –AG EQUIPMENT SERVICE TECH
COURSE SYLLABUS
December 7, 2022

Syllabus Statements

I. CATALOG DESCRIPTION

Course Number: AGST2510
Course Title: Power Trains II
Prerequisite(s): AGST1110, AGST1130, AGST1140

Catalog Description: Advanced study of power trains. Theory, design, construction, diagnosis, repair, and testing of farm equipment power trains, particularly those transmissions classified as "on-the-go" shift types. AG Equipment CVT/IVT systems included. Lab projects are accepted.

Credit Hour: 5.5
Class Hours: 30
Lab Hours: 158
Total Contact Hours: 188

II. COURSE OBJECTIVES: *Course will:*

A. Show how to test, diagnose, dissemble, evaluate, assemble, and verify correct operation of Ag equipment power train systems.
B. Show how to perform safety procedures related to the Hazard Communication and Globally Harmonized Systems as well as specific program rules for tool and equipment use.
C. Show how to identify power train components used in typical Ag equipment vehicles.
D. Describe power flow of power-shift / CVT transmissions.
E. Show how to locate technical information found on dealer portals and technical manuals.
F. Show how to operate the vehicle in a safe and effective manner to move the machine for testing and placement in the service bay.
G. Show how to follow service manual / operator manual instructions for proper testing, diagnosis, disassembly, reassembly and verification of service performed.
H. Show how to use common and special tools as prescribed in service manual instructions.
I. Demonstrate the correct operation of forklift, overhead cranes, gantry cranes, and other lifting devices.
J. Describe the effects of common power-shift clutch pack, hydraulic, bearing, seal and gear failures.
K. Show how to connect and interpret pressure gauges for measuring supply / return, clutch apply and lube circuits in Ag equipment power trains.
L. Show how to communicate with customers throughout the process of service procedures.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

B. GENERAL EDUCATION LERANING 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. Customer production order procedures
B. Power train fundamentals
C. Testing and diagnostic procedures
D. Shop safety/hazard communication, lifting technology
E. Machine operation – operator manuals
F. Gears: types/applications, power flow, ratios
G. Clutches: types, application/modulation/release
H. Dealer portal navigation
I. Component lubrication
J. Failure analysis
K. Implement safety procedures related to the Hazard Communication and Globally Harmonized Systems as well as specific program rules for tool and equipment use.
L. Completion of all projects, assignments, and daily work sheets.

V. INSTRUCTIONAL MATERIALS

Required Text(s):	JD FOS Power Trains (ISBN # 0-86691-37-7) Program literature / resources
Tools:	See current required tool list
Other Resources:	Students must use approved safety eyewear (Z-87.2) at all times while in the lab area (CLEAR LENS ONLY). PPE – Personal Protective Equipment required by the program. Program or sponsoring employer shirt (button front or polo) no tee or sweat shirts.

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. Transparencies
5. Demonstrations
6. Project boards
7. Flip charts
8. Handouts
9. Observations

10. Assigned lab projects
11. 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.

VIII. SPECIFIC COURSE REQUIREMENTS

A. Student must:

1. Complete all projects, assignments, and daily work sheets.
2. Earn a grade of 70% (2.0) or a C is required to successfully pass this class.

B. Program shop safety rules will be followed. Please see the course information document for any additional safety rules established by the instructor.

C. 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.

D. 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 and 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 reasonable 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 dated 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.