SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
DIESEL –AG EQUIPMENT SERVICE TECH
COURSE SYLLABUS
October 16, 2020
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number: AGST2420
Course Title: Engine Overhaul and Inspection
Prerequisite(s): AGST1220, AGST1240, AGST1260

Catalog Description: Complete out-of-frame Diesel Engine overhaul to include the safe and proper use of service methods for disassembly, inspection, measuring, reconditioning, reassembly, adjusting, and performance testing of AG Equipment Diesel Engines.

Credit Hour: 4.5
Class Hours: 15
Lab Hours: 158
Total Contact Hours: 173

II. COURSE OBJECTIVES: *Course will:*

A. Identify crankshaft types and nomenclature.
B. Remove measure, inspect, and install crankshafts and bearings.
C. Identify crankshaft bearing types and their functions.
D. Identify, measure, inspect, recondition, and install connecting rod assemblies.
E. Identify, measure, inspect, recondition, and install piston assemblies.
F. Identify, measure, inspect, recondition, and install piston rings.
G. Identify, measure, inspect, recondition, and install engine blocks.
H. Identify, compare, measure, and inspect various types of cylinders.
I. List functions, composition, and sources of engine lubricants.
J. Identify, service, and repair common engine lubrication systems.
K. Identify, service, and repair common oil filtration systems.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

1. Identify crankshaft types and nomenclature
2. Remove measure, inspect, and install crankshafts and bearings
3. Identify crankshaft bearing types and their functions
4. Identify, measure, inspect, recondition, and install connecting rod assemblies
5. Identify, measure, inspect, recondition, and install piston assemblies
6. Identify, measure, inspect, recondition, and install piston rings
7. Identify, measure, inspect, recondition, and install engine blocks

8. Identify, compare, measure, and inspect various types of cylinders
9. List functions, composition, and sources of engine lubricants
10. Identify, service, and repair common engine lubrication systems
11. Identify, service, and repair common oil filtration systems
12. Identify safety procedures related to the Hazard Communication and Globally Harmonized Systems as well as specific program rules for tool and equipment use

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. Function and nomenclature
B. Construction/materials
C. Removal
D. Failure analysis
E. Measurements and installation of: crankshafts, bearings, connecting rods, pistons, piston rings, crankcase, lubricants, lubrication systems, and filtration systems.

V. INSTRUCTIONAL MATERIALS

Required Text(s):	Fundamentals of Service, Engines - John Deere (Ch., 2, 7, & 12). Diesel Engine and Fuel System Repair - Dagel (Ch. 6, 8, 9, & 11).
Outside Reading / Research Required:	Three Technical Reports based on articles found in a trade journal related to Agricultural Transportation
Other Resources:	Engine technical manuals 3rd Semester required tools Safety glasses w/ side shields (Z87 approved) Leather work shoes Pen & colored pencils Remote start switch and test lead kit (purchase kit at SCC parts store)

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. Notebook
2. Quizzes
3. Tests
4. Lab grades
5. 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 calculate.

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. **Please see the course outline for any additional attendance regulations established by the instructor.**

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

E. Perform necessary tool room duties.