



South Central College

## AGME 2946 Tractor/Equipment Repair II

### Common Course Outline

#### Course Information

<b>Description</b>	This course provides the student with tractor service shop experience in hydraulics, diesel fuel systems, electrical systems, power trains, air conditioning, and engines. Students perform repair services on customer tractors and school units.(Prerequisite: AGME 2945)
<b>Total Credits</b>	4
<b>Total Hours</b>	128

#### Types of Instruction

Instruction Type	Credits/Hours
Lab	4/128

#### Pre/Corequisites

AGME2945

#### Course Outcomes

**1. Test understanding of workplace safety will be developed**

**Learning Objectives**

Adhere to predetermined shop rules and consequences for disregarding rules  
Use of jackstands and lifting devices  
Proper lifting techniques  
Safe use of hydraulic testing equipment  
Proper unit shut down lockout procedures  
Acknowledge chemicals used in shop and dangers associated with them

**2. Test Electrical devices on and off machines**

**Learning Objectives**

Test batteries  
Test cranking circuit control components  
Use analog and digital multimeters  
Perform on-tractor cranking tests  
Measure circuit voltage drops  
Test electro-mechanical gauge/lamp console circuits  
Test engine protection override system  
Repair field/road lighting circuits,repair cab blower/wiper circuits

### **3. Adjust components**

#### **Learning Objectives**

Adjust tractor carburetor  
Adjust engine governed speeds  
Set fuel systems to standard horsepower with dynamometer  
Adjust power train components  
Adjust hydraulic system pressures

### **4. Rebuild engine components**

#### **Learning Objectives**

Measure internal engine components  
Determine reuse of old parts  
Obtain new components and reassemble  
Weigh out new vs rebuilt costs  
Test rebuilt items before returning to customer

### **5. Perform service on units**

#### **Learning Objectives**

Change fluids at recommended times  
Service filters and check for contamination  
Refer to operator manual for proper operation  
Clean units

### **6. Select proper tools and various fasteners.**

#### **Learning Objectives**

Use of speciality tools from manufacturer of unit  
Use of measuring tools for diagnosis and repair to specification  
Use proper tools for student and bystander safety  
Proper torqueing of hardware

### **7. Diagnosis and repair farm equipment**

#### **Learning Objectives**

Listen to customer complaint  
Determine the problem  
Troubleshoot the cause  
Correct the problem

### **8. Test and repair mechanical power trains**

#### **Learning Objectives**

Determine cause of complaint  
Test for proper operation  
Evaluate extent of repair  
Estimate cost of repair  
Perform power train repair  
Complete work order and billing

### **9. Test and repair power shift and hydrostatic power trains**

#### **Learning Objectives**

Determine cause of complaint  
Test pressures and observe operation  
Disassemble unit and inspect components  
Estimate cost of repair for customer  
Perform repairs and retest  
Complete work order and billing

### **10. Test and repair hydraulic systems**

#### **Learning Objectives**

- Practice proper safety procedures with high pressure oil
- Determine cause of complaint
- Test pressures and observe operation
- Disassemble and inspect components
- Estimate cost of repair
- Perform repairs and retest
- Complete work order and billing

**11. Perform welding and fabrication as needed**

**Learning Objectives**

- Practice safety while welding and cutting
- Perform broken bolt and stud removal
- Identify metal for specific welding processes
- Perform heating and cutting operations with gas torch
- Repair and fabricate components

**12. Perform parts department operations**

**Learning Objectives**

- Access electronic parts catalog
- Identify part or parts required
- Differentiate between new and used
- Obtain needed repair parts

**13. Prepare work order and billing of repair services**

**Learning Objectives**

- Insert customer and equipment information
- Record parts purchased for repair
- List shop supplies used for repair
- Compose cause, complaint and correction narrative for repair
- Calculate totals for customer billing

**SCC Accessibility Statement**

Disability Services provides accommodations and other supports to students with permanent and temporary disabilities that affect their SCC experience. Disabilities may include mental health (anxiety, depression, PTSD), ADHD, learning disabilities, chronic health conditions (migraine, fibromyalgia), sensory disabilities, and temporary disabilities (broken arm, surgery). Common accommodations are extended test time, private room for testing, audiobooks, and sign language interpreter.

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