Appendix B

New Course or Course Change Proposal Form

Date of Proposal: 5-2-2012
Author: Bruce White  Jim Zwaschka

Proposal Type: | (*)New Course | Modify Course | Delete Course
Contact for the Course:
Course Designator, Number and Title (i.e.: ACCT 1800, Business Law):
AGME 2946
Number of Credits:
4
Prerequisites:
AGME 2945

Course Description: 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: AGME2945) If you have a disability and need accommodations to participate in the course activities, please contact your instructor as soon as possible.
4 Cr (0 lect/pres; 4 lab; 0 other)

Grading Method: | Grade | Pass/Fail
Scheduling: | Fall | Spring | Summer | Alternate Years | Variable | On Demand
Instructional Type: | Lecture | Lab | Lecture/Lab | Internship | Seminar

(*)Class Maximum: (For New Courses Only) / All Unlimited faculty members of a program or discipline must sign.

Faculty Name | Faculty Signature | Class Max | Date
James Zwaschka | Bruce White | 22 | 5-2-12

Dean's Name | Dean's Signature | Date

If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select insert and then select insert rows below to add rows to the table.

Is this Course Proposed as a Liberal Arts Course: Yes  No x
If Yes, Which MnTC Area/Areas Will it Fulfill (http://www.mntransfer.org)?
Is This Course a Requirement/Elective for a Specific Program or Programs? Yes x  No
If Yes, Which Program(s)? Agribusiness Service Technician
Describe What is Changing/Being Added, and the Rationale: Change of prerequisite to avoid registration block.

What Impact Will This New Course or Change Have on Other Programs or Areas?
NONE
TRACTOR/EQUIPMENT REPAIR II
Course Outcome Summary

Course Information
Organization South Central College
Developers Bruce White / James Zwaschka
Development Date 7/28/2010
Course Number AGME2946
Potential Hours of Instruction 128
Total Credits 4

Description
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: AGME2945)

Types of Instruction

<table>
<thead>
<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab</td>
<td>128</td>
<td>4</td>
</tr>
</tbody>
</table>

Prerequisites
AGME2945

Exit Learning Outcomes

Core Abilities
A. Teamwork and problem-solving
B. Analysis and inquiry:
C. Critical and creative thinking
D. Written and oral communication

Competencies
1. Test understanding of workplace safety will be developed
   Learning Objectives
   a. Adhere to predetermined shop rules and consequences for disregarding rules
   b. Use of jack stands and lifting devices
   c. Proper lifting techniques
   d. Safe use of hydraulic testing equipment
   e. Proper unit shut down lockout procedures
   f. Acknowledge chemicals used in shop and dangers associated with them

2. Test Electrical devices on and off machines
   Learning Objectives
   a. Test batteries
b. Test cranking circuit control components  
c. Use analog and digital multimeters  
d. Perform on-tractor cranking tests  
e. Measure circuit voltage drops  
f. Test electro-mechanical gauge/lamp console circuits  
g. Test engine protection override system  
h. Repair field/road lighting circuit, repair cab blower/wiper circuits  

3. Adjust components  
   Learning Objectives  
   a. Adjust tractor carburetor  
b. Adjust engine governed speeds  
c. Set fuel systems to standard horsepower with dynamometer  
d. Adjust power train components  
e. Adjust hydraulic system pressures  

4. Rebuild engine components  
   Learning Objectives  
   a. Measure internal engine components  
b. Determine reuse of old parts  
c. Obtain new components and reassemble  
d. Weigh out new vs. rebuilt costs  
e. Test rebuilt items before returning to customer  

5. Perform service on units  
   Learning Objectives  
   a. Change fluids at recommended times  
b. Service filters and check for contamination  
c. Refer to operator manual for proper operation  
d. Clean units  

6. Select proper tools and various fasteners.  
   Learning Objectives  
   a. Use of specialty tools from manufacturer of unit  
b. Use of measuring tools for diagnosis and repair to specification  
c. Use proper tools for student and bystander safety  
d. Proper torqueing of hardware  

7. Diagnosis and repair farm equipment  
   Learning Objectives  
   a. Listen to customer complaint  
b. Determine the problem  
c. Troubleshoot the cause  
d. Correct the problem  

8. Test and repair mechanical power trains  
   Learning Objectives  
   a. Determine cause of complaint  
b. Test for proper operation  
c. Evaluate extent of repair
d. Estimate cost of repair  
e. Perform power train repair  
f. Complete work order and billing  

9. Test and repair power shift and hydrostatic power trains  
Learning Objectives  
a. Determine cause of complaint  
b. Test pressures and observe operation  
c. Disassemble unit and inspect components  
d. Estimate cost of repair for customer  
e. Perform repairs and retest  
f. Complete work order and billing  

10. Test and repair hydraulic systems  
Learning Objectives  
a. Practice proper safety procedures with high pressure oil  
b. Determine cause of complaint  
c. Test pressures and observe operation  
d. Disassemble and inspect components  
e. Estimate cost of repair  
f. Perform repairs and retest  
g. Complete work order and billing  

11. Perform welding and fabrication as needed  
Learning Objectives  
a. Practice safety while welding and cutting  
b. Perform broken bolt and stud removal  
c. Identify metal for specific welding processes  
d. Perform heating and cutting operations with gas torch  
e. Repair and fabricate components  

12. Perform parts department operations  
Learning Objectives  
a. Access electronic parts catalog  
b. Identify part or parts required  
c. Differentiate between new and used  
d. Obtain needed repair parts  

13. Prepare work order and billing of repair services  
Learning Objectives  
a. Insert customer and equipment information  
b. Record parts purchased for repair  
c. List shop supplies used for repair  
d. Compose cause, complaint and correction narrative for repair  
e. Calculate totals for customer billing