6/27/2023 DATE
☑ REQUIRED COURSE
☑ ELECTIVE COURSE

Agriculture DIVISION
☐ NEW COURSE
☐ REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	AGR-090		**TITLE:** *(30 Characters Max)*	Principles of Agricultural Mechanics									
SEM CR HRS:	2.5	**Lecture:**	2	**Lab:**	1			**ECH:**	3				
Course Level:	☐ Gen Ed / IAI ☐ Baccalaureate /Non-IAI ☑ Career/Technical ☐ Dev Ed/ Not in Degree Audit			**Clinical Practicum:**	0	**Work-based Learning**	0	**WBL ECH:**	0				
COURSE PCS #	12 - 01.0201		**IAI Code**					**Contact Hours (Minutes Per Week)**					
Repeatable (Y/N):	N	**Pass/Fail (Y/N):**	N	**Variable Credit (Y/N):**	N	**Min:**		**Max:**		**16 Wks**	150	**8 Wks**	300
Prerequisites:													
Catalog Description: (40 Word Limit)	Covers the fundamentals of basic preventive maintenance for tractors and familiarizes the student with setting and adjusting sprayers, tillage equipment, planters, and combines.												

	List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
1	Introductory Maintenance and Safety	2	1		
2	Intake and Exhaust Systems	3	1		
3	Engine Fuel Systems	3	1		
4	Engine Lubrication Systems	3	2		
5	Engine Cooling Systems	2	1		
6	Electrical Systems	4	2		
7	Power Trains	3	1		
8	Hydraulic Systems	3	1		
9	Other Components	2	1		
10	Tune-up and Troubleshooting	3	2		
11	Machinery Adjustments	2	2		
	TOTAL	30	15	0	0

EVALUATION							
QUIZZES	☑	**EXAMS**	☑	**ORAL PRES**	☐	**PAPERS**	☐
LAB WORK	☑	**PROJECTS**	☑	**COMP FINAL**	☑	**OTHER**	☐

COURSE MATERIALS		
TITLE:	Preventative Maintenance	
AUTHOR:	John Deere Publications	
PUBLISHER:	John Deere Publishing	
VOLUME/EDITION/URL:	6th Edition	
COPYRIGHT DATE:	1999	

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:
Introductory Maintenance and Safety	3	Discuss service intervals, the value of record keeping, and safety precautions.
Intake and Exhaust Systems	4	Describe air cleaners, valves, manifolds, mufflers, and testing of intake and compression.
Engine Fuel Systems	4	Compare gas and diesel fuel systems, fuel selection, and refueling machines.
Engine Lubrication Systems	5	Analyze lubrication principles, operation of lubrication systems, selection of engine oils, and assessing oil pressure.
Engine Cooling Systems	3	Describe the basic fundamental operation of cooling systems, selection of coolants, and servicing and testing cooling systems.
Electrical Systems	6	Discuss the operation of electrical systems, battery and spark plug maintenance, and timing ignition systems.
Power Trains	4	Examine power trains, including the selection of lubricants and power train maintenance.

Hydraulic Systems	4	Discuss principles and operations of hydraulic systems, the selection of hydraulic fluids, and maintenance and testing of hydraulic systems.
Other Components	3	Locate the operator cab and its components, steering and brake fundamentals, belt and gear drives, and lighting and air conditioning.
Tune-up and Troubleshooting	5	Inspect procedures visually, tune-up steps, and use of tune-up equipment.
Machinery Adjustments	4	Examine proper setting and adjustment of planting, tillage, and harvesting equipment.
Insert New Line Above this Line		
	45	

COURSE OUTCOMES*	At the successful completion of this course, students will be able to:
• Compare gasoline and diesel engine and fuel systems.	
• Analyze lubrication and cooling systems including fundamentals of operation, selection of lubricants and coolants, and servicing those systems.	
• Discuss the operation of electrical and electronic systems.	
• Examine power trains and hydraulic systems including selection of hydraulic fluids.	

** Course Outcomes will be used in the Assessment Software for Outcomes Assessment. Limit to 3 - 5.*