6/26/2025	DATE	TEC	DIVISION
☑	REQUIRED COURSE	☐	NEW COURSE
☑	ELECTIVE COURSE	☑	REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	MET-043		TITLE: *(30 Characters Max)*		Motors and Generators						
SEM CR HRS:	2.5	Lecture:	1.5	Lab:	2.0	ICCB Lab:	2.0	ECH:	3.5		
Course Level:	☐ Gen Ed/IAI ☐ Baccalaureate/Non-IAI ☑ Career/Technical ☐ Dev Ed/Not in Degree Audit			Clinical Practicum:	0.0	Work-based Learning:	0.0	WBL ECH:	0.0		
Course PCS & CIP:	12 - 15.0303		IAI Code:	N/A				Contact Hours (Minutes/Week)			
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:		Max:		16 Wks	175	8 Wks	350
Prerequisites:	EET-050 or MET-042										
Corequisites:	None										
Catalog Description: (40 Word Limit)	This course focuses on the installation, maintenance and application of motors, equipment and controls.										

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
DC motors	3	4		
Generators	2	1		
AC motors: single phase	3	3		
AC motors: series and shunt	1	1		
AC motors: synchronous	1	1		
AC motors: shaded pole	2	3		
AC motors: universal	3	4		
Alternators	1	1		
Multi-phase	5	8		
Motor controls	4	6		
TOTAL	25	32	0	0

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

COURSE MATERIALS		
TITLE:	*Motors*	
AUTHOR:		
PUBLISHER:	ATP	
VOLUME/EDITION/URL:		
COPYRIGHT DATE:	2010	

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:
DC motors	7	1. Identify the types of DC motors. 2. Describe the operation of DC motors. 3. Diagnose DC motors.
Generators	3	1. Explain the operation, uses and diagnostic procedures for generators. 2. Repair DC generators.
AC motors: single phase	6	1. Explain the operation, uses and diagnostic procedures for AC motors.
AC motors: series and shunt	4	1. Describe the motor construction and its relationship to the applications of correct motors.
AC motors: synchronous	2	1. Describe the operation and construction of constant RPM motors.

AC motors: shaded pole	3	1. Explain the uses and diagnostic procedures for less expensive motors.
AC motors: universal	7	1. Explain the uses, limitations and repair of universal motors.
Alternators	2	1. Describe the operation and repair of AC generating equipment.
Multi phase	13	1. Explain how to choose correct motor repair procedures.
Motor controls	10	1. Explain the types, uses, applications and repair of various motor controls.
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Outcomes*	Outcome Title	At the successful completion of this course, students will be able to:
Course Outcome 1	Oper DC Motor Gen	Describe the operation of a DC motor and generator.
Course Outcome 2	Oper AC Single Motor	Describe the operation of an AC single phase motor.
Course Outcome 3	Oper 3 Phase Motor	Describe the operation of a three phase motor.
Primary Laker Learning Competency	Scientific Literacy: Students apply the scientific process to real-life situations.	
Secondary Laker Learning Competency	Professional Skills & Ethics: Students demonstrate professional skills and ethical accountability.	

**Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency. Limit to 3-5.*