

11/15/2022 DATE



REQUIRED COURSE



ELECTIVE COURSE

Technology

DIVISION

☐ NEW COURSE☐ REVISION

# Lake Land College

## Course Information Form

COURSE NUMBER:	AUT-081		TITLE: (30 Characters Max)		Ignition and Fuel Systems			
SEM CR HRS:	3	Lecture:	2	Lab:	2	ECH:		4
Course Level:	<input type="checkbox"/> Gen Ed / IAI <input type="checkbox"/> Baccalaureate /Non-IAI		<input checked="" type="checkbox"/> Career/Technical <input type="checkbox"/> Dev Ed/ Not in Degree Audit		Clinical Practicum:	0	Work-based Learning:	0
							WBL ECH:	0
COURSE PCS #	12 - 47.0604		IAI Code		N/A		Contact Hours (Minutes/Week)	
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:	Max:	
Prerequisites:	AUT 048, AUT 051 and AUT 052 or consent of instructor							
Corequisites:	None							
Catalog Description: (40 Word Limit)	This course is the study of vehicle ignition systems and fuel systems. It will include ignition systems and fuel delivery systems, including throttle body, port fuel-injected, gasoline direct-injection and high-pressure common rail diesel systems.							

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Gasoline, alternative fuels and diesel fuels	4	2		
Ignition system components and operation	4			
Ignition system diagnosis and service	4	6		
Fuel pumps, lines and filters	3	4		
Fuel-injection components and operation	3	4		
Gasoline direct-injection systems	3	4		
High-pressure common rail diesel fuel systems	3	3		
Electronic throttle control system	2	2		
Fuel-Injection system diagnosis and service	4	4		
Diesel OBD II, monitors and diagnosis	4	3		
<b>TOTAL</b>	<b>34</b>	<b>32</b>	<b>0</b>	<b>0</b>

EVALUATION			
QUIZZES <input checked="" type="checkbox"/>	EXAMS <input checked="" type="checkbox"/>	ORAL PRES <input type="checkbox"/>	PAPERS <input type="checkbox"/>
LAB WORK <input checked="" type="checkbox"/>	PROJECTS <input type="checkbox"/>	COMP FINAL <input checked="" type="checkbox"/>	OTHER <input type="checkbox"/>

COURSE MATERIALS	
TITLE:	Automotive Electrical and Engine Performance
AUTHOR:	James D. Halderman
PUBLISHER:	Pearson
VOLUME/EDITION/URL:	Eighth Edition
COPYRIGHT DATE:	2020

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		<i>The student will be able to:</i>
Gasoline, alternative fuels and diesel fuels	6	1. Explain the characteristics of gasoline, diesel fuel and alternative fuels. 2. Demonstrate the testing of fuels for contaminations.
Ignition system components and operation	4	1. Explain the purpose and function of the ignition systems used in automotive, including distributor, distributorless, wasted spark and coil-on-plug systems.
Ignition system diagnosis and service	10	1. Demonstrate the procedures for inspecting, testing and replacing ignition components.
Fuel pumps, lines and filters	7	1. Explain the purpose and function of the fuel tank, lines, pumps and filters. 2. Demonstrate the procedures for inspecting, testing and replacing fuel components.
Fuel-injection components and operation	7	1. Explain throttle-body injection, port fuel-injection and fuel pressure regulators operation and service. 2. Demonstrate the procedures for inspecting, testing and replacing fuel components.

Gasoline direct-injection systems	7	1. Explain the operation and components of gasoline direct-injection. 2. Demonstrate the procedures for inspecting, testing and replacing components.
High-pressure common rail diesel fuel systems	6	1. Explain the operation and components of a high-pressure common rail diesel fuel system. 2. Demonstrate the procedures for inspecting, testing and replacing components.
Electronic throttle control system	4	1. Explain the purpose, function, and components of an electronic throttle control system. 2. Demonstrate the procedures for inspecting, testing and replacing components.
Fuel-injection system diagnosis and service	8	1. Demonstrate the procedures for inspecting, testing and replacing components.
Diesel OBD II, monitors and diagnosis	7	1. Demonstrate the procedures for inspecting, testing and replacing components.
66		

Outcomes*		At the successful completion of this course, students will be able to:
Course Outcome	Assessing the ignition systems for needed service.	
Course Outcome	Assessing the fuel injection systems for needed service.	
Course Outcome	Executing the proper procedure to diagnosis and repair the fuel module.	
Primary Laker Learning Competency	Information & Technology Literacy: Students not only identify when information is necessary, but they also find, evaluate and use that information effectively with the appropriate technological tools.	
Secondary Laker Learning Competency	Creative Thinking & Problem Solving: Students think creatively and solve problems by successfully combining knowledge in new ways.	

\*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.