



Engineering Program

Specialty	Common
Course Number	20210222
Course Title	Automotive Electricity Lab
Credit Hours	1
Theoretical Hours	0
Practical Hours	3



❖ تطبق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2009/2008

Brief Course Description:

- ❖ Battery testing, Starting system, Diagnostics and maintenance, Ignition systems, Diagnostics and maintenance Lights, Safety and Signaling, Automotive, generators automatic control system.

Course Objectives:

1. Describe the contraction and operation electricity and electronic systems.
2. Diagnosis and service ignition systems, engine fuel – fuel in injection and electronic.
3. Diagnosis and service Lights, Signaling, Generators.
4. Diagnosis and service control systems.
5. Diagnosis and service Sensors and Ecm and Testing.



Detailed Course Description:

Lab Number	Lab Name	Lab Content	Time Needed
1.	Battery Testing Service	<ul style="list-style-type: none"> ▪ Battery construction ▪ Analyzing Battery ▪ Open circuit voltage test ▪ Hydrometer test ▪ Specific gravity ▪ Charging – Indicator ▪ Battery load test 	
2.	Starting system service	<ul style="list-style-type: none"> ▪ Cranking voltage test ▪ Voltage prop test ▪ Current Draw test ▪ Starting motor Bench tests ▪ No – load test ▪ Removing and Installing starting motor ▪ Servicing starting motor ▪ Jump starting 	
3.	Ignition systems service	<ul style="list-style-type: none"> ▪ Ignition Switches testing ▪ Testing Coil, Distributor Secondary Ignition, Primary ▪ Diagnosis and Services contact point, primary and secondary Voltage 	
4.	Charging System Service	<ul style="list-style-type: none"> ▪ Charging system troubles ▪ Checking the drive belt ▪ Charging system testing ▪ Charging system out put test ▪ Charging system maintenance ▪ Removing and Installing Alternator ▪ Alternator service 	
5.	Electronic fuel injection service	<ul style="list-style-type: none"> ▪ Fuel Injection trouble ▪ Checking fuel injection ▪ Testing fuel pump and capacity and pressure ▪ Testing fuel pressure regulator ▪ Testing fuel injectors ▪ Malfunction – Indicator light ▪ Interpreting trouble codes and scan data 	

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		<ul style="list-style-type: none"> ▪ Sensor diagnosis ▪ ECM diagnosis ▪ Air and fuel filter service ▪ Electric fuel pump service ▪ Cleaning and service fuel injectors ▪ Cleaning throttle- body and injector service 	
6.	Lights, Safety, and Signaling, Driver Information, and control devices	<ul style="list-style-type: none"> ▪ Testing the light bulbs and service ▪ Testing horn and horn pelay and service ▪ Testing security system and service ▪ Testing, seat belts, air bags and service ▪ Testing wind shield wipers and washers and service ▪ Testing Instrument pand and service ▪ Networks and multiplexing testing and service ▪ Testing other electrical and electronic devices 	

Evaluation Strategies:

Exams		Percentage	Date
Exams	Med term Exam	20%	--/--/----
	Assignments	30%	--/--/----
	Final Exam	50%	--/--/----

Teaching Methodology:

- ❖ Laboratory

Text Books & References:**Textbook:**

1. Jack ERJAVEC, AUTOMOTIVE Technology A system Approach, Delmar. U.S.A – 2005.

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