



Engineering Program

Specialization	Common
Course Number	20210223
Course Title	Automobile Electronics Lab
Credit Hours	1
Theoretical Hours	0
Practical Hours	3



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



Brief Course Description:

Testing and inspection of sensors, actuators, relays. Electronic systems in modern cars: Ignition, fuel, ...

Course Objectives:

Upon the completion of this course, the student will be able to:

- 1.
- 2.
- 3.
- 4.



Detailed Course Outline:

Unit Number	Unit Title	Unit Content	Time Needed
1.	Engine load sensors	<ul style="list-style-type: none"> ▪ Air flowmeter location and inspection ▪ Electronic injection location and inspection 	
2.	Engine speed and position sensors	<ul style="list-style-type: none"> ▪ Camshaft position sensor and crank shaft location and inspection 	
3.	Oxygen and fuel sensors	<ul style="list-style-type: none"> ▪ Carbon monoxide, nitrous oxide ▪ Hydrocarbons lambda value location and inspection 	
4.	Composition and shock sensors	<ul style="list-style-type: none"> ▪ Signals of knock sensors location and inspection ▪ Airbag location and inspection ▪ Fuel security system location and inspection 	
5.	Actuators	<ul style="list-style-type: none"> ▪ Fuel injection, closed loop control ▪ Acceleration and deceleration ▪ Idle speed ▪ Single point injection ▪ Multi point injection ▪ Location and inspection 	
6.	Relays	<ul style="list-style-type: none"> ▪ Switching batteries ▪ Double starting ▪ Stopping the start with engine running ▪ Thermal time switch 	
7.	Cold start Control	<ul style="list-style-type: none"> ▪ Cold start of engine ▪ Engine warm-up ▪ Location and inspection 	
8.	Electronic ignition control	<ul style="list-style-type: none"> ▪ Timing the closed loop ignition ▪ Fast regulation of the spark lead ▪ Slow regulation of the spark lead ▪ Location and inspection 	
9.	Sensors	<ul style="list-style-type: none"> ▪ Coolant temperature, air temperature ▪ Vacuum sensor, warning light ▪ Throttle position sensor 	

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Evaluation Strategies:

Exams		Percentage	Date
Exams	Reports	30%	
	Midterm	20%	
	Final Exam	50%	

Teaching Methodology:

- ❖ Laboratory

Text Book

1. Instructional Lab. Sheets



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