



Engineering Program

Specialization	Automotive Maintenance
Course Number	20211261
Course Title	Automotive troubleshooting and maintenance
Credit Hours	2
Theoretical Hours	2
Practical Hours	0



Brief Course Description:

Automotive maintenance record and schedules. Five steps troubleshooting plane. Using the symptoms chart and troubleshooting matrix .Troubleshooting no self diagnosis systems .Troubleshooting self diagnosis systems .Check engine light. Procedures to retrieve trouble codes. Troubleshooting with (AVO) meter .Diagnosis with SCAN tools. Troubleshooting by using Auto-data.

Course Objectives:

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

1. Identify automotive maintenance record and schedules.
2. Understanding five steps troubleshooting plane.
3. Know how to use troubleshooting matrix plane.
4. Know how to retrieve trouble codes.
5. Know how to use SCAN TOOL and other diagnosis equipments.



Detailed Course Outline:

Unit Number	Unit Title	Unit Content	Time Needed (hr)
1.	Automotive maintenance record and schedule	<ul style="list-style-type: none"> ▪ General ▪ Maintenance intervals and operation schedules Vehicle on floor service Vehicle fully raised service Vehicle half raised service Under bonnet operations Final items check 	3
2.	5-steps troubleshooting plane	<ul style="list-style-type: none"> ▪ Confirm the customers complain ▪ Analyze the customer complain ▪ Find the root cause ▪ Repair the root cause ▪ Verify the repair 	5
3.	Using the symptoms chart and troubleshooting matrix	<ul style="list-style-type: none"> ▪ Troubleshooting by symptom ▪ How to diagnose no self diagnosis system? 	5
4.	Troubleshooting no self diagnosis system	<ul style="list-style-type: none"> ▪ No self diagnosis systems in the vehicle. ▪ How to diagnose no self diagnose systems problems. 	3
5.	Troubleshooting self diagnosis systems	<ul style="list-style-type: none"> ▪ Overview ▪ Fault detection principles ▪ Limitations of the self diagnosis system 	4
6.	Check engine warning light	<ul style="list-style-type: none"> ▪ Operation of check engine light ▪ Troubleshooting check engine light problems *Check engine light fail to come on at bulb check *Check engine light doesn't flash codes (stay on or off) 	2
7.	Procedure to retrieve trouble codes	<ul style="list-style-type: none"> ▪ Retrieving trouble codes by using flash codes ▪ Retrieving trouble codes by using fault code reader 	4
8.	Troubleshooting tools and equipments	<ul style="list-style-type: none"> ▪ Troubleshooting by (AVO) meter ▪ Troubleshooting by LED ▪ Troubleshooting by scan tools ▪ Using auto data in troubleshooting process 	4



Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	
	Second Exam	20%	
	Final Exam	50%	
Homework and Projects Discussions and lecture Presentations		10%	

Teaching Methodology:

- ❖ Lectures and presentations

Text Book

1. Automotive diagnostic, Charles White, Hynes Publishing, UK.

References

1. KIA MOTORS company training program.
2. AUTO-DATA 2004.
3. TOYOTA training program.

