



Engineering Program

Specialization	Automotive Maintenance
Course Number	20211131
Course Title	Automotive power drive line units workshop
Credit Hours	2
Theoretical Hours	0
Practical Hours	6





Brief Course Description:

Maintenance and repair of clutch system, manual transmission, automatic transmission, propeller shaft and universal joints, final drive, differential and axles.

Course Objectives:

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

1. Remove, disassembly, inspect, reassembly and installing power drive units.
2. Troubleshooting power drive units' problems.
3. Using service manuals.



Detailed Course Outline:

Unit Number	Unit Title	Unit Content	Time Needed (hr)
1.	Servicing clutch system	<ul style="list-style-type: none"> ▪ Safety precaution. ▪ Clutch assembly removal, inspection and installation. ▪ Checking the clutch operation. <ul style="list-style-type: none"> * Clutch disengaging and engaging Problems. * Clutch slip. * Unusual sounds and noise. 	15
2.	Servicing manual transmission	<ul style="list-style-type: none"> ▪ Safety precaution. ▪ Disassembly, inspection and reassembly the manual transmission. ▪ Checking manual gearbox operation. <ul style="list-style-type: none"> * Hard shifting into gear. * Transmission sticks in gear. * Transmission jumps out of gear. * Gear slashes when shifting. * Transmission noises. * No power through transmission. 	20
3.	Servicing automatic transmission	<ul style="list-style-type: none"> ▪ Safety precaution. ▪ Disassembly, inspection and reassembly the automatic transmission. ▪ Final inspection and testing. <ul style="list-style-type: none"> * Inspection of the throttle cable. * Inspection and adjustment of shift Cables. * Stall test and test evaluation. * Road test. * Time lag test. 	20

4.	Servicing propeller shaft, driving shafts and joints	<ul style="list-style-type: none"> ▪ Safety precaution. ▪ Propeller shaft removing, inspection and installation. ▪ Practice on universal joints. ▪ Practice on drive axels. ▪ Practice on CV joints. 	15
5.	Servicing final drive and differential	<ul style="list-style-type: none"> ▪ Safety precaution. ▪ Practice on final drive and differential. ▪ Adjustment of pinion preload. 	20

Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	
	Second Exam	20%	
	Final Exam	50%	
	Assignment	10%	

Teaching Methodology:

- ❖ Workshop.

References & Text Book

Instructional Workshop. sheets

