Four Wheeler Chassis Mechanism Course – PCP (Theory & Practical) Training Schedule

Total course duration (400 hr)		
PCP (200 hrs)		Self learning (200 hrs)
Practical (80 hrs)	Theory (120 hrs)	

			Pcp- topic				Instruction to instructor	Learning outcomes- After attending the PCP learner would be able to -:
Week	Topic	Day	Duration (hr)	Theory	Duration (hr)	Practical		
Week 1	Introduction with automobile- Workshop safety & precautions	Day 1	2 hrs	• Origen of auto car to today vehicle. • Type of vehicle • General health & precautions	3hrs	• Show a film on journey of automobile. • Charts on safety & health in work shop. • Demonstration of safety gadgets.	• Use available resources to explain, what has been covered in theory.	• identify the important stages and name associated with automobile evolution. • adopts the appropriate safety measures while working in a workshop.
	Introduction to hand tools	Day 2	2 hrs	List out hand tools, their use ,safety precaution while using these and usage	4 hrs	Show hand tools used in auto repair work shops, give a feel of handling	Hand tools be shown , precaution to be taken while using these & actual practice	• identify & handle various tools used in workshop. • identify which tool is to be used for particular job. • adopts appropriate precautions while handling tools.

Week 2	**Location of different assemblies of vehicle**	**Day 1**	**2 hrs**	**Introduction to different assemblies, principals of working, location on vehicle & functions**	**3hrs**	**On vehicle practice - location of assemblies**	**To display assy. Of vehicle and let class see these and discuss various functions**	• **identifies the different sub assemblies that make up an automobile.** • **explain how vehicle moves.** • **locate the position of various sub assemblies.**
	Working of internal combustion engine ,4 stroke petrol	**Day 2**	**2 hrs**	**Explain working of otto cycle & different strokes**	**3hrs**	**Introduction of engine components, their working, construction, metal used.**	**Conduct class with dismantled engine for showing components of engine.**	• **identify different parts of engine.** • **differentiate between I.C & E.C. engine.** • **explain the fundamentals of engine.**
Week 3	**Working of Internal Combustion Engine, 4 stroke--diesel cycle**	**Day 1**	**2hrs**	**Explain working of 4 stroke in diesel cycle & difference in petrol &diesel engine**	**3hrs**	**Introduction of engine components, their working, construction, metal used for diesel engines**	**Conduct class with dismantled diesel engine for showing components of engine**	• **identify different parts of engine.** • **differentiate between spark ignition & compression ignition engine.** • **explain the working of diesel engine.**

	Working-details of clutch, types , functions & components	**Day 2**	**2 hrs**	**Explain working of clutch ,principles types, & functioning**	**3hrs**	**Introduction of clutch, components, their working ,construction ,metal used & maintenance**	**Conduct class with dismantled clutch for showing components**	• **explain the working principle of clutch.** • **identify different types of clutch.** • **identify various parts that make up the clutch system.**
Week 4	**Working-details of gear box, types ,functions & ,components**	**Day 1**	**2hrs**	**Explain working of gear box ,principles types, & functioning**	**3hrs**	**Introduction of gear box components, their working ,construction ,metal used & maintenance**	**Conduct class with dismantled gear box for showing components of different type of gear boxes.**	• **explain the working principle of gear box.** • **identify different types of gear box.** • **identify different components of manual gearbox.** • **identify which parts are usable or need replacement.**
	Working-details of propeller shaft & universal joint, types ,functions & ,components	**Day 2**	**2 hrs**	**Explain working of propeller shaft & universal joint,, principles types, & functioning**	**3hrs**	**Introduction of propeller shaft & , universal joint, components, their working ,construction ,metal used & maintenance**	**Conduct class with dismantled propeller shaft & u j cross, for showing components of different type of gear boxes.**	• **explain the working principle and function of propeller shaft & universal joint.** • **identify different parts of propeller shaft & universal joint.**
Week 5	**Working-details of Differential, functions & components**	**Day 1**	**2 hrs**	**Explain working of differential ,principles types, & functioning**	**3hrs**	**Introduction of differential Components, their working ,construction ,metal**	**Conduct class with dismantled for differential Showing components of different type of gear**	• **explain the working of differential.** • **identify various components of a differential.**

						used & maintenance	**boxes.**	• **identify which parts of differential are useful or need replacement.**
	Working-details of Front & rear axel, functions & ,components	**Day 2**	**2 hrs**	**Explain working of front & rear axel ,principles types, & functioning, principles types, & functioning**	**3hrs**	**Introduction of Components, the front & rear axel their working ,construction ,metal used & maintenance**	**Conduct class with dismantled for front & rear axel Showing components of different type of gear boxes.**	• **explain the working of rear axle.** • **identify various components of a rear axle.**
Week 6	**Working-details of Chassis & suspension functions & ,components**	**Day 1**	**2 hrs**	**Explain working of chassis & suspension types, & functioning, principles**	**3hrs**	**Introduction of Components, the chassis & suspension their working ,construction ,metal used & maintenance**	**Conduct class with dismantled f chassis & suspension Showing components of different type of chassis & suspension**	• **explain the function of chassis and suspension system.** • **identify type of construction of chassis required for an automobile.** • **identify which parts are usable or need replacement.**
	Working-details of Steering system Functions & ,components	**Day 2**	**2 hrs**	**Explain working of steering system types, & Functioning, principles types,**	**3hrs**	**Introduction of Components, the steering system their working ,construction ,metal used & maintenance**	**Conduct class with dismantled f steering system showing components of different type of chassis & suspension. Wheel balancing & wheel alignment machine**	• **explain the function of steering system.** • **state the Ackerman geometry of steering.** • **list the different types of steering linkages.** • **define different front axles.**
Week 7	**Working-details of Brake system Functions &**	**Day 1**	**2 hrs**	**Explain working of brake system & Functioning, principles types**	**3hrs**	**Introduction of Components, the brake system their working**	**Conduct class with dismantled for showing brake system components of**	• **identify different types of brake system used.** • **explain the working**

	,components					**,construction ,metal used & maintenance**	**different type of chassis & suspension. Wheel balancing & wheel alignment machine**	**of brake system.** • **identify different components of brake system.** • **identify which parts are usable or need replacement.**
	Working-details of Tyer & tube Functions & ,components	**Day 2**	**2hrs**	**Explain working of tyer & tube & Functioning, principles types**	**3hrs**	**Introduction of tyer & tube components, the their working, construction, metal used & maintenance**	**Conduct class with dismantled for showing components of different type of tyer & tube balancing of wheels**	• **Explain the importance of the tyre in a vehicle.** • **Identify various types of hub.** • **Distinguish between different types of tyres.** • **Cary out wheel balancing.**
Week 8	**Function of battery in vehicle ,its construction**	**Day 1**	**2 hrs**	**Explain working of battery & Functioning, principles**	**3hrs**	**Introduction of Battery Components, the their working ,construction ,metal used & maintenance**	**Conduct class with dismantled battery for showing components of different types of battery of vehicle.**	• **explain the functions and working principle used in battery.** • **identify the material used in battery.**
	Battery checking, Charging & method for maintenance	**Day 2**	**2hrs**	**Different method for maintaining proper functioning of battery.**	**3hrs**	**Introduction of Battery Components, their working, maintenance**	**Conduct class with equipment for showing battery of vehicle**	• **identify different components of battery.** • **carry out maintenance according to set procedure.**
Week 9	**Tyre puncture**	**Day 1**	**2 hrs**	**How to remove tyre from vehicle , fix**	**3hrs**	**Introduction of Tyer puncture**	**Conduct class with equipment**	• **carry out tyre repair in case of puncture.**

				puncture & type		**Components, their working & ,maintenance**	**for showing repair of tyer puncture**	
	Tyre rotation & its importance	**Day 2**	**2 hrs**	**How to take care of tyre & reasons for wear & tear**	**3hrs**	**Practice of lifting vehicle on jack with safety. For tyer rotation**	**Conduct class with equipment for lifting vehicle for tyer rotation**	• **handle vehicle lifting equipment.** • **carry out tyre rotation check and alignment.**
Week 10	**Lubricants type , Its use**	**Day 1**	**2hrs**	**Explain working of different type of lubricants used & Functioning**	**4hrs**	**Introduction of Lubricants their working & ,maintenance**	**Conduct class with equipment for showing how lubrication is done for chassis systems**	• **identify different grades of motor oil.** • **locate the passage of oil through chassis system.** • **carry out lubrication in chassis system.**
	Servicing of vehicle	**Day 2**	**2 hrs**	**Explain importance of washing of vehicle**	**4hrs**	**Practical washing of under chassis of vehicle**	**Conduct class with equipment for showing washing of vehicle under chassis**	• **carry out washing of vehicle under chassis**
Week 11	**Servicing of vehicle**	**Day 1**	**2 hrs**	**Explain importance of changing of engine oil, gear oil, & differential oil plus checking of brake oil, coolant**	**4hrs**	**Practical of Changing of engine oil, gear oil, & differential oil plus checking of brake oil, coolant**	**Conduct practical on vehicle of Changing of engine oil, gear oil, & differential oil plus checking of brake oil, coolant to demonstrate**	• **identify which part of vehicle required servicing and carry out servicing as per requirement.** • **carry out checks for oiling of different parts.**

	Servicing of vehicle	**Day 2**	**2hrs**	**Explain how to do washing of interior of vehicle, body &engine compartment**	**4hrs**	**Practical on washing of interior of vehicle, body &engine compartment**	**Conduct practical on vehicle washing of interior of vehicle, body t &engine compartment**	• **carry out checks for coolant.** • **carry out washing of vehicle interior, body & engine compartment.**
Week 12	**Defects and rectifications of clutch**	**Day 1**	**2 hrs**	**Explain how to do defect location in a vehicle, & procedure to rectify same**	**3hrs**	**Practical on defect rectification of clutch**	**Conduct practical on defect location and rectification Of clutch**	• **identify & locate defect of the clutch system and carry out rectification.**
	Defects and rectifications of gear box, types ,	**Day 2**	**2hrs**	**Explain how to do defect location in a vehicle gear box and shifting mechanism and rectification**	**3hrs**	**Practical on defect rectification of gear box**	**Conduct practical on defect location and rectification in a gear box.**	• **identify & locate defect of the gear box and carry out rectification.**
Week 13	**Defects and rectifications of propeller shaft & universal joint**	**Day 1**	**2 hrs**	**Explain how to do defect location in a vehicle propeller shaft & universal joint and rectification.**	**3hrs**	**Practical on defect rectification of propeller shaft & universal joint.**	**Conduct practical on defect location and rectification Of propeller shaft & universal joint.**	• **identify & locate defect of the propeller shaft & universal joint and carry out rectification.**

	Defects and rectifications of differential	**Day 2**	**2hrs**	**Explain how to do defect location in a vehicle differential and rectification**	**3hrs**	**Practical on defect rectification of Differential**	**Conduct practical on defect location and rectification Of differential**	• **identify & locate defect of the differential and carry out its rectification**
Week 14	**Defects and rectification of Front & rear axel,**	**Day 1**	**2hrs**	**Explain how to do defect location in a vehicle Front & rear axel**	**3hrs**	**Practical on defect rectification of Front & rear axel**	**Conduct practical on defect location and rectification of front & rear axel**	• **identify & locate defect of the front & rear axle and carry out its rectification.**
	Defects and rectification of Chassis & suspension functions & ,components	**Day 2**	**2hrs**	**Explain how to do defect location in a vehicle Chassis & suspension functions**	**3hrs**	**Practical on defect rectification of Chassis & suspension functions**	**Conduct practical on defect location and rectification Of chassis & suspension functions**	• **identify & locate defect of the Chassis & suspension system and carry out its rectification**
Week 15	**Defects & rectification of Steering system Functions & components**	**Day 1**	**2 hrs**	**Explain how to do defect location in a vehicle steering system**	**3hrs**	**Practical on defect rectification of Steering system**	**Conduct practical on defect location and rectification of steering system**	• **identify defect of the steering system and carry out its rectification**
	Defects & rectification of Brake system Functions & components	**Day 2**	**2 hrs**	**Explain how to do defect location in a vehicle brake system**	**3hrs**	**Practical on defect rectification of Brake system**	**Conduct practical on defect location and rectification Of brake system**	• **identify defect of the brake system and carry out its rectification.**

Week 16	**Defects & rectification of electrical systems related to head lights, back ,parking & indicator lights**	**Day 1**	**2hrs**	**Explain how to do Remove & refit head lamp, parking, indicator & brake lights**	**3hrs**	**Practical on defect rectification of Head lamp, parking, indicator & brake lights**	**Conduct practical on defect location and rectification Of Head lamp, parking, indicator & brake lights**	• **identify & locate the defect of the electrical system and carry out its rectification.**
	Measuring & marking	**Day 2**	**2 hrs**	**Explain equipments used for measuring various jobs**	**3hrs**	**Practical handling of equipments, their units, use etc**	**Explain type of measuring equipments use, their handling, Reading units**	• **identify & handle different measuring & marking tools.** • **read the measuring units.** • **carry out the use of these tools.**
Week 17	**Basic computer knowledge**	**Day 1**	**2 hrs**	**Basic computer knowledge**	**3hrs**	**Handling of computer on basic operations**	**Show basic computer usage an practice.**	• **switch on computer and open document to attend information**
	Work shop Documentation	**Day 1**	**2 hrs**	**Job card, spare part demand, collection of spare part from store,**	**3hrs**	**Handling of documents and understanding their purpose.**	**Practice on set documentation procedure.**	• **carry out documentation related to workshop.**

Week 18	**Self assessment on safety measures**	**Day 1**	**3 hrs**	• **Explaining questions by way of discussions** • **Objective questions on** • **Workshop safety & precautions while handling equipment**	**4hr**	**Class to demonstrate safety drill**	**-------**	**-------**
	Self assessment on engine.	**Day 2**	**3 hrs**	• **Explaining questions by way of discussions** • **Objective questions on Engine while handling job**		**-------**	**-------**	**-------**
Week 19	**Self assessment on transmission assembly & ,Steering & brake system**	**Day 1**	**3 hrs**	• **Explaining questions by way of discussions on transmission assembly ,Steering & brake system.** • **Objective questions on transmission assembly & ,Steering & brake system, while handling job**		**-------**	**-------**	**-----**
	Self assessment on Road safety.	**Day 2**	**3hrs**	• **Road rules other soft skills of driving Documentation of vehicle, driver.** • **Objective questions on steering & brake system while handling job.** **Show documents to class and discuss its clauses**		**-------**	**-------**	**-------**