



## Partnership in Apprenticeship Dual System Development

### LIST OF MODULES FOR MOTOR VEHICLE MECHANIC – Dual Apprenticeship Training System

MODULES	UNIT	ELEMENTS
1. Maintaining safety of workshop and surroundings	1.1. Maintaining workshop safety	1.1.1. Maintaining workshop safety rules 1.1.2. Maintaining workshop working environment 1.1.3. Maintaining personal safety
	1.2. Handling fire accidents	1.2.1. Handling fire fighting equipment and materials 1.2.2. Handling different types of fire
	1.3. Performing first aid	1.3.1. Performing artificial respiration 1.3.2. Performing first aid to minor scalpels
2. Performing preventive Maintenance of tools, machines and equipment	2.1. Conducting preventive maintenance of work tools	2.1.1. Maintaining workshop safety gears 2.1.2. Maintaining workshop tools 2.1.3. Maintaining workshop equipment and machines
3. Performing bench works	3.1. Performing cutting	3.1.1. Performing straight sawing 3.1.2. Performing angular sawing 3.1.3. Performing chiseling

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MODULES	UNIT	ELEMENTS
	3.2. Performing filing	3.2.1. Performing flat filing 3.2.2. Performing radii filing 3.2.3. Performing angle filing
	3.3. Performing drilling	3.2.4. Performing hand drilling on plate 3.2.5. Carrying out drilling on bench drilling machine 3.2.6. Countering bore drilled holes
	3.4. Performing threading	3.4.1. Carrying out dieing 3.4.2. Carrying out taping
4. Performing welding processes.	4.1. Performing arc welding	4.1.1. Performing down hand arc welding bead 4.1.2. Performing down hand V joint 4.1.3. Performing down hand butt joint 4.1.4. Performing down hand tee joint welding
	4.2. Performing gas welding	4.2.1. Using gas welding tools and equipment 4.2.2. Performing down hand butt joint 4.2.3. Performing down hand lap joint



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MODULES	UNIT	ELEMENTS
	4.3. Performing soldering	4.3.1. Carrying out thin metal soldering
5. Building simple electric circuits.	5.1. Constructing circuit	5.1.1. Building horn circuit 5.1.2. Building a head light circuit 5.1.3. Building indicator light circuit 5.1.4. Building parking light circuit 5.1.5. Building brake light circuit
	5.2. Measuring electrical quantities	5.2.1. Measuring voltage in the circuit 5.2.2. Measuring current in the circuit 5.2.3. Measuring resistance in the circuit. 5.2.4. Measuring power in the circuit
6. Carrying out general maintenance on electrical and electronic systems	6.1. Maintaining Batteries	6.1.1. Checking electrolyte level 6.1.2. Checking state of charge of battery 6.1.3. Performing battery charging
	6.2. Servicing electrical and electronic circuits	6.2.1. Troubleshooting electrical and electronic circuits 6.2.2. Repairing electrical and electronic circuits



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MODULES	UNIT	ELEMENTS
	6.3. Servicing conventional ignition systems	6.3.1. Diagnosing ignition systems 6.3.2. Repairing ignition system components
7. Carrying out general vehicle services	7.1. Servicing engine lubrication system	7.1.1. Changing engine oil 7.1.2. Changing engine oil filter
	7.2. Servicing fuel system	7.2.1. Changing fuel filter 7.2.2. Servicing air cleaner 7.2.3. Performing fuel system bleeding.
	7.3. Servicing cooling systems	7.3.1. Checking engine coolant 7.3.2. Replacing fan belt 7.3.3. Checking operation of thermostat 7.3.4. Servicing radiator 7.3.5. Servicing water pump
	7.4. Servicing transmission systems.	7.4.1. Checking clutch free play 7.4.2. Servicing gear box 7.4.3. Servicing propeller shaft and differential 7.4.4. Servicing final drive



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MODULES	UNIT	ELEMENTS
	7.5. Performing greasing	7.5.1. Carrying out chassis greasing 7.5.2. Lubricating door locks and hinges
8. Carrying out repair of wheel and tyre	8.1. Replacing tyres	8.1.1. Replacing worn tyre 8.1.2. Refilling pressure 8.1.3. Performing tyre rotation
	8.2. Repairing tube and tubeless tyres	8.2.1. Repairing tube tyre 8.2.2. Repairing tubeless tyre
	8.3. Servicing wheel hubs	8.3.1. Servicing wheel hub components 8.3.2. Adjusting wheel bearing taps play
9. Repairing hydraulic brake system	9.1. Servicing hydraulic brake system components	9.1.1. Servicing master cylinder 9.1.2. Servicing wheel cylinder 9.1.3. Servicing brake booster
	9.2. Servicing drum brakes	9.2.1. Checking brake drum 9.2.2. Relining drum brake shoes 9.2.3. Adjusting brakes
	9.3. Servicing disc brakes	9.3.1. Replacing brake pads 9.3.2. Repairing brake caliper



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MODULES	UNIT	ELEMENTS
10. Maintaining suspension system	10.1. Replacing suspension bushes	10.1.1. Replacing spring bushes 10.1.2. Replacing stabilizer bushes
	10.2. Replacing shock absorbers	10.2.1. Replacing telescopic shock absorber 10.2.2. Replacing McPherson strut shock absorber
	10.3. Replacing steel suspension springs.	11.3.1. Refitting coil springs 11.3.2. Refitting leaf springs 11.3.3. Refitting torsion bars
11. Carrying out engine maintenance	11.1. Performing engine non destructive test	11.1.1. Performing engine compression test
	11.2. Adjusting valve clearance	11.2.1. Performing valve overlap adjustment method 11.2.2. Performing one to one valve adjustment method
	11.3. Carrying out ignition timing	11.3.1. Performing spark ignition timing 11.3.2. Performing compression ignition timing



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MODULES	UNIT	ELEMENTS
12. Overhauling engines	12.1. Dismantling engines	12.1.1. Dismantling cylinder head 12.1.2. Dismantling oil sump 12.1.3. Dismantling cylinder block
	12.2. Servicing cylinder heads	12.2.1. Performing valve lapping 12.2.2. Assembling cylinder head
	12.3. Checking connecting rods	12.3.1. Checking condition of connecting rod 12.3.2. Checking connecting rod straightness
	12.4. Assembling engines	12.4.1. Assembling engine components
13. Servicing fuel systems	13.1. Servicing petrol fuel systems	13.1.1. Servicing carburation fuel system. 13.1.2. Servicing electronic fuel injection system.
	13.2. Servicing diesel fuel systems	13.2.1. Servicing diesel supply system
14. Servicing ignition system	14.1. Servicing electronic ignition systems	14.1.1. Servicing electronic ignition components.
15. Servicing transmission system	15.1. Servicing clutches	15.1.1. Servicing clutch components.
	15.2. Overhauling manual gearboxes	15.2.1. Overhauling main gearbox. 15.2.2. Overhauling auxiliary gearbox.



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MODULES	UNIT	ELEMENTS
	15.3. Servicing final drive unit	15.3.1. Servicing final drive components. 15.3.2. Testing crown wheel and pinion backlash
	15.4. Servicing automatic transmissions.	15.4.1. Changing automatic transmission fluid (ATF) 15.4.2. Changing (ATF) filter
16. Servicing steering system	16.1. Performing wheel alignment	16.1.1. Replacing steering joints and links
	16.2. Servicing power steering systems	16.2.1. Servicing power steering components
17. Repairing brakes	17.1. Servicing hydraulic brakes	17.1.1. Servicing brake pads 17.1.2. Servicing brake linings
	17.2. Servicing antilock brake system (ABS)	17.2.1. Troubleshooting antilock brake system (ABS) 17.2.2. Servicing ABS



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MODULES	UNIT	ELEMENTS
18. Servicing air conditioning system	18.1. Servicing air conditioning systems components	18.1.1. Servicing air conditioning components 18.1.2. Recharging refrigerant and oil 18.1.3. Servicing heating system
19. Servicing electrical components	19.1. Servicing starter motors	19.1.1. Dismantling starter motor 19.1.2. Servicing starter motor components 19.1.3. Inspecting starter relay continuity 19.1.4. Inspecting starter relay operation 19.1.5. Assembling starter motor 19.1.6. Testing starter motor
	19.2. Servicing alternators	19.2.1. Dismantling alternator 19.2.2. Servicing alternator 19.2.3. Servicing alternator regulator 19.2.4. Inspecting alternator rectifiers 19.2.5. Assembling alternator
	19.3. Supervising preventive maintenance	19.3.1. Performing preventive maintenance of tools, equipment and machines 19.3.2. Performing preventive maintenance of



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MODULES	UNIT	ELEMENTS
		working environment