



Semester – IV

Subject Name: Automobile Trade Practice

Subject Code: 09AE0405

Diploma branch in which subject is offered: - Automobile Engineering

Objective:

This course enables students of automobile engineering to plan, operate and maintain automobile garage activities.

Credits Earned: 2

Course Outcomes:

Students should able to :

- Prepare modern garage layout by following preliminary safety rules
- Select appropriate hand tool or power tool for required application
- Use appropriate testing and servicing tools or instruments for given situation
- To identify faults in the automobile vehicle and perform maintenance and repair work

Pre-requisite of course: Automobile Engine

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term work	
0	0	4	2	0	30	20	25	25	100

Contents:

Sr. No.	Topics	Teaching hrs.	Weightage
1	Introduction to Automobile Garage Garage layout, Importance of various sections in garage, Types of job done in various sections, General safety rules while working in garage	04	08
2	Tools Application of various hand & power tools used in garage, Application of special purpose tools used in garage	06	12
3	Measuring & Testing instruments Use of various measuring & testing instruments like Vernier callipers, Dial gauge, micrometer, thickness gauge, wire gauge, pressure gauge etc, Various engine testing equipment, A.C System & electrical system testing equipment	08	16



4	<p>Servicing & Maintenance Cylinder boring and honing, liners fitting, Cylinder head facing, valve seat lapping. Adjustment of valve timing, Rocker arm gap adjustment/setting procedure, Tuning of carburetor, Fuel injection pumps and fuel injector's calibration, Air intake & Exhaust systems and components, Adjustment of clutch, repair & replacement of clutch parts, Maintenance of Propeller shaft & universal joint, Repair & maintenance of final drive/axles. Maintenance of steering system, Maintenance of wheel and tyre. Tyre rotation, tyre re-treading, effect of tyre inflation & tyre wear. Wheel balancing, Maintenance of hydraulic brakes, brake adjustments and bleeding of brakes. Study of air brake circuit & system components, Maintenance of radiator and water cooling system, Maintenance of vehicle body. minor and major repairs, Body repair tools & equipments. Introduction to denting & painting process of vehicles.</p>	24	48
5	<p>Workshop management practices : Study of Workshop documents & records like job cards, parts catalogue, parts price list, vehicle history sheet, warranty card, bill & billing procedure of vehicle, logbook of vehicle, customer satisfaction sheet, service book, etc. Activities and responsibilities of workshop management. Study of workflow in service station. Customer complaint Handling & consumer cases in case of any dispute.</p>	08	16

References:

1. Internal combustion engines by V.M. Domkundwar
2. Automobile Engineering by K. M. Gupta
3. Internal Combustion Engine by R. K. Rajput
4. Vehicle Service book
5. Vehicle Workshop Manual
6. Job cards of modern service station.

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
40%	40%	20%	0	0	0

Suggested List of Experiments:

1. Prepare a layout of a modern Garage
2. Demonstrate use of safety equipments and procedures in garage
3. Study of measuring, gauging & service equipments.



4. Demonstrate features and use of various types of testing instruments and equipment
5. Carryout maintenance of four stroke petrol engine
6. Demonstrate Procedure for Servicing of two wheeler/four wheeler
7. Cleaning and testing of different types of nozzles
8. Demonstrate procedure for Wheel balancing and wheel alignment

Suggested List of Student Activities

- a) Prepare Charts of various hand & Power tool, measuring instruments.
- b) Visit the garage.
- c) Prepare the layout of modern garage.
- d) Take measurements of precision parts, like- crankshaft, cam shaft, piston, bore of cylinder block, etc. in workshops

Instructional Method:

- a) Chart/films showing various modern garage lay out and different operation taking place there.
- b) Demonstration of various tools to repair/ for maintenance of vehicle.
- c) Disassembly and assembly of various parts of automobile for maintenance.
- d) Visit the automobile garage.