

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

**COURSE CURRICULUM
COURSE TITLE: AUTOMOBILE TRADE PRACTICE
(Code: 3340205)**

Diploma Programme in which this course is offered	Semester in which offered
Automobile Engineering	4th Semester

1. RATIONALE

Automobile maintenance is also a good business proposition in modern economy. This business is both technically satisfying and financially lucrative. Some entrepreneur who have started this business as a small garage now have garages as big as small industry employing 40 to 50 workers and supervisors. Some diploma engineers would like to be entrepreneur and may start this business after passing out, or some may work as supervisors in big garages. This course tries to prepare students for such roles. In planning this course, it was decided to link theory with practice with a particular emphasis on the various aspects of service and maintenance work. The content of this course is purely practical base and designed in such a way that student be acquainted with practices and knowledge required to start workshop at least at small scale. It will be also helpful to students who aim to work in authorized work-shop.

2. COMPETENCY

The course content should be taught and curriculum should be implemented with the aim to develop different types of skills leading to the achievement of the following competency:

- **Plan, operate and maintain auto garage activities**

3. COURSE OUTCOMES (CO's)

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning out comes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- i. Prepare modern garage layout by following preliminary safety rules
- ii. Select appropriate hand tool or power tool for required application.
- iii. Use appropriate testing and servicing tools or instruments for given situation

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	PA	ESE	PA	50
0	0	2	2	00	00	20	30	

Legends: L-Lecture; T – Tutorial/Teacher Guided Student Activity; P - Practical; C – Credit;; ESE - End Semester Examination; PA - Progressive Assessment.

5. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes (in Cognitive Domain)	Topics and Sub-topics
Unit – I Introduction to automobile garage	1a. sketch general layout of modern garage 1b. Follow preliminary safety rules in garage	1.1 Garage layout 1.2 Importance of various sections in garage 1.3 Types of job done in various sections 1.4 General safety rules while working in garage
Unit – II Tools	2a. Describe various hand & power tools 2b. Select appropriate hand tool or power tool for required application	2.1 Application of various hand & power tools used in garage 2.2 Application of special purpose tools used in garage
Unit– III Measuring & testing instruments	3a. Explain various measuring & testing instruments 3b. Select appropriate measuring & testing instrument for required application	3.1 Use of various measuring & testing instruments like Vernier callipers, Dial gauge, micrometer, thickness gauge, wire gauge, pressure gauge etc. 3.2. Various engine testing equipment 3.3 Various transmission system testing equipment 3.4 A.C System & electrical system testing equipment
Unit– IV Servicing & Maintenance	4a. Describe about service operation 4b. Describe different service equipment used	4.1 Role of service advisor & service executive. 4.2 Prepare a job card -Over view of car inspection -exterior inspection -interior inspection -inspecting engine components -inspecting trunk -inspecting bottom 4.3 Service equipments 4.4. Servicing of vehicle

6. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (Theory)

Not Applicable

7. SUGGESTED LIST OF PRACTICAL/EXERCISES

The practical/exercises should be properly designed and implemented with an attempt to develop different types of skills (**outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies/programme outcomes. Following is the list of practical exercises for guidance.

*Note: Here only outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of certain outcomes in affective domain which would in turn lead to development of **Course Outcomes** related to affective domain. Thus over all development of **Programme Outcomes** (as given in a common list at the beginning of curriculum document for this programme) would be assured.*

Faculty should refer to that common list and should ensure that students also acquire outcomes in affective domain which are required for overall achievement of Programme

Sr. No.	Unit No.	PRACTICAL/EXERCISES (Outcomes in Psychomotor Domain) (Any Seven)	Approx. Hrs. Required
1	I	Prepare a layout of a modern Garage for given vehicle	04
2	I	Demonstrate use of safety equipments and procedures in garage	04
3	II	Demonstrate use and care of hand tools	04
4	II	Demonstrate features and use of instruments, power tools, special purpose tools	04
5	III	Demonstrate features and use of various types of measuring instruments	04
6	III	Demonstrate features and use of various types of testing instruments and equipment	04
7	IV	Carryout maintenance of bearing and bushes	04
8	IV	Demonstrate features and use of servicing equipment	04
9	IV	Perform role of service advisor, service executive, job card preparation and customer care	04
10	IV	Demonstrate Procedure for Servicing of two wheeler/four wheeler	04
		Total Hrs	28

8. SUGGESTED LIST OF STUDENT ACTIVITIES

Following is the list of proposed student activities such as:

- i. Prepare Charts of various hand & Power tool, measuring instruments.
- ii. Visit the garage.
- iii. Prepare the layout of modern garage.
- iv. Take measurements of precision parts, like- crankshaft, cam shaft, piston, bore of cylinder block, etc. in workshops.

9. SPECIAL INSTRUCTIONAL STRATEGIES (If Any)

- i. Chart/films showing various modern garage lay out and different operation taking place there.
- ii. Demonstration of various tools to repair/ for maintenance of vehicle.
- iii. Disassembly and assembly of various parts of automobile for maintenance.
- iv. Visit the automobile garage.

10. SUGGESTED LEARNING RESOURCES

A. List of Books

S.No.	Author	Title of Books	Publication
1	Kirpal singh	Automobile engg. vol-1	Standard Publishers Distributors
2	William Crouse	Automobile Mechanics	TATA Mc-Graw Hill Publication
3	H. M. Sheti	Automotive Technology	Mc-Graw Hill Publication
4	Anil Chhikara	Automobile Engg Vol-2	Satya Prakasan
5	J. A. Dolan	Motor Vehicle Technology	Heinemann educational books
6	Staton Abbey	Automobile workshop	Pitman

S.No.	Author	Title of Books	Publication
		practice	

B. List of Major Equipment/ Instrument

- i. Various hand & power tools for maintenance.
- ii. Various testing & measuring equipments.
- iii. Engine & other system parts for disassembly and assembly.
- iv. Personal safety equipments.

C. List of Software/Learning Websites

- i. www.youtube.com
- ii. www.howstuffworks.com
- iii. www.ehow.com

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. M. J. Pathak**, H.O.D., Automobile Engineering Department, Sir Bhavsinhji Polytechnic Institute, Bhavnagar.
- **Prof. M. N. Vibhakar**, Lecturer, Automobile Engineering Department, Dr. S&SS Gandhi Polytechnic, Surat.
- **Prof. D. J. Gohel**, Lecturer, Automobile engineering Department. C. U. Shah Polytechnic, Surendranagar
- **Prof. Sulay Patel**, I/C H.O.D., Automobile Engineering Department, L. J. Polytechnic, Ahemdabad.

Coordinator and Faculty Members from NITTTR Bhopal

- **Dr. C. K. Chugh**, Professor, Department of Mechanical Engineering
- **Dr. K. K. Jain**, Professor, Department of Mechanical Engineering