

CBSE| DEPARTMENT OF SKILL EDUCATION CURRICULUM FOR SESSION 2026-2027

AUTOMOTIVE (SUBJECT CODE 804)

JOB ROLE: Automotive Service Technician

Class XI

COURSE OVERVIEW:

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows

OBJECTIVES OF THE COURSE:

In this course, followings are the main objectives of this course.

- Communicate effectively with the customers.
- Identify the principal components of an automotive system.
- Identify and control hazards in the work place that pose a danger or threat to their safety or, that of others.
- Demonstrate self-management skills.
- Demonstrate the ability to provide a self analysis in context of entrepreneurial skills and abilities.
- Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection.
- Identify and demonstrate safe use of hand and power tools/equipment used in vehicle service station/workshop
- Recognize the benefits of great customer service;
- Provide customers necessary information appropriately and systematically;
- Use techniques to provide services based on customer's needs and wants;
- Administer first aid to a casualty with small cuts, grazes, bruises, external bleeding, minor burns and scalds

SALIENT FEATURES:

- Automotive as a vehicle unit.
- Systems/sub systems & components.
- Automotive electronics for safety, pollution control, fuel efficiency and comforts.
- Other related areas of automotive electronics for engine management, diagnostics, repair etc.

LIST OF EQUIPMENT AND MATERIALS:

The list given below is suggestive and an exhaustive list should be prepared by the vocational teacher. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

Teaching/Training Aids:

1. Two Post lift
2. Air compressor
3. Wheel balancer
4. Bench vice
5. Work tables
6. Bench grinder
7. Oil draining & filling equipment
8. Cooling system tester
9. Multimeter
10. Hydrometer
11. BC clamp meter
12. Coolant tester
13. Battery & charging system tester (Megatronics)
14. Diagnostic tool(genesis Evo)
15. General hand tools
16. Pneumatic tools
17. Torque wrenches
18. Car seat covers
19. Steering covers
20. Gear Knob covers
21. Fender covers/kits
22. Floor mats
23. Cotton gloves
24. Hardtoedboots
25. Sun glasses(3m)
26. Bump caps
27. Air filter testing machine
28. Hydraulic press
29. Hydraulic jacks
30. Vehicle safety stands
31. Parts washing station car
32. Pullers
33. Sliding hammer
34. Wheel aligner
35. Head Light beam aligner (optical type)
36. A/c Machine
37. Air Inflater/Tyre Inflating machine (Digital Type)
38. A/c Leakage Tester
39. Old car

CAREER OPPORTUNITIES:

Automobile engineering is a huge industry. There is great number of employment opportunities in the following fields:

1. Private national and multinational automobile companies
2. Service stations
3. Private transport companies

VERTICAL MOBILITY:

After 12th standard, student can opt for graduation in science, commerce and take Automotive as specialization, following career options are available in field.

CURRICULUM:

This course is a planned sequence of instructions consisting of Units meant for developing employability and Skills competencies of students of Class XI opting for Skills subject along with other subjects

AUTOMOTIVE (SUBJECT CODE 804)

Class XI (Session-2026-2027)

Total Marks: 100 (Theory- 60 + Practical- 40)

	UNITS	NO. OF HOURS For Theory and Practical	MAX. MARKS For Theory and Practical
Part A	Employability Skills		
	Unit 1: Communication Skills-III	13	2
	Unit 2: Self-Management Skills-III	07	2
	Unit 3: ICT Skills-III	13	2
	Unit 4: Entrepreneurial Skills-III	10	2
	Unit 5: Green Skills-III	07	2
	Total	50	10
Part B	Subject Specific Skills		
	Unit 1: Evolution of Automobiles & Indian Automobile Market	15	2
	Unit 2: Introduction to Automobile dealership and Role of Sales & Service Personnel	20	3
	Unit 3: Health and Safety at workplace	38	6
	Unit 4: Basic Product Knowledge (Automobile)	20	6
	Unit 5: Sales & Service Personnel grooming and Ethic	12	5
	Unit 6: Road Safety	14	5
	Unit 7: Workshop layout, Tools & Equipment	18	6
	Unit 8: Automotive Technology & Routine maintenance (Engine)	36	10
	Unit 9: Automobiles and our Environment	17	7
	Total	190	50
Part C	Practical Work		
	Project		10
	Viva		05
	Practical File	20	15
	Demonstration of skill competency via Lab Activities	60	10
	Total	80	40
	GRAND TOTAL	260	100

NOTE: Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

DETAILED CURRICULUM/TOPICS: Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills-III	13
2.	Unit 2: Self-management Skills-III	07
3.	Unit 3: Information and Communication Technology Skills-III	13
4.	Unit 4: Entrepreneurial Skills-III	10
5.	Unit 5: Green Skills-III	07
	TOTALDURATION	50

Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

Part-B–SUBJECT SPECIFIC SKILLS (Class XI)

S. No.	Units	Duration in Hours
1.	Unit 1: Evolution of Automobiles & Indian Automobile Market	15
2.	Unit 2: Introduction to Automobile dealership and Role of Sales & Service Personnel	20
3.	Unit 3: Health and Safety at workplace	38
4.	Unit 4: Basic Product Knowledge (Automobile)	20
5.	Unit 5: Sales & Service Personnel grooming and Ethic	12
6.	Unit 6: Road Safety	14
7.	Unit 7: Workshop layout, Tools & Equipment	18
8.	Unit 8: Automotive Technology & Routine maintenance (Engine)	36
9.	Unit 9: Automobiles and our Environment	17
	TOTAL DURATION	190

UNIT	SESSION/TOPIC	ACTIVITY/PRACTICAL
Unit 1: Evolution of Automobiles & Indian Automobile Market	1.1. Evolution of Automobiles	Discuss about vehicle evolution history
	1.2. Classification of Vehicles and structure	Show different type of the vehicles on the screen and ask the students to name the type of the vehicles. Also show some vehicles available in the college campus/lab
	1.3. Indian Automobile market and prominent Automobile Manufacturers in India	Discuss about automobile market
Unit 2: Introduction to Automobile dealership and Role of Sales & Service Personnel	2.1. Sub-sectors of Automotive Industry & Automotive Dealership Structure.	Plan visit to nearest automobile showroom & workshop to show the layout, different departments and their function.
	2.2. Introduction to Sales Consultant Role & Responsibilities	
	2.3. Importance of Sales in Business Growth	
	2.4. Introduction to Role of Service Technician & Responsibilities	
	2.5. Importance of Service in Business Growth	
Unit 3: Health and Safety at workplace	3.1. Workplace Safety Rules	Demonstrate the use of different PPEs used in automotive workshop.
	3.2. Personal Hygiene and Cleanliness	Demonstrate correct use of face mask, hand and workplace sanitization
	3.3. Fire Safety and Emergency Procedures	Show different type of fire extinguishers and their use
	3.4. Safe Handling of Equipment	Demonstrate safe way of using workshop tools & equipment
	3.5. First Aid Basics	Demonstrate simple act of first aid
Unit 4: Basic Product Knowledge (Automobile)	4.1. Importance of Product Knowledge in Sales & Service	
	4.2. Anatomy of all type of vehicles	Show main aggregates of the vehicles on two, three, four-wheeler vehicles
Unit 5: Sales & Service Personnel grooming and Ethics	5.1. Sales & Service Personnel Grooming and Professional Behaviour	Role play showing body language and workplace discipline
	5.2. Ethics in Sales and Service and Customer Dealing	Role play showing Ethical selling
Unit 6: Road Safety	6.1. Introduction and importance of Road Safety	Discuss road safety and its importance
	6.2. Key Road Safety Principles and Safe Driving Techniques	Demonstrate some of Safe Driving Techniques

UNIT	SESSION/TOPIC	ACTIVITY/PRACTICAL
Unit 7: Workshop layout, Tools & Equipment	7.1. Workshop layout	Students to draw different workshop layouts based on their understanding of visiting workshops.
	7.2. Workshop Tools & Equipment	Practice of using workshop tools and equipment safely
Unit 8: Automotive Technology & Routine maintenance (Engine)	8.1. Engine and its systems	Show all the engine systems of the vehicles
	8.2. Routine maintenance and settings in Engine	Practice-Check engine oil for correct level, replace oil & oil filter, check and clean/replace air filter and fuel filter
Unit 9: Automobiles and our Environment	9.1. Pollutants from Automobile and BS-6 norms	Discuss about pollutants from vehicle and their effect, importance of BS6 norms
	9.2. Changes incorporated to make vehicles BS-6 compliant	Show major changes done in the vehicles to make vehicles BS-6 compliant (Diesel & Petrol)
	9.3. PUC certification	Show the process of pollution checking at a PUC checking center

PRACTICAL GUIDELINES FOR CLASS XI

Assessment of performance:

The two internal examiners, assigned for the conduct and assessment of Practical Examinations each in Senior Secondary School Curriculum (Under NSQF). Question for the viva examinations should be conducted by both the examiners. Question to be more of General nature, project work or the curriculum. Investigatory Project especially those that show considerable amount of effort and originality, on the part of the student, should get suitable high marks, while project of a routine or stereo typed nature should only receive MEDIOCRE marks.

Procedure for Record of Marks in the Practical answer-books:

The examiner will indicate separately marks of practical examination on the title page of the answer-books under the following heads:

Project - 10 marks

Projects for the final practical are given below. Student may be assigned

Guidelines for Project Preparation:

The final project work should encompass chapters on:

- a) Introduction,
- b) Identification of core and advance issues,

- c) Learning and understanding
- d) Observation during the project period.

Viva based on Project - 05 marks

The teacher conducting the final practical examination may ask verbal questions related to the project, if any, done by the student. Alternatively, if no project has been assigned to the students, viva may be based on questions of practical nature from the field of subject as per the Curriculum

Practical File - 15 Marks

Students to make a power point presentations / session assignment / practical file / report.

Suggested list of Practical–

1. Inspection of an engine.
2. Washing of an engine.
3. Tuning of an engine.
4. Tuning of the ignition system of an engine.
5. Replace engine oil and oil filter of a car.
6. Servicing of cooling systems.
7. Engine Timing and engine sound test after setting.
8. Servicing of transmission system.
9. Servicing of clutch system.
10. Adjust clutch pedal free play.
11. Overhauling of clutch.
12. Replace gear and different oil.
13. Adjust gear lever free play.
14. Servicing of wheel assembly.
15. Hub greasing and bearing play adjustments.
16. Tyre Rotation of a car.
17. Tyre puncture repair.
18. Servicing of brakes system.

Demonstration of skill competency in Lab Activities - 10 marks

Internal Examiner shall allot marks based on whole year performance of students during regular practicals. Practical performance/Periodic Test marks/Notebook Presentation shall be considered.