

CBSE | DEPARTMENT OF SKILL EDUCATION CURRICULUM FOR SESSION 2020-2021

AUTOMOTIVE (SUBJECT CODE 804)

JOB ROLE: Automotive Service Technician

**RATIONALIZED CURRICULUM FOR
CLASS-XII FOR SESSION 2020-21**

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-IV	13	10
	Unit 2 : Self-Management Skills- IV	07	
	Unit 3 : ICT Skills- IV	13	
	Unit 4 : Entrepreneurial Skills- IV	10	
	Unit 5 : Green Skills- IV	07	
	Total	50	
Part B	Subject Specific Skills		
	Unit 1: Measuring & service Equipment	30	10
	Unit 2: Steering system	15	07
	Unit 3: Suspension system	15	06
	Unit 4 : Transmission and Final Drive system	15	07
	Unit 5 : Automotive Electrical and electronic system	35	15
	Unit 6 : Motor Vehicle Act and Rules	10	05
Total	120	50	
Part C	Practical Work		
	Project	60	10
	Viva		05
	Practical File		15
	Demonstration of skill competency via Lab Activities	60	10
	Total	90	40
GRAND TOTAL		260	100

DETAILED CURRICULUM/TOPICS:

Part-A: EMPLOYABILITY SKILLS

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

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

Part-B – SUBJECT SPECIFIC SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Measuring & service Equipment	30
2.	Unit 2: Steering system	15
3.	Unit 3: Suspension system	15
4.	Unit 4 : Transmission and Final Drive system	15
5.	Unit 5 : Automotive Electrical and electronic system	35
6.	Unit 6 : Motor Vehicle Act and Rules	10
	TOTAL DURATION	120

UNIT	TOPIC	ACTIVITY/ PRACTICAL
Unit 1: Measuring & service Equipment	1.1.1 Air Compressor	Demonstration of air compressor
	1.1.2 Car Washer	Procedure of automatic car washer
	1.1.3 Tyre Inflators	Demonstration of tyre Inflator
	1.1.4 Spark Plug Cleaner and Tester	Model of Spark Plug Cleaner and Tester
	1.5 Wheel Balancing - Procedure of Wheel Balancing/ Working of Wheel Balancing Machine*	
Unit 2: Steering system	2.2.1 Ackerman's Principle of Steering	Working Model of 1 Ackerman's Principle of Steering
	2.2.2 Steering Geometry	Model of steering geometry
	2.2.3 Steering Gear Box	Demonstration of rack & pinion and recirculating type of steering gearbox
	2.2.4 Steering Linkages	Demonstration of steering system with all components.
	2.2.5 Power Steering	Demonstration of hydraulic power steering
	2.2.6 Trouble Shooting and Remedies	Discussion of various problems with its remedies.
Unit 3: Suspension system	3.2.1 Introduction	Location of suspension system.
	3.2.2 Types of Suspension System	Working Models of suspension system.
	3.2.3 Description of Suspension System	Demonstration of parts of suspension system.
	3.2.4 Components of a Suspension system Servicing of shock absorber*	Demonstration of shock absorber*
Unit 4 : Transmission and Final Drive system	4.1.1 Transmission & Final Drive System (Propeller Shaft & Universal Joint Propeller Shaft Types of Universal Joint*	Types of Universal Joint*

***Note: To be assessed in practical only. No question shall be asked from this portion in Theory Exams.**

UNIT	TOPIC	ACTIVITY/ PRACTICAL
	4.1.2 Transmission & Final Drive System (Propeller Shaft & Universal Joint Universal Joint Trouble shooting chart for Transmission and Final Drive System* Trouble Shooting Chart for Clutch, Trouble Shouting Chart for Gearbox*	Trouble Shooting Chart for Clutch, Trouble Shouting Chart for Gearbox, Troubleshooting Chart for the Rear Axle*
	4.2.1 Transmission & Final Drive System (Differential and Rear Axle)Final Drive	Components of final drive
	4.2.2 Transmission & Final Drive System (Differential and Rear Axle) Differential	Demonstration of Differential
	4.2.3 Transmission & Final Drive System (Differential and Rear Axle) Rear Axle	Model on various types of rear axle
Unit 5 : Automotive Electrical and electronic system	Automotive Electrical & Electronic System (Introduction and Battery) 5.1.1 Introduction	Importance of Auto electrical system.
	Automotive Electrical & Electronic System (Introduction and Battery) 5.1.2 Purpose of Automotive Electrical System	Purpose of Automotive Electrical System
	Automotive Electrical & Electronic System (Introduction and Battery) 5.1.3 Layout of an Automotive Electrical System	Layout of an Automotive Electrical System
	Automotive Electrical & Electronic System (Charging & Starting System & Different Electrical Circuit) 5.2.1 Charging System	Demonstration of charging system
	Automotive Electrical & Electronic System (Charging & Starting System & Different Electrical Circuit) 5.2.2 Starting System	Demonstration starting system

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UNIT	TOPIC	ACTIVITY/ PRACTICAL
	Automotive Electrical & Electronic System (Charging & Starting System & Different Electrical Circuit) 5.2.3 Different Circuit Diagrams of a Car 5.4.2 Automobile DC Generator* 5.4.4. Construction of Alternator*	Demonstration of DC Generator* Practical on Alternator *
Unit 6: Motor Vehicle Act and Rules	6.1.1 Provision regarding Issue of Driving	Documents required for registration, Insurance, claims, Transfer of Ownership and fitness certificates.
	6.1.2 Registration of Vehicle	
	6.1.3 Insurance	
	6.1.4 Claims	
	6.1.5 Transfer of Ownership Licence	
	6.1.6 Fitness Certificate	
	6.2.1 Indian Traffic Rules & Signs	Models of Road signs and practical demo on hand signals.
	6.2.2 Hand Signals used by the Drivers	
	6.2.3 The Driving Hand Signals used by the Driver	
	6.2.4 Hand Signals used by the Traffic Personnel	
	6.2.5 Traffic Police Hand Signals (Manual)	
	6.3.1 Emission	Demonstration of PCV system and Evaporative Emission Control system.
	6.3.2 Sources of Emission	
	6.3.3 Types of Emission	
	6.3.4 Emission Control	
6.3.5 Emission Norms in India		

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