



# **BOARD OF SCHOOL EDUCATION HARYANA**

## **Syllabus and Chapter wise division of Marks (2025-26)**

**Class- 12<sup>th</sup>**

**Subject: Automotive**

**Code: AUT 926**

### **General Instructions:**

1. There will be an Annual Examination based on the entire syllabus.
2. The Annual Examination will be of 60/2=30 marks, Practical Examination will be of 50 marks and 20 marks weightage shall be for Internal Assessment.
3. For External Assessment (Practical) Examination:
  - (i) External Assessment- Hand on Skill of 25 (Written 10, Practical 15).
  - (ii) External Assessment- Portfolio of 10.
  - (iii) External Assessment- Viva of 15.
4. For Internal Assessment:

There will be Periodic Assessment that would include:

  - i) For 6 marks- Three SAT exams will be conducted and will have a weightage of 06 marks towards the final Internal Assessment.
  - ii) For 2 marks- One half yearly exam will be conducted and will have a weightage of 02 marks towards the final Internal Assessment.
  - iii) For 2 marks- Subject teacher will assess and give maximum 02 marks for CRP (Class room participation).
  - iv) For 5 marks- A project work to be done by students and will have a weightage of 05 marks towards the final Internal Assessment.
  - v) For 5 marks- Attendance of student will be awarded 05 marks as:

75% to 80%	- 01 Marks
Above 80% to 85%	- 02 Marks
Above 85% to 90%	- 03 Marks
Above 90% to 95%	- 04 Marks
Above 95% to -	- 05 Marks



## Course Structure (2025-26)

Class- 12<sup>th</sup>

Subject: Automotive

Code: AUT 926

Unit. No.	Unit Name	Unit Marks
1	Service Manual	05
2	Serviceability, Replacement or Repair of Engine	10
3	Transmission System	10
4	Suspension System	10
5	Auto Electrical	15
Unit. No.	Employability Skill Units	Unit Marks
1.	Communication Skills	2
2.	Self-Management Skills	2
3.	Information and Communication Technology Skills	2
4.	Entrepreneurship Skills	2
5.	Green Skills	2
Total		60/2=30
Practical Examination		50
Internal Assessment		20
Grand Total		100



## **Unit 1: Service Manual**

- Reading of Service Manual ,Content of Service Manual.

## **Unit 2: Serviceability and Replacement or Repair of Engine**

- Reconditioning of Valve Mechanism , OHC, OHV, Valve lapping operation .
- Replacement of piston ring.
- Inspection and replacement of cylinder liner/bore sleeve, connecting rod and engine bearing .
- Testing of cooling system and replacement of defective components
- Regular Servicing of MPFI System ,advantage of MPFI.
- CRDI And Non CRDI System.
- Service workshop Equipment

## **Unit3: Transmission System**

- Overhauling of Clutch ,Diaphragm Clutch.
- Servicing of Propeller shaft, Universal and slip Joints .
- Servicing of differential unit and adjustments.
- Introduction to the Automatic Transmission system.

## **Unit 4: Suspension System**

- Maintenance of Suspension system
- Suspension check –up.
- Service and Replacement of Leafs
- Cambering of leaf springs , shackle, shackle pin and centre Bolt.
- Replacement of Strut/Shock absorbers, inspection of steering linkage .
- Manual and Power Steering, Steering system Adjustments

## **Unit5: Auto Electrical**

- Automotive Electrical and Electronics Symbol, Reading of Circuit Diagram, Cables Specifications and colour code ,wiring Harness .
- Electrical test Equipment's, Jumper wire, Digital multimeter Etc.
- Battery and its Maintenance ,Battery inspection , Battery testing.
- Checking of electrical connections of lighting system in a vehicle
- Application and replacement of fuses ,type of fuses.
- Circuit diagram of charging system of Automobile and checking of charging system.
- Circuit Diagram of starting system of Automobile and checking of starter circuit, starting motor trouble shooting.
- Circuit Diagram of ignition System and Checking of Ignition Circuit
- Maintenance and servicing of major Electrical Accessories
- Introduction to Climate control system Heating Ventilation and Air Conditioning in a vehicle .



## **Unit 6 : Employability Skill –**

- Communication skill.
- Self-management skill.
- Information and Communication Technology skill (ICT)
- Entrepreneurship Skill.
- Green skills

### **Practical's: -**

1. Service Manual .
2. Valve Mechanism.
3. Piston Rings.
4. Cylinder liner/bore sleeve, connecting rod and engine bearing.
5. Replacement of defective components.
6. Servicing of MPFI.
7. CRDI and non CRDI system.
8. Overhauling of Clutch.
9. Propeller shaft, universal and slip joints.
10. Differential unit and adjustment.
11. Automatic transmission system.
12. Suspension system.
13. Service and repair of leaf spring set etc.
14. Replacement of strut/shock absorber.
15. Electronics symbol.
16. Electrical test equipment.
17. Battery.
18. Circuit diagram of charging system of automobile.
19. Circuit diagram of ignition system.
20. Major electrical accessories.





# Month wise Syllabus Teaching Plan (2025-26)

Class- 12<sup>th</sup>

Subject: Automotive

Code: AUT 926

Month	Subject- content	Teaching Periods	Revision Periods	Practical Work
<b>April</b>	<b>Automobile – Unit-1</b> Session -1- Reading of Service Manual ,Content of Manual <b>Employability Skill- Unit 1</b> Session 1 :- Active Listening Session 2:- Parts of Speech Session 3:- Writing Sentences	<b>16</b>	<b>2</b>	<b>3</b>
<b>May</b>	<b>Automobile – Unit -2</b> Session -1- Reconditioning of Valve Mechanism ,OHC, OHV, Valve lapping operation Session -2- Replacement of piston ring Session-3- Inspection and replacement of cylinder liner/bore sleeve, connecting rod and engine bearing <b>Employability Skill –Unit 2:</b> Session 1:- Motivation and Positive Attitude Session 2:- Result Orientation Session 3:- Self Awareness	<b>16</b>	<b>2</b>	<b>3</b>
<b>June</b>	Home Work – Unit1 and 2 Practical and ES-Unit 1 All session Revision			
<b>July</b>	<b>Automobile –Unit-2</b> Session -4- Testing of cooling system and replacement of defective components Session -5- Regular Servicing of MPFI System , advantage of MPFI Session -6- CRDI And Non CRDI System <b>Employability Skill – Unit 03</b> Session 01:- Getting started with Spreadsheet Session 02:- Performing Basic Operation in a Spreadsheet Session 03:- Working with Data and Formatting Text Session Session 04:- Advanced Features in Spreadsheet	<b>12</b>	<b>06</b>	<b>07</b>



<b>August</b>	<b>Automobile – Unit-3</b> Session -1- Overhauling of Clutch , Diaphragm Clutch Session -2- Servicing of Propeller shaft, Universal and slip Joints Session -3- Servicing of differential unit and adjustments Session -4- Introduction to the Automatic Transmission system <b>Employability Skill – Unit 3</b> Session 05:- Presentation Software Session 06 :- Opening, Closing, Saving and Printing a Presentation Session 07:- Working with slides and text in a Presentation Session 08:- Advanced Features used in Presentation	<b>16</b>	<b>04</b>	<b>04</b>
<b>Sept</b>	<b>Revision for Half-Yearly Exam</b> <b>Automobile – Unit-4</b> Session -1- Maintenance of Suspension system, Suspension check -up Session -2- Service and Replacement of Leaf springs , Cambering of leaf springs , shackle, shackle pin and centre Bolt Revision of Half yearly Exam <b>Employability Skill – Unit 04</b> Session 01:- Entrepreneurship and Entrepreneur Session 02:- Barrier to Entrepreneurship	<b>14</b>	<b>06</b>	<b>03</b>
<b>October</b>	<b>Automobile – Unit-4</b> Session -3- Replacement of Strut/Shock absorbers , inspection of steering linkage Session -4-Inspection of Steering Linkage Session -5- Manual and Power Steering Session -6-Steering system Adjustments. <b>Employability Skill – Unit 04</b> Session 03:- Entrepreneurial Attitudes Session 04:- Entrepreneurial Competencies	<b>12</b>	<b>02</b>	<b>06</b>
<b>November</b>	<b>Automobile –Unit-5</b> Session -1-Automotive Electrical and Electronics Symbol ,Reading of Circuit Diagram ,Cables Specifications and colour code ,wiring Harness Session -2- Electrical test Equipment's, Jumper wire, Digital multimeter Etc. Session -3- Battery and its Maintenance ,Battery inspection , Battery testing <b>Employability Skill – Unit 05</b> Session 01:- Green Jobs Session 02:- Importance of Green Jobs	<b>10</b>	<b>05</b>	<b>07</b>



<b>December</b>	<b>Automobile – Unit-5</b> Session -4- Checking of electrical connections of lighting system in a vehicle Session -5- Application and replacement of fuses , type of fuses Session -6- Circuit diagram of charging system of Automobile and checking of charging system Session -7- Circuit Diagram of starting system of Automobile and checking of starter circuit, starting motor trouble shooting <b>Employability Skill –</b> Project Work for Spreadsheets	<b>15</b>	<b>03</b>	<b>06</b>
<b>January</b>	<b>Winter Vacation: 1st to 15th January</b> <b>Automobile – Unit-5</b> Session -8- Circuit Diagram of ignition System and Checking of Ignition Circuit Session -9- Maintenance and servicing of major Electrical Accessories Introduction to Climate control system Heating Ventilation and Air Conditioning in a vehicle <b>Employability Skill –</b> Project Work for Presentation Software.	<b>10</b>		<b>02</b>
<b>February</b>	<b>Revision</b>		<b>10</b>	
<b>March</b>	<b>Annual Examination</b>			

### Note:

Skill Subject Teachers are advised to direct the students to prepare Practical Notebook of the Terminology/Definitional Words/ Glossary used in the Chapters for Enhancement of Vocabulary or Clarity of the Concept.

- The PSSCIVE Skill Textbook Present Information in Boxes the book. These help Students to get Conceptual Clarity. However, the Information in these Boxes would not be Assessed in the Year- End Examination.

### **Prescribed Books:**

1. Security Skill Book- Text Book for Class IX, PSSCIVE Publication.
2. Employability Skill Book- Text Book for Class IX, PSSCIVE Publication.





# NSQF Question Paper Design (2025-26)

Class- 12<sup>th</sup>

Subject: Automotive

Code: AUT 926

Time:- 2 Hours 30 Minutes

Competencies	Total
Knowledge	40%
Understanding	30%
Application	20%
Skill	10%
	100%

Type of Question	Marks	Number	Description	Total Marks
Objective Questions	1	15	6 Multiple Choice Questions, 3 Fill in the Blanks Questions, 3 One Word Answer Type Questions, 3 Assertion-Reason Question true/false	15
Very Short Answer Type Question	2	6	Internal choice will be given in any 2 questions	12
Short Answer Type Question	3	6	Internal choice will be given in any 2 questions	18
Essay Answer Type Question	5	3	Internal options will be given in all the questions	15
Total		30		60