Community College of Skill Development

Lesson Plan: Basics of Automobile Technology (AMV-105-V)

Program: B.Voc. Automobile **Semester: I** **Credits: 03**

Course Objectives:
The course should enable the students to know the basics of automobiles, to understand about the suspension and steering system and wheels and tires.

Course Outcomes: After the successful completion of the course, students will be able to:

- CO1: To understand the basics of automobiles, their classification, parts, and performance metrics.
- CO2: To able to analyze the functions, requirements, and components of chassis and suspension systems.
- CO3: To able to evaluate the necessity, functions, and effectiveness of transmission and braking systems in automobiles. Demonstrate the knowledge of different types of braking systems.
- CO4: To synthesize knowledge of steering systems and front axles to understand their purpose, construction, and types.

Equipment required in Classroom/ Laboratory/ Workshop

i. LCD/Projector
ii. Whiteboard/ Black Marker

Assessment Scheme

S.No.	Criteria	Marks
1	End Term Examination	75
2	Internal Evaluation Scheme	25
2a	Class Tests	15

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2a (i)	Class Test-I	7.5
2a (ii)	Class Test-II	7.5
2(b)	Teacher Assessment (Continuous Evaluation)	10
2b (i)	Attendance	5
2b (ii)	Assignment / Presentation	5

Lesson Plan

Lecture No.	Content to be Covered	Pedagogy	Date of Implementation	Course Outcomes Covered
UNIT – 1: INTRODUCTION (6 Lectures)				
1	Introduction to an Automobile – Definition, Scope	Board & PPT	04/08/2025	CO1
2	Brief History of Automobiles	Board & PPT	04/08/2025	CO1
3	Classification of Automobiles	Board & PPT	05/08/2025	CO1
4	Parts of an Automobile – Overview	Board & PPT	12/08/2025	CO1
5	Performance of an Automobile – Key Metrics and Factors	Board & PPT	18/08/2025	CO1
6	B.P, I.P, F.P	Board & PPT	18/08/2025	CO1
UNIT – 2: CHASSIS AND SUSPENSION (10 Lectures)				
7	Introduction to Chassis, Classification of Chassis	Board & PPT	19/08/2025	CO2
8	Frame and Vehicle Dimensions	Board & PPT	25/08/2025	CO2
9	Functions/Objectives of Suspension Systems	Board & PPT	25/08/2025	CO2
10	Requirements and Elements of Suspension System	Board & PPT	26/08/2025	CO2
11	Types of Springs in Automobile Suspensions	Board & PPT	01/09/2025	CO2

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12	Dampers (Shock Absorbers) – Construction and Working	Board & PPT	01/09/2025	CO2
13	Types of Suspension Systems – Overview	Board & PPT	02/09/2025	CO2
14	Types of Suspension Systems – Comparison	Board & PPT	08/09/2025	CO2
15	Wheels – Types, Construction, Importance	Board & PPT	08/09/2025	CO2
16	Tires – Types, Markings, Performance	Board & PPT	09/09/2025	CO2
UNIT – 3: TRANSMISSION AND BRAKING SYSTEM (13 Lectures)				
17	Introduction to Transmission System	Board & PPT	15/09/2025	CO3
18	Clutch – Types, Construction, Working	Board & PPT	15/09/2025	CO3
19	Gearbox/Transmission – Types and Working	Board & PPT	16/09/2025	CO3
	Sessional Test – 1	Paper Pen	25/09/2025	
20	Propeller Shaft and Universal Joints	Board & PPT	01/10/2025	CO3
21	Final Drive and Differential – Necessity and Working	Board & PPT	06/10/2025	CO3
22	Rear Axles – Types and Functions	Board & PPT	13/10/2025	CO3
23	Introduction to Braking System, Necessity, and Functions	Board & PPT	13/10/2025	CO3
24	Requirements of a Good Braking System, Classification of Brakes	Board & PPT	14/10/2025	CO3
25	Disc Brake (Construction & Working)	Board & PPT	14/10/2025	CO3
26	Drum Brake (Construction & Working)	Board & PPT	20/10/2025	CO3
27	Hydraulic Brakes (Construction & Working)	Board & PPT	20/10/2025	CO3
28	Power Brakes, Brake Effectiveness	Board & PPT	21/10/2025	CO3
29	Anti-lock Braking System (ABS)	Board & PPT	21/10/2025	CO3
UNIT – 4: STEERING AND FRONT AXLE (11 Lectures)				
30	Purpose, Functions, and Requirements of a Steering System	Board & PPT	27/10/2025	CO4

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31	General Arrangement of a Steering System	Board & PPT	27/10/2025	CO4
32	Steering Gears and Steering Ratio	Board & PPT	28/10/2025	CO4
33	Reversibility and Steering Geometry	Board & PPT	28/10/2025	CO4
34	Wheel Alignment and Steering Mechanism	Board & PPT	03/11/2025	CO4
35	Understeering and Oversteering	Board & PPT	03/11/2025	CO4
36	Steering Linkages, Steering Wheel, and Column	Board & PPT	04/11/2025	CO4
37	Steering Arm, Drag Link, and Steering Stops	Board & PPT	04/11/2025	CO4
38	Adjustment of Steering Geometry	Board & PPT	10/11/2025	CO4
39	Introduction to Front Axle – Importance and Function	Board & PPT	10/11/2025	CO4
40	Construction and Types of Front Axles	Board & PPT	11/11/2025	CO4
	Sessional Test - 2	Paper & Pen	15/11/2025	

Suggested Readings:

1. Automobile Engineering, R.K. Rajput, Laxmi Publications.
2. Automobile Engineering by Dr. Kripal Singh.

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