



Lok Jagruti Kendra University
University with a Difference

Diploma in Automobile Engineering



Course Code: 025010506
Two and Three Wheeler

Programme / Branch Name			Diploma in Automobile Engineering			
Course Name	Two & Three-Wheeler				Course Code	025010506
Course Type	HSSC	BSC	ESC	PCC	OEC	PEC

Legends: HSSC: Humanities and Social Sciences Courses
 ESC: Engineering Science Courses
 OEC: Open Elective Courses

BSC: Basic Science Courses
 PCC: Program Core Courses
 PEC: Program Elective Courses

1. Teaching and Evaluation Scheme

Teaching Hours / Week					Evaluation Scheme				
L	T	P	Total Teaching Hours	Total Credit	CA	CCE	SEE (TH)	SEE (PR)	Total
3	2	0	5	5	10	40	50	-	100

Legends: L: Lectures T: Tutorial P: Practical
 CA: Continuous Assessment (Attendance + Activity)
 CCE: Continuous & Comprehensive Evaluation
 SEE (Th): Semester End Evaluation (Theory)
 SEE (Pr): Semester End Evaluation (Practical)

2. Prerequisite

- ✓ Internal Combustion Engine
- ✓ Automobile Transmission
- ✓ Automobile System
- ✓ Fundamentals of Automobile Electrical and Electronics

3. Rationale

The course aims to impart basic skills for understanding of modern systems, safety & comfort features used in automobile.

4. Objectives

- ✓ Understand function and applications of various sensors and actuators.
- ✓ Identify and learn importance Safety features in Automobile.
- ✓ Explain modern comfort features in vehicle.
- ✓ Understand the necessity of peripheral systems of Automobile.

5. Contents

Unit No.	Unit Name	Topics	Learning Outcome	% Weightage	Hours
1.	Introduction to Engine Technology	1.1 Development history of two & three-wheeler vehicles. 1.2 Selection and Design consideration for 2-wheeler. 1.3 Three-wheeler engines Systems requirements for Engine lubrication, cooling & starting. 1.4 Recent developments in engine for 2 / 3-Wheeler. 1.5 Electric Vehicles	<ul style="list-style-type: none"> Understanding of various engines used in two and three-wheeler and its technology. 	20	08
2.	Introduction to Transmission System for Two and Three-Wheeler	2.1 Clutch – special requirements, different types used in two & three wheelers. 2.2 Need of primary reduction, selection of transmission - gear box, gear shift mechanism, Chain OR belt drive system for transmission 2.3 Arrangement of final drive & differential for three-wheeler.	<ul style="list-style-type: none"> Different types of transmission system used in two and three-wheeler. 	30	13
3.	Two-wheeler Miscellaneous System	3.1 Steering system arrangement for two & three wheelers, steering column construction, steering geometry, Suspension requirements, design considerations. 3.2 Design consideration of brake, types of brakes – disc, drum and braking mechanism – mechanical, hydraulic & serv. Hand operated or Foot operated brakes. 3.3 Wheel types – spokes construction, alloy wheels, pressed wheel disc or split wheel disc. Types of tyres for two & three-wheeler.	<ul style="list-style-type: none"> Steering, Suspension system, Braking System and Wheels and Tyres for two and three wheelers. 	20	08

		3.4 Springs & shock absorbers for 2 / 3-Wheeler			
4.	Electrical Systems & Instruments:	4.1 Battery specifications, charging system, Lighting (front & rear), Ignition key switch, Horn, Side Signaling, Instruments & Indicators	<ul style="list-style-type: none"> Electrical System and Instrumentation for two and three-wheeler. 	15	7
5.	Frame & Body for Two and Three-Wheeler	5.1 Types of frames, construction, loads, design consideration, materials for frame. 5.2 Types of three-wheeler bodies, layout, and its regulations. 5.3 Aerodynamic, aesthetic & ergonomic considerations for body work, side car.	<ul style="list-style-type: none"> Different types of body and frames used in two and three-wheeler. 	15	6

Total Hours **42**

6. Suggested Specification Table for Evaluation Scheme

Unit No.	Unit Name	Distribution of Topics According to Bloom's Taxonomy					
		R %	U %	App %	C %	E %	An %
1.	Introduction to Engine Technology	40	40	10	0	10	0
2.	Introduction to Transmission Systems for Two and Three-Wheeler	35	45	10	0	10	0
3.	Two-wheeler Miscellaneous system	30	50	10	0	10	0
4.	Electrical Systems & Instruments	30	50	10	0	10	0
5.	Frame & Body for Two and three-wheeler	40	40	10	0	10	0

Legends: R: Remembering U: Understanding
 App: Applying C: Creating
 E: Evaluating An: Analyzing



7. Reference Books

1. Newton Steed, “The Motor Vehicle”, McGraw Hill Book Co. Ltd., New Delhi
2. Siegfried Herrmann, “The Motor Vehicle”, Asia Publishing House, Bombay.
3. “Two stroke Motor Cycles”, Staff & Motor Cycles, London Iife Books.
4. G.B.S. Narang, “Automobile Engineering”, 5th Edition, Khanna Publishers, Delhi.
5. Service Manuals of Manufacturers of Indian Two & Three wheelers.
6. Irving. P. E., “Motor Cycle Engineering”, Temple Press Book, London – 1992.
7. “The Cycle Motor Manual”, - Temple Press Limited, London – 1990.
8. Raymond Broad Lambretta, “A Practical Guide to maintenance and repair”, S.Chand & Co., New Delhi - 1987.

8. Open Sources (Website, Video, Movie)

- 1) <https://www.youtube.com/c/TheAutomotives>
- 2) <https://www.youtube.com/channel/UC4la8Cf7-DxaxsfMhaWpHiQ>
- 3) <https://theautomobileengineers.blogspot.com/>
- 4) <http://nptel.ac.in/>
- 5) <https://www.youtube.com/c/LearnEngineering>
- 6) <https://www.electronics-tutorials.ws/>