



C. U. SHAH UNIVERSITY

Wadhwan City

FACULTY OF: - Technology and Engineering
DEPARTMENT OF: - Automobile Engineering
SEMESTER: -VII
CODE: - 4TE07TWT1
NAME: – Two and Three Wheeler Technology

Teaching and Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hrs	Marks	Hrs	Pr/Viva	TW	Pr	
4TE07TWT1	Two and Three Wheeler Technology	3	0	2	5	4	30	1.5	70	3	---	20	30	150

Objectives:

- To develop the basic knowledge of the students in constructional details of two and Three Wheelers.
- Dissect the skills of the students in the operating principles

Prerequisite:

Basic knowledge of Internal combustion engines, vehicle body engineering and chassis frames.

Course Outline:

Sr. No.	Course Content	Hours
1	Introduction: Development history of two & three wheeler vehicles. Classification & layouts of two wheelers (motorcycles, scooters, mopeds) and Three wheelers vehicles (by applications – goods/passengers, carriage capacity). Study of technical specification of Two & Three wheelers.	5
2	Power Unit: Two stroke SI engine, four stroke SI engine; merits and demerits. Symmetrical and unsymmetrical port timing diagrams. Types of scavenging processes; merits and demerits, scavenging pumps. Rotary valve engine. Fuel system. Lubrication system. Magneto coil and battery coil spark ignition system, electronic ignition system. Starting system; Kick starter system.	10
3	Chassis and sub-systems: Mainframe and its types. Chassis and shaft drive, Single, multiple plates and centrifugal clutches. Gear box and gear controls. Front and rear suspension systems. Shock absorbers. Panel meters and controls on handle bar.	10
4	Brakes, Wheels And Tyres: Drum brakes, disc brakes, front and rear brake links, layouts. Spoked wheel, cast wheel, disc wheel, disc types. Tires and tubes.	10
5	Two wheelers: Case study of major Indian models of motorcycles, scooters and mopeds. TVS mopeds and motorcycles, Hero Honda motorcycles, Bajaj scooters and motorcycles RACE, Yamaha, Enfield motorcycles. Servicing and maintenance.	5
6	Three wheelers: Case study of Indian models. Auto rickshaws, pickup van, delivery van and trailer. Maintenance: daily, weekly, monthly, Fault tracing.	5

Learning Outcomes:

On successful completion of this course students will be able to:

- Illustrate the functioning of clutch and gear box of two wheeler and three wheeler.
- Demonstrate the wheels, tyres, suspensions and braking systems.
- Identify the latest models of two wheelers.
- Define the operations of three wheelers and latest models of three wheelers.
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Books Recommended:

1. Motor Cycle Engineering by **Irving. P. E.** Temple Press Book, London – 1992.
2. The Cycle Motor Manual , Temple Press Limited, London - 1990

Reference Books:-

1. The Cycle Motor Manual, Temple Press Ltd., London, 1990.
2. Two Wheelers, **Ramalingam. K. K.**, Scitech publications, Chennai, 2009
3. Marshall Cavendish, Encyclopedia of Motor cycling, 20 volumes, New York and London, 1989.
4. Vespa "Maintenance and Repair series" by Bryaut, R.V.
5. A practical guide to maintenance and repair, Raymond Broad Lambretta, 1987.