

**AT8603 TWO AND THREE WHEELERS**

DETAILED SYLLABUS

**OBJECTIVE:**

- The aim of this course is to make the students to know and understand the constructional details operating characteristics and vehicle design aspects

**UNIT I THE POWER UNIT**

Two stroke and four stroke SI & CI engine Construction and Working, merits and demerits, Symmetrical and unsymmetrical valve & port timing diagrams. Scavenging process.

**UNIT II FUEL AND IGNITION SYSTEMS**

Fuel system – Different circuits in two-wheeler fuel systems, fuel injection system. Lubrication system, Ignition systems - Magneto coil and battery coil spark ignition system, Electronic ignition System, Starting system - Kick starter system – Self-starter system. Recent technologies.

**UNIT III CHASSIS AND SUB-SYSTEMS**

Main frame for two and three wheelers, its types, Chassis and different drive systems for two wheelers, Single, multiple plates and centrifugal clutches, Gear box and its and various gear controls in two wheelers. Front and rear suspension systems. Shock absorbers. Panel meters and controls on handle bar, Freewheeling devices

**UNIT IV BRAKES AND WHEELS**

Drum brakes & Disc brakes Construction and Working and its Types, Front and Rear brake links layouts. Brake actuation mechanism. Spoked wheel, cast wheel, Disc wheel & its merits and demerits. Tyres and tubes Construction & its Types. Steering geometry.

**UNIT V TWO & THREE WHEELERS – CASE STUDY**

Case study of Sports bike, Motor cycles, Scooters and Mopeds - Auto rickshaws, Pick up van, Delivery van and Trailer. Servicing and maintenance. Recent developments.

**TEXT BOOK:**

1. Irving, P. E," Motor cycle Engineering", Temple Press Book, London, 1992.

**REFERENCES:**

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