

(4 Lect./Week)
(4 hrs. Lab/Week)
(1 Student's presentation /Week)

(Total Credits -7)

Paper 601: Tyre Technology

1. **Tyre classification:** Solid Tyre, Pneumatic Tyre, Radial Tyre, Bias and Bias Belt Tyre and Tubeless Tyre.
2. Tyre design, tyre mechanics, Caracas design, contour shape, cord path and their characteristics. Cord tension. Load capacity of tyre. Stresses in Tyre. Tread design, Bead design.
3. Tyre manufacturing: Tyre building Drum, Cure finishing. Tyre testing. Laboratory test, proving ground, inspection of tyre, Earth moving tyres & ADV tyre.

Practical - Polymer VI:

1. Mechanical properties of vulcanized rubber: a) Tensile strength b) Elongation at break %, c) Hardness and d) Tear strength.
2. Aging and weathering properties of rubber and rubber to fabric ply.
3. Bonding properties of rubber to fabric and rubber to metal.
4. Abrasion properties of tyre tread.

Suggested Readings:

1. Heavy Duty Truck Tire Engineering SAE's 34th L. Ray Buckingdale Lecture, by T. L. Ford and F. S. Charles, SP729(1988).
2. Engineering Data Book, "Over-The-Road Truck Tyres," The Goodyear Tyre & Rubber Company (2001).
3. The Science and Technology of Rubber by J. E. Mark, B. Erman, F.R. Eirich, Elsevier (2005).