

ME309 Theory of Machines

Credit: 4

Approval: Approved in 3rd Senate

Prerequisite: Mechanics of Solids

Students intended for:

Elective or Core: Core

Semester: Odd/Even

Course objective:

To introduce the basic concepts of kinematics and dynamics of machines.

Course Content:

- Kinematic pair, diagrams and inversion. Mobility and range of movement. (5)
- Displacement velocity and acceleration analysis of planar linkages. (10)
- Dimensional synthesis for motion, path and function generation. (8)
- Cam profile synthesis (5)
- Gears (10)
- Dynamic force analysis (4)
- Flywheel (3)
- Inertia forces and balancing for rotating and reciprocating machines. (12)

Suggested Book:

1. A. Ghosh, A. K. Mallik, Theory of Mechanisms and Machines, East West Press Pvt. Ltd.
2. Uicker, J. J., Shigley, J. E., and Pennock, G. R., Theory of Machines and Mechanisms, Oxford University Press.
3. Thomas Bevan, Theory of Machines, Pearson.
4. C. E. Wilson, J. P. Sadler, Kinematics and Dynamics of Machinery, Pearson.
5. R. L. Norton, Design of Machinery, McGraw Hill Company.