BASIC MECHANICAL ENGINEERING 2-0-0

For 1st Semester Code (RBM1B001)

MODULE-I (8 classes)

Thermodynamics:
Systems, Properties, Process, State, Cycle, Internal energy, Enthalpy, Zeroth Law, First law and Second Law of Thermodynamics, Basic Concept of Entropy, Properties of ideal gas., Properties of pure substances, Steam formation, Types of Steam, Enthalpy, Specific volume, Internal energy and dryness fraction of steam, use of Steam tables. Related numericals.

MODULE-II (6 classes)

Application of Thermodynamics:
Air compressors, Steam Power Plant, Refrigerators and Heat pump, I.C. Engines (Brief Description of different components of above mentioned systems and working principles with Schematic diagram only)

MODULE-III (5 Classes)

Basic Power transmission devices:
Belt, Rope, Gear drives.Coupling, clutch, brakes. (Working principle only)

Introduction to Robotics:
Robot anatomy, joints and links and common robot configurations

MODULE-IV (5 Classes)

Mechanical Measurements:
Temperature, pressure, velocity, flow, strain, force, torque measurements. (Working principle only).

Text books

i. Basic Mechanical Engineering by Pravin Kumar, Pearson
ii. Basic Mechanical Engineering by A R Israni, P K Shah, BS Publications
iii. Text book of Elements of Mechanical Engineering, S T Murthy, Universities press
iv. Basic and applied Thermodynamics by P. K. Nag, Tata McGraw Hill

Reference books

i. Basic Mechanical Engineering by .D. Mishra, P.K Parida, S.S.Sahoo, India Tech Publishing company
ii. Elements of Mechanical Engineering by J K Kittur and G D Gokak,Willey
iii. Basic Mechanical Engineering by BasantAgrawal, C M Agrawal,Willey
iv. Engineering Thermodynamics by P. Chattopadhaya, Oxford University Press