

B. Tech – I (MECHANICAL & PRODUCTION)

Basic Mechanical Systems
MED 210 ABC
MED 110 DEF

L	T	P	C
3	0	2	4

THEORY :

- Conventional and non-conventional energy sources-types of fuels, Calorific value of fuels, calculation of minimum air required for Complete Combustion of fuel.
- Steam generators, Definition, Classification, general study of Cochran, Babcock Wilcox, Lancashire and Locomotive boilers, boilers mountings and accessories, Draught Classification, Calculation of Chimney height, boiler efficiency and numericals.
- Internal Combustion Engines – Definition, Classification, Components, Working of the two stroke and Four-stroke cycle engines, S.I. and C.I. Engines, various efficiencies. Air standard cycles – Otto, diesel & dual cycle & numerical.
- Layout of different types of power plants – Thermal power plant, Nuclear power plant, Hydro power plant.
- Machine tools: Introduction to different types of machine tool such as lathe, drilling machines, shaper, and various operations, and numericals on machining process.
- Refrigeration and air conditioning: Definition refrigeration and air conditioning, Vapour Compressor system, domestic refrigerator, Ice plant, Wiadool air conditioner.

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENT :

Based on the theory course prescribed above.

BOOKS REFERENCES :

1. R.K. Rajput, "Thermal Engineering", Laxmi Publications, 1994.
2. T.S. Rajan, "Basic Mechanical Engineering", Wiley Eastern Ltd., 1996.
3. S.B. Mathur, S. Domkundwar, "Elements of Mechanical Engineering", Dhanpat Rai & Sons, 1999.
4. S.K. Hajra Chaudhry, "Elements of Workshop Technology Vol. I", Asia Publishing Co. Ltd., 1988.
5. W.A.J. Chapman, "Workshop Technology", ELBS Low Price Text, Edward Donald Pub. Ltd., 1961.
6. A.A. Memon, Sakaria, "Elements of Heat Power", Popular Publications, 1986.
7. H.R. Kapoor, "Thermal Engineering Vol. I and II", Tata McGraw Hill Co. Ltd., 1988.
8. H.S. Bawa, "Workshop Technology", Tata McGraw Hill Publishing Co. Ltd., 1995.
9. M.K. Bhatt, A.A. Memon, S.P. Dubey, "Basic Course in Mechanical Engineering", Popular Prakashan, Surat, 2001.