VEER NARMAD SOUTH GUJARAT UNIVERSITY,SURAT

BASIC MECHANICAL SYSTEMS

SEMESTER - I

TEACHING SCHEME	**L=3; P/D=2; TA=1**
EXAMINATION SCHEME	**Theory = 3hours; Marks= 100**
PRACTICAL / DRAWING	**Internal evaluation Marks: 20** **External evaluation Marks: 30**

(A) THEORY

(1) Conventional and non conventional energy source – types of fuels, calorific value of fuels, and calculation of minimum air required for complete combustion of fuel.

(2) Steam generator, definition, classification, general study of Cochran, Babcock Wilcox, Lancashire and locomotive boilers. Boiler mounting and accessories. Draught classification, Calculation of chimney height.

(3) Internal combustion engines – definition, classification , components, working of the two stroke and four stroke cycle engines, SI and CI engines, different systems of IC engines like fuel system like fuel energy systems , ignition system, cooling system.

(4) Layout of different types of power plants – thermal power plant, nuclear power plant, hydro power plant , gas turbine power plant.

(5) Refrigeration and air conditioning: definition of refrigeration, air conditioning, vapor compression system, domestic refrigerator, Ice Plant, Wind Air conditioner

(6) Machines tools: Introduction to different types of machine tool such as lathe, drilling machines, shapers and milling machines, various operations, introduction to various manufacturing processes.

(B) PRACTICALS/DRAWING + TUTORIAL ASSIGNMENT:

Based on the theory course prescribed above.

REFERENCES:

(1) S.K hazrachowdhari, “Elements of Workshop Technology, Vol – 1,” Asia publication co.ltd.1998.
(2) T. S Ranjan , “ Basic Mechanical engineering”, Wiley eastern Ltd.,1994.
(3) S.S Mathur , S.Domkundwar , “Elements of Mechanical Engineering”, dhanpat rai and sons , 1984.