Staff Name: Mr. B. Selvasarathy Associate Professor

Year: IV Year/ VII Sem

UNIT I INTRODUCTION TO POWER PLANTS AND BOILERS

Layout of Steam , Hydel , Diesel , MHD, Nuclear and Gas turbine Power Plants Combined Power cycles – comparison and selection , Load duration Curves Steam boilers and cycles – High pressure and Super Critical Boilers – Fluidised Bed Boilers UNIT II STEAM POWER PLANT 9 Fuel and ash handling ,Combustion Equipment for burning coal, Mechanical Stokers. Pulveriser, Electrostatic Precipitator, Draught- Different Types, Surface condenser types, cooling Towers

UNIT III NUCLEAR AND HYDEL POWER PLANTS

Nuclear Energy-Fission , Fusion Reaction, Types of Reactors, Pressurized water reactor ,Boiling water reactor, Waste disposal and safety Hydel Power plant- Essential elements, Selection of turbines, governing of Turbines- Micro hydel developments

UNIT IV DIESEL AND GAS TURBINE POWER PLANT

Types of diesel plants, components , Selection of Engine type, applications-Gas turbine power plant- Fuels- Gas turbine material – open and closed cycles- reheating – Regeneration and intercooling – combines cycle

UNIT V OTHER POWER PLANTS AND ECONOMICS OF POWER PLANTS

Geo thermal- OTEC- tidel- Pumped storage –Solar central receiver system Cost of electric Energy- Fixed and operating costs-Energy rates- Types tariffs- Economics of load sharing, comparison of various power plants.

TOTAL: 45 PERIODS

TEXT BOOKS:

1. Arora S.C and Domkundwar S, “A Course in Power Plant Engineering”, Dhanpat Rai, 2001

2. Nag P.K ,”Power Plant Engineering”. Third edition Tata McGraw- Hill ,2007

REFERENCES:

1. EI-Wakil M.M ,Power “Plant Technology,” Tata McGraw-Hill 1984

2. K.K.Ramalingam , “ Power Plant Engineering “, Scitech Publications, 2002

3. G.R,Nagpal , “Power Plant Engineering”, Khanna Publishers 1998

4. G.D.Rai, “Introduction to Power Plant technology” Khanna Publishers, 1995