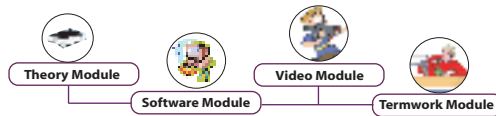


Learning/Training Resources with Computer Aided Instructions in subject of **Power Plant Engineering**

Introduces, Global e-Learning System in Education & Training in the form of Learning Resources with Computer Aided Instructions



System Requirement:- IBM-PC Compatible with Window-OS, 128 MB RAM/Multimedia Kit

Theory module

Features : Theory, Figures, Photographs, Animations with controller, Highlighter tool, Note creation facility, Systematic page navigation, Printing facility.

List of Topics

Introduction



The Introduction of the Various Sources of the Energy, Principal Types of the Power Plants and Combustion of Fuels.

Power Plant Cycles

The various cycles used in Power Plants, viz., Rankine Cycle, Regenerative Cycle, Binary Vapour Cycle, Otto Cycle, Diesel Cycle, Dual Combustion Cycle, Gas Turbine Cycles.

Steam Power Plant



Description of Different Aspects of Steam Power Plant, Layout of a Modern Steam Power Plant, Fuel Handling, Combustion Equipment for Steam Boilers, Ash Handling, Dust Collection, Chimney Draught, Boiler Accessories, Steam Nozzles, Steam Turbines, Cooling Towers, Cooling Ponds etc.

Diesel Engine Power Plant

I.C. Engines used in such a Plant and essential components of Diesel Power Plants. Combustion Phenomenon in I.C. Engines, its related topics and Layout of a Diesel Engine Power Plants Layout etc.



Gas Turbine Power Plant

General aspects of Gas Turbine used in such a Plant along with the description of Gas Power Cycle used in such turbines. Operation of Gas Turbines, Gas Turbines Power Plants Layout etc.

Hydro-Electric Power Plant



Elements of Hydro-Electric Power Plant, Hydro-Electric Turbines, Plant Layout, Hydro-Electric Plant Controls, Hydrology etc.

Nuclear Power Plant

The General Aspects of Nuclear Engineering, Nuclear Power Systems, Nuclear Reactors and their Description, Nuclear Energy etc.

Combined Operation of Different Power Plants

Advantages of Combined Operation of Plants, Load Division between Power Stations, Hydro-Electric Plant in Combination with Steam or Nuclear Power Plants, Co-ordination of Hydro-Electric and Gas Turbine Stations, Co-ordination of different types of Power Plants.

Economics of Power Generation

Principle of Power Plant Design, Location of Power Plant, Layout of Power Plant Building, Cost Analysis, Selection of Type of Generation, Selection of Power Plant Equipment, and Economics in Plant Selection, Economic Load Sharing etc.



Non-Conventional Power Generation

The Wind Power Plant, Tidal Power Plant, Solar Power Plant, Geothermal Power Plant, and Direct Energy Conversion Systems.

Plant Instrumentation

The various instruments used in a Power Plant such as Pressure Gauges, Thermometers, Liquid Gauges, Flow Meters, p-H Measuring Instruments, Speed Measuring Instruments etc.

Major Electrical Equipment used in Power Plant



Generation Equipment, Transformers, Switch Gear, Protection of Electrical Systems.



Pollution and its Control

Pollution from Thermal Plants, Pollution from Nuclear Power Plants, and Pollution from Hydro-Electric Power Plants.

Software Module



Software Module Covers Description of Various Power Plant Cycles; Steam Power Plant, Fuel Handling, Combustion Equipment for Steam Boilers, Burners etc. Various Types of Boilers, Accessories, Feed Water Heater and Evaporators, Steam nozzles, Steam Turbines, Steam Condensers, Cooling Ponds & Cooling Towers, Piping System.

Gas Turbine Power Plants, Hydro Electric Power Plants, Hydraulic Turbines, Hydro Plant Auxiliaries etc. Nuclear Power Plants, Nuclear Power System, Nuclear Reactors, Components of Nuclear Power Plant, Combined Operations of Different Power Plants, Advantages, Load Distribution between Power Plants, Co-ordination of Different Types of Power Plants, Economies of Power Generations, Economies in Plant Selection, Factors Effecting Economies of Generation & Distribution of Power, Economies of Load Sharing, Tariff for Electrical Energy & Plant Instrumentation.

Video Module

Layouts of various types of Power plants, Hydraulic, Thermal, Nuclear power plants, Turbines, Boilers, Cooling towers, Condensers, etc.



Termwork Module



Contains assignments on various topics covering Subjective questions, Objective questions, Random selection of objective type questions, Numerical assignments, Video assignments.