PEE305 LOAD AND ENERGY MANAGEMENT

L T P Cr
3 1 0 3.5

Course Objectives: To understand the basics of load forecasting and need of forecasting , method of forecasting, To know the steps involved in load management , different tariff structure in our country .impacts of load management and understanding through different case studies, benchmarking in energy management.

Load Forecasting: Classification and characterization of loads, Approaches to load forecasting, Forecasting methodology, Energy forecasting, Peak demand forecasting, Non−weather sensitive forecast and Weather sensitive forecast, Total forecast, Annual and monthly peak demand forecasts, Applications of state estimation to load forecasting.

Load Management: Introduction to Load management, Electric energy production and delivery system structure (EEPDS), Design alternatives for EEPD systems, Communication/control techniques for load management, Tariff structure and load management, principles of macro and microeconomics and energy pricing strategies, Assessing the impacts of load management.

Energy Demand Forecasting: Static and dynamic analysis of energy demand, Elements of energy demand forecasting, Methodologies and models for energy demand forecasting, Techno−economic approach in energy demand forecasting.

Energy auditing, Energy management, Power Pools and Energy Banking

Trends And Case Studies: Energy management strategy, Symbiotic relation between information, Energy models and decision making, Case studies like industrial energy forecasting, Transportation energy forecasting, Residential, Commercial and agricultural energy forecasting

Course Learning Outcome: On the completion of the course, the student will be able

- To be familiar with different load forecasting method used in power system,
- To understand different phase of load management and impacts of load management
- To understand the concept of energy demand and method to satisfy meet the energy demand
- To understand the measurement of energy conservation and its case studies
- To be familiar with ways of saving electricity in different utilities. Different phase of energy audit.
- To understand the role of energy management and energy forecasting

Recommended Books

2. *Martino J., Technological Forecasting for Decision Making", Elsevier Press (1972).*
3. *Gellings C.W. and Penn Well P.E. "Demand Forecasting in the Electric Utility Industry", Fairmount Press (1992).*
4. *Makridakis S., "Forecasting Methods and Applications", John Wiley and Sons (1997).*
5. *Brown, R.G., Smoothing, forecasting and prediction of discrete time series, PHI Int. (1963)*

Evaluation Scheme:

S. No.	Evaluation Elements	Weightage (%)
1.	MST	30
2.	EST	45
3.	Sessionals (May include Assignments/Projects/Tutorials/Quizes etc.)	25