

## EEE 352 Power Generation, Transmission and Distribution

*Generation of Electric Energy:* Sources of energy. Heat value of fuels.

Thermal stations. Hydroelectric stations. Nuclear stations.

*Economics of Power Supply:* Fixed and running charges in electric power production. Load curves and load duration curves including concept of base, intermediate and peak load. Definition of load factor, maximum demand, Diversity factor and their effects on generation.

*Distribution System:* Survey of power system components feeders distributors services mains radial and ring-man systems. Voltage drop in distribution systems. Per-unit qualities. *Overhead*

*Transmission System:* Conductors and insulators. Transmission line parameters. Resistance, inductance and capacitance. Stringing: Calculation of sag and tension. Stringing chart and performance. Representation of short and long power lines. *Underground Cables:* Types. Inductance of concentric cables. Capacitance of single-core and three-core cables. Thermal characteristics. Sheath currents.

*Circuit Breakers:* Principles of arc-extinction. Types of circuit breakers.