

EEE 556 Power System Engineering II

(System Analysis, Planning & Protection)

Non linear and linear programming, load forecasting, generation, transmission and distribution planning. Voltage and frequency control. Field inventory. Specification of energy systems equipment, siting of stations, station management maintenance routine.

Fault Studies: analysis of symmetrical 3-phase faults, symmetrical and unsymmetrical faults.

Principle of protection of HV and LV systems: Fundamental principles and mode of operation of specific protective switchgears, such as circuit breakers, instrument transformers, relays etc are treated. Over-voltage and insulation coordination. Selection of circuit breakers. Unit and distance protection: pile to wire, carrier current and VHF communication principles; distance measurements, selection of zones and inter trip schemes. Electromagnetic, solid state and digital equipment for protection and control of substations. Fuses and earth leakage devices.