

Course Title: Power System Planning and Operation

Course Code: EPEG 411

Credit Hours: 3

Course Description

Electric Power System comprised of three components; generation, transmission and distribution. Electric power should be adequately supplied to meet the growing demand for electricity. For this purpose, electric power systems expansion should be properly planned to meet the demand. The objective of the course is to provide concepts of electricity planning and operation, particularly generation planning.

Course Contents:

Features of Electric Power, Features of Power System Planning, Hierarchy of Power System Planning, Electricity Demand Representation, Electricity Demand Forecasting, Electricity Generation Technologies, Optimization Techniques, Electricity Generation Planning Techniques, Dynamic, Linear and Mixed-Integer Programming, GAMS, Electric Power System Reliability, Economic Operation of Power Plants, Unit Commitment, Hydro Scheduling, Economic Dispatch, Transmission and Distribution Planning

References:

1. Wood and Wollenberg, *Power Generation System Operation and Control*, John Wiley, 1994
2. A S Pabla, *Electric Power System Planning*, MacMillan India Limited, New Delhi, 1998
3. IAEA, *Expansion Planning for Electric Generation Systems: A Guide Book*, IAEA, 1984

Evaluation:

In-Semester Evaluation: 50%

End-Semester Evaluation: 50%