

<i>SEMESTER</i> <i>Eighth</i>	<i>DEPARTMENT</i> <i>Power Engineering</i>	<i>COURSE TITLE</i> <i>Power System Economics</i>
<i>COURSE CODE</i> <i>EP802</i>	<i>HOURS: 3</i> <i>UNITS: 3</i>	<i>COURSE SPECIFICATIONS</i> <i>Theoretical Content</i>
<p><i>1. Economic Operation of Power Systems:</i></p> <ul style="list-style-type: none"> ➤ Determine incremental fuel cost. ➤ Economic dispatch neglecting transmission losses. ➤ Transmission loss as a function of plant generation. ➤ General loss formula. ➤ Optimum load dispatch considering transmission losses. ➤ Cost of electricity. ➤ Economic evaluation methods. ➤ Operation and maintenance costs. 		
<p><i>2. Tariffs:</i></p> <ul style="list-style-type: none"> ➤ Flat demand rate tariff. ➤ Strait line meter rate tariff. ➤ Block meter rate tariff. ➤ Two-part tariff. ➤ Power factor tariff. ➤ Seasonal rate tariff. ➤ Peak load tariff. ➤ Three- part tariff. ➤ Describe the operation of electromechanical and electronic energy meters. 		
<p><i>3. Estimation and Forecasting for Power Consumption in Power Systems:</i></p> <ul style="list-style-type: none"> ➤ Power conservation and load curves plotting, heating, air conditioning, lighting, street lighting, home utilizations. ➤ Power demand and power consumption. Power loading of installations. ➤ Determine factors used for load estimation: Demand factor, Diversity factor, Factor of maximum utilization, ect. 		

4. Basic Concepts of Market Economics.

- Modeling the consumers.
- Modeling the producers.
- Market equilibrium.
- Pareto efficiency.
- Global welfare and deadweight loss.

References:

1. *Electrical Power Systems*; Ashfaq Husain.
2. *Power Plant System Dewsing*; Kam W. Li & A. Paul Priddy. John Willy & Sons; Newyork.
3. *Guide for Electrical Engineers*; Schneider Electric S.A.
4. *Power Plant System Design*; Li Priddy & Kam W.Li
5. *Power System Economics*; Daniel S. Kirschen; Goran Strbac University of Manchester. John Willy & Sons, Ltd. 2005.