EE427-2: Economic Operation of Power Systems

Course code and name	EE427-2: Economic Operation of Power Systems
Credits units	2 Credit units
Contact hours	2 Contact hours: 2 lecture, 0 tutorial and 0 practical
Instructor name	Dr. Sami Alotaibi
Textbook	Allen j. wood, Bruce F. Wallenberg, Power Generation, Operation and Control, John Wily & Sons, 1996.
Other supplemental materials	- William Stevenson, Jr. Elements of Power System Analysis., 4th Ed., New York: McGraw-Hill, 1982. - J. Ducan Glover., Mulukutla Sarma. Power System Analysis and Design., 2nd Ed., PWS,1994.
Specific course information	
a. Course description	Operating restrictions, short-term load forecasting, analysis of loads curves, economic load distribution between generating units, the tariff, additional cost, precedence in the selection of generating units, voltage and reactive power control, energy.
b. Prerequisite	EE322-3
c. Required / Elective	Required
Course Learning Outcomes	
CLO of the Lecture Activities: CLO1: Recognize the concept of load curves usage and implementation. CLO2: Explain the economic operation of power systems. CLO3: Calculate the economic load dispatch within power plants. CLO4: Analyze the economic dispatch problem considering transmission line losses. CLO5: Evaluate the economic dispatch solution among the unit commitment method.	
Brief list of topics to be covered	

- Load curves analysis in power system
- Incremental coast characteristics, economic load dispatch problem
- Load sharing between two power plants
- Load sharing between generation units in the system
- Unit commitment problem
- Constrains in plant commitment scheduling
- Tariffs in electrical power systems
- Reactive power control
- Excitation System in power plants
- Topics in power conservation

Mapping Course Learning Outcomes to Student Outcomes

	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
CLO5							