







OFFICE OF CONSULTATION & TRAINING  
College of Engineering and Petroleum

## Kuwait University- College of Engineering & Petroleum – Electrical Engineering – OCT



### EE002- Power System Economics & Operations

#### Contact

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#### Course objectives

This course introduces participants to the operational and economic principles governing power systems, focusing on how electricity demand is met reliably and at minimum cost under technical constraints. Participants will develop an understanding of system structure, generation technologies, and cost characteristics, and will analyze the core operational problems of economic dispatch and unit commitment. The course integrates reliability considerations as well as network constraints and system stability.

#### Training course duration:

***Five days***

#### Timing:

**9 a.m. – 3 p.m.**  
**Daily**

#### Course outline :

##### Day one topics:

##### Power System Objectives & Structure

- Objectives of power system operation
- Trade-offs in system operation
- Electricity demand and system structure
- Generation technologies overview

##### Day two topics:

##### Generation Economics & System Capability

- Generation cost structures



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- Operational characteristics of generators
- Generation mix
- System adequacy

### Day three topics:

#### Economic Dispatch

- Dispatch concepts
- Cost minimization
- System constraints
- Limitations of simplified dispatch

### Day Four topics:

#### Unit Commitment & Reliability

- Commitment decisions
- Operational constraints
- Reliability considerations
- Supply–demand balance

### Day Five topics:

#### Network Constraints & System Operation

- Power flow concepts
- Transmission constraints
- Security considerations
- System stability



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جامعة الكويت  
KUWAIT UNIVERSITY

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#### **Fees:**

**(To be determined)**

#### **Instructor:**

Dr. Abeer Almaimouni  
Electrical Engineer, College of Engineering & Petroleum,  
Kuwait University