



Electrical Engineering

Smart Metering Systems and Technologies

Course Introduction

The Smart Metering Systems and Technologies course is designed to provide a comprehensive understanding of modern metering solutions that enhance the efficiency and reliability of utility services. Over five days, participants will explore the fundamental components of smart metering systems, delve into communication technologies and network architectures, and learn about data management and analytics. The course also covers the integration of smart metering systems with utility operations and addresses common deployment challenges. Through case studies and real-world examples, attendees will gain insights into successful implementations and future trends in the field. This training equips professionals with the knowledge and skills necessary to effectively manage and optimize smart metering systems.

Target Audience

This course is intended for utility professionals, engineers, data analysts, and project managers involved in the planning, implementation, and management of smart metering systems.

Learning Objectives

- Understand the fundamental concepts, components, and benefits of smart metering systems.
- Learn about the various communication technologies and network architectures used in smart metering.
- Gain knowledge on data collection, storage, and analytics for effective smart meter data management.
- Explore the integration of smart metering systems with utility operations, including grid and customer service platforms.

- Identify deployment strategies, challenges, and future trends in smart metering technologies.

Course Outline

- **DAY 01**

Introduction to Smart Metering Systems

- Overview of Smart Metering Technology
- Definition and importance of smart metering
- Historical evolution of metering systems
- Key components of smart metering systems
- Benefits of smart meters for utilities and consumers
- Regulatory and policy frameworks
- Current trends and future outlook
- Case studies of successful smart metering implementations

- **Day 02**

Smart Metering Infrastructure and Communication Technologies

- Communication Technologies and Network Architecture
- Types of communication networks (AMI, AMR)
- Wired vs. wireless communication technologies
- Data transmission methods and protocols
- Network security and data privacy
- Interoperability standards
- Role of IoT in smart metering
- Case studies of communication technology implementations

- **Day 03**

Data Management and Analytics in Smart Metering

- Data Collection, Storage, and Processing

- Methods of data collection from smart meters
- Data storage solutions (cloud, on-premise)
- Data processing and management techniques
- Role of big data analytics
- Predictive analytics and its applications
- Real-time data monitoring and management
- Case studies of data management solutions

• Day 04

Integration with Utility Operations

- Integration with Grid and Utility Systems
- Smart grid integration
- Demand response programs
- Energy management systems
- Integration with billing and customer service platforms
- Challenges in integration and solutions
- Benefits of integration for utilities
- Case studies of successful integration projects

• Day 05

Implementation, Challenges, and Future Trends

- Deployment Strategies and Future Trends
- Planning and deployment strategies
- Cost-benefit analysis
- Common challenges in deployment and solutions
- Regulatory compliance and standards
- Future trends in smart metering
- Emerging technologies (e.g., AI, machine learning)

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
April 7, 2025	April 11, 2025	5 days	2150.00 \$	Virtual - Online
Sept. 22, 2025	Sept. 26, 2025	5 days	4250.00 \$	UAE - Dubai
Nov. 17, 2025	Nov. 21, 2025	5 days	4950.00 \$	Austria - Vienna