

## **DAY 1**

### *Data Mining and Pattern Recognition*

- Data Mining Process
- Data Preparation
- Association and Pattern Recognition
- Data Mining in Energy Industry
- Data Mining-clusters and Outliers

## **DAY 2**

### *Artificial Intelligence Algorithms*

- Artificial Intelligence Development
- Linear Regression
- Logistic Regression
- Decision Tree
- Support Vector Machine
- Other Algorithms Applied in Artificial Intelligence (AI)

## **DAY 3**

### *Energy Distribution Planning and Optimization*

- Energy Storage Planning
- Managing Incidents and Instrument Failures
- Energy Grid Management
- Energy Consumption Forecasting

## **DAY 4**

### *Developing Digital Twins*

- Digitization of Industry and Energy
- Optimal Power Flow Problem Formulation
- Neural Network Application to Optimal Power Flow
- Particle Swarm Optimization for Optimal Power Flow
- Total Transfer Capability Enhancement by Evolutionary Algorithm

## DAY 5

### *Simulation, Machine Learning and Smart Contracts*

- Dynamic Simulation of Industry Systems
- Simulation of Unit Commitment Problem
- Machine Learning for Renewable Energy
- Forecasting Renewable Energy Generation
- Smart Contracts within the Energy Industry