



NEPPA is pleased to continue offering a 1-day basic and technical prerequisite course for anyone looking to attend technical programs or to gain a basic understanding of electrical theory, concepts and mathematic principles.

Basic Electricity & Mathematics for Utility Operations is designed to be an introduction to the electrical concepts and mathematic principles needed to understand electricity and electrical equipment. This course is a foundational level course that is a basis for additional course work in specific disciplines such as substation, overhead lines and metering.

WHO SHOULD ATTEND

This course is designed for:

- All field operations personnel including:
 - Meter Technicians
 - Lineworkers
 - Substation Technicians
- Customer Service or Office Personnel looking to understand the product they sell every day
- Supervisors or Managers transitioning from other departments or disciplines

LEARNING OBJECTIVES

Upon completion of this one-day course, participants will be able to successfully:

1. Practice and solve mathematic problems used in electrical power measurements
2. Demonstrate a basic understanding of electrical theory including electricity and magnetism
3. Ability to differentiate between how DC and AC circuits function
4. Explain the difference and interconnection of generation, transmission and distribution of electricity
5. Demonstrate an understanding of energy and demand, and the difference between kW and kWh
6. Ability to recognize the utmost importance of electrical safety



BASIC ELECTRICITY & MATHEMATICS FOR UTILITY OPERATIONS

MARCH 29, 2022
AUGUST 30, 2022



TOPICS COVERED

Basic Electricity:

- Atoms
- Conductors & Insulators
- Ohms law
- Voltage, Current, Resistance
- Magnetism
- Generation
- AC sine waves
- Inductance, Capacitance
- Transformers
- Series & Parallel circuits

Basic Mathematics:

- Whole numbers
- Fractions decimals
- Powers and roots
- Algebra, Trigonometry
- Vectors

Electric Power & Energy:

- Resistance, current and energy
- Energy calculations
- Electric Power
- The power chart (triangle)
- Demand calculations
- Demand billing

Electrical Safety:

- Physical & Electrical Hazards
- Working with energized parts
- PPE
- Safe Work Practices
- Effect of current and voltage on the human body
- Electric Arcs

Power System Overview:

- Generation
- Transmission
- Distribution

AGENDA

Agenda details are subject to change.

8:00 am	Welcome & Introductions	12:45pm	Module 5: Power System Overview
8:15 am	Module 1: Basic Electricity		
9:15 am	Break	1:45 pm	Final Exam & Practical
9:30 am	Module 2: Basic Mathematics	2:30 pm	Review Final
10:45 am	Module 3: Electrical Safety	2:45 pm	Certificates of Completion
11:30 am	Lunch	3:00 pm	Adjourn
12:00 pm	Module 4: Electric Power & Energy		

INSTRUCTOR

Thomas (Tom) Succi, Technical & Safety Trainer



Tom has worked in metering in New England for the past 48 years as a meter technician, instructor, engineer and manager. He has created instructional programs and taught in the region for most of his career and also ran the meter apprentice training for many years at National Grid as a Principal Trainer.

He recently retired as the Supervisor of Meter Test and Engineering at United Illuminating and looks forward to continuing his career as an instructor. Tom holds a BS and an AS in Engineering Technology as well as an advanced certificate in Management from WPI.

Tom and his wife Arlene currently reside in Connecticut.

