Electrical Metering Program Outline

// Unit 1 – Basic Mathematics & Electricity

- Electrical System Components
- The Distribution System
- Basic Math
- Electrical Circuits
- Trigonometry & Vectors

// Unit 2 – Fundamentals of Alternating Current

- Alternating Current and Circuits Containing Resistance
- Inductance in Alternating Current Circuits and Resistance and Impedance in Series Circuits
- Capacitors are not only fun, they're Important Too!
- Series Circuits: Resistance, Inductive Reactance, and Capacitive Reactance
- AC Parallel Circuits and Series-Parallel Circuits
- AC Instruments and Meters
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- Alternating Current Generators
- Transformers
- Transformer Connections and Special Applications

// Unit 3 – Electric Metering

- Introduction to Substation Metering
- Working Safely in the substation Environment
- Electronics, Logic and Microprocessors
- Review of Power Circuit Calculations
- Data Acquisition and Power System Controls
- Instruments and Instrument Transformers
- Substation Switchboard Meters
- Demand Metering
- Meter Installations and Applications
- Meter Testing and Maintenance

// **Course Outline –** TVPPA Metering Lab

5 Days of hands-on learning for metering & auxiliary systems.

Unit 3 Subjects Covered:

- Basic Meter Math
- Advanced Meter Math
- Instrument Transformers
- Types of Meters – Single Phase
- Types of Meters – Three Phase
- Meter Constants
- KWH vs. KVA
- Demand Metering
- Time of Use Metering
- Burden of Secondary Circuits
- Overall Metering Accuracy
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- Phase Angle Relationships & How to analyze with a meter site test
- Interpreting phase vectors of volage & currents