



## Technical Diagnostic Services Training Institute

### Power Quality & Harmonics 24 Hours

#### Who Should Attend?

Managers, Supervisors, Field Electricians, and Field Technician who want to understand the fundamentals of Power Quality and Harmonics.

#### Course Description:

Students will learn the typical causes of Harmonics and their effects to connected electrical equipment including safety hazards, equipment damage, and reduced life. The course also includes the basic procedures to recognize, measure, and correct harmonic distortion in systems as well as discuss pros and cons of typical solutions

#### Outline:

##### I. Terms and Definitions

##### II. Formulas Used

- A) Ohms Law
- B) Resistors & Inductors Series/Parallel
- C) Capacitors Series/Parallel
- D) Single Phase VA, W, PF
- E) Three Phase VA, W, PF
- F) Motor HP
- G) Voltage Drop
- H) Short Circuit Current

##### III. Power System Fundamentals

- A) Single Phase 120 VAC
- B) Single Phase 120/240 VAC
- C) Three Phase Delta
- D) Three Phase Wye
- E) Three Phase Center leg grounded Delta

##### IV. Power System Grounding

##### V. Electrical Disturbances

- A) Transients
- B) Momentary Disturbances
- C) Long Term Disturbances

##### VI. The Nature of Harmonics

- A) Non Linear Loads
- B) Single Phase Sources
- C) Three Phase Sources

##### VII. Mitigation Techniques

##### VIII. Power Quality Survey

## TDSTI