

DAY 1

Session Duration: 6 hours

Thermometry Fundamentals

- Temperature scales and conversions
- Absolute and relative temperatures
- Classes and benefits of contact thermometers
- Classes and benefits of non-contact thermometers
- Identifying and reducing errors

DAY 2

Session Duration: 7 hours

Advanced IR Theory

- Units for measuring radiant power
- Relationship between power and temperature
- Planck's blackbody curves

DAY 3

Session Duration: 7 hours

Temperature Measurement Error Sources and Corrections

- Calibration
 - how IR sensors are calibrated
 - how to check calibration
 - calibration/accuracy specifications
- Reflectance
 - shielding techniques
 - measuring & compensating for with direct and reflector methods
- Emittance
 - how emittance varies
 - using default and table values
 - how to measure emittance
- Transmittance
 - filters to view through materials and atmospheres
 - filters to measure temperatures of material surfaces and atmospheres
 - measuring material transmittance
 - Target Width/Distance Ratios
 - calculating target size/distance

DAY 4

Session Duration: 6 hours

Traceable Temperature Limits: How Hot is Too Hot

→ Delta T classifications

- NETA, Mil Spec, and other standards

→ Absolute temperature classifications

- ANSI, IEEE, NEMA standards for electrical systems
- correction formula for load and ambient temperature
- other standards for mechanical systems

→ Developing limits for your equipment

DAY 5

Session Duration: 6 hours

Preparing Quantitative Reports

→ Data to gather

→ Report procedures

→ Image processing software capabilities

→ Report generation software capabilities