



5 Day Category 1 Certification/Operator Course Outline

This course meets or exceeds the recommended training curriculum of ASNT-TC-1A for Category 1 Thermal/Infrared Certification as well as ISO 18436-7. The course is a good mixture of audio, visual, and kinetic presentation material.

The hands-on workshops ensure that the students leave the course with confidence in their ability to operate their IR equipment. Certification will be granted to students who successfully complete the written requirements. Class size is limited to give maximum interaction between instructor and students.

Introduction to Infrared Thermography and predictive maintenance

Basic Thermal Physics

Introduction to Temperature
Matter, Energy, Temperature
Temperature scales
Introduction to Heat

Basic Heat Transfer Theory

Thermodynamics
Change of State
Specific Heat
Conduction, Convection, Radiation

Electromagnetic Radiation

The Electromagnetic Spectrum
Infrared Explained
Introduction to Planck's Curves

The Infrared Image

How an Infrared Image is Produced

Qualitative Thermography

Operating Your Equipment

How Your Camera Works
Detectors-Focal Plane Arrays (FPA)
3 Main Controls: Focus, Level, Span
Getting a Good Image Workshop

Infrared Radiation Physics

The Stephan Boltzmann Law
Wein's Law
Planck's Law
Emission, Reflection, Transmission
Emissivity

Temperature Measurement Workshop
Emissivity Testing Workshop

Imaging and Analysis Factors

Inspection Techniques
Atmospheric Attenuation
Field of View
Instantaneous Field of View
Instantaneous Measurement Field of View
IMFOV Workshop
Infrared Lenses
Infrared Windows

Applications (As pertinent to class)

Introduction to Applications
Reporting
Electrical Inspections
Mechanical Inspections
Process Inspections
Building Inspections
Flat Roof Inspections
Class Application Discussions
Workshop

Software

General Software Discussion

Category 1 Examination

