



## Certified Residential Thermographer (CRT) Course Outline

### DAY 1 Understanding Thermal Imaging

#### MORNING SESSION 9:00 AM -1:00 PM

9:00 am Course Overview (15)

Infrared Theory (60)

- Types of Detectors
- Resolution and Sensitivity
- Electromagnetic Wavelengths

Understanding Heat Flow (45)

- How Energy Travels
- Conduction/Convection/Radiation
- Steady State Considerations

Understanding Emissivity (60)

- How it effects your Image
- How it effects your temperature
- Apparent vs. Actual

Temperatures

Accurate Temperature Measurements

(60)

- Camera variables
- Spot size ratios
- Understanding E+T+R
- Limitations

Lunch Break (30)

#### AFTERNOON SESSION 1:30 PM-5:30 PM

Infrared Camera Breakout

Getting to know your imager (30)

- Power Supplies/Chargers
- FOV Considerations
- Manual vs. Automatic

Camera controls (30)

- Focus/Range/Distance
- Saving Quality Images

Camera Care (15)

- Cleaning
- Lens Care

Hands on Camera Labs (135)

- Emissivity Demonstration
- High Temperature concerns
- Moisture Inspections
- Spot Size Measurements

Other Test Equipment (30)

- Moisture Meters
- Video Borescopes
- Amp Meters



## DAY 2 Thermal Imaging Applications

- Argon Seal leaks

### MORNING SESSION 9:00 AM -1:00 PM

Review & Questions from Day 1

(15)

Moisture Inspections (60)

- Roof Leaks
- Walls and Windows
- Basement
- Radiant Floors

Winter Applications (45)

- Cold climate Inspections
- Walls/Ceiling Energy

Summer Applications (45)

- Warm Climate Inspections
- Walls/Ceilings Energy

Inspection Conditions Required

(30)

- Delta T required
- Environmental Data

Electrical Inspections (30)

- Safety Concerns
- Overloaded Circuits vs. loose

Window Deficiencies (30)

- Air Infiltration identification

Lunch Break (30)

### AFTERNOON SESSION 1:30 PM -5:30 PM

Pest Infestations (20)

- Termites
- Bees
- Critters

Appliance's (20)

- Water Heaters
- Range/Cooktops
- Refrigerators

AC Unit Inspections (20)

- Condensers
- Duct Temperatures

Hands on Equipment Use (45)

- Quality Images
- Other important information

Loading Images to PC (15)

Creating Reports / Hard Copy Data (45)

Questions/Review (15)

Course Exam (25 Questions) (45)

Course Critique

(Times in parentheses)