

# NORA Gold Plus

## COURSE DESCRIPTION

This class combines Building Performance Institute (BPI) building science fundamentals and “house as a system” concepts with the enhanced National Oilheat Research Alliance (NORA) Gold training. Students will learn about improvements that have been incorporated into today’s oilheat systems and receive guidance on how to conserve energy and reduce their customers’ heating bills. While focusing on the heating system, participants will come to understand and appreciate how the house works as a system and how various heating system components affect and are affected by other components and conditions in the home.

Students will gain an understanding of how heat transfer, airflow, moisture and air leaks affect their customers’ comfort. In addition, participants will come to understand that by combining BPI’s safety inspection criteria with NORA’s guidelines on combustion and system operation, they will be able to identify and correct potential safety issues more quickly and accurately. They will also gain an appreciation of how to install and adjust state-of-the-art systems to operate safely while delivering maximum efficiency. BPI and North American Technician Excellence (NATE) have approved this class for continuing education credits. Participants who successfully complete the class and are already NORA Gold-certified will also receive continuing education credits (CEUs).

### Prerequisites:

- Basic reading skills (Grade 8-9 level)
- Basic HVAC experience is recommended, but anyone can attend
- To earn the NORA Gold certification, attendees must have a minimum of 5 years in the industry and be NORA Silver-certified

### Schedule:

NORA Gold Plus consists of 8 hours of classroom instruction, including a 100-question test. Total BPI CEUs per course is 4.0. Total NORA CEUs per course is 8.0 (must be NORA gold-certified).

NYSERDA’s Workforce Development Program offers energy efficiency and building science courses through training partners across New York State. This training is recognized by the Building Performance Institute (BPI), National American Technician Excellence (NATE) and National Oilheat Research Alliance (NORA).

**To register for NORA Gold Plus, please contact Sue Montgomery Corey, or call 518-251-2525 or email [suemc@capital.net](mailto:suemc@capital.net)**

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## COURSE DESCRIPTION *(continued)*

### Training Topics:

- House as a System
- Comfort
- Building Science
- The Building Envelope
- Heat Transfer
  - Conduction
  - Convection
  - Radiation
- Airflow in Buildings
  - Infiltration
  - Exfiltration
  - Stack Effect
  - Mechanical Effect
  - Wind Effect
  - Pressure vs. Flow
- Moisture in Buildings
  - Humidity
  - Relative Humidity
  - Condensation
  - High Water Vapor Solutions
- Air Leaks
  - Finding Air Leaks
  - Air Sealing
- Insulation
  - How It Works
  - Barriers
  - Types
- Heating Distribution
  - Steam
  - Hot Water
  - Warm Air
  - BPI Safety Standards
- Ductwork
  - Sizing
  - Problems
  - Sealing
- BPI Safety Inspections
  - Spillage
  - Draft
  - Worst Case Depressurization
  - Fixes for Depressurization
- Understanding Today's Oilheat Systems
  - Combustion
  - Excess Air
  - Minimizing Emissions
  - CO
  - Smoke and Soot
  - Combustion Efficiency
  - NO<sub>x</sub> Reduction Strategies
  - Low Sulfur Fuel
- Heating System Heat Loss
  - On-cycle
  - Off-cycle
  - Jacket
  - Distribution
  - Infiltration
- Burner Improvements
  - High Static Pressure
  - New Components
- Drafting Strategies
  - Chimney
  - Power Vent
  - Direct Vent
- Helping Customers Conserve Energy and Reduce Their Heating Bills
  - Free and Low-cost Savings
  - Energy Audits
  - Types of Efficiency
  - Prioritize Retrofits
  - Energy Conservation Investments
  - Reducing Bills Requires Change
- Selling New Systems
  - Maximize the Savings
  - Heat Loss Calculation
  - Calculate Savings
  - Consider State-of-the-art (Condensing)

