



Training Schedule

Fall 2011

Trane Boston District



TRANE BOSTON
225 Wildwood Ave.
Woburn, MA 01801

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Training Contact: Kristina Regonini
kregonini@trane.com
781-305-1350



About Our Training

Trane provides indoor comfort HVAC systems, service, and energy efficiency solutions for your commercial, industrial, and institutional needs. Trane products and services deliver highly efficient building systems for our customers.

Educating customers aids in the proper usage and maintenance of building systems. As a leader in the HVAC and energy services industry, Trane recognizes the importance of providing continuing education to our customers on Trane products, as well as on Fundamentals of HVAC.

Trane offers training opportunities regionally throughout the United States. Customers may obtain information on our classes any time of the year on Trane's website:

www.trane.com/commercial/training.

Trane's Boston District (serving MA, ME, NH and RI) is pleased to provide the following schedule of classes at our local offices. A course description and detailed information on each class is provided within. Trane's factory-trained professional instructors will be on site to instruct each class.

If your needs extend beyond our current offerings, you may contact Kristina Regonini at kregonini@trane.com or 781-305-1350; options are available to conduct private off-cycle training for groups of 12 or more.

Please note: It is Trane's local policy to reserve any training offered on *Trane proprietary equipment for our Owner customers only*. We apologize for any inconvenience.

General Information:

Registration: A registration form is provided as the last page of this brochure. Please fill out the form completely and submit via mail or e-mail scan. You may also contact our office and information can be taken over the phone. Appropriate contact information is provided on the form. If you'd like to attend more than one of our training courses, please complete a separate form for each class; multiple students may be listed on the same form if payment information will be the same. *Please do not fax forms.*

Confirmation: A *confirmation email* will be sent to the contact email address provided on the registration form. If you do not receive confirmation within 5 business days of submitting your registration, please call: 781-305-1350.

How to Pay: Trane accepts *Credit Cards* (Visa, MasterCard, American Express and Discover), *Purchase Order*, or *Check* (made payable to "Trane"). Please provide payment information along with your registration form in order to be processed.

The cost of each course includes comprehensive literature needed for that course (provided on site the 1st day) and meals while attending class at Trane.

Discount Policy: Please see individual course descriptions for pricing and discounts available.

Cancellation Policy:

- Trane reserves the right to cancel any class with fewer than 12 registered attendees; due to inclement weather; or instructor illness. In the event of a cancellation, all students will be notified as early as possible; Trane's liability will be limited to the reimbursement of course fees.
- Should you need to cancel your registration, ***you may cancel up to 5 business days before class*** and tuition will be refunded in full. *****You must notify Kristina Regonini via e-mail: kregonini@trane.com in order to cancel your registration. ***** If you cancel less than 5 business days before the class, payment will ***NOT*** be refunded. "No Shows" will be charged in full.



Course Schedule

(The following pages contain course descriptions/outlines; pricing; prerequisites, target audience, etc. for the classes listed below.)

Tracer Summit™ System Operations (TSSO): **3.5 day course**

- **Location:** Woburn, MA Trane Office (225 Wildwood Ave., Woburn, MA)
- **Dates:** November 1st - 4th
- **Time:** 8:00a.m. – 4:30p.m. (T, W, Th); 8:00a.m. – 11:30a.m. (F)

Precedent / Voyager II Rooftop Operation: **2 day course**

- **Dates & Locations:**
 - Providence area Trane Office: November 7th – 8th - 50 Vision Blvd., East Providence, RI
 - Portland area Trane Office: November 10th – 11th - 30 Thomas Dr., Westbrook, ME
- **Time:** 8:00am – 4:30pm each day

**The following TRACE™ 700 software classes may be taken individually (so long as participant meets prerequisites), or as a series of classes. Pricing for an individual class is \$275.⁰⁰ each; if participant registers for all three classes, the cost is \$750.⁰⁰*

TRACE™ 700 Load / Design: **1 day course**

- **Location:** Woburn, MA Trane Office (225 Wildwood Ave., Woburn, MA)
- **Date:** November 15th (8hr. course)
- **Time:** 8:00am – 5:00pm

TRACE™ Energy & Economics: **1 day course**

- **Location:** Woburn, MA Trane Office (225 Wildwood Ave., Woburn, MA)
- **Date:** November 16th (8hr. course)
- **Time:** 8:00am – 5:00pm

ASHRAE 90.1 / LEED and TRACE™ 700: **1 day course**

- **Location:** Woburn, MA Trane Office (225 Wildwood Ave., Woburn, MA)
- **Date:** November 17th (8hr. course)
- **Time:** 8:00am – 5:00pm

Tracer Summit™ System Operations (TSSO)



Course Description

In Tracer Summit™ System Operations, students learn to operate and modify an installed Tracer Summit™ system. This highly interactive course includes presentations and hands-on workshops where students practice using the common applications of a Tracer Summit™ building management system. At the end of this course students are able to:

- Monitor and control building mechanical systems
- Respond to alarm conditions
- Create custom alarms and expanded messages
- Create and modify schedules
- Modify existing graphics
- Generate reports and trends
- Monitor chiller plant control
- Learn how time-of-day, area, and variable air systems work together



Target Audience

Tracer Summit™ System Operations is intended for Trane service technicians and Tracer Summit™ system owners, building engineers, and operators.

Prerequisites

Tracer Summit™ System Operations is an operations-level course. Students should be familiar with personal computers and the Windows operating system. Previous on-site use of Tracer Summit™ is preferred.

Continuing Education Units

Upon successful completion of this course, students receive a certificate of achievement and earn 2.6 CEUs according to criteria set by the International Association for Continuing Education and Training (Washington, DC). To successfully complete this course, the student must attend all class sessions, complete the workshops and quizzes throughout the course, and turn in an evaluation.



Course Length: 3.5 days

Tuition per person

\$1550.00

Discount: \$1395.00 - *Early bird discount 10% off registrations received by September 2nd*

Registration Information **Deadline:** Monday, October 24th

<https://mylearning.ingersollrand.com/lmt/xlr8login.login?site=trane-ext>

Trane College of Building Automation
4833 White Bear Parkway
St. Paul, MN 55110

Voice: (651) 407-4022
Fax: (651) 407-4193
Email: TraneCBA@trane.com

Precedent/Voyager II Rooftop Operation



Course Length: 2.0 days

Instructed By: Trane factory-trained instructor

Target Audience: This course is recommended for Owners, Operators, Facilities Personnel, Property Managers, Service Contractors and Technicians who work on or will work on rooftops and systems and that are looking to increase their knowledge of the Trane Precedent and Voyager rooftops.

Cost:

- **Individual:** \$500.⁰⁰
- **Multi-student discount:** \$475.⁰⁰ for each additional student from the same company, attending the same course.
- Cost of course includes comprehensive literature needed for course (provided on site the 1st day) and meals while attending class at Trane.

Registration: Please fill out the attached form and submit to local Trane office.
(Information listed on last page)

Registration Deadline: Friday, October 7th

Course Description: This is a product introductory seminar with emphasis on installation, component overview and operation, diagnosis and troubleshooting for the 3-25 ton Precedent and Voyager II Rooftop Units using the ReliaTel™ control system. The class includes coverage for all HVAC operations as well as economizer and heating systems.

Specific Course Objectives:

- Familiarize on usage of Precedent and Voyager ReliaTel™ microelectronic hardware.
- Learn application and operation of rooftop electronic controls.
- Know the diagnostic, checkout, testing and troubleshooting procedures for these controls.
- Become familiar with combustion cycle and operation and troubleshooting of heating components
- Learn system maintenance requirements.
- Review Trane wiring diagram conventions.

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Outline:

A. Application and Options

1. Precedent and Voyager Applications
2. Systems and Control Components
3. Refrigeration Cycle

B. System Operation

1. Mechanical Cooling
 - a. Components
 - b. Options
 - c. Operation
 - d. Checkout
2. Economizer and Cooling
 - a. Installation
 - b. Operation
 - c. Adjustment
 - d. Maintenance

3. Heating

- a. Components
- b. Operation

4. Heat Pump

- a. Components
- b. Operation
- c. Defrost Cycle

C. Maintenance

1. Mechanical
2. Cleaning
3. Troubleshooting

D. Electrical Wiring

1. NSI-Style Diagrams
2. Power Wiring
3. Connection Diagrams
4. Control Schematics

TRACE™ 700 Load / Design



Course Length: 1 day (8hrs.)

Instructed By: Trane C.D.S. Instructor

Prerequisite / Target Audience: The class is designed primarily for beginning users, but advanced users will gain a better understanding of program methodology and garner tips from the trainer. The information in this class provides basic information critical for understanding subsequent C.D.S. TRACE courses (e.g. TRACE 700 Energy & Economics and the ASHRAE Standard 90.1/LEED Seminar). ***It is highly recommended that students are current users of the TRACE software.***

Cost:

- **Individual:** \$275.00
- **Discount:** 3 classes for \$750.00: **For customers registering for all 3 of the TRACE 700 courses currently offered (*TRACE 700 Load/Design; TRACE Energy & Economics and ASHRAE 90.1 / LEED and TRACE 700*) the cost is \$750.00 for all 3 classes.**
- Cost of course includes comprehensive literature needed for course (provided on site the 1st day) and meals while attending class at Trane.

Registration: Please fill out the attached form (last page) and submit to local Trane office.

Registration Deadline: Friday, October 14th

Course Description: TRACE 700 Load software incorporates the load and system section of TRACE 700. It contains the functionality of TRACE minus the energy and economic portions of the program. Users are able to complete complex building load calculations for virtually any building. This 8-hour class provides users with a better understanding of TRACE 700 Load allowing them to more effectively use the program.

Concepts learned during the training include:

- How to navigate the program and gain a better understanding of the various input fields.
- Understand how design weather is used to determine peak loads.
- How TRACE calculates supply temperatures and airflows.
- Understand the plenum heat balance calculations and how TRACE balances airflows.
- How TRACE determines coil capacities and how to zone spaces.
- How to utilize templates to reduce input time.
- How to create multiple alternatives to model various choices.
- How to create custom library values for items such as construction types, schedules, and shading plus others.
- How to share files and the difference between a stand-alone and network installation.
- Understand advanced features in the program to include modeling ASHRAE Standard 62.1, importing GBXML files, and various system types to include Underfloor Air Distribution and Chilled Beams.
- Interpret results and learn how to read the various output reports.
- Practice using the program through in-class exercises.
- Discover various resources available to help licensed users.

TRACE™ Energy & Economics



Course Length: 1 day (8hrs.)

Instructed By: Trane C.D.S. Instructor

Prerequisite / Target Audience: The class is designed primarily for intermediate users. Participants are expected to know how to navigate the load portion of the program, effectively use templates, understand TRACE 700 Load methodology, understand the result of various zoning configurations, and be familiar with TRACE 700 Load output reports. Advanced users will gain a better understanding of program methodology and garner tips from the trainer. The information in this class provides basic information critical for understanding subsequent C.D.S. TRACE courses (e.g. the ASHRAE Standard 90.1/LEED Seminar and the Advanced training course). ***It is highly recommended that students are current users of the TRACE software.***

Cost:

- **Individual:** \$275.00
- **Discount:** 3 classes for \$750.00: ****For customers registering for all 3 of the TRACE 700 courses currently offered (TRACE 700 Load/Design; TRACE Energy & Economics and ASHRAE 90.1 / LEED and TRACE 700) the cost is \$750.00 for all 3 classes.****
- Cost of course includes comprehensive literature needed for course (provided on site the 1st day) and meals while attending class at Trane.

Registration: Please fill out the attached form (last page) and submit to local Trane office.

Registration Deadline: Friday, October 14th

Course Description: TRACE 700 software is the benchmark complete load, system, energy and economic analysis program that compares the energy and economic impact of such building alternatives as architectural features, HVAC systems, building utilization or scheduling and economic options. This 8-hour class provides users with a better understanding of TRACE 700 enabling them to more effectively use the program.

Concepts learned during the training include:

- Learn how to navigate the program and gain a better understanding of the various input fields.
- Understand how weather is used to determine peak and off-peak loads.
- Understand the various day types TRACE uses to calculate peak and off-peak loads.
- Understand how TRACE uses unloading curves to determine energy use.
- Learn how to create multiple alternatives to model various choices.
- Learn how to create custom library values for cooling and heating equipment.
- Understand how TRACE calculates life-cycle costs and other economic parameters.
- Learn how to create custom utility rate structures.
- Understand advanced features in the program to include modeling ASHRAE Standard 62.1, importing GBXML files, and Hot Water Reset.
- Interpret results and learn how to read the various output reports.
- Practice using the program through in-class exercises.
- Discover various resources available to help licensed users.

ASHRAE 90.1 / LEED and TRACE™ 700



Course Length: 1 day (8hrs.)

Instructed By: Trane C.D.S. Instructor

Prerequisite / Target Audience: The class is designed for advanced users. Those taking the course should understand how to perform basic functions such as navigation, creating templates, creating custom library values, program methodology, and how to interpret results. Attendees are encouraged to complete the TRACE 700 Load and TRACE 700 Energy & Economics courses prior to attending this course. *It is highly recommended that students are current users of the TRACE software.*

Cost:

- **Individual:** \$275.00
- **Discount:** 3 classes for \$750.00: ****For customers registering for all 3 of the TRACE 700 courses currently offered (TRACE 700 Load/Design; TRACE Energy & Economics and ASHRAE 90.1 / LEED and TRACE 700) the cost is \$750.00 for all 3 classes.****
- Cost of course includes comprehensive literature needed for course (provided on site the 1st day) and meals while attending class at Trane.

Registration: Please fill out the attached form (last page) and submit to local Trane office.

Registration Deadline: Friday, October 14th

Course Description: Many know TRACE 700 software as the benchmark complete load, system, energy and economic analysis program that compares the energy and economic impact of such building alternatives as architectural features, HVAC systems, building utilization or scheduling and economic options. But, did you know, the program is tested in accordance with ASHRAE Standard 140-2004, "Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs," and it meets the requirements for simulation software set by ASHRAE Standard 90.1-2004 and the LEED® Green Building Rating System. This 8-hour class discusses how to utilize TRACE 700 for LEED Energy & Atmosphere Credit 1 analyses through the Performance Rating Method detailed in ASHRAE Standard 90.1-2004 and 2007.

Concepts learned during the training include:

- Overview of the USGBC and the LEED program.
- Explore the various credits available through the LEED for New Construction rating system and how TRACE can aid in achieving various points.
- Gain a better understanding of ASHRAE Standard 90.1 and how it has evolved.
- Learn details on sections of ASHRAE Standard 90.1 focusing on mandatory requirements.
- Delve into the specifics of Appendix G – Performance Rating Method.
- Relate ASHRAE Standard 90.1 requirements to TRACE 700.
- Discuss common mistakes made when performing these types of analyses.
- Learn what an unmet hour is and how to reduce/eliminate them.
- Interpret results and learn how to read the various output reports.
- Discuss LEED template submittals.
- Build a baseline building to satisfy LEED EAc1 through in-class exercises.
- A better understanding of TRACE 700 capabilities for modeling energy saving measures.
- Discover various resources available to help licensed users.



Registration Form:

Session: Fall 2011

Registration Deadlines: See individual course descriptions

***Please fill out ALL INFORMATION COMPLETELY & CLEARLY.
Submit via one of the following methods:***

- **MAIL:** Trane; 225 Wildwood Ave. Woburn, MA 01801 Attn: Kristina Regonini
- **Email:** kregonini@trane.com
- **Phone:** 781-938-9700 x-1350

Course Title: _____

Student Name: _____

Student Phone: _____

Contact Name (if different from Student): _____

Contact Phone: _____

Company Name: _____

Company Address: _____

City: _____ **State:** _____ **Zip:** _____

Student or Contact email address: _____

Once registration information is received, you will be noticed with a confirmation via email to the address provided above.

Please list any dietary restrictions: _____

METHOD OF PAYMENT (CHOOSE ONE)

Attention Federal Government employees: *Orders for training courses by Federal Government employees should be made out to our Federal Government reseller and must be paid for by credit card; please contact our office for details. **Do not provide payment information below.*

*** Purchase Order#:** _____

*** Check #:** _____ (make payable to: **TRANE**)

*** Credit Card: (circle one)**

VISA MASTER CARD AMERICAN EXPRESS DISCOVER

Card Number: _____

Exp. Date: _____

Cardholder Name (please print): _____

Cardholder Signature: _____

FOR OFFICE USE ONLY: Customer Account #: _____