

Introduction to HOT2000

Energy Modelling

24-40 hours to complete (class time, on-demand course material, review of content, final test and review of downloadable materials)

6 - 90 minute virtual instructor-led training (VILT) sessions
(1x per week)

Self-study challenges/homework (weekly)

4 sets of plans and data for practicing using HOT2000

Final test (practice for Energy Advisor (House) Exam): 100 questions

Passing mark on final test = 70



BLUE HOUSE
ENERGY

COURSE DESCRIPTION

This course combines the Blue House Energy on-demand course material, self-directed study and practice files, and weekly 90 minute virtual instructor-led sessions over a 6 week period, and covers all the competency guidelines for HOT2000 in the NRCan Energy Advisor (HOUSE) Exam.

The training goals for this course are:

- To explain what HOT2000 software is, what it can do, and what it cannot do
- To demonstrate how to input above-grade building envelope components in the HOT2000 main interface
- To demonstrate how to input below-grade building envelope components in the HOT2000 main interface
- To demonstrate how to use the code editors and hot keys in the HOT2000 main interface
- To demonstrate how to model mechanical systems in the HOT2000 main interface

Course includes:

- 6 - 90 minute virtual classroom sessions
- BHE study guide
- Practice house files
- Access to on-demand course material
- BHE Resource Site
- Technical Support and access to BHE Program Coordinator

NOTE: This course doesn't go into data collection for HOT2000 modelling, code compliance, what upgrade recommendations to make (for new or existing houses), or how to carry out reporting.

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LEARNING OBJECTIVES

Week 1: Introduction to HOT2000

- Explain the methods that can be used to navigate HOT2000 (House Wizard and Main Interface)
- Demonstrate knowledge of the House Wizard
- Explain the limitations of the House Wizard

Week 2: Modelling the Above Grade Envelope

- Demonstrate ability to navigate through all input screens for above grade components
- Demonstrate ability to input correct information into window and door input screens
- Demonstrate ability to input correct information into air tightness testing screen

Week 3: Modelling Foundations

- Demonstrate the ability to navigate the input screens for foundations generally
- Explain the use of the Temperature, Baseload and operating condition/atypical load screens
- Explain the differences between Type 1, Type 2, and supplementary heating/cooling system types

Week 4: Using Code Editors

- Explain the differences between nominal/onscreen/effective R (RSI) value
- Demonstrate the use of the code and the fuel cost editor, and when user specified R/RSI values are input
- Demonstrate the use of hot keys

Week 5: Modelling Mechanicals

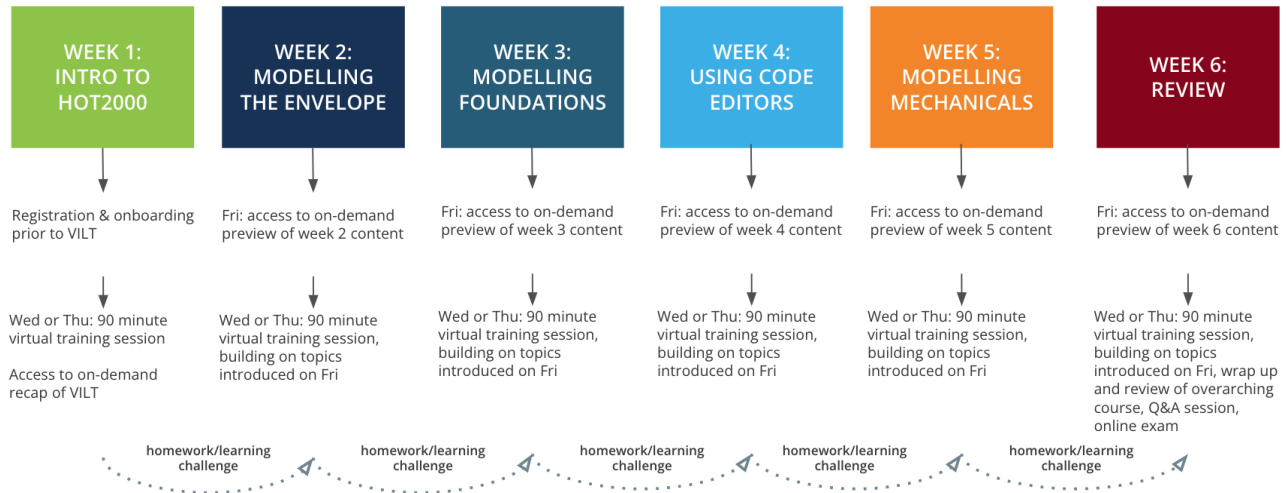
- Demonstrate how to input standard mechanical equipment and systems for heating and cooling screens
- Demonstrate how to complete domestic hot water (DHW) and ventilation input screens
- Demonstrate how to complete renewable energy input screens

Week 6: Summary and review of exam and practice files

- Review online exam and all house info tabs
- Explain the procedures for modelling upgrades
- List the procedures for generating a label, reports, and submitting a file to the Service Organization

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How a Blue House Energy Blended Learning (On-demand and Virtual Classroom) Course Works:



COURSE OUTLINE

Week 1: Introduction

Virtual Classroom

What is HOT2000, what does it do?
What components of a house must be included and where does that information come from?
Factors HOT2000 takes into account to calculate model (standard operating conditions, etc.)
Wizard: limitations/uses
Tour of HOT2000 Main Interface: info tabs, tree view, other views, modes, editor options, settings and preferences
Intro to HOT2000 Help
Intro to HOT2000 User Guide

On-demand Resource

Intro to modelling with HOT2000

Self-Study Challenge

Input simple house into Wizard, then change some parameters in the Main interface

Week 2:

Modelling the Above-Grade Envelope

Virtual Classroom

Ceilings
Roofs
Walls
Windows
Doors
Exposed Floors
Airtightness Test Screen

On-demand Resource

Modelling in Hot2000: Envelope Components (Above Grade)

Self-Study Challenge

Input simple house into the main interface using all above grade inputs demonstrated in the class, try your hand at the foundation. Record your results, carry out changes as per instructions, record your results

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Week 3: Modelling the Below Grade Envelope

Virtual Classroom

- Foundations, general*
- Basement*
- Crawlspace*
- Slab on Grade*
- Walkout*
- Multiple Foundations*
- Temperatures Screen*
- Baseloads Screen*
- Operating conditions/atypical loads*
- Type 1, 2, supplementary heating and cooling systems*

On-demand Resource

- Modelling in Hot2000: Envelope Components (Above Grade)*

Self-Study Challenge

- Input a simple house into the main interface, record your results, change the foundation 3 ways as specified in the instructions and record your results from each.*

Week 4: Using Code Editors and User-Specified Inputs

Virtual Classroom

- The Code Editor (new, user-defined, favourites)*
- The Fuel Editor*
- User Specified R/RSI Values*
- Nominal/onscreen/effective R-value*
- Hot Keys*

On-demand Resource

- Modelling in Hot2000: The Code Editor*

Self-Study Challenge

- Take house from week 3 and change a range of envelope components in the code editor as per instructions, recording your results for each variation*

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Week 5:

Modelling Mechanical Systems

Virtual Classroom

What range of mechanical systems does HOT2000 encompass?

Baseboard Heaters

Furnaces and Boilers (fans and pumps)

Combination, Combo, Integrated Systems

Heat Pumps

Air Conditioners

Radiant Heat

Supplementary Systems

Domestic HotWater

Ventilation

Renewable Energy On-site Generation

On-demand Resource

Modelling in Hot2000: Mechanical Systems

Modelling in Hot2000: Upgrades

Modelling in Hot2000: Reports

Self-Study Challenge

Take original house from Week 3, change mechanical systems in 10 ways as per instructions, record your results after each

TIMED PRACTICE EXAM - 100 Questions

Week 6:

Summary and Review

Virtual Classroom

Review all house info tabs

Program/mode

Procedures for modelling upgrades

Generate a label, HOIS, RUR

Prep file to submit to SO

On-demand Resource

Access to practice exam (unlimited responses)

BHE follow up (survey, customer success)

Self-Study Challenge

4 practice files with instructions complete with a 'key'