Introduction to HOT2000 Energy Modelling (Self-Directed)

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

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

COURSE DESCRIPTION

This self-directed (on demand) course includes Blue House Energy course material, access to navigation videos for reference, and 4 practice house files complete with instructions, plans, sketches, photos, and a data collection form. The course covers all the competency guidelines for HOT2000 in the NRCan Energy Advisor (HOUSE) Exam. While this course is self-directed, we recommend you take 4 to 6 weeks to work through it, using the reference videos and practice house files.

At the end of this course you will be able to:

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

Course includes:

- Access to on-demand course material
- Practice house files
- BHE Video Resources
- Technical Support

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.

Introduction to HOT2000 Energy Modelling

LEARNING OBJECTIVES

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*

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*

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*

Modelling the Below Grade Envelope (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*

Section 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*

Section 6: Upgrades and Reports

- *Explain the procedures for modelling upgrades*
- *List the procedures for generating a label, reports, and submitting a file to the Service Organization*

Introduction to HOT2000 Energy Modelling

COURSE OUTLINE

Introduction

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
Intro to HOT2000 Help
Intro to HOT2000 User Guide

On-demand Resource

Intro to modelling with HOT2000

Self-Study Challenge: House 1

Input simple house into Wizard, then change some parameters in the Main interface as per the study guide

Modelling the Above-Grade Envelope

Ceilings
Roofs
Walls
Windows
Doors
Exposed Floors
Airtightness Test Screen

On-demand Resource

Modelling in Hot2000: Envelope Components (Above Grade)

Self-Study Challenge

Input a simple house into the main interface using all above grade inputs, try your hand at the foundation. Carry out changes as per the study guide.

Modelling the Below Grade Envelope

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

Above Grade Components

Self-Study Challenge

Input a simple house into the main interface, change the foundation as specified in the study guide.

Using Code Editors and User-Specified Inputs

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

The Code Editor and Hot Keys

Self-Study Challenge

Change a range of envelope components in the code editor as per the study guide

Introduction to HOT2000 Energy Modelling

Modelling Mechanical Systems

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 Mechanical Systems
Modelling in Hot2000: Upgrades
Modelling in Hot2000: Reports

Self-Study Challenge

Change mechanical systems as per instructions in study guide
TIMED PRACTICE EXAM - 100 Questions

Review & Assessment

On-demand Resource

Access to practice exam (unlimited responses)
TIMED PRACTICE EXAM - 100 Questions

Self-Study Challenge

4 practice files with instructions