

Southface HERS class #98

Jan 23, 2017 to Jan 28, 2017

<u>Time</u>	<u>Topic</u>
Monday	Day I
7:30 AM	Arrive at training location, registration, load support files on laptop
8:00 AM	Introductions, binder contents - Quick HERS overview/ software demo
9:30 AM	Geometry review - Take-offs, areas, volumes, roof pitch, etc.
11:30 AM	Analyzing Homes <ul style="list-style-type: none"> High Performance Homes Energy Usage in Homes
12:00 PM	Lunch
12:45 PM	House as a System <ul style="list-style-type: none"> Building Science Fundamentals Climate Map + Moisture Map Understanding Heat and Air movement
2:00 PM	Understand Moisture flow - liquid, vapor and psychrometrics
2:45 PM	Overview of wood-frame construction and Construction Drawings
3:30 PM	Pressures and Diagnostics - Theory of Pressure Testing
4:00 PM	Determining Infiltration: ACH50, ACHnat, ELR
4:30 PM	Testing for House Depressurization - Blower Door Test (IC)
6:00 PM	Adjourn
<p><i>HW: Using Resnet3dSim, perform takeoffs+"Uncle Bruce", Fun with Psychrometrics, HERS HW problems #1-8</i></p> <p><i>HW: Read SF Factsheet #22, "Blower Door & Duct Blaster" + Appendix A-26 and A-27 of RESNET Standards</i></p> <p><i>HW: Skim REMRate Help Screens "Property/Builder Info" through "Frame Floors" (first seven screens)</i></p> <p><i>HW: Scan Krigger Book (Introduction + Chapters 1 & 2)</i></p>	
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Tuesday	Day II
7:45 AM	Arrival
8:00 AM	HW Review, Geometry problems + REMRate™ & HERS pop quiz
9:15 AM	BD practice session, additional takeoffs exercise - FIELD house
10:15 AM	Advanced Framing Concepts + Air sealing techniques
	Intro to insulation concepts & conduction heat flow, HDD, design temperatures
12:15 PM	Lunch
1:00 PM	UxAxDeltaT, Uavg, Ravg calculations
1:30 PM	Insulating building components - R-values of materials <ul style="list-style-type: none"> Walls Ceilings Foundations - slab, crawlspaces, basements
2:30 PM	RESNET Insulation Grading + exercise
3:00 PM	Window technologies
4:00 PM	Entering FIELD House envelope information into REMRate & practice Resnet3dSim
5:15 PM	Quick demo of duct pressure testing (prop)
5:30 PM	Total Leakage demonstration
	Programming the digital gauge
6:00 PM	Adjourn
<p><i>HW: Enter envelope data into Resnet3dSim, HW Problems #9 - 15, assigned articles, Scan Krigger Ch. 3, 4, & 5</i></p> <p><i>HW: Scan REMRate Help Screens "Rim Joists" through "Skylights" (next six screens)</i></p>	
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Wednesday	Day III
8:00 AM	Homework Review - Problems #9-15 + REM/Rate™ & HERS pop quiz
9:00 AM	Energy - Units, Rates, & Quantities
10:00 AM	HVAC I - Mechanical Equipment <ul style="list-style-type: none"> Mechanical Equipment Types Equipment Efficiencies & Load Calculation Basics Ductwork Types and applications
12:30 PM	Lunch
1:15 PM	HVAC II - Ductwork Essentials <ul style="list-style-type: none"> Ductwork Leakage and Pressure issues Duct leakage video
2:00 PM	Fundamentals of Duct Pressure Testing - Total vs Leaks to Outside (IC)
2:45 PM	Testing Protocol for FIELD House/Duct Pressurization (DB + BD Testing)
3:30 PM	FIELD mechanical systems into REMRate
4:00 PM	Water Heaters, Combustion Safety, Ventilation and IAQ for Homes
5:30 PM	Practice Resnet3dSim mechanical entries
6:00 PM	Adjourn
<p><i>HW: HW Problems #16 - 30, plus assigned articles, Resnet3dSim mech, Scan Krigger Chapters 6, 8 & 9</i></p> <p><i>HW: Read REMRate Help Screens "Mech Equipment" through "Lights & Appliances" (next four screens)</i></p>	

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Thursday	Day IV	
	8:00 AM	Review HW #16-30 + REM/Rate™ & HERS pop quiz + review FIELD Results
	9:15 AM	Break
	9:30 AM	Overview of RESNET + HERS standards, Ch 1-10 + Appendix A, B, C
	10:30 AM	Interactive ACME house REM/Rate Exercise
	12:30 PM	Lunch
	1:00 PM	HERS marketing / Providership / SF Program Overview / ENERGYSTAR etc
	2:15 PM	Break
	2:45 PM	Hands on Software Problem - Brady House Example Problem Analyzing Brady Example Problem Plans Participants create REM/Rate™ file
	5:30 PM	Software reports - Answer questions based on different reports for Brady House
	6:00 PM	Adjourn
<i>Homework: HW Problems #31-45, Read "Top Ten Bloopers", Study for BD&db Oral Exam, Scan Krigger 7 & 10</i>		

Friday	Day V	
	8:00 AM	Homework Review - Problems #31-45 & HERS pop quiz
	8:45 AM	Features of REM/Rate™ - Improvement analysis "Brady house" data entry, Improvement assessment
	10:45 AM	HERS - REM/Rate™ Reports ENERGY STAR report Energy Codes and Other reports Upgrades / Predicting Actual Energy Costs
	12:15 PM	Lunch
	1:00 PM (after lunch, sessions are concurrent)	Some students begin with Oral Exams, others with Resnet3dSim Exam Complete Resnet3dSim Exam for two houses (simulator exams) Evaluation of Blower Door and Duct Blaster knowledge (oral exams)
	4:30 PM	After all exams are completed, practice exercise problems (handout)
	5:00 PM	Classroom - Test prep - review for national electronic test
	6:00 PM	Adjourn
<i>Homework: study for Exam</i>		

Saturday	Day VI	
	7:15 AM	Arrive and prepare for test (Spartan breakfast today)
	7:30 AM	RESNET Electronic Test (open-book, open-notes, timed test) Wrap up and fill in course evaluation Students finishing test early depart to FINAL house and start take-offs
	9:30 AM	Test concludes; remaining students depart to FINAL house
	9:45 AM	FINAL House rating Participants to perform FINAL House take-offs Complete takeoffs, checklist and field notes (as needed for rating) After gathering all data, students may depart
	12:30 PM	FINAL house file - all students to create confirmed rating based on takeoffs Email FINAL house file to instructor for grading within 5 days Receive feedback from FINAL house file; make corrections as needed

There will be a 10-15 minute break in the morning and in the afternoon each day