

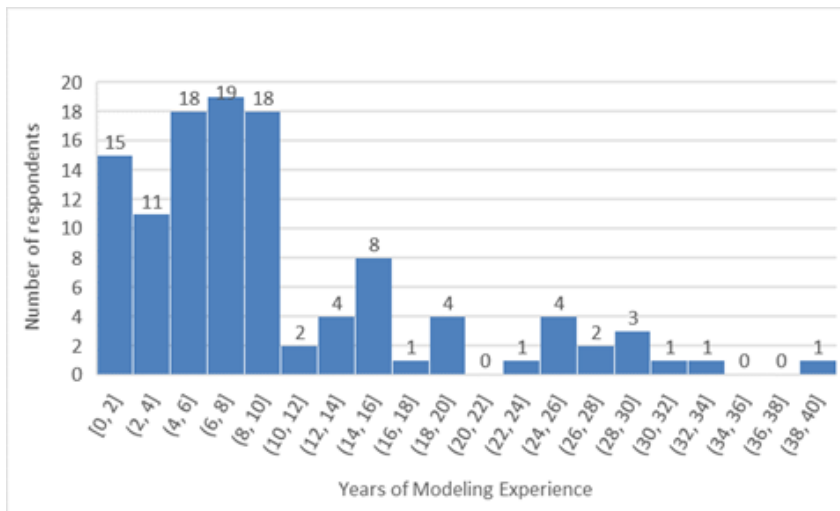


IBPSA-USA Education Survey Report

11/6/2019

The Education Committee of IBPSA-USA surveyed members for their opinions about education priorities and preferences. The survey was open from August 19 to September 27, 2019 and received 113 responses.

Years of Experience of Respondents



Training Priorities

Respondents were asked for their opinion of the importance of potential education topics. The average scores are shown in the following table, with 5 being high priority and 1 being low priority and with topics sorted from highest to lowest priority

Training Topic	Average Score
Communication and presentation of modeling results	4.28
Integrating early design phase modeling	4.23
"BPS 201" - e.g., modeling advanced systems, envelope, early design, daylight, controls	4.20
"BPS 101" - e.g., geometry, zoning, internal loads, compliance modeling, quality control, sensitivity/uncertainty analysis, results analysis, presentation	4.19
Quality control	4.12
"BPS 301" - e.g., natural ventilation, complex controls, co-generation, district systems, BIM to BEM workflows, scripting, etc.	3.96
Advanced HVAC modeling	3.92
Fundamental HVAC system modeling	3.88
Advanced envelope modeling	3.88
BIM to BEM workflows	3.87
Code compliance modeling	3.80
Daylight modeling in whole-building simulation	3.77
Natural ventilation modeling	3.77
Uncertainty	3.73
Daylight modeling	3.67
Calibration	3.63
Training for architects	3.53
Indoor airflow modeling	3.52
Radiant system modeling	3.50
Performing takeoffs, identifying input values	3.46
Scripting	3.42
"BPS 401" e.g., specialty training for CFD, scripting, computer	3.34

programming, etc.	
Building Energy Modeling Professional (BEMP) exam preparation	3.19
Outdoor airflow modeling	3.15
Electric lighting modeling	3.14
Computer programming	3.12
Urban-scale modeling	3.10
Training for building owners	3.01

Additional training topics suggested by respondents

- Climate models
- Post occupancy evaluation and validation
- Comparison of Different Code Models (ASHRAE vs IECC) and Lighting Controls
- Basic HVAC Concepts
- Additional Certifications or Educational programs that specializes in BEM and simulation modeling
- Hands on training on ESP-r/ EnergyPlus/ eQUEST
- Quality Control
- HVAC fundamentals for Energy Modelers,
- Learning from forums and examples
- Better infiltration methods for commercial buildings
- How to eliminate the communication barriers among professionals from different areas.
- team work in doing BPS, the role of architects in early design stage BPS
- Acoustic modeling
- Revit 2020.1 Simulation Scripting (new feature) for MEP simulation and system analysis
- Tropical architecture, material studies
- District Energy system modeling
- District systems, cost effectiveness of measures
- Passive Design, Passive House Certification
- Indoor environmental quality, requirements, stochastic modeling, occupant behaviour, weather data and a focus on weather extremes
- Model inventory/tracking system. Guideline for creating sets of prototype buildings (and/or adapting existing prototype sets like DOE IECC to local needs)
- Evaluating and analyzing BEM outputs, parametric analysis
- Efficient use of debugging tools and other outputs, modeling program selection based on project needs
- Envelop thermal breaks

- Free teaching of Energy Plus, plus making the components to get Energy Plus models free. Not everyone has a large company buying the software. Why I never bothered with energy plus.
- Renovation decision making
- FMU/FMI and cosimulation
- water source heat pumps, demand controls, advanced MEP controls
- Validation Models vs Design Models; modeling when you don't have a full building design
- Understanding weather files
- Reviewing models built by others for QA/QC checks, certifications, and other programs
- Scripting
- Modeling applied to specific building types such as hostpitals, labs, and data centers. Also the application of performance simulation in manufacturing.
- The topics listed above include those that are high priority for me. I find that there are resources for training on the basics of how to use a particular software, but wish there were more out there for training on how to interpret drawings/schedules for systems and controls to model them properly, as well as advanced envelope modeling - both for new envelope technologies and for quality methods of modeling in the software
- Optimization of key input parameters
- Parametric Simulations and optimizations