

PROBABILISTIC SEISMIC HAZARDS ANALYSIS (PSHA) 2025

WEDNESDAYS, FRIDAYS, JAN 22 - MAY 9* | 11:00 AM - 12:30 PM PACIFIC | VIRTUAL

REGISTER

MEMBERS \$2500
NONMEMBERS \$3000

PART 1 - INTRODUCTION

Week 1

- Class Overview
- Intro to PSHA

Week 2

- Probability Review
- Aleatory Variability, Epistemic Uncertainty

PART 2 - STANDARD PSHA

Week 2

- PSHA Mathematical Framework

Week 3

- Seismic Source Characterization: Faults, Areal Zones

Week 4

- Intro to Ground-Motion (GM) Models
- Hazard Results, Uniform Hazard Spectra, CMS

Week 5

- Probabilistic Risk Analysis and Risk-Targeted Spectra
- Intro to Design-Time Histories

PART 3 - GROUND-MOTION MODELS

Week 6

- Median GM Models: Empirical Models, HW Effects
- Median GM Models: Model Complexities (NL Site Effects)

Week 7

- Median GM Models: Finite-Fault Simulations
- Components of Aleatory Variability of GM

Week 8

- Modeling Directivity Effects
- Conditional GM Models for Secondary Design Parameters

Week 9

- Selection and Modification of Design-Time Histories

PART 4 - ADVANCED PSHA TOPICS

Week 10

- Conditional Mean Spectra

Week 11

- Vector Hazard
- Simplified Methods for Checking Hazard Results

Week 12

- Partially Non-Ergodic PSHA
- Fully Non-Ergodic PSHA

Week 13

- Site Response: VS Profile Correction Approach
- Hazard-Consistent Conditional Scenario Spectra (CSS)

Week 14

- Use of Epistemic Uncertainty from PSHA in Engineering Practice
- Removing the Poisson Assumption from PSHA

Week 15

Review

- Causes and Solutions of Convergence Errors



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*CLASS MEETS EVERY WEDNESDAY AND FRIDAY EXCEPT FOR THE WEEK OF MARCH 24.