

Agenda

Understanding Earthquake Actions and Effects

- Earthquake fundamentals
- Seismic zone tectonic theory
- Codes and earthquakes
- Hazard maps

Analyzing Earthquake Effects on Structures

- Understanding the dynamics of structures
- Evaluating the response spectrum
- Damping
- Effect of soil conditions on the spectrum
- Inelastic behavior

Understanding the Code: ASCE 7 Seismic Provisions

- Base shear calculation
- Mapped spectral response
- Site coefficients
- Response modification factors
- Importance factor

Seismic Design of Structures

- Design response spectrum
- Equivalent lateral force procedure
- Load combinations
- Vertical and horizontal force distribution
- Diaphragms
- Nonstructural components and nonbuilding structures
- Base isolation
- Damping

Seismic Force Resisting Systems in Steel, Reinforced Concrete, Wood, and Masonry

- International Building Code (IBC) provisions
- American Institute of Steel Construction (AISC) provisions
- American Concrete Institute for Structural Concrete (ACI 318) provisions
- National Design Specification (NDS) for Wood Construction provisions
- American Concrete Institute for Masonry Structures (ACI 530) provisions

Seismic Design of Buildings
Natick, MA - Tuesday, October 9, 2018

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Learning Objectives

You'll be able to:

Examine earthquake actions, structural dynamics and response spectra.

Learn about seismic design objectives, and study the seismic design provisions of ASCE 7-10.

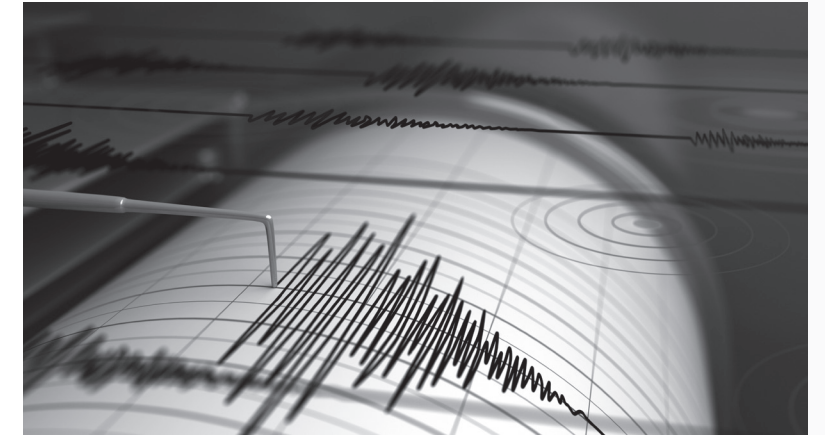
Discuss seismic force resisting systems.

Review material-specific design criteria for wood, steel, concrete and masonry buildings.



Seismic Design of Buildings

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Study seismology, earthquake actions, structural dynamics and response spectra

Review seismic design provisions in ASCE 7-10

Examine load combinations, overstrength and redundancy

Review design criteria for wood, steel, concrete and masonry

Consider nonstructural components and nonbuilding structures

Continuing Education Credits

Professional Engineers

7.0 Contact Hours (PDHs)

Contractors

Non-Credit Continuing Ed.

Architects

7.0 HSW Contact Hours
7.0 AIA HSW Learning Units

International Code Council

.7 CEUs (Building)



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John Ebel - Boston College

Dr. Ebel received an A.B. degree in Physics from Harvard University in 1975 and a Ph.D. degree in Geophysics from the California Institute of Technology in 1981. Since 1981 he has been a member of the geophysics faculty at Boston College and has also carried out research at Weston Observatory. He is a past chair of the Eastern Section of the Seismological Society of America and of the New England Seismic Advisory Council, and he has been meeting program chairman and secretary of the Seismology Section of the American Geophysical Union. Dr. Ebel’s research interests are in the areas of earthquake hazard, earthquake source mechanisms, earthquake prediction, wave propagation studies and determination of lithospheric structure. Since 1981 he has been in charge of the New England Seismic Network of Weston Observatory of Boston College. This network, currently comprised of seismic stations that span the six New England states, is used to detect, locate, catalog and study all earthquakes that occur in New England and vicinity. Dr. Ebel’s research has focused on studying the causes and effects of earthquakes in New England and vicinity, although he has also published papers on earthquake activity in other parts of the eastern United States and Canada, California, Europe, Mexico and the southwest Pacific. He also has conducted extensive research on methods for earthquake hazard computation and earthquake forecasting. Dr. Ebel has published one book and over 60 scientific papers, and he has presented over 150 professional talks on his research work, along with numerous technical reports submitted to government agencies or private firms. He has been a consultant to a number of private companies and government agencies, including Argonne National Laboratory, the U.S. Nuclear Regulatory Commission and Lawrence Livermore National Laboratory, on seismic hazard and nuclear test ban treaty monitoring issues. He has been a consultant on seismic hazard for over 20 major engineering projects such as highway bridges,

LNG tanks, dams and other critical structures in the United States, the Bahamas, Colombia, the Dominican Republic, Honduras, Jordan, Puerto Rico, Chile and Tunisia.

Troy Morgan - *Exponent Failure Analysis Assoc*

Dr. Morgan is a recognized expert in the field of seismic isolation and passive energy dissipation systems. He has performed extensive research on the numerical simulation and experimental behavior of innovative seismic protective devices and optimization of their use within performance-based engineering frameworks. Dr. Morgan has served as a consultant to many engineering firms, assisting with the design of essential structures including healthcare facilities, laboratories, industrial buildings, and critical infrastructure requiring sophisticated analysis techniques and the applications of advanced seismic protective systems. He has also served as the chair of both the SEAONC Continuing Education Committee and the SEAOC State Seismology Sub-committee on seismic isolation and supplemental damping devices. Prior to joining Exponent, Dr. Morgan was assistant professor at the Center for Urban Earthquake Engineering at the Tokyo Institute of Technology in Japan. He has taught courses at the University of California-Berkeley and San Francisco State University. He has also held positions as a post-doctoral researcher at the Pacific Earthquake Engineering Research Center and as a design engineer at Forell/Elsesser Engineers Inc. Dr. Morgan received his B.S., M.E. and Ph.D. degrees in Civil and Environmental Engineering from University of California-Berkeley. He received the NEHRP Graduate Fellowship in Earthquake Hazard Reduction in 2005; Outstanding Graduate Student Instructor Award, UC Berkeley, 2004; and the SEAONC Excellence in Structural Engineering Award 2004.

Seminar Information

Courtyard by Marriott Natick

342 Speen Street
Natick, MA 01760
(508) 655-6100

Registration
8:00 - 8:30 am
Morning Session
8:30 - 11:45 am
Lunch (On your own)
11:45 am - 12:45 pm
Afternoon Session
12:45 - 5:00 pm

Tuition

\$279 for individual registration
\$259 for three or more registrations.

Each registration includes a complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the CD/manual package. You may also send another person to take your place.

Continuing Education Credit Information

This seminar is open to the public and offers 7.0 PDHs to professional engineers and 7.0 HSW contact hours to architects in all states, except Florida architects. Educators and courses for Massachusetts architects are not subject to pre-approval.

This seminar is approved by the American Institute of Architects for 7.0 HSW Learning Units (Sponsor No. J885). Only full attendance can be reported to the AIA/CES.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana, Maryland, New Jersey (Approval No. 24GP00000700), New York (NYSED Sponsor No. 35), North Carolina, and North Dakota. HalfMoon Education is deemed an approved architect continuing education sponsor in New York.

The International Code Council has approved this course for .7 CEUs in the specialty area of Building.

This seminar offers a non-credit continuing education opportunity to construction contractors. It has not been approved by any state with a construction contractor continuing education requirement.

Attendance will be monitored and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Additional Learning

Webinar Series

Community Solar and Rooftop Solar

- **Community Solar**
Wed., Sept. 5, 2018, 11:00 AM - 2:15 PM CDT
- **Design Your Solar Roof**
Thurs., Sept. 6, 2018, 11:00 AM - 2:15 PM CDT

Seismic Design and Construction

- **Seismology and Building Codes**
Wed., Sept. 12, 2018, 11:00 AM - 3:30 PM CDT
- **Seismic Design of Building Structures**
Thurs., Sept. 13, 2018, 11:00 AM - 3:30 PM CDT

Small Wind Energy Systems

- **Small Wind Energy System Components**
Thurs., Sept. 20, 2018, 11:00 AM - 1:00 PM CDT
- **Small Wind Energy Siting and Sizing**
Fri., Sept. 21, 2018, 11:00 AM - 1:00 PM CDT

For more information visit:
www.halfmoonseminars.org/webinars/

Can’t Attend? Order the CD/Manual Package:

An audio recording of this seminar is available for \$289 (including shipping). Allow five weeks from the seminar date for delivery. Please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Registration

Seismic Design of Buildings

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How to Register		Registrant Information
Online: www.halfmoonseminars.org		Name: _____
Phone: 715-835-5900		Company/Firm: _____
		Address: _____
Fax: 715-835-6066		City: _____ State: _____ Zip: _____
		Occupation: _____
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		Email: _____
		Phone: _____
		Additional Registrants:
		Name: _____
Complete the entire form. Attach duplicates if necessary.		Occupation: _____
		Email: _____
		Phone: _____
		Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
		() I need special accommodations. Please contact me.

Tuition

- () **I will be attending the live seminar.** Single Registrant - **\$279.00**. Three or more registrants from the same company registering at the same time - **\$259.00** each.
- () **I am not attending.** Please send me the CD manual package for **\$289.00**. (S&H included. Please allow five weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

Credit Card: *Mastercard, Visa, American Express, or Discover*

Credit Card Number: _____

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