

Agenda

Presented by David Harmanos, P.E., LEED AP

Soil Investigation and Classification

Properties of soil

- Importance of recognizing soil properties
- Formation of soils
- Types of soils

Soil investigation

- Site reconnaissance
- Geology and visual observations
- Drilling and boring
- Test pits
- Establishing appropriate investigational methods
- Obtaining and reviewing geotechnical reports

Reviewing Hydraulic and Mechanical Properties of Soils

Soil permeability

Compressibility of soil

Soil hydraulics

- Saturation, hydraulic gradient, and conductivity

Drained and undrained shear strength

- Vertical and lateral earth pressure

Stress and failure in soils

Determining and Increasing Bearing Capacity

Calculating bearing capacity

Bearing capacity of shallow foundations

Bearing capacity of piers and piles

Increasing bearing capacity

- Draining and compaction
- Soil improvement

Determining and Increasing Slope Stability

Natural and engineered slopes

Reviewing basic concepts of slope stability

Understanding slope failures

Impact of surface water and groundwater

Examining slope stabilization methods

- Unloading
- Draining and compaction
- Reinforcement
- Soil improvement

Soil Mechanics, Bearing Capacity and Slope Stabilization

Cherry Hill, NJ - Tuesday, March 24, 2020



HalfMoon Education Inc.
PO Box 278
Altoona, WI 54720-0278

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Learning Objectives

You'll be able to:

Describe the mechanical and hydraulic properties of soils that affect bearing capacity and slope stability.

Identify appropriate soil investigation methods.

Define soil permeability, compressibility, conductivity and drained and undrained shear strength.

Determine bearing capacity and know how to increase it through draining and compaction.

Evaluate slope stability and identify causes of slope failures.

Explore slope stabilization methods including reinforcement and soil improvement.



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Soil Mechanics, Bearing Capacity and Slope Stabilization

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Learn about the properties of soil and explore soil investigation procedures

Review hydraulic and mechanical properties of soils and learn about stress and failure in soils

Examine the bearing capacity of shallow foundations, piers and piles

Understand slope failures and the impact of surface and groundwater

Compare slope stabilization methods, such as unloading and draining

Continuing Education Credits

Professional Engineers

6.5 CPC Credits/PDHs

Contractors

Non-Credit Continuing Ed.

Architects

6.5 HSW Continuing Ed. Hours

6.5 AIA LU|HSW



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David Harmanos, P.E., LEED AP *Branch Manager at Hillis-Carnes Engineering Associates, Inc.*

Mr. Harmanos is a professional engineer with extensive experience in subsurface exploration, soil testing, infiltration testing, geosynthetics, and seismic and advanced analysis. His expertise includes commercial, industrial and institutional foundation design; retaining wall and steep slope design; sinkhole remediation; landfill design; site work; forensic engineering; LEED consulting; and construction quality control/assurance (CQA/QC). Mr. Harmanos is a graduate of Drexel University where he received both his BS and MS degrees in Civil Engineering (Geosynthetics and Geotechnical).

Hillis-Carnes performs geotechnical engineering consulting and laboratory testing services. Its construction services include evaluation of bearing materials, inspection of pile driving, slope inclinometer installation and monitoring, and retaining wall construction observation.

Here’s what past attendees had to say about the program and presenter David Harmanos:

- “Very knowledgeable and great presenter.” – *Engineer*
- “Very informative and helpful.” – *Architect*
- “Very knowledgeable instructor, has an excellent grasp on the subject.” – *Facilities Engineer*
- “Excellent presentation.” – *Project Manager/Owner/Developer*

Seminar Information

Webinar Instructions will be emailed before the date of the webinar.

Log into Webinar:	Break:
8:00 - 8:30 am	12:30 - 1:30 pm
Morning Session:	Afternoon Session:
8:30 am - 12:30 pm	1:30 - 4:30 pm

Tuition

\$299 for individual registration

\$279 for three or more simultaneous registrations.

***Included with your registration:** Complimentary continental breakfast and printed seminar manual.*

- 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 self-study package. You may also send another person to take your place.



Continuing Education Credit Information

This seminar is open to the public and offers up to 6.5 CPC credits/PDHs to professional engineers and 6.5 HSW continuing education hours to architects in all states. HalfMoon Education is an approved continuing education provider for New Jersey engineers (Approval No. 24GP00000700).

HalfMoon Education is deemed a New York-approved continuing education provider for engineers and architects via its registration with the American Institute of Architects Continuing Education System (Regulations of the Commissioner §68.14(i)(2) and §69.6(i)(2)).

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, North Carolina, and North Dakota.

This event has been approved by the American Institute of Architects Continuing Education System for 6.5 LU|HSW (Sponsor No. J885). Courses approved by the AIA/CES qualify for New Jersey architects. Only full attendance can be reported to the AIA/CES. Visit www.halfmoonseminars.org for complete AIA/CES information under this course listing.

This seminar offers a non-credit continuing education opportunity to contractors; it has not been approved in any state that has a 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**
- Foundations in Cold Regions**
- **Introduction to Foundations in Cold Regions**
Thurs., Feb. 20, 2020, 11:00 AM - 12:30 PM CST
 - **Shallow Foundation Design in Cold Regions**
Thurs., Feb. 20, 2020, 1:00 - 2:30 PM CST
 - **Deep Foundation Design in Cold Regions**
Fri., Feb. 21, 2020, 11:00 AM - 12:30 PM CST
 - **Foundation Construction in Cold Regions**
Fri., Feb. 21, 2020, 1:00 - 2:00 PM CST

- Soil Mechanics and Slope Stability**
- **Soil Investigation and Classification**
Tues., Feb. 25, 2020, 11:00 AM - 1:00 PM CST
 - **Reviewing Hydraulic and Mechanical Properties of Soils**
Tues., Feb. 25, 2020, 1:30 - 3:00 PM CST
 - **Determining and Increasing Bearing Capacity**
Wed., Feb. 26, 2020, 11:00 AM - 1:00 PM CST
 - **Determining and Increasing Slope Stability**
Wed., Feb. 26, 2020, 1:30 - 3:00 PM CST

- Designing for Climate Resilience**
- **Current and Anticipated Climate Effects on Structures and Communities**
Thurs., Feb. 27, 2020, 11:00 AM - 12:30 PM CST
 - **Assessing the Impact of Sea Level Rise, Changing Temperature and Changing Weather Patterns**
Thurs., Feb. 27, 2020, 1:00 - 3:00 PM CST
 - **Studying the Impact of Extreme Weather**
 - **Events on Structures and Communities**
Fri., Feb. 28, 2020, 11:00 AM - 12:30 PM CST
 - **Adapting Sites, Outdoor Spaces, New Construction and Existing Buildings to Withstand Extreme Weather Events**
Fri., Feb. 28, 2020, 1:00 - 3:00 PM CST

For more information and other online learning opportunities visit:
www.halfmoonseminars.org/webinars/

Can’t Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$279. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Registration

Soil Mechanics, Bearing Capacity and Slope Stabilization

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How to Register	Registrant Information		
Online: www.halfmoonseminars.org	Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip: _____ Occupation: _____ Email: _____ Phone: _____		
Phone: 715-835-5900	Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____		
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Complete the entire form. Attach duplicates if necessary.	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 - **\$299.00**. Three or more registrants from the same company registering at the same time - **\$279.00** each.

() **I am not attending.** Please send me the self-study package:

☐ Downloadable MP3 Audio/PDF Manual for **\$279.00**.

☐ CD/Manual Package for **\$299.00**. ☐ USB/Manual Package **\$299.00**. (S&H included. Please allow five weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

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