

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

Fort Washington, PA - Wednesday, October 17, 2018



Halfmoon Education Inc.
PO Box 278
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Learning Objectives

You'll be able to:

- Understand** key properties of soil, including soil permeability and compressibility.
- Identify** appropriate soil investigation methods.
- Determine** bearing capacity and know how to increase it through draining and compaction.
- Evaluate** slope stability and understand slope failures.
- Examine** slope stabilization methods including reinforcement and improvement.



Soil Mechanics, Bearing Capacity and Slope Stabilization

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

Discuss soil investigation procedures, and explore geotechnical reports

Examine the bearing capacity of shallow foundations, piers and piles

Understand slope failures and discuss the impact of surface and groundwater

Compare slope stabilization methods, such as unloading and draining

Continuing Education Credits

Professional Engineers

6.5 PDHs

Architects

6.5 HSW CE Hours

6.5 AIA HSW Learning Units

Landscape Architects

6.5 HSW Clock Hours

6.5 LA CES HSW PDHs

Contractors

Non-Credit Continuing Ed.



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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 about presenter David Harmanos:

“Dave was very knowledgeable in presentation and provided great examples to represent real practical experiences.” – *Engineer for Heavy Civil Contractor*

“David was highly knowledgeable and good at explaining all aspects of the material.” – *Mechanical Engineer*

Seminar Information

Hilton Garden Inn Fort Washington 530 W. Pennsylvania Ave. Fort Washington, PA 19034 (215) 646-4637	Registration 8:00 - 8:30 am Morning Session 8:30 am - 12:15 pm	Lunch (On your own) 12:15 - 1:15 pm Afternoon Session 1:15 - 4:30 pm
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Tuition
\$279 for individual registration
\$259 for three or more simultaneous registrations.

Each registration includes a complementary 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 (CDT), 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.



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

- International Green Construction Code**
- **Introduction to the International Green Construction Code (IgCC)**
Thurs., Sept. 20, 2018, 11:00 AM - 12:30 PM CDT
 - **Chapters 4-5: Site Development and Material Use**
Thurs., Sept. 20, 2018, 1:00 - 2:30 PM CDT
 - **Chapters 6-9: Energy, Water, Environmental Quality and Building Commissioning**
Fri., Sept. 21, 2018, 11:00 AM - 12:30 PM CDT
 - **Chapters 10-11: Existing Buildings**
Fri., Sept. 21, 2018, 1:00 - 2:30 PM CDT

- Slope Stabilization and Landslide Prevention**
- **Analyzing the Stability of Slopes**
Tues., Sept. 25, 2018, 11:00 AM - 2:15 PM CDT
 - **Slope Stabilization Methods**
Thurs., Sept. 27, 2018, 11:00 AM - 2:15 PM CDT

Continuing Education Credit Information

This seminar is open to the public and offers 6.5 PDHs to professional engineers and 6.5 HSW continuing education hours to architects and 6.5 HSW clock hours to landscape architects in most states, including Pennsylvania. Educators and courses are not subject to pre-approval in Pennsylvania.

This seminar is approved by the American Institute of Architects for 6.5 HSW Learning Units (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 6.5 HSW PDHs. Only full attendance can be reported to the AIA/CES and LA/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 continuing education sponsor for New York architects and landscape architects.

This course offers a non-credit continuing education opportunity to construction contractors.

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.

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

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How to Register	Registrant Information Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip _____ Occupation: _____ Email: _____ Phone: _____ Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ 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.
Online: www.halfmoonseminars.org	
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Complete the entire form. Attach duplicates if necessary.	

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.

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