Soil Mechanics, Bearing Capacity and Slope Stabilization

Wilmington, DE - Thursday, July 13, 2017

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

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

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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 PDHs

Architects
6.5 HSW CE Hours
6.5 AIA HSW Learning Units

Contractors
Non-Mandatory Cont. Ed.

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James “Jay” A. McKelvey, III, D.GE, F.ASCE
Director-Geotechnical Design Division at Earth Engineering Inc.
Mr. McKelvey is the Director of the Geotechnical Design Division at Earth Engineering Inc. He is a registered professional engineer (P.E.) in California, Delaware, Maryland, New Jersey, Pennsylvania, and Virginia. Mr. McKelvey is also a diplomate (D.GE) of the Academy of Geo-Professionals and a fellow of the American Society of Civil Engineers (F.ASCE). Mr. McKelvey has extensive experience in geotechnical engineering including site assessment and field investigations; deep and shallow foundation design for buildings, bridges and other structures; retaining wall design; embankment stability; mechanically-stabilized soil structures; and subsurface hydrology. He also has significant experience in mitigating heavy construction claims and litigation support pertaining to impacted heavy construction projects. Mr. McKelvey has also handled construction support and construction quality assurance projects.

His environmental engineering experience includes technical contributions to the remediation of many Superfund sites and over fifty landfill design projects. Mr. McKelvey has published over 25 technical papers in journals, conference proceedings and trade magazines. He is currently the treasurer for the Delaware Valley Geo-Institute (DVI). He serves on the Geoinstitute committees for Earth Structures and Geosynthetics, and is a voting member in ASTM committees Soil and Rock (D18) and Geosynthetics (D38).

Here’s what past attendees had to say about the program and presenter James McKelvey III:

"Very good at explaining very technical aspects in simple layman terms." – Professional Engineer

"Fantastic job!" – Architect

“Good speaker. Kept my interest throughout the seminar.” – Geo-tech Inspector

“He made difficult subjects easy to understand.” – Structural Engineer

Webinar Series

Handling Ethical Issues in Professional Engineering Practice
Fri., June 9, 10:00 - 11:00 AM CDT

Pavement Design
• Principles of Pavement Design
  Thurs., June 15, 11:00 AM - 12:00 PM CDT
• Flexible Pavement Design
  Thurs., June 19, 12:30 - 2:30 PM CDT
• Rigid Pavement Design
  Fri., June 16, 11:00 AM - 1:00 PM CDT
• Maintenance, Rehabilitation and Sustainability of Pavements
  Fri., June 19, 1:30 - 3:30 PM CDT

SketchUp: In-Depth Modeling Techniques for Building Professionals
• SketchUp Good Modeling Practices and Techniques
  Mon., June 19, 3:00 - 4:30 PM CDT
• Resolving Complex Roots in SketchUp
  Tues., June 20, 3:00 - 4:30 PM CDT
• Creating Animations and Movies in SketchUp
  Wed., June 21, 3:00 - 4:30 PM CDT
• Continuous Backgrounds for the SketchUp Model or Animation
  Thurs., June 22, 3:00 - 4:30 PM CDT
• Introducing Google Earth Geolocation into the Model
  Fri., June 23, 3:00 - 4:30 PM CDT

Solar Photovoltaic Project Design and Development
• Solar Photovoltaic Project Design and Development, Part I
  Wed., June 7, 11:00 AM - 3:15 PM CDT
• Solar Photovoltaic Project Design and Development, Part II
  Thurs., June 8, 11:00 AM - 2:15 PM CDT

Community Solar, Residential Solar, and Solar Batteries
• Community Solar
  Wed., June 14, 11:00 AM - 2:15 PM CDT
• Introduction to Residential Solar
  Wed., June 21, 11:00 AM - 2:15 PM CDT
• Solar Battery Management Systems
  Wed., June 28, 11:00 AM - 2:15 PM CDT

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

Registration

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How to Register

Online: www.halfmoonevents.org
Phone: 715-835-5900
Fax: 715-835-6066

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

Complete the entire form. Attach duplicates if necessary.

Tuition

$259
$279

$289 (including shipping).

Checks: Make payable to HalfMoon Education Inc.

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