## **Credit Information**

#### **Deep Foundations and Excavations**

This webinar is open to the public and is designed to qualify for 7.0 PDHs for professional engineers and 7.0 HSW continuing education hours for licensed architects in all states that allow this learning method. Please refer to specific state rules to determine eligibility.

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The American Institute of Architects Continuing Education System has approved this course for 7.0 HSW LUs (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .7 CEUs in the specialty area of Sitework (Preferred Provider No. 1232).

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### **Hot-Mix Asphalt Pavement Design, Maintenance and Rehabilitation**

This webinar is open to the public and is designed to qualify for 6.0 PDHs for professional engineers, 6.0 HSW continuing education hours for licensed architects, and 6.0 HSW continuing education hours for landscape architects in all states that allow this learning method. Please refer to specific state rules to determine eligibility.

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The American Institute of Architects Continuing Education System has approved this course for 6.0 HSW LUs (Sponsor No. 1885). Only full participation is reportable to the AIA/CES. The Landscape Architecture Continuing Education System has approved this course for 6.0 HSW PDHs. Only full participation is reportable to the LA CES. The International Code Council has approved this event for .6 CEUs in the specialty area of Building (Preferred Provider No. 1232).

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Hot-Mix Asphalt Pavement Design, Maintenance and Rehabilitation HalfMoon Education Inc. PO Box 278 Altoona, WI 54720-0278

ve, Interactive Webinars
Deep Foundations and Excavations



# **Live, Interactive Webinars**

## **Deep Foundations and Excavations**

- Thursday, December 5, 2024 | 8:30 am - 4:30 pm CST

## Hot-Mix Asphalt Pavement Design, Maintenance and Rehabilitation

- Friday, December 6, 2024 | 9:00 am - 4:00 pm CST

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Architects: 7.0 HSW CE Hours | AIA: 7.0 LU | HSW International Code Council: .7 CEUs (Sitework)



## Hot-Mix Asphalt Pavement Design, **Maintenance and Rehabilitation**

Friday, December 6, 2024 | 9:00 am - 4:00 pm CST

Credits: Professional Engineers: 6.0 PDHs

Architects: 6.0 HSW CE Hours | AIA: 6.0 LU | HSW

Landscape Architects: 6.0 HSW CE Hours | LA CES: 6.0 HSW PDHs

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#### Agenda:

Soil Mechanics, Bearing Capacity, and Earth Retention A. Vytiniotis Understanding soil characteristics M. Mousavi

Bearing capacity Basic earth pressure theory

**Bracing systems** Tieback anchors

Soil nail walls

Sheet pile and soldier pile walls

Secant pile and diaphragm walls Top-down excavations

Using cofferdams

### **Exploring Deep Foundation Types**

A. Vytiniotis M. Mousavi

Types of deep foundations Driven piles Drilled shafts Others

 Auger cast piles Hybrid foundations

Grouping piles

• Selecting foundation type: life expectancy, cost, soil conditions

### Pile Design

A. Vytiniotis

Effective stress Estimating axial capacity M. Mousavi

Skin friction end bearing Computing settlement Lateral capacity design

Down drag

**Uplift** capacity

Battered piles

Moment resistance

#### **Testing Methods of Deep Foundations for Structural** M. Hussein **Integrity and Geotechnical Load Bearing Capacity Evaluations**

Driven piles, drilled shafts, and auger-cast piles

Wave equation analysis, dynamic load testing, bi-directional-static load testing, low-strain integrity testing

Cross-hole sonic logging, thermal integrity profiling

Case studies

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**Credits:** Professional Engineers: 6.0 PDHs

Architects: 6.0 HSW CE Hours | AIA: 6.0 HSW LUs

Landscape Architects: 6.0 HSW CE Hours | LA CES: 6.0 HSW PDHs

International Code Council: .6 CEUs (Building)

### Agenda:

### **Principles of Pavement Design**

Applications for hot-mix asphalt pavements

Goals and considerations

Characteristics: smooth, dense, uniform surface

Terminology and technology

Codes and standards

### **Asphalt Mix Design Considerations**

Aggregates

Recycled materials

Design methods

Asphalt binders

### **Making Asphalt Pavements More Sustainable**

### **Asphalt Installation**

Installation process

Options

Joints and transitions

Quality assurance and quality control

### Maintenance and Rehabilitation

Establishing a maintenance program

Causes of distress and damage

Types of distress and damage

Repair and rehabilitation techniques

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# **Faculty**

### **Deep Foundations and Excavations**

### Antonios Vytiniotis, Ph.D., P.E.

Director, Group Lead, Massachusetts Consulting, Geocomp

Dr. Vytiniotis is a member of the Geo-Institute's Deep Foundation and Computation Geotechnics committees and a regional director for the Society of Construction Law - North America. He has background in structural and geotechnical engineering, geotechnical earthquake engineering, and numerical analysis. Dr. Vytiniotis has worked on numerous projects in more than 20 states and multiple countries, assisting project owners, law firms, insurance companies and developers.

#### Masoud Mousavi, Ph.D., P.E. Project Manager at Geocomp

Dr. Mousavi specializes in geotechnical engineering, earthquake engineering, transportation geotechnics, unsaturated soil mechanics, and in-situ and advanced laboratory soil testing. With a professional career spanning over 10 years, he has successfully contributed to a wide range of projects across multiple states, as well as in Eastern Europe, the Middle East, and Southeast Asia.

Mohamad Hussein. P.E.. Executive Vice President of GRL Engineers, Inc., and Executive Director of Global Industry Relations at Pile Dynamics, Inc.

In Mr. Hussein's 40+ years career he has consulted on more than 1,000 deep foundations projects in 35 States in the USA and several countries. He frequently organizes educational courses and seminars on deep foundations, including the American Society of Civil Engineers' (ASCE) Continuing Education Class: Deep Foundations Design, Construction, and Quality Control. In Mr. Hussein is a member of the deep foundations-related committees of DFI, ASTM, PDCA, ASCE, and TRB.

### Hot-Mix Asphalt Pavement Design, Maintenance and Rehabilitation Shenghua Wu, Ph.D. PE. LEED AP

Engineer; Associate Professor at University of Southern Alabama

Dr. Wu is currently an associate professor in the Department of Civil, Coastal, and Environmental Engineering at the University of South Alabama. He is the director for Interdisciplinary Center for Sustainable Engineering (ICSE), the Gulf-Coast Center for Addressing Microplastic Pollution (GC-CAMP), and the Solid Waste Sustainability Hub, and he is also the director for Sustainable Asphalt Materials Lab. Dr. Wu was a senior sustainability research engineer in the Illinois Center for Transportation at the University of Illinois at Urbana-Champaign. His research and education areas include asphalt materials characterization; smart, sustainable transportation materials for infrastructure; pavement performance evaluation; and modeling, design, and maintenance.

For more information on the presenters:

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