



Geotechnics for Trenchless Construction

November 1-3, 2016
Golden, Colorado, USA



This three-day knowledge- and skill-building course provides an in-depth, comprehensive review of geotechnical engineering and design required for successful trenchless construction projects.

Trenchless technologies are sustainable methods used to install and renew underground infrastructure, and these innovative technologies have been increasingly utilized in North America. Appropriate selection among trenchless techniques and optimized project design requires a thorough understanding of the geologic subsurface conditions and variability. In this course, trenchless technology's top experts will provide instruction on the state-of-practice in site-characterization and design of trenchless projects.

Hands-on labs and demonstrations of the geotechnical engineering principles required for best trenchless design provide relevant experience for the industry professional, new and seasoned alike. This course is the first of a suite of short courses to be offered and developed as a collaboration between the Colorado School of Mines and Louisiana Tech University. Stay tuned in 2017 for courses on: **Trenchless Design, Equipment and Contracting** and **Risk Management**.

Organized by:

Colorado School of Mines Center for Underground Construction & Tunneling (UC&T)

Dr. Priscilla Nelson

Department Head and Professor
Department of Mining Engineering
Colorado School of Mines

Dr. Reza Hedayat

Assistant Professor, Department of Civil
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Colorado School of Mines

Dr. Tom Iseley

CETF Professor, Civil Engineering
Director, Trenchless Technology Center
Louisiana Tech University

WHO SHOULD ATTEND?

Owners, designers, contractors, equipment manufacturers and suppliers involved in the planning, design, construction and management of trenchless projects seeking to expand his/her professional knowledge, as well as those interested in an update on new guidelines.

This short course incorporates the NEW Standard Design and Construction Guidelines for Microtunneling, published by American Society of Civil Engineers in 2015.

CONTINUING EDUCATION:

Colorado School of Mines will award 2.3 CEUs upon successful completion of this course.

SHORT COURSE AGENDA

TUESDAY, NOVEMBER 1

- 8:00-9:15 a.m. **Introduction to Trenchless Technology**
Tom Iseley, Louisiana Tech
David Bennett, Bennett Trenchless Engineers, LLP
- 9:15-12:00 p.m. **Soil Characterization in the Field**
Fundamentals
Priscilla Nelson, Colorado School of Mines
Applied
Heather Ivory, iTi Consulting Inc.
Brian Dorwart, Brierley Associates
- 12:00-1:00 p.m. **Lunch**
- 1:00-5:00 p.m. **Soil Characterization in the Lab**
Fundamentals
Priscilla Nelson, Colorado School of Mines
Applied/Implementation
Nick Strater, Brierley Associates
Glenn Boyce, Jacobs
Soil Testing in the Lab
Reza Hedayat, Colorado School of Mines
Brian Dorwert, Brierley Associates
Nick Strater, Brierley Associates

WEDNESDAY, NOVEMBER 2

- 8:00-10:00 a.m. **Rock Characterization Planning and Field Testing**
Fundamentals
Priscilla Nelson, Colorado School of Mines
Applied
Paul Hedland, Aldea Services, LLC
Craig Vandaelle, Michels
- 10:15-12:00 p.m. **Rock Characterization in the Lab**
Fundamentals
Priscilla Nelson, Colorado School of Mines
Applied/Implementation
Ray Post, Huxted Tunneling
Lisa Dwyre, WSP/Parsons
Brinckerhoff
- 12:00-1:00 p.m. **Lunch**
- 1:00 -3:00 p.m. **Hydraulic Characterization**
Fundamentals
Greg Landry, Moretrench
Applied
Johnny Britt, Thompson Pump and Manufacturing
Greg Landry, Moretrench

WEDNESDAY, NOVEMBER 2 (continued)

- 3:00-5:00 p.m. **Rock Characterization Lab Testing**
Lab Testing of Rock
Reza Hedayat, CSM
Brian Asbury, CSM
- 6:00-9:00 p.m. **Banquet**
10 Breakthrough Innovations in Trenchless Construction
Steven Kramer, AECOM
Tom Iseley, Louisiana Tech

THURSDAY, NOVEMBER 3

- 8:00-10:00 a.m. **Ground Movement**
Fundamentals
Marco Boscardin, Consultant
David Bennett, Bennett Trenchless
Applied
Dennis Doherty, Haley & Aldrich
Craig Vandaelle, Michels
- 10:15-12:00 p.m. **Problem Ground: Pros and Cons of Different Methods**
Craig Camp, Mott MacDonald
Red Robinson, Shannon & Wilson
Paul Schmall, Moretrench
Eric D. Eisold, Bradshaw Construction
- 12:00-1:00 p.m. **Lunch**
- 1:00-3:00 p.m. **Geotechnical Risk**
Robert Goodfellow, Aldea
Steven Kramer and Robin Dill, AECOM
Craig Camp, Mott MacDonald
Steve Fradkin, Stantec
- 3:00-5:00 p.m. **Soil Modification and Slurry Lab**
Reza Hedayat and Mike Mooney, Colorado School of Mines
Buck Hammond, Baroid-Halliburton
Barry Sorteberg, Clean Slurry Technology
Jeannine Jones, BASF
- 6:00-8:00 p.m. **Closing Reception and Panel Discussion**
Project analysis, challenges and work needed
All speakers

FRIDAY, NOVEMBER 4

- All day **Optional Field Day**
Site investigations and projects in the Denver area (TBD—requires separate registration)



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csm.space.com/events/trenchless