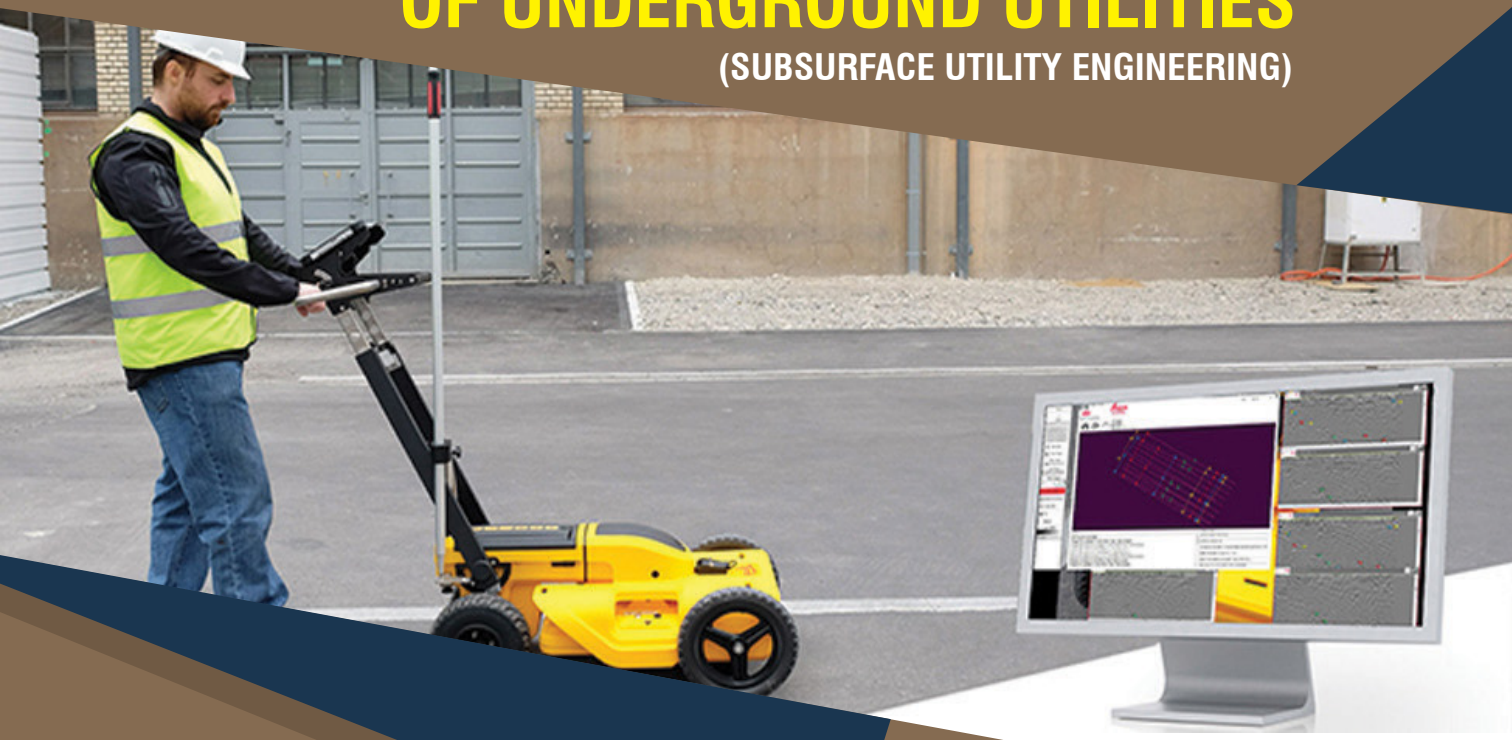
SEMINAR ON
DETECTION & MAPPING OF UNDERGROUND UTILITIES
(SUBSURFACE UTILITY ENGINEERING)



13-14 NOVEMBER 2019
8:00 A.M. – 4:00 P.M
MANAMA, KINGDOM OF BAHRAIN

For Registration and Inquiries

Bahrain Society of Engineers
T: +973 17-727100 / 17-810 725 F: +973 17-827475
Email: training.officer@bse.bh
Website: www.mohandis.org

ORGANIZED BY:

BAHRAIN SOCIETY OF ENGINEERS

IN COOPERATION WITH

AFA

Aqua Foundation
Serving Earth & Humanity

Introduction:

Having accurate knowledge of subsurface/ underground/ buried utilities (pipes/ cables/ drains etc.) is critical for any infrastructure project. The successful detection and mapping of buried utilities involves the combination of several techniques, the results of which are synthesised down to a single interpreted plot. The techniques and methodologies used will primarily depend upon the required outcome for the survey, the site conditions and the type of pipes or cables being targeted.

Subsurface Utility Engineering (SUE) is an upcoming field dealing with procedure and standards for detection and mapping of underground utilities. The workshop comprehensively covers all the aspects related to conducting a successful underground utility detection and mapping project.

Benefits:

The program will benefit an individual or organization by reducing risks and costs involved while meeting an existing utility unexpectedly during construction. The program will also help organizations plan towards creating database of existing utilities in their area (refineries/ plants/ factories) for future reference/ expansion plans/ repair & rehabilitation. There is an urgent need for capacity building in the field of SUE, and program will also help participants to pursue career in this field.

Who should Attend ?

This two day training workshop program will help professionals, engineers and managers from entire spectrum of construction, infrastructure and municipal sector, including but not limited to:

- Water, electrical, telecom, gas and other utility companies
- GIS companies
- Construction/ Infrastructure organizations, MES
- Trenchless companies
- Refineries/ factories/ plants
- Municipalities/ Municipal Corporations
- Utility repair/ rehabilitation organizations
- Airport Authorities/ planners/ consultants/ contractors
- Highway authorities/ planners/ consultants/ contractors
- Environment consultants/ contractors
- Fresh engineers planning to pursue career as SUE engineer
- Engineers/ managers conducting/ supervising utility detection projects

Fee Structure:

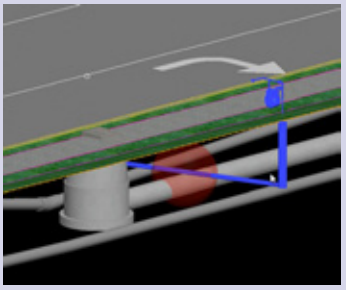
BD 400 per participant, inclusive of training notes, morning & evening tea & Lunch. A discount of 10% for students and 5% discount on group booking of 03 or more participants from a single organization is applicable.

Facilitator: Dr. Sanjay Rana

A geophysicist working in the field of engineering geophysics for last 29 years. M. Tech., MBA and Doctorate qualifications. He pioneered the concept of Subsurface Utility Engineering (SUE) in India, dealing with management of underground utility infrastructure during construction projects, to ensure safety of utilities, personnel and public.

Key Elements:

- Introduction to Subsurface Utility Engineering
- Utility Quality Level Attributes
  - Quality Level D, C, B, A
- Steps and procedures for QL-D data collection
- Survey procedures for collecting QL-C data (including use of total station, DGPS etc.)
- Field Procedure and Approaches for GPR Surveys
  - Antenna selection, frequency v/s depth
  - Various Antenna Configurations in various applications
  - Data acquisition, data handling
- DataProcessing of GPR data
  - High pass, low pass filters, Ormsy bandpass filtering, Notch Filters
  - AGC, Move Out Correction, Terrain Correction, Migration, energy envelops
  - Time-depth conversion
- Data interpretation of GPR data
- Field Procedure and Approaches for EPL Surveys
  - Direct Connection Mode, Clamp Mode, Induction Mode
  - Choosing right frequency & locating in difficult cases
- SUE map preparation guidelines, including plan, L-section etc.



Detection & Mapping of Underground Utilities

(Subsurface Utility Engineering)

REGISTRATION FORM

Name:

Organization: Department

Position: Email:

Address:

Telephone: Mobile: Fax:

Seminar	Duration	Date & Venue	Timing	Course Fee
Detection & Mapping of Underground Utilities (Subsurface Utility Engineering)	2 Days	13-14 November 2019 Kingdom of Bahrain	8:00am to 4:00 pm	BD 400

Note:

- For Individual/ overseas, payment shall be received upon submission of the completed registration form.
- Registration shall be reconfirmed only once payment has been made prior to the course.
- No Show of participant/s during the course will be charged in full amount accordingly.
- Cancellation of participant/s shall be submitted in writing to BSE ten days (10 days) before the course.
- A discount of 10% for students and 5% discount on group booking of 03 or more participants from a single organization.

Method of payment:

☐ I will pay by Cash

☐ Invoice the Organization (Please attach the authorization / nomination Letter)

☐ I enclose a Banker's Draft payable to Bahrain Society of Engineers-Training Centre

☐ Bank BIC: NBOBBHBM / IBAN: BH18 NBOB 0000 0099 0989 11 - National Bank of Bahrain-Manama Main Branch

☐ Please Debit to Amex: ☐ Visa: ☐ Master Card: ☐ (Additional 3% will be charged)

Card Number: Expiry Date:

Card Holder's name and address (if different from above)

Signature: Date:

BAHRAIN SOCIETY OF ENGINEERS

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