

**Short Course:**  
**Reinforced Soil Structures: Design Methods, Issues and Innovations**

Barry R. Christopher, *Independent consultant*

**- AGENDA -**

**REINFORCED SOIL TECHNOLOGY**

- History
- Types of Structures and Components
- Applications
- Advantages and Limitations
- Future

**DESIGN OF REINFORCED SOIL SLOPES**

- Compaction Aids
- Steepened Slopes and Slope Repair
  - External and Internal Design Issues
- Design Standards
- Design Steps and Design Details
- Drainage and Other Special Issues
- Software for Design &/or Analysis
- Design Example
- Advances and Innovations
- Specifications, Construction and Construction Monitoring
- Case Histories

**DESIGN OF REINFORCED SOIL WALLS (aka., MSE, MSB, R.E., R.S., G.R.S., Fabric Wall, Etc.)**

- External and Internal Issues
- Design Standards
- Design Steps and Design Details
- Facing, Drainage and Other Special Issues
- Software for Design &/or Analysis
- Design Example
- Advances and Innovations
- Specifications, Construction and Construction Monitoring
- Case Histories

**DESIGN OF REINFORCED EMBANKMENTS**

- Background and Applications
- Design Guidelines/Standards
- Design Details & Example Review
- Specifications and Construction
- Combinations with Other Technologies

**QUESTION & ANSWER PERIOD**

<b>When:</b>	Sunday January 23, 2005	<b>Registration fee:</b>	\$300.00 per person
<b>Where:</b>	Hilton Austin 500 East 4th Street Austin, TX 78701	<b>Special registration fee for <u>full-Conference registrants:</u></b>	\$ 50.00 per person
<a href="http://www.asce.org/conferences/geofrontiers05/">http://www.asce.org/conferences/geofrontiers05/</a>		<ul style="list-style-type: none"> <li>• Registration includes refreshments, lunch, handouts</li> <li>• Participants receive 7 PDHs</li> </ul>	

## **ABOUT THE COURSE**

**Reinforced Soil Structures: Design Methods, Issues and Innovations.** . . This short course will focus on the design and construction of reinforced soil systems including retaining walls, steepened slopes and embankments over soft subgrade. A brief background of the application of each of these technologies will be presented including the advantages, economic considerations, and limitations of each type of system as compared to other conventional practices. Details concerning the design, selection of reinforcing materials, specification and construction of each type of system will be covered. Current design codes/standards and software will be referenced and summarized. Special issues that have on occasion resulted in undesirable performance will be reviewed. An overview of several recent innovations such as the combination of reinforcement with lightweight fill and newly developed alternative design procedures will also be presented. Each attendee will be given course notes to support the lecture, which include step-by-step design procedures and example problems. A CD containing additional course reference material will also be provided.

## **ABOUT THE INSTRUCTOR**

**Barry R. Christopher, Ph.D., P.E.** is an independent geotechnical engineering consultant specializing in reinforced soil and other ground improvement technologies, geo-environmental containment system design, geosynthetic application and design, and geotechnical/geosynthetic testing and instrumentation. He has a BSCE from U.N.C. Charlotte, a MSCE from Northwestern University, and a Ph.D. from Purdue University. He is a registered Professional Engineer in six states and has over 25 years of experience in geotechnical and geosynthetics engineering. He has authored over 70 technical papers, many of which are on reinforced soil technology, six design manuals for U.S. federal agencies, two of which are on reinforced soil structures, and recently a textbook on geosynthetics. Dr. Christopher was the principal investigator (1985-1990) for the FHWA research study on "Behavior of Reinforced Soil," and has designed, supervised the construction and instrumented numerous reinforced soil structures. He is currently the co-principal in the FHWA/NHI workshops on Geosynthetics Engineering, Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Geotechnical Instrumentation, and Subsurface Investigation. He is also the co-technical director and a principal consultant for the HITEC Earth Retaining Structures review program. His professional service activities include chair of several national and international professional committees and he is currently active in ASTM, ASCE, IGS, NAGS, the GeoCouncil, ISO and TRB.

## **ABOUT THE SPONSOR**

This course is conducted on behalf of the North American Geosynthetic Society (NAGS), a chapter of the International Geosynthetics Society (IGS), who are dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies. Their mission is to advance the use of geosynthetics as engineering materials and to provide forums such as this course to facilitate communication among those interested in the application of geosynthetics in geotechnical, transportation and environmental engineering applications. Additional information on NAGS can be found at <http://www.nagsigs.org>.