NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

NTU-JTC Industrial Infrastructure Innovation Centre

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Accreditation
PDU: 7 Points
STU: TBC

Short course on

Ground Improvement and Foundation Design

Speaker: Professor Jie Han
University of Kansas, the United States

Date : 5 Apr 2017

Venue : Seminar Room A, Block N1, N1-B1B-06, School of CEE

About the course

8:15 am	-	9:00 am	Registration
9:00 am	-	9:45 am	Introduction to ground improvement methods
9:45 am	-	10:30 am	Intelligent and rapid compaction
10:30 am	-	10:50 am	Tea Break
10:50 am	-	12:30 pm	Granular columns: different methods and recent advances
12:30 pm	-	1:30 pm	Lunch
1:30 pm	-	3:00 pm	Deep mixed columns: design, construction, and quality control
3:00 pm	-	3:20 pm	Tea break
3:20 pm	-	5:00 pm	Column-supported embankments: design and recent advances
5:00 pm	-	5:30 pm	Questions and Discussions
5:30 pm			Closure

The course will cover the following topics:

1) Introduction to ground improvement methods will cover problematic geomaterials and conditions, geotechnical problems and failures, ground improvement methods and classification, selection of ground improvement method, design considerations, construction, quality control and assurance, and recent advances and trends for future developments in ground improvement.

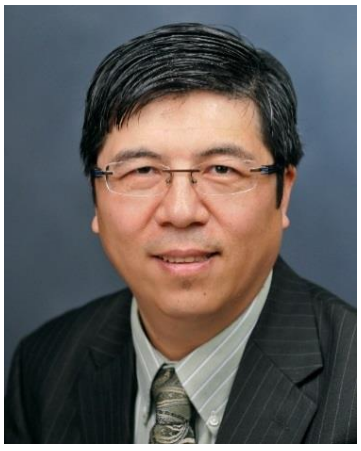
2) This lecture will start with the discussion on principles of densification and then introduce the new technologies of intelligent compaction and rapid impact compaction. Different parameters used for evaluation of intelligent compaction will be explained. The advantages and disadvantages of different equipment will be compared. Technical issues, such as test sections and selection of target Intelligent Compaction Measurement Value (ICMV), will be discussed. This lecture will also cover the principles, suitability, applications, and design of rapid impaction compaction for projects.

3) This lecture will discuss the use of geosynthetics (geotextile, geogrid, and geocell) for stabilization of unpaved and paved roads and construction platforms. Different mechanisms associated with the stabilization will be explained. Mechanical stabilization and reinforcement of roads will be compared. Design methods for geosynthetic-stabilized unpaved and paved roads will be presented. Case histories will also be presented.

4) Different types of column technologies will be discussed in terms of method of installation, rigidity of columns, and mode of failure. Design, construction, and quality control of each type of column technology will be reviewed. Recent research and advances on the column technologies, especially on settlement, consolidation, and stability will be presented. Case studies will be presented.

5) Historical development of column-supported embankments including geosynthetic-reinforced column-supported embankments will be briefed. The mechanisms involved in the load transfer platform, such as soil arching and tensioned membrane effect, will be discussed. Design issues, such as critical height, soil arching ratio, and tension in geosynthetic, will be discussed. Case studies will be presented.

About the Speaker



Dr. Jie Han is the Glenn L. Parker Professor of Geotechnical Engineering at Department of Civil, Environmental, and Architectural Engineering at the University of Kansas in the United States. He received his BS and MS degrees in Geotechnical Engineering from Tongji University in 1986 and 1989 respectively, his Ph.D. degree in Civil Engineering from the Georgia Institute of Technology in 1997, and has been a professional engineer in Georgia since 1998. Prof. Han's research and practical experiences have dealt with geosynthetics, ground improvement, pile foundations, buried structures, and roadways. He has published more than 300 international journal and conference papers and recently authored a textbook in English entitled "Principles and Practice of Ground Improvement". He has served as an associate editor for the ASCE Journal of Geotechnical and Geoenvironmental Engineering and the ASCE Journal of Materials in Civil Engineering, an editorial board member for other eight international journals, a vice chair of the ASCE Soil Improvement Committee, and a technical chair/member for a number of international conferences. Prof. Han has received a number of research grants as a principal or co-principal investigator from the National Science Foundation, the Strategic Highway Research Program (SHRP) 2, the National Cooperative Highway Research Program (NCHRP), the Federal Highway Administration, etc. He received the Best Paper Award in Soil Mechanics from the U.S. Transportation Research Board in 2008, was the recipient of the 2011 Shamsher Prakash Prize for Excellence in Practice of Geotechnical Engineering, awarded the Changjiang Lecture Scholar by the Ministry of Education of China in 2013, the recipient of the International Geosynthetics Society (IGS) Award in 2014, the first author of the paper presentation selected as the Best of the Best Award at the ASCE GeoStructures Congress in Phoenix, Arizona in 2016, the corresponding author of the Design and Construction Group Practice Ready Paper Award for 2016 from the U.S. Transportation Research Board, and the 2017 ASCE Martin S. Kapp Foundation Engineering Award. Prof. Han was elected to the ASCE Fellow in 2014.

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REGISTRATION FORM

1-day short course on *GROUND IMPROVEMENT AND FOUNDATION DESIGN*

Date: 5 Apr 2017

Venue: Seminar Room A (N1-B1B-06), Block N1, Level B1, NTU-CEE

Name		Designation	
Organization			
Email		Tel No.	
Mailing address			

PE Registration No.	
RE Registration No.	
RTO Registration No.	

FEES: S$250/Participant

- Fees include 7% GST, refreshments, lunch & course notes.
- Please submit the registration form **at least 5 working days** via email to luping@ntu.edu.sg before the commencement of the short course.
- There will be no refund of fees for any cancellation made.
- A replacement can be made at no extra charge.
- Registration will only be confirmed upon the receipt of the registration form.

PAYMENT MODE:

By Bank Draft/Cheque in Singapore Dollars (payable to "Nanyang Technological University").

Issuing Bank: _____

Bank Draft/Cheque Number: _____

Amount: S$ _____

SIGNATURE & DATE

Please mail your payment details to:

Address:

NTU-JTC Industrial Infrastructure Innovation Centre

Nanyang Technological University, N1-B1C-22, 50 Nanyang Avenue, Singapore 639798

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