PROCEEDINGS OF THE FIRST INTERNATIONAL CONFERENCE ON GEOTECHNICAL ENGINEERING EDUCATION AND TRAINING/SINAIA/ROMANIA/12 – 14 JUNE 2000

## Geotechnical Engineering Education and Training

Edited by Iacint Manoliu, Ion Antonescu & Nicoleta Rădulescu Technical University of Civil Engineering, Bucharest, Romania

**BLIOTHEK** INFORMATIONS BIBLIOTHEK



A.A. BALKEMA/ROTTERDAM/BROOKFIELD/2000

## Table of contents

Introduction	XI
1 Invited papers	
Civil and geotechnical engineering in society – Ethical aspects and future prospects <i>H.Brandl</i>	3
The impact of knowledge management and ICT <i>F.B.J. Barends</i>	15
Teaching geotechnical engineering 1950-2000 and beyond S. Prakash	25
Education in earthquake geotechnical engineering: Practice and needs <i>P.S. Sêco e Pinto</i>	33
Developing computer based instruction for geotechnical education S. Sharma	47
Trends in engineering education worldwide and their relevance for geotechnical engineering education <i>I. Manoliu</i>	63
2 National reports on geotechnical engineering education	
Geotechnical engineering education and training in Belgium W. Haegeman	85
Geotechnical engineering education and training in Brazil E. M. Palmeira	89
Some problems of the geotechnical engineering education in Bulgaria T.S.Germanov	97
A brief view of the education in geotechnical engineering in Chile <i>R.Verdugo &amp; C.Andrade</i>	101
La formation en géotechnique en Côte d'Ivoire B. Pango-Tati	105

Geotechnical engineering education and training in Croatia V.Szavits-Nossan	107
L'enseignement de la mécanique des sols en France dans les formations d'ingénieur en génie civil <i>R.Kastner</i>	115
Geotechnical engineering education in Germany U.Arslan, R. Katzenbach & J.Turek	119
Geotechnical engineering education in Greece D.K.Atmatzidis & A.G.Anagnostopoulos	123
Geotechnical education in Ireland B.M.Lehane, M.Creed, T.L.L.Orr, M.Long & M.Rodgers	127
An overview of geotechnical engineering education in Japan H.Ohta, H.Sekiguchi & T.Mitachi	131
Geotechnical engineering education and training in Lithuania V. Stragys	137
National report – Mexico O.R. Couttolenc, H. Haas & V.Taboada	141
Geotechnical engineering education in New Zealand D.L. Fellows	145
On geotechnical engineering education and training in Poland E. Dembicki	149
Geotechnical engineering education in Romania I. Manoliu	155
Geotechnical engineering education in Sri Lanka S.A. S. Kulathilaka	163
Geotechnical engineering education and training in Sweden G.B.Sällfors & M.Gustafsson	167
Geotechnical Engineering (GE) education in Vietnam and some ideas on future improvement N.Cong Man	171
3 Place, role and content of geotechnical engineering in civil, environmental and earthquake engineering curricula, at undergraduate and post-graduate level	
The importance of education in geotechnical engineering S.Akbulut	179
Enseignement de la géotechnique à l'université de Tizi-Ouzou, Algérie R. Bahar & B. Melbouci	183
Underground structures mechanics as a part of geotechnical engineering N.S. Bulychev	187

New trends in geotechnical engineering education S.F.O.Cinicioglu	193
Geomechanics in construction management R.A.Coleman	197
Enseignement de la géotechnique dans les départements de génie civil de l'Institut Universitaire de Technologie, France Ch.Coulet	201
Geotechnical engineering education in Tongji University G.Da-Zhao	203
Notes on geotechnics in the university curriculum J.Feda	207
The necessity of knowledge of geotechnics for officers of military ground forces <i>I. Has &amp; A. Pogány</i>	211
Education and training of geotechnical engineering specialists for various branches of construction <i>V.D. Kazarnovsky</i>	215
UFV's geotechnical engineering experience: Curricula at the graduate and undergraduate geotechnical engineering courses D.C.de Lima, E.A.G.Marques, C.H.C e Silva & P.S.A.Barbosa	217
Geotechnical education and training in St. Petersburg State University of Architecture and Civil Engineering <i>R.A. Mangushev &amp; S.N. Sotnicov</i>	223
The geotechnical engineering courses at the University of Minho, Portugal <i>F.F. Martins</i>	225
Specific aspects of geotechnical engineering education at the Ecole Nationale des Ponts et Chaussées F.Schlosser, S.Amar & J.Canou	231
Teaching of geotechnics at the Czech Technical University I.Vaníček	237
Challenges in geotechnical engineering education L.D.Wesley	241
4 Teaching, learning and assessment in geotechnical engineering education	
Teaching of knowledge concerning the behaviour of unsaturated soils S. Andrei & S. Manea	251
Utility of physical models for a better understanding of soil behaviour S. Andrei & S. Manea	257
Limit equilibrium methods for stability analysis in landfills I.Bellezza	265

Geotechnical centrifuge applications to foundations engineering teaching B.Caicedo	271
Enseignement de la rhéologie expérimentale pour la recherche J. Canou, JC. Dupla, JL. Favre, E. Dufour-Laridan & Ph. Reiffsteck	275
Un enseignement de spécialité, le cours de stabilité des pentes de l'ENTPE R. M. Faure, J. P. Bourgoin, J. P. Mizzi & N. Botu	283
Teaching earth pressure problems and stability problems from the point of applied mechanics S. Kobayashi	289
Uncertainty in basic laboratory and field properties of geomaterials F.H.Kulhawy, W.A. Prakoso & K.K. Phoon	297
The usefullness of a multidisciplinary approach in geotechnical engineering education claimed by slope stability analyses D.N. Păunescu & N. Mărgărit	303
Some experience after lecturing on ground improvement at the Faculty of Civil Engineering of the Silesian Technical University in Gliwice J.A. Sekowski	311
5 The use of information and communication technology – ICT in geotechnical engineering education	
Geomeca – Multimedia pour l'éducation: Comportement des sols J. Biarez, A. Gomes Correia & S. Taibi	317
Demonstration models for undergraduate teaching in geotechnics <i>F.Bucher</i>	325
Interactive multimedia geotechnical engineering course M.Budhu	329
Computer aided learning in geotechnical engineering education M.B.Jaksa, L.R.Davison & D.G.Toll	335
The use of simple models for undergraduate teaching of geomechanics J.K. Kodikara	343
Place des méthodes numériques dans l'enseignement de la géotechnique Ph. Mestat & Y. Riou	349
GIS – Necessity and means of work in the near future for geotechnicians A. Pogány	361
Building research skills: A course-integrated training method A.Popescu & R.Popescu	365
Educating geotechnical engineers in the age of computers L.C. Reese & W.M. Isenhower	371
Application of geotechnical software in education P.Santrac	375

An interactive approach for geotechnical engineering education S. Singh	381
On the computer aided education of analysis of vertical stresses and settlements of the elastic half-space loaded with various vertical loads <i>M.Skrinar &amp; D.Battelino</i>	383
Stresses and settlements in homogeneous, elastic, isotropic half space, under the load described by a plane over the rectangle <i>M.Skrinar &amp; D.Battelino</i>	389
Introduction into dynamical soil-structure interaction problems A.Strukelj	395
6 Case studies in geotechnical engineering education	
Use of case histories comparison in teaching process A.Chirică, A.Olteanu, M.S.Şerbulea & C.Banciu	403
The practical experience of professors on the geotechnical teaching process O.Couttolenc	409
Statnamic load testing: After the successes in the USA and Asia, getting ready for Europe G.van Ginneken & P.Middendorp	413
A determination to suction capacity of clay with an empirical method S.N.Keskin, Ö.Çimen & H.Yildirim	421
Focus on real life problems facilitating learning and understanding L.Lundell-Sällfors & G.B.Sällfors	425
Etude dans le cadre d'une mobilité universitaire du glissement de terrain de Mont de l'Enclus C. Schroeder & D. N. Păunescu	433
The importance of teaching case histories in the geotechnical education in Austria S. Semprich	441
Straightening of tall structures tilted as a consequence of uneven settlement of foundation soil: Case histories I. Stănculescu, I. Antonescu & A. Olteanu	447
7 History, lifelong learning and international cooperation in geotechnical engineering education	
History of soil mechanics at MIT, 1925-1996 H.P.Aldrich Jr & R.V.Whitman	457
Future challenges and opportunities for the geotechnical teaching <i>R. Flores-Berrones</i>	463
Pour l'enseignement de l'histoire de la géotechnique M.Gambin & JP.Magnan	469

The collaborative geotechnical engineering research of students in the Civil Engineering Department, Khon Kaen University, Thailand W.Gasaluck	477
La formation continue en géotechnique à l'Ecole Nationale des Ponts et Chaussées, France JP. Magnan & E. Carrier	483
International cooperation in geotechnical engineering education – A case study involving Romanian and EU universities <i>I. Manoliu &amp; N. Rădulescu</i>	487
Taught postgraduate geotechnical education in Scotland J.Oliphant & W.M. Stewart	495
Geotechnical engineering: French universities postgraduate programs – Doctorate: D.E.A. + 3-4 years L.Vinet	501
International student exchanges: Conditions for a broader development A.Vuez	503
8 Additional paper	
Basic aspects of Environmental Geotechnics education M. Manassero & C. Spanna	509
Author index	523