

Teaching & Learning Conference Schedule

| Time | Item |
|---------------|---|
| 8:30 | Open Conference |
| 8:40 | Keynote #1 - Are Geotechnical Engineering Labs Effective for Learning? Dr. Gordon Stuble, University of Waterloo |
| 9:40 | Keynote #2 - Key Principles for Effective Learning in Lectures Dr. Donna Ellis, University of Waterloo |
| 10:40 | Coffee |
| 11:00 - 12:00 | Paper Presentations |
| 12:00 | Lunch |
| 13:00 | Keynote #3 - Graduate Attributes: An Opportunity for Rational Curriculum Redevelopment Dr. Vicki Remenda, Queen's University |
| 14:00 | Keynote #4 - Use of Case Histories in Geotechnical Engineering Dr. Jim Graham, University of Manitoba |
| 15:00 | Coffee |
| 15:20 - 16:20 | Paper presentations |
| 16:20 - 17:00 | Discussion and Closing |

Keynote Abstracts

Case studies - a tool for learning

Jim Graham

University of Manitoba

Student projects based on case studies provide opportunities for technical awareness, motivation, confidence, teamwork and life-long learning. They can be used at undergraduate and postgraduate levels to produce an improved learning experience. These attributes are increasingly important as employers and licensing authorities move towards a combination of broadly-based undergraduate education and more specialized postgraduate or in-practice training.

Key Principles for Effective Learning in Lectures

Donna Ellis

University of Waterloo

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Are Geotechnical Engineering Labs Effective for Learning?

Gordon Stublely

University of Waterloo

Laboratory learning activities are usually resource intensive to operate and student -time intensive to complete. Given the amount of effort required to run and perform these learning activities, are they effective? If so, what techniques should we use to ensure that laboratory exercises maximize the opportunity for significant student learning? Can we apply these techniques to other types of learning activities? Answers to these questions can be found in a review of the university science and engineering education literature from the 1950's to the present. Surprisingly these answers contradict many long standing practices in the engineering teaching community. From the review we will identify the significant and negative impact that students' misconceptions have on their learning. It will be shown that active student engagement in all learning activities will ensure that misconceptions are diminished and that phenomenal learning can then occur.

Graduate Attributes: An Opportunity for Rational Curriculum Redevelopment

Vicki Remenda
Queen's University

The Canadian Engineering Accreditation Board (CEAB) is transitioning from counting inputs (i.e. counting accreditation units (AU)) to measuring outputs, or graduate attributes for engineering programs in Canada. This transition can be viewed as a curse - or an opportunity for curriculum redevelopment. In this presentation participants will learn techniques for developing a vision for what engineering students should know, and what skills and attitudes they should have. Ideas for selecting and/or redesigning an assemblage of courses consistent with the graduate attributes will be presented. Developing assessment rubrics will be discussed, and it will be demonstrated how attributes can be measured. Experience gained from the Queen's University Geological Engineering curriculum reform implemented in the Fall of 2009, and the literature, will be the basis for the presentation.

Accepted Papers

The Role of Competency-Oriented Descriptions in Geo-Engineering

A. Keith Turner

Colorado School of Mines

Hydrogeology and Engineering Geology in the Education of Geotechnical and Geoenvironmental Engineers

Richard Jackson

Geofirma Engineering Ltd.

The Use of State of the Art E-Learning Technology in Support of Education and Professional Development for GeoEngineers

Skordaki, E, & Vlachopoulos, N.

Royal Military College of Canada

Evaluation of Teaching a Two Course Sequence in Geotechnical Engineering in an Integrated Lecture – Lab Environment

T. Kunberger

Florida Gulf Coast University

Geotechnical Engineering in the Americas Before Columbus

Luis E. Vallejo, Kristine Lalley, & Matthew Long

University of Pittsburgh

Evaluations of Lateral Earth Pressure in a Soil-Bentonite Slurry Trench Cutoff Wall

Daniel G. Ruffing, Jeffrey C. Evans, Michael A. Malusis

Bucknell University

Understanding the Limitations of the Swedish Method of Slices from the Stress Perspective

G.H. Lei, Abraham C.F. Chiu & Q. Zheng

Hohai University

The Theory of Granular Packings as a Chapter of the Soil Mechanics Subject

Calixtro Yanqui

San Agustin National University of Arequipa