THE UNIVERSITY OF WESTERN ONTARIO
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Course Outline 2009-FT
CEE9621 – Landslides and Slope Stability

OBJECTIVES: To study principles of slope stability analysis, to evaluate stability of earth slopes and to investigate landslides and other slope failures from engineering perspectives. The principles and methodologies for the assessment, recognition, investigation, analyses and mitigation of landslides and slope failures will be studied.

PREREQUISITE: Completion of an undergraduate degree in civil engineering or permission of the instructor.

TOPICS: (1) Principles, definitions, triggering mechanisms and processes of landslides, (2) Soil mechanics principles: shear strengths and stability conditions (3) Principles of slope stability analysis by limit equilibrium approach and numerical modeling using Slope-W, (4) Monitoring of slope stability and investigation of slope failures, and (5) principles of slope stabilization and repair and preliminary design using Slope-W.

CONTACT HOURS: Weekly 2 hour lectures, discussions and presentations (details will be discussed in the first lecture

TEXT: 1. Study guidelines.
2. *Soil Strength and Slope Stability*, Duncan, J.M. and Wright, S.G. 2005 Wiley (2 hour reserve in Taylor library)

REFERENCE: *Landslides: Investigation and Mitigation*. 1997. Special Report 247, TRB, NRC (2 hour reserve in Taylor library)

ASSIGNMENTS: 4 Assignments.

EXAMINATION: One final project report.

EVALUATION:		
	Presentations, discussions, and assignments	50%
	Project	50%
	Total	**100%**

INSTRUCTOR: Dr. J.Q. Shang, P.Eng. ESB3082.
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ES 9621 Schedule

Fall -2009 Term Lectures: Tuesdays, 2:30 - 4:30

Lecture	Date	Topics	Work due
1	9/22/2009	(1) Principles, definitions, triggering mechanisms and processes of landslides	
2	9/29/2009	**P1 case presentation**	
3	10/6/2009	(2) Soil mechanics principles: shear strengths and stability conditions	A1
4	10/13/2009	(3) Principles of slope stability analysis	
5	10/20/2009	(4) Monitoring of slope stability and investigation of slope failures	
	10/27/2009	**out of town**	
	11/3/2009	**out of town**	
6	11/10/2009	**P2 Slope stability analysis**	A2
7	11/17/2009	(5) principles of slope stabilization and repair	
8	11/24/2009	(6) Case studies	
9	12/1/2009	**P3 Instrumentation**	A3
10	12/8/2009	**P4 Mitigation**	A4

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CEE9621a - 2009 – Landslides and Slope Stability

Assignment 1

Select a slope failure (landslide) case study from ***Canadian Geotechnical Journal*** (must be from an issue between 1996 and 2009[1]), which involves failure of an earth (soil) slope, which can be either natural or man-made, and include following information in detail:

a) Communicate among yourselves and ensure no duplicate cases – notify your selection via WebCT to all registered students.
b) Define this slope failure in terms of the forming names discussed in TRB;
c) Summarize detailed information on the failure (history, chronology, climate, geology, hydrogeology, topography, precipitation, internal and external causes, trigger, etc.); and
d) Discuss impacts of this landslide on human and environment as well as on social and economic losses.
e) Present your case in class, 5 minutes. Your case will be commented by fellow students and approved by the course instructor – please be in classroom at least 10 minutes before class starts and load your slides into computer.
f) **Hand-in Assignment 1:** Write an essay on items 1isted in b), c) and d) above with no more than 10 pages, double space. Include a hard copy of the CGJ paper.

[1] Papers can be download from CGJ website for issues after 1996.
http://pubs.nrc-cnrc.gc.ca/rp-ps/journalDetail.jsp?jcode=cgj&lang=eng