The Hong Kong University of Science and Technology

UG Course Syllabus

[Course Title] Soil Slope Engineering

[Course Code] CIVL4710

[No. of Credits] 3

[Any pre-/co-requisites] CIVL 3730 – Fundamentals of Geotechnics

CIVL 3740 - Geotechnical Analysis and Design

Name: Dr WANG, Yu

Email: wang.yu@ust.hk

Course Description

This final-year elective course aims to teach students to apply the fundamental principles of soil mechanics to the analysis and design of slope stability. The course covers slope failure mechanisms, transient seepage analysis, measurement and selection of shear strength parameters, historical and recent methods of slope stability analysis, designs of slope stabilization measures, and reliability-based analysis. Hands-on experience of using computer software for slope seepage and stability analyses will also be provided in the course.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Assignments	30%
Group Project Individual Report	50%
Project Presentation (including Q&A)	20%

Required Texts and Materials

1. Duncan, J. M., Wright, S. G., & Brandon, T. L. (2014). Soil strength and slope stability. John Wiley & Sons (Online version available @ HKUST library)

[Optional] Additional Resources

2. Geotechnical Manual for Slopes (GCO, 1984): design standard and recommended good practice mainly for man-made slopes
3. Geoguide 7 - Guide to Soil Nail Design and Construction (GEO, 2007): for use of soil nails in slope works
4. Highway Slope Manual (GEO, 2000): supplementary guidelines for highway slopes
5. Geoguide 1 - Guide to Retaining Wall Design (GEO, 1993): for retaining walls
6. GEO Report No. 138 - Guidelines for Natural Terrain Hazard Studies, 2nd Edition (GEO, 2016): for natural terrain
7. E.N. Bromhead, The Stability of Slopes. Blackie Academic & Professional, 1992.
8. R. Chowdhury, Slope Analysis. Elsevier Scientific Publishing, 1978.
9. D. Brunsden, D.B. Prior, Slope Instability. John Wiley & Sons, New York, 1984.