

Faculty of Engineering

School of Minerals and Energy Resources Engineering

Undergraduate Course Outline

MINE4310

Mine Geotechnical Engineering

Convenor:

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## 1. INFORMATION ABOUT THE COURSE

Course Code:	MINE4310	Term:	T1, 2020	Level:	UG	Units/Credits	6 UOC
Course Name:	Mine Geotechnical Engineering						

## 2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

### 2.1. Course Aims

This course provides students with a practical understanding of the application of geotechnical engineering

- x Subsidence Engineers' Handbook. National Coal Board (1975).
- x Rock Support and Reinforcement Practice in Mining. E Villaescusa, C Windsor & A Thompson (eds.), Balkema (1999).
- x Cablebolting in Underground Mines. D Hutchinson & M Diederichs, BiTech Publishers (1996).
- x Deep and high stress mining, 1st Int'l Seminar, AGU, 2002 (This is a series)
- x Mass Mining Conf. Series Proceedings. AusIMM, Brisbane. (This is a series recent one in 2015 in Sydney)
- x ISRM 2003 Proceedings Technology roadmap for rock mechanics South Africa (SAIMM)
- x Ground control in mining Technology and practice, Proc. Of 1st Aust. Ground control in Mining Conf., UNSW, ed. Hebblewhite, 2003. (This is a series recent one in 2014)
- x

## 4. COURSE CONTENT AND LEARNING ACTIVITIES

### 4.1. Course content

1. Introduction to Mine Geotechnical Engineering
2. Rock mass classification system, reinforcement and support of hard rock & soft rock
3. Mining methods selection criteria and geotechnical risks
4. Application of numerical methods to mine design
5. Caving mechanics & excavation stability
6. Longwall Geomechanics
7. Hard rock / coal pillar mechanics and design
8. Mine backfill and subsidence
9. Dynamic events in hard rock and coal mining
10. Instrumentation and monitoring (surface and underground)
11. Slope stability

## 4.2. Learning Activities Summary

UNSW







- x Significantly affect your performance in ~~assess~~able work, be it a formal end-of-semester examination, a class test, a laboratory test, a seminar presentation or any other form of ~~asth~~5 0.621-1.3 (s)9.6 (e)-3 (s)]TJ 18.435

We also encourage all students to share any feedback they have any time during the course. If you have a concern, please contact us immediately.

