Course

Mine Geology and Geophysics for Mining Operations

MINE8760 | 6 Units of Credit
Overview

This course will focus on the essential interaction between the disciplines of geology and mining engineering, embracing engineering geology, structural geology, the geotechnical field and applied geophysics within the constraints of ongoing mining operations - the need to operate safely, the need to maintain production and the need to control costs. The impact of engineering geological rock mass properties and structural features on mining operations is evaluated. The likely variability of these parameters and the degree of confidence with which they can be predicted and projected ahead of open pit and underground mining processes and hence used in ongoing mine planning and scheduling will be discussed. Techniques of determining and monitoring the stress regime of the mine will be reviewed. In this context, a major task of the mine geologist is to continually update the technical data base, originally based on exploration data, with new data gathered as mining proceeds and by logging of strategically placed drill holes in advance of mining. Results of and lessons learnt from mining operations must also be incorporated in the data base to assist in reinterpretation of the data and improve prediction of future mining conditions. Modern geophysical techniques are essential aids in this process. These techniques, including 2D and 3D seismic, microseisms, tomography, electromagnetic imaging techniques, radar and downhole geophysical survey methods, will be reviewed in the context of their ability to provide reliable information to assist with mine planning and operational decision making.

This course will enable students to gain knowledge and skills needed for effective communication between disciplines at the geological-engineering interface. Effective exchange of data is of benefit to both. Case histories of mining operations, illustrating particular examples of mining operational problems and solutions, will be presented. As well, case studies of various mining situations will be presented for class and syndicate evaluation and identification of operational strategies.
**Faculty**
Faculty of Engineering

**School**
School of Minerals & Energy Resources Engineering

**Study Level**
Postgraduate

**Offering Terms**
Term 1

**Campus**
Kensington

**Delivery Mode**
Fully online

**Indicative contact hours**
6

**Timetable**
Visit timetable website for details
Course Outline

To access course outline, please visit:

MINE8760 Course Outline
Fees

Commonwealth Supported Students  $1191
Domestic Students               $4470
International Students         $5910

DISCLAIMER
Please note that the University reserves the right to vary student fees in line with relevant legislation. This fee information is provided as a guide and more specific information about fees, including fee policy, can be found on the fee website.

For advice about fees for courses with a fee displayed as "Not Applicable", including some Work Experience and UNSW Canberra at ADFA courses, please contact the relevant Faculty.

Where a Commonwealth Supported Students fee is displayed, it does not guarantee such places are available.
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179