Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: SURFACE AND UNDERGROUND MINING SYSTEMS

Unit ID: ENGPG9401

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (ENGRG3401)

ASCED: 030303

Description of the Unit:
This unit enables participants to surface and underground mining systems and apply a body of knowledge in the area of mining methods. The unit equips students with highly developed skills for research and enquiry. Students enrolled in this unit will be able to apply the body of knowledge to a range of contexts within the mining industry enabling them to undertake professional or highly skilled work within the mining industry and allow them to undertake further study.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory						
Intermediate						

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Advanced			✔			

Learning Outcomes:

On successful completion of the unit the students are expected to be able to:

Knowledge:

K1. Recognize orebody characteristics and classification.
K2. Select and describe adequate mining systems for a given deposit.
K3. Retell the mine developments required for a given mining system.
K4. Interpret the effect of mining recovery and dilution on profitability and their relationship.
K5. Interpret various loading/transport systems in a surface or underground mining method.

Skills:

S1. Propose the most adequate mining system for an orebody.
S2. Evaluate profitability in consideration of mining recovery and ore dilution.
S3. Select and jusify the equipment suitable for a mining system.

Application of knowledge and skills:

A1. Synthesize knowledge and develop solutions to a mining system in a range of technical or management functions in varied specialised contexts.
A2. Plan and design a mining system suitable for a given deposit.

Unit Content:

Surface and underground mining systems.

Topics may include:

- Introdcution to surface and underground mining
- Orebody characteristics and classification
- Mining recovery and dilution of ore
- Surface mining systems, including strip mining and open pit mining systems
- Underground mining systems (1) self-supported mining systems
- Underground mining systems (2) supported mining systems
- Underground mining systems (3) caving mining systems
- Underground mine hoisting system

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-5, S1-3	Assignment questions	Assignments	10 - 40%
K1-5, S1-3, A1-2	Design Project	Design Project Report	20 - 30%
K1-3, S1-3, A1-2	End of Semester Examination or Test	Examination/Test	40 - 60%

Adopted Reference Style:

IEEE

Refer to the library website for more information

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