



Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: TUNNELLING AND MINE DEVELOPMENT

Unit ID: ENGIN5515

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (ENMIN5120)

ASCED: 030303

Description of the Unit:

This unit qualifies participants to apply an advanced body of knowledge in the area of underground mine development and equips them 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:

Knowledge:

- K1.** Recognize the principles and practice of mine development.
- K2.** Interpret drilling and blasting method for shaft sinking, tunnelling, raising and winzing operations.
- K3.** Interpret mechanised tunnelling systems.
- K4.** Appreciate mine development through difficult ground.

Skills:

- S1.** Synthesize knowledge and investigate underground mine development problems.
- S2.** Select mine development techniques for a mine development.
- S3.** Analyze development requirements for differing mining systems.
- S4.** Undertake case studies, including costing.

Application of knowledge and skills:

- A1.** Plan and design underground mine developments.
- A2.** Investigate an adequate mine development technique for mine developments

Unit Content:

Topics may include:

1. Mine planning and optimising the infrastructure requirements for mines.
2. Drill and blast or machine mining selecting appropriate methods for diverse scenarios.
3. Development requirements for differing mining systems.
4. Case studies and costs.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-4, S1-4	Numerical and conceptual tasks	Submitted assignments	40-50%
K1-4, S1-4, A1-2	Mine development design project	Report	20-30%
K1-4, S1-4	Numerical tasks	Invigilated test	20-40%

Adopted Reference Style:

Other (IEEE-Refer to the library website for more information)

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)