



# Unit Outline (Higher Education)

**Institute / School:** Institute of Innovation, Science & Sustainability

**Unit Title:** MINE POWER AND SERVICES TECHNOLOGY

**Unit ID:** ENGIN2501

**Credit Points:** 15.00

**Prerequisite(s):** Nil

**Co-requisite(s):** Nil

**Exclusion(s):** (ENMIN5100 and ETMIN2260)

**ASCED:** 030303

**Description of the Unit:**

This unit introduces students to different electrical and hydraulic power systems for mines such as, compressed air and diesel generators and mine water and the different dewatering techniques used in surface and underground mines.

**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.** Demonstrate the principles and practice of mine utility supply and distribution.
- K2.** Interpret the nature, occurrence and methods to deal with water.
- K3.** Interpret the processes and appreciate the importance of mine de-watering.

#### Skills:

- S1.** Select and evaluate drainage systems for a mine.
- S2.** Select and evaluate power systems for a mine.

#### Application of knowledge and skills:

- A1.** Develop a detailed design in relation to mine power systems.
- A2.** Develop a detailed design in relation to mine drainage systems.

#### Unit Content:

Topics may include:

- Mine Dewatering: - The occurrence of ground water, surface water and mine water; - Quantitative and qualitative measurement of water; - Mine dewatering systems for both surface and underground; and - Prevention of inflow and mine flooding.
- Power Supply: - Electrical; - Compressed air; - Hydraulic; and - Diesel.

### Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-K3, S1, S2, A1, A2	A selection of tutorial and design problems will be used throughout the unit.	A combination of assessed tutorials and assignments.	20 - 30%
K1-K3, S1, S2, A1, A2	Practical exercises undertaken in the field and/or laboratory.	A written report.	20 - 30%
K1-K3, S1, S2, A1, A2	An examination or test on any or all of the material covered in the unit.	Examination/test	40 - 60%

### 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](#)