



Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: Subsurface Environment and Ventilation

Unit ID: ENGRG3402

Credit Points: 15.00

Prerequisite(s): (ENGRG2302)

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED: 030303

Description of the Unit:

This unit enables participants to apply a body of knowledge in the area of mine ventilation 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:
Knowledge:

- K1.** Describe the theoretical concepts to solve mine ventilation problems.
- K2.** Identify the ventilation systems used in underground mining operations.
- K3.** Compare the common impurities and hazards in mine atmosphere.

Skills:

- S1.** Evaluate complex ideas in mine ventilation.
- S2.** Analyse the nature of a mine environment.
- S3.** Select appropriate tools to solve problems in mine ventilation.

Application of knowledge and skills:

- A1.** Justify, develop and apply control measures that can detect, monitor, and control mine hazards.
- A2.** Create an appropriate ventilation system for a mine.

Unit Content:

Topics may include:

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- Theory of Mine ventilation
- Mine Ventilation pollutants and their control by ventilation and alternative techniques
- The principles of mine ventilation planning, Computer aided mine ventilation planning
- Exposure and maximum permissible dose, Principles of protection
- Emergency procedure and disaster management
- Optimisation of mine ventilation systems

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-K3, S1-S3 and A1-A2	Numerical and conceptual tasks	Assignment/s	10-30%
K2-K3, S2-S3 and A2	Mine ventilation planning project and/or laboratory-based practical exercise	Report and Ventsim files and/or lab report	20-40%
K1-K3, S1-S3 and A1-A2	Examination of some or all of the unit materials	Test/Exam	30-50%

Adopted Reference Style:

IEEE

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

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