

# Unit Outline (Higher Education)

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

**Unit Title:** Mine Safety and Environmental Engineering

**Unit ID:** ENGRG9403

**Credit Points:** 15.00

**Prerequisite(s):** Nil

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

**Exclusion(s):** (ENGIN5501)

**ASCED:** 030303

## Description of the Unit:

This unit qualifies participants to apply an advanced body of knowledge in the area of mine safety and environmental engineering 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	■	■	■	■	■	■
Advanced	■	■	■	■	✓	■

### Learning Outcomes:

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

### Knowledge:

- K1.** Identify, analyse and apply the development and implementation of health and safety and work environmental policies and practices.
- K2.** Understand and analyse the systems used in risk assessment and control.
- K3.** Report on the history of occupational health and safety.
- K4.** Demonstrate a summary of how the legal system deals with occupational health and safety problems.
- K5.** Interpret comparison risk management models.
- K6.** Appreciate, compare and contrast occupational health and safety auditing tools.
- K7.** Identify and analyse the effects of specific hazards on the human body.

### Skills:

- S1.** Evaluate, analyse, consolidate and synthesise knowledge and identify and provide solutions to complex mine safety problems.
- S2.** Generate and evaluate complex ideas in mine safety and selection appropriate solutions.
- S3.** Assess and apply the hierarchy of hazard controls to control hazards.
- S4.** Select and apply appropriate tools to solve problems in mine safety.
- S5.** Propose and accommodate communication strategies to transfer complex knowledge and ideas to a variety of disciplines within a mining project.

### Application of knowledge and skills:

- A1.** Develop high-level, independent judgments relating to mine safety in a range of technical or management functions in varied specialised contexts.
- A2.** Plan, implement and evaluate short, medium and long term plans and schedules for mine safety.
- A3.** Act responsibility and be accountable for personal outputs and all aspects of the work or function of others.

### Unit Content:

Topics may include:

- Legislation: general framework; health & safety legislation; mines regulations.
- Occupational Health & Safety: history and philosophy; types of accidents and injuries; hazard management; manual handling; human factors; entry into confined spaces; control strategies.

- Mine Environmental Engineering: atmospheric contaminants and their control; (dusts, gases, radiation, heat and humidity, noise); mine illumination.
- Emergency Situations: outbursts and explosions; mine fires; mine rescue.

**Learning Task and Assessment:**

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-7, S1-5, A1-3	Numerical and conceptual tasks.	Submitted assignments	40-50%
K1-7, S1-5, A1-3	Risk assessment.	Report	25-30%
K1-7, S1-5, A1-3	Safe design project.	Report	25-30%

**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](#)