Course Outline (Higher Education)

Institute: Institute of Innovation, Science & Sustainability

Course Title: MINE SAFETY & ENVIRONMENTAL ENGINEERING

Course ID: ENGIN5501

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (ENMIN5020)

ASCED: 030303

Description of the Course:

This course 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 course 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 course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory						
Intermediate						

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Advanced					✔	

Learning Outcomes:

On successful completion of the course 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 accomodate 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.

Course 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.

Values:

V1. Recognise that social problems have an historical and legal context.
V2. Underline the safe-place over the safe-person approach to control hazards.
V3. Appreciate workplace consultation.

Graduate Attributes

The Federation University Federation graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1-7, S1-3, A1-3	AT1-3
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	K5-7, S1-2, A1-3	AT1-2
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	K1-7, S1-5, A1-3	AT1-2
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	K3-5, S4-5, A1-3	AT1-3
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	K1-7, S1-5, A1-3	AT1- AT3

Learning Task and Assessment:

Learning Outcomes Assessed	Learning 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