Course Outline (Higher Education)

School / Faculty:	Faculty of Science and Technology
Course Title:	MINE ENVIRONMENT ENGINEERING
Course ID:	ENGIN5504
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	ENMIN7050 MINE ENVIRONMENT ENGINEERING
ASCED Code:	030303
Grading Scheme:	Graded (HD, D, C, etc.)

Program Level:

AQF Level of Program					
5	**6**	**7**	**8**	**9**	**10**
Level					
Introductory					
Intermediate					
Advanced				✔	

Learning Outcomes:

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

Knowledge:

- **K1.** Compile the environmental impacts that mining operations can have.
- **K2.** Generate the general principles and responsibilities enshrined in law of the mining industry to the environment.
- **K3.** Propose how environmental considerations can be designed into mining operations.
- **K4.** Formulate what is meant by sustainable development.
- **K5.** Evaluate the economic, social, political and environmental aspects that are essential elements in achieving sustainable development.

Skills:

- **S1.** Combine environmental principles with engineering practice.
- **S2.** Evaluate complex ideas in mine environmental management.

Application of knowledge and skills:

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ENGIN5504 MINE ENVIRONMENT ENGINEERING

A1. Implement and evaluate short, medium and long term plans and schedules for environmental management at mines.

A2. Act within the legislative requirements for environmental stewardship.

Course Content:

Topics may include:

- Ecologically sustainable development.

- The law, the environment and the workplace.

- Engineering ethics.

- The concept of waste.

- Airborne pollution.

- Water and fluid pollution.

- Environmental impact and impact analysis.

- Contaminated land management.

- Environmental impact assessment.

- Disposal of mine tailings.

- Vibration and fly rock.

- Noise.

- Methods of minimising environmental impact.

- Case studies.

Values and Graduate Attributes:

Values:

V1. Appreciate environmental implications in excavation of rock, soil, etc.

V2. Propose the fact that excavation is essential to maintenance of modern living standards, but that it must be balanced with environmental protection.

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V3. Demonstrate the sustainability ethic in engineering.

Graduate Attributes:

FedUni graduate attributes statement. To have graduates with knowledge, skills and competence that enable them to stand out as critical, creative and enquiring learners who are capable, flexible and work ready, and responsible, ethical and engaged citizens.

Attribute	Brief Description	Focus
Knowledge, skills and competence	Mining engineering is a fast-changing technological area which impacts on our every-day life. Students will develop an appreciation that learning is a life-long process.	High
Critical, creative and enquiring learners	Development of independent, critical and creative learners is an essential feature of engineering education. Assessments tasks are individualised, so students need to rely on their personal efforts to arrive at their conclusions.	High
Capable, flexible and work ready	Mining engineering study requires a team work approach to execute tasks to achieve common objectives. Training for engagements is built in to the mining program. A student will graduate with a new outlook as an engaging capable, flexible and work ready individual.	High
Responsible, ethical and engaged citizens	Through the mining program delivery, a student will value the engineering input for the advancement of humanity. Students are made aware that the engineer does not work or act in isolation, but is part of a wider community that includes many stakeholders, some of which may have no technical knowledge of what the engineer does. An awareness of community as a responsible, ethical and engaged citizen is important when finding a design solution.	High

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Task	Assessment Type	Weighting
K1-5, S1-2, A1-2	Numerical and conceptual research tasks.	Submitted assignments	30-40%
K1-5, S1-2, A1-2	Critical analysis of case studies.	Report	30-40%
K1-5, S1-2, A1-2	Design project.	Report	20-40%

Adopted Reference Style:

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