

Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: MINE PLANNING & SCHEDULING

Unit ID: ENGIN5505

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (ENMIN4090 and ENMIN7010)

ASCED: 030303

Description of the Unit:

This unit qualifies participants to apply an advanced body of knowledge in the area of surface and underground mining 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

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

Knowledge:

- K1.** Identify production planning and scheduling requirements for a mine.
- K2.** Select the parameters used in determining which planning and scheduling system should be used.
- K3.** Interpret common mining planning methods.
- K4.** Recognize a variety of planning exercises using modern simulation techniques.
- K5.** Appreciate the social, political and environmental issues associated with mining.

Skills:

- S1.** Select the best mining system for an ore deposit.
- S2.** Partition mine development plans.
- S3.** Evaluate the effects of mining operation on social, political and environmental issues.
- S4.** Select excavation processes for various types of mineral deposits in varying conditions.
- S5.** Incorporate the appropriate safety systems.

Application of knowledge and skills:

- A1.** Develop short, medium and long term plans and schedules for a mine.
- A2.** Manage personal outputs and all aspects of the work or function of others.

Unit Content:

Topics may include:

- Introduction to mine planning and sustainability
- Mineral inventory and ore reserve estimation
- Determination of size of mine, life of mine and production rates
- Feasibility study

- Equipment selection, production planning and mining costs.

- Optimisation in open pits.

- 3D ultimate pit limit algorithms and their application.
- Haul road generation and dump design.
- Heuristic long and short term scheduling techniques.

- Mine optimisation for sequencing and scheduling.
- Mine closure planning
- Project management and network analysis

- Future concepts.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-5, S1-5, A1-2	Numerical and conceptual tasks.	Written assignments	40-50%
K1-5, S1-5, A1-2	Design project.	Written report and associated calculations	50-60%

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](#)