



DEPARTMENT OF MINING ENGINEERING

www.up.ac.za/mining-engineering

KEY RESEARCH IMPACT

EBIT's Department of Mining Engineering has contributed greatly to the South African mining industry by providing it with world-class leaders in mining engineering. The Department focuses on numerical modelling and rock engineering, rock breaking, environmental management, and mining management and leadership.

RESEARCH OPPORTUNITIES

- Safety, health and the environment in the mining industry
- Rock engineering and numerical modelling
- Rock-breaking technology
- Mining resilience
- Virtual reality education and training in the mining industry

#UPMiningMatters

RESEARCH PRIDE

Research chairs and entities

- Harmony Chair in Rock Engineering and Numerical Modelling
- AEL Intelligent Blasting Chair in Innovative Rock-Breaking Technology
- Murray and Roberts Chair in Industry Leadership 4.0
- Mining Resilience Research Centre

Exceptional research facilities

- *Kumba Virtual Reality Centre for Mine Design*
Virtual Reality (VR) has established itself as a credible medium to convey previously complex technical scenarios in a clear, more visual way. The Department is contributing to the advancement of VR education and training in the mining industry with its cutting-edge Kumba VR Centre for Mine Design. Topics that are being addressed in this field include fully integrated mine design using VR to visually represent the consequences of good or poor mine design, and ways in which VR can be fully optimised and implemented as a tool for mining engineering students to experience various aspects of a mining operation working together, integrating several types of simulations into one environment. Further interventions in providing incident reconstruction simulations through VR include potentially preventative actions in an immersive environment. The Centre opens an array of research possibilities to optimise operations in the mining industry.

Join the University of Pretoria's Faculty of Engineering, Built Environment and Information Technology and join a world-class research institution.



CAREER PATHWAYS

Qualified mining engineers can register as professional engineers (Pr. Eng.) after obtaining the required industry exposure. In addition to occupying highly satisfying positions, professional engineers can also undertake consultation work. Honours and master's degree programmes in the Department allow postgraduate students to obtain specialised knowledge in their chosen field, which will benefit them in their careers in industry. For those interested in an academic career, a PhD degree from the Department is an invaluable asset.

ALUMNI RELATIONSHIPS

The Faculty of Engineering, Built Environment and Information Technology believes in continuing the relationship that has been formed with its students even after they graduate. The fact that many of its alumni occupy leading positions in industry is testimony to the high value of a qualification from the Faculty, as well as the important contribution its alumni have made to the economic development of the country.

The Department is particularly successful in this regard. The Mining Alumni Society of the University of Pretoria (MASUP) is an active alumni body. Members of the Society support the Department by raising sponsorships, ensuring that high skills and educational standards are maintained, offering mentorship, providing external examiners, being available for industry discussions, offering guidance and serving on the advisory committee of the Department. MASUP also serves as a social network for mining engineers in industry.

POSTGRADUATE DEGREE PROGRAMMES

Honours programmes

The Department's honours degree programmes prepare students for a career in research through the teaching of its modules. However, there is also a strong need for these programmes in industry, without students having to commit to master's degree studies

BEngHons Mining Engineering ■ **BScHons Applied Science Mining**

Master's programmes

Through the Department's master's programmes, the student initiates, plans and executes a scientific investigation on a mining engineering topic and then writes a dissertation on the research project and its findings.

MEng Mining Engineering ■ **MSc Applied Science Mining**

Doctoral programmes

A doctoral degree in the Department is awarded for a successful thesis on advanced original research that makes a real and substantial contribution to the knowledge of engineering science or practice.

PhD Mining Engineering ■ **PhD Mining**

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Faculty of Engineering,
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