University of Pretoria Yearbook 2017

BScHons Applied Science Mining (12243035)

Duration of study	1 year
Total credits	128

Programme information

The BScHons (Applied Science) degree is conferred by the following academic departments:

- Chemical Engineering
- Civil Engineering
- Industrial and Systems Engineering
- Materials Science and Metallurgical Engineering
- Mechanical and Aeronautical Engineering
- Mining Engineering

Any specific module is offered on the condition that a minimum number of students are registered for the module, as determined by the head of department and the Dean. Students must consult the relevant head of department in order to compile a meaningful programme, as well as on the syllabi of the modules. The relevant departmental postgraduate brochures must also be consulted.

Admission requirements

An appropriate bachelor's degree, a BTech degree or equivalent qualification.

Curriculum: Final year

Minimum credits: 128

All modules compulsory / Alle modules verpligtend

Core modules

Basic mine ventilation engineering 701 (PKB 701)

Module credits	16.00
Prerequisites	No prerequisites.
Contact time	Self study
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering
Period of presentation	Semester 1 or Semester 2

Underground mining methods 701 (PMY 701)

Module credits	32.00
Prerequisites	No prerequisites.
Contact time	10 lectures per week
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering
Period of presentation	Semester 1 or Semester 2

Module content

PMY 701 provides an overview of mining by covering the following subject matter: history of mining in South Africa, surface-mining methods, underground mining methods, and a brief overview of mine environmental control and mine strata control. Then the module covers general mine layouts, mine plan reading, mine surveying, electricity supply, transport systems, water management systems, and mine fires. Specific mining techniques. Shafts: Types, methods and equipment for sinking; economic considerations. Tunneling: Design, development techniques and equipment. Design and construction of large excavation. Design, construction, reinforcing and repair of ore passes. Fires in gold and coal mines: Causes, prevention, detection, combating and insurance. Flooding: Water sources, results, dangers, sealing and control.

Research project 700 (PSS 700)

Module credits	32.00
Prerequisites	No prerequisites.
Contact time	Self study
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering

Period of presentation	Year

Module content

*This is a compulsory research module.

Basic rock mechanics 703 (PSZ 703)

Module credits	16.00
Prerequisites	No prerequisites.
Contact time	Self study
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering
Period of presentation	Semester 1 or Semester 2

Surface-mining 703 (PMY 703)

Module credits	16.00
Prerequisites	No prerequisites.
Contact time	10 lectures per week
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering
Period of presentation	Semester 1 or Semester 2

Module content

Mining methods for open pits and strip mine operations. Basic mine planning, scheduling and economic cut-off limits with regards to waste stripping and ore grade. Continuous and discontinuous operations: Selection and management of truck-based loading and transport systems. Selection and management of conveyor-based loading and transport systems. Dragline selection, operation, management and strip mining practices. Slope stability in surface mines, plane, wedge and circular/non-circular failures.

Explosives engineering 701 (PRX 701)

Module credits	16.00
Prerequisites	No prerequisites.
Contact time	10 lectures per week
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering
Period of presentation	Semester 1 or Semester 2

Module content

History of explosives, types of explosives: primary and secondary explosives, thermodynamics of detonation, strength of explosives. Methods and techniques, explosive initiating systems, application of explosives in rock breaking; the effects of geology and drilling. Surface and underground blasting, controlled blasting, vibration control, air blast. Ethics and regulatory compliance. Equipment and calculations.

The information published here is subject to change and may be amended after the publication of this information. The General Regulations (G Regulations) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the General Rules section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.