University of Pretoria Yearbook 2017

Strata control 410 (PSZ 410)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEng Mining Engineering
	BEng Mining Engineering
	BEng Mining Engineering ENGAGE
Prerequisites	SWK 210, PMY 320, Finalists only
Contact time	3 lectures per week, 2 practicals per week, 1 tutorial per week
Language of tuition	Module is presented in English
Academic organisation	Mining Engineering
Period of presentation	Semester 1

Module content

Three dimensional stress and strain tensors and linear elasticity. The state of stress in the earth’s crust. Rock material and rock mass failure criteria. The response of the rock mass to underground excavations, energy release rate and excess shear stress. Mining induced seismicity, rock bursts and measures to minimise mining induced seismicity so as to improve SHE. Elementary mine layout design, pillar design and underground excavation support and their effects on SHE. Stress analysis of mining layouts and mine layout optimisation.