

# University of Pretoria Yearbook 2021

## Strata control 310 (PSZ 310)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Engineering, Built Environment and Information Technology</a>
<b>Module credits</b>	16.00
<b>NQF Level</b>	07
<b>Programmes</b>	<a href="#">BEng Mining Engineering</a> <a href="#">BEng Mining Engineering ENGAGE</a>
<b>Prerequisites</b>	SWK 210
<b>Contact time</b>	2 tutorials per week, 3 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mining Engineering
<b>Period of presentation</b>	Semester 2

### 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.

Geotechnics include understanding discontinuities in rock mass, stereo nets, cohesion and friction. Rock behaviour pertaining to excavations, understanding plane, circular and wedge failures, Rock slope safety factors. Slope stabilisation, neutral line theory, effects of water in a slope, monitoring of slopes and instruments available for slope stability monitoring, Risk concepts pertaining to slopes and a case study is discussed. Aspects of the Mine Health and Safety Act are also dealt with.

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