

University of Pretoria Yearbook 2025

Rock and soil mechanics for geologists 371 (GLY 371)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	36.00
NQF Level	07
Programmes	BSc in Environmental and Engineering Geology
Prerequisites	GLY 263 and WTW 148
Contact time	4 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Geology
Period of presentation	Semester 1

Module content

Introduction to engineering properties and behaviour of soil and rock. Basic characteristics of soils such as plasticity of fine-grained soils, particle size analysis and phase relationships. Seepage analysis in soils such as flow nets and effective stress principles related to saturated and unsaturated principles. The Mohr-Coulomb strength theory and the construction of Mohr circles with interpretation of the stress-strain properties of soils. Physical and mechanical properties of rock, stress and strain in rocks, strength and deformability of rock and rock mass and in-situ stress. Rock mass characterisation and applications of rock mass classification systems to slopes and tunnels. Inference of geotechnical constraints to selected lithostratigraphic units and incorporating different stabilization methods in rock excavations.

General Academic Regulations and Student Rules

The [General Academic Regulations \(G Regulations\)](#) and [General Student Rules](#) apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations. The G Regulations are updated annually and may be amended after the publication of this information.



Regulations, degree requirements and information

The faculty regulations, information on and requirements for the degrees published here are subject to change and may be amended after the publication of this information.

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQSF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.