University of Pretoria Yearbook 2020

BScHons Geology (02240142)

Minimum duration of study	1 year
Total credits	135
NQF level	08

Programme information

Renewal of registration

i. Subject to exceptions approved by the Dean, on the recommendation of the relevant head of department, a student may not sit for an examination for the honours degree more than twice in the same module.
ii. A student for an honours degree must complete his or her study, in the case of full-time students, within two years and, in the case of after-hours students, within three years of first registering for the degree. Under special circumstances, the Dean, on the recommendation of the relevant head of department, may give approval for a limited extension of this period.

In calculating marks, General Regulation G.12.2 applies.

Apart from the prescribed coursework, a research project is an integral part of the study.

Admission requirements

- BSc (Geology)
- At least an average of 60% for all the geology modules at third-year level
- Complete preceding degree will be considered for selection.
- Only limited to 25 positions; candidates who have progressed in the minimum period will take preference

Pass with distinction

The BScHons degree is awarded with distinction to a candidate who obtains a weighted average of at least 75% in all the prescribed modules and a minimum of 65% in any one module.

Curriculum: Final year

Minimum credits: 135

Core modules

Petrology and geochemistry 701 (GLY 701)

Module credits	20.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Geology
Period of presentation	Year

Module content

Interpretation and application of advanced petrogenetic tools: the Rb/Sr and Sm/Nd isotopic systems, quantitative interpretation of binary and ternary phase diagrams, Harker type diagrams, assimilation-fractional crystallisation – partial melting. Geothermometers and geobarometers, PT-t loops. Abundance of elements in the crust, crust-forming models. Hydrous geochemistry. Recognition of geochemical anomalies. Analytical methods and the treatment of geochemical data. A one-week field trip to the Bushveld Complex.

Crustal evolution 704 (GLY 704)

Module credits	20.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Geology
Period of presentation	Year

Module content

Precambrian crustal evolution. Precambrian plate tectonics. Precambrian evolution of the African plate (Eburnean, Kibaran and Pan-African events). Phanerozoic evolution to the African plate; global examples of tectonics as a continental crustal source. Determination of deformational history of crustal rocks; determination of palaeostress conditions in ancient crustal rocks. Practical experience of structural analysis and determination of deformational history. A one-week field trip to a tectonically complex area.

Mapping camp 707 (GLY 707)

Module credits	10.00
Prerequisites	No prerequisites.
Contact time	2 practicals per week
Language of tuition	Module is presented in English

Department	Geology
Period of presentation	Year

Module content

Mapping and analysis of a geologically complex area using different techniques.

Honours project 710 (GLY 710)

Module credits	35.00
Prerequisites	No prerequisites.
Contact time	5 practical sessions per week
Language of tuition	Module is presented in English
Department	Geology
Period of presentation	Year

Module content

Independent acquisition of geological field and/or laboratory data, treatment and interpretation thereof, and writing of an honours essay.

Economic geology 713 (GLY 713)

Module credits	20.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Geology
Period of presentation	Year

Module content

Basic remote sensing methods and their applications to geology; basic geophysical and geochemical exploration techniques; exploration target generation - philosophies and methods; professional geological practice; the SAMREC and similar codes; geologists in the business environment; case studies. Practical component (runs parallel to theory above) encompasses ore-microscopy; ore mineral identification; ore textures; analysis of ore assemblages; instrumental techniques applied to ores. Various short field trips to both opencast and underground mines.

Modern analytical methods and sampling theory 715 (GLY 715)

Module credits	20.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Geology

Period of presentation	Year

Module content

Modern analytical methods, including X-ray Diffraction (XRD), X-ray Fluorescence (XRF), inductively coupled mass spectrometry (ICP-MS), methods of isotopic analysis, and electron beam methods (EPMA, SEM, CT). An introductory statistical course in sampling methods, treatment of data, statistical validity, and basic geostatistics.

Trends in geoscience 716 (GLY 716)

Module credits	10.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Geology
Period of presentation	Year

Module content

The field of Geology is rapidly evolving both in terms of industry requirements and the type of science done. This module includes short courses offered by staff and industry on a variety of topics, as well as a weekly departmental seminar on current research in the department. The content of this module is expected to vary year by year according to availability of internal and external lecturers.

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.