

# 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)

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

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

<b>Module credits</b>	10.00
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	2 practicals per week
<b>Language of tuition</b>	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

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<b>Period of presentation</b>	Year
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**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)**

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

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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.