University of Pretoria Yearbook 2018

BSc Geology (02133023)

Minimum duration of study	3 years
Total credits	426

Admission requirements

- The following persons will be considered for admission: a candidate who is in possession of a certificate that is deemed by the University to be equivalent to the required Grade 12 certificate with university endorsement; a candidate who is a graduate from another tertiary institution or has been granted the status of a graduate of such an institution; and a candidate who is a graduate of another faculty at the University of Pretoria.
- Life Orientation is excluded in the calculation of the Admission Point Score (APS).
- Grade 11 results are used for the provisional admission of prospective students. Final admission is based on the Grade 12 results.

Minimum requirements												
Achievement level												
Afrikaans or English				**Mathematics**				**Physical Science**				**APS**
NSC/IEB	HIGCSE	AS-Level	A-Level	NSC/IEB	HIGCSE	AS-Level	A-Level	NSC/IEB	HIGCSE	AS-Level	A-Level	
5	3	C	C	5	3	C	C	5	3	C	C	32

Candidates who do not comply with the minimum admission requirements for BSc (Geology), may be considered for admission to the BSc – Extended programme for the Physical Sciences. The BSc – Extended programme takes place over a period of four years instead of the normal three years.

BSc - Extended programme for the Physical Sciences:

Minimum requirements												
Achievement level												
	Afrikaans or English				**Mathematics**				**Physical Science**				**APS**
	NSC/IEB	HIGCSE	AS-Level	A-Level	NSC/IEB	HIGCSE	AS-Level	A-Level	NSC/IEB	HIGCSE	AS-Level	A-Level	
BSc - Extended programme for the Physical Sciences	4	3	D	D	4	3	D	D	4	3	D	D	26

Other programme-specific information

A student must pass all the minimum prescribed and elective module credits as set out at the end of each year within a programme as well as the total required credits to comply with the particular degree programme. Please refer to the curricula of the respective programmes. At least 144 credits must be obtained at 300-/400-level, or otherwise as indicated by curriculum. The minimum module credits needed to comply with degree requirements

is set out at the end of each study programme. Subject to the programmes as indicated a maximum of 150 credits will be recognised at 100-level. A student may, in consultation with the Head of Department and subject to the permission by the Dean, select or replace prescribed module credits not indicated in BSc three-year study programmes to the equivalent of a maximum of 36 module credits.

It is important that the total number of prescribed module credits is completed during the course of the study programme. The Dean may, on the recommendation of the Head of Department, approve deviations in this regard. Subject to the programmes as indicated in the respective curricula, a student may not register for more than 75 module credits per semester at first-year level subject to permission by the Dean. A student may be permitted to register for up to 80 module credits in a the first semester during the first year provided that he or she obtained a final mark of no less than 70% for grade 12 Mathematics and achieved an APS of 34 or more in the NSC.

Students who are already in possession of a bachelor's degree, will not receive credit for modules of which the content overlap with modules from the degree that was already conferred. Credits will not be considered for more than half the credits passed previously for an uncompleted degree. No credits at the final-year or 300- and 400-level will be granted.

The Dean may, on the recommendation of the programme manager, approve deviations with regard to the composition of the study programme.

Please note: Where elective modules are not specified, these may be chosen from any modules appearing in the list of modules.

It remains the student's responsibility to acertain, prior to registration, whether they comply with the prerequisites of the modules they want to register for.

The prerequisites are listed in the Alphabetical list of modules.

Promotion to next study year

A student will be promoted to the following year of study if he or she passed 100 credits of the prescribed credits for a year of study, unless the Dean on the recommendation of the head of department decides otherwise. A student who does not comply with the requirements for promotion to the following year of study, retains the credit for the modules already passed and may be admitted by the Dean, on recommendation of the head of department, to modules of the following year of study to a maximum of 48 credits, provided that it will fit in with both the lecture and examination timetable.

General promotion requirements in the faculty

All students whose academic progress is not acceptable can be suspended from further studies.

- A student who is excluded from further studies in terms of the stipulations of the abovementioned regulations, will be notified in writing by the Dean or Admissions Committee at the end of the relevant semester.
- A student who has been excluded from further studies may apply in writing to the Admissions Committee of the Faculty of Natural and Agricultural Sciences for re-admission.
- Should the student be re-admitted by the Admissions Committee, strict conditions will be set which the student must comply with in order to proceed with his/her studies.
- Should the student not be re-admitted to further studies by the Admissions Committee, he/she will be informed in writing.

- Students who are not re-admitted by the Admissions Committee have the right to appeal to the Senior Appeals Committee.
- Any decision taken by the Senior Appeals Committee is final.

Pass with distinction

A student obtains his or her degree with distinction if all prescribed modules at 300-level (or higher) are passed in one academic year with a weighted average of at least 75%, and obtain at least a subminimum of 65% in each of the relevant modules.

Curriculum: Year 1

Minimum credits: 140

Minimum credits:

Fundamental = 12

Core = 128

Additional information:

Students who do not qualify for AIM 102 must register for AIM 111 and AIM 121.

Student wishing to take second-year Mathematics or applied Mathematics modules to complement the Mechanics modules, must take WTW 114 and WTW 124 instead of WTW 158 and WTW 164.

Students who select PHY 124 are able to continue with a second major in Chemistry, Mathematics, Soil Science or Physics. Students who select SWK 122 may continue with a second major in Engineering Geology, Mathematics, Chemistry, Soil Science or Mechanics.

Fundamental modules

Academic information management 102 (AIM 102) - Credits: 6.00
Academic information management 111 (AIM 111) - Credits: 4.00
Academic information management 121 (AIM 121) - Credits: 4.00
Language and study skills 110 (LST 110) - Credits: 6.00
Academic orientation 102 (UPO 102) - Credits: 0.00

Core modules

General chemistry 117 (CMY 117) - Credits: 16.00
General chemistry 127 (CMY 127) - Credits: 16.00
Introduction to geology 155 (GLY 155) - Credits: 16.00
Earth history 163 (GLY 163) - Credits: 16.00
First course in physics 114 (PHY 114) - Credits: 16.00
First course in physics 124 (PHY 124) - Credits: 16.00
Mechanics 122 (SWK 122) - Credits: 16.00
Calculus 158 (WTW 158) - Credits: 16.00
Mathematics 164 (WTW 164) - Credits: 16.00

Curriculum: Year 2

Minimum credits: 150

Minimum credits:

Core = 54

Elective = 96

Additional information:

Students must select 2 groups of modules (normally 2x48 credits = 96 credits) from the following list, depending on the second major intended:

Chemistry: CMY 282, CMY 283, CMY 284, CMY 285 (48 credits)

Mathematics: WTW 211, WTW 218, WTW 220, WTW 221 (48 credits)

Applied Mathematics: WTW 211, WTW 218, WTW 248, WTW 286 (48 credits)

Physics: PHY 263, PHY 255 (48 credits) and WTW 211, WTW 218, WTW 220, WTW 248 (48 credits)

Engineering Geology/Soil Science/Mechanics: GKD 250, SWK 210, GIS 221 (40 credits)

GIS/Geomorphology: GGY 252, GIS 220, GMA 220 (40 credits)

Core modules

Sedimentology 253 (GLY 253) - Credits: 12.00
Fundamental and applied mineralogy 255 (GLY 255) - Credits: 12.00
Igneous petrology 261 (GLY 261) - Credits: 12.00
Metamorphic petrology 262 (GLY 262) - Credits: 12.00
Geological field mapping 266 (GLY 266) - Credits: 6.00

Elective modules

Physical chemistry 282 (CMY 282) - Credits: 12.00
Analytical chemistry 283 (CMY 283) - Credits: 12.00
Organic chemistry 284 (CMY 284) - Credits: 12.00
Inorganic chemistry 285 (CMY 285) - Credits: 12.00
Process geomorphology 252 (GGY 252) - Credits: 12.00
City structure, environment and society 266 (GGY 266) - Credits: 24.00
Geographic data analysis 220 (GIS 220) - Credits: 14.00
Geographic information systems introduction 221 (GIS 221) - Credits: 12.00
Introductory soil science 250 (GKD 250) - Credits: 12.00
Remote sensing 220 (GMA 220) - Credits: 14.00
Waves, thermodynamics and modern physics 255 (PHY 255) - Credits: 24.00
General physics 263 (PHY 263) - Credits: 24.00
Strength of materials 210 (SWK 210) - Credits: 16.00
Linear algebra 211 (WTW 211) - Credits: 12.00
Calculus 218 (WTW 218) - Credits: 12.00
Analysis 220 (WTW 220) - Credits: 12.00
Linear algebra 221 (WTW 221) - Credits: 12.00
Vector analysis 248 (WTW 248) - Credits: 12.00
Differential equations 286 (WTW 286) - Credits: 12.00

Curriculum: Final year

Minimum credits: 144

Minimum credits:

Core = 78

Elective = 66

Additional information:

Students must select one group of modules (at least 66 credits each) from the following list, provided the appropriate second year modules were taken:

Chemistry: CMY382, CMY 383, CMY384, CMY385 (72 credits)

Mathematics: WTW 310, WTW 320, WTW 381, WTW 389 (72 credits)

Applied Mathematics: WTW 382, WTW 383, WTW 386, WTW 387 (72 credits)

Physics: PHY 364, PHY 356 (72 credits)

Astrophysics: PHY 300, GMS 320, GIS 320 (82credits) - Note that this option does not allow entry into Physics Honours

Engineering Geology/Soil Science/Mechanics: GKD 350, SGM 311, GLY 363, GLY 364 (66 credits)

GIS/Geomorphology: GIS 310,GIS 320, GMA 320 (72 credits)

Core modules

Structural geology 365 (GLY 365) - Credits: 18.00
Groundwater 366 (GLY 366) - Credits: 18.00
Economic geology 367 (GLY 367) - Credits: 36.00
Advanced Geological field mapping 368 (GLY 368) - Credits: 6.00

Elective modules

Physical chemistry 382 (CMY 382) - Credits: 18.00
Analytical chemistry 383 (CMY 383) - Credits: 18.00
Organic chemistry 384 (CMY 384) - Credits: 18.00
Inorganic chemistry 385 (CMY 385) - Credits: 18.00
Geographic information systems 310 (GIS 310) - Credits: 22.00
Spatial analysis 320 (GIS 320) - Credits: 22.00
Soil classification and surveying 350 (GKD 350) - Credits: 14.00
Engineering geology 363 (GLY 363) - Credits: 18.00
Rock mechanics 364 (GLY 364) - Credits: 18.00
Remote sensing 320 (GMA 320) - Credits: 22.00
Soil-water relationship and irrigation 350 (PGW 350) - Credits: 14.00
Observational astronomy 300 (PHY 300) - Credits: 36.00
Electronics, electromagnetism and quantum mechanics 356 (PHY 356) - Credits: 36.00
Statistical mechanics, solid state physics and modelling 364 (PHY 364) - Credits: 36.00
Soil mechanics 311 (SGM 311) - Credits: 16.00
Analysis 310 (WTW 310) - Credits: 18.00
Complex analysis 320 (WTW 320) - Credits: 18.00
Algebra 381 (WTW 381) - Credits: 18.00

Dynamical systems 382 (WTW 382) - Credits: 18.00
Numerical analysis 383 (WTW 383) - Credits: 18.00
Partial differential equations 386 (WTW 386) - Credits: 18.00
Continuum mechanics 387 (WTW 387) - Credits: 18.00
Geometry 389 (WTW 389) - Credits: 18.00