University of Pretoria Yearbook 2021

BSc Geology (02133023)

Department	Geology
Minimum duration of study	3 years
Total credits	428
NQF level	07

Admission requirements

- The closing date is an administrative admission guideline for non-selection programmes. Once a non-selection programme is full and has reached the institutional targets, then that programme will be closed for further admissions, irrespective of the closing date. However, if the institutional targets have not been met by the closing date, then that programme will remain open for admissions until the institutional targets are met.
- The following persons will be considered for admission: candidates who are in possession of a certificate that is deemed by the University to be equivalent to the required National Senior Certificate with university endorsement, candidates who are graduates from another tertiary institution or have been granted the status of a graduate of such an institution, and candidates who are graduates of another faculty at the University of Pretoria.
- Life Orientation is excluded from the calculation of the Admission Point Score (APS).
- Grade 11 results are used for the conditional admission of prospective students. Final admission is based on Grade 12 results.
- Please note that the Faculty does not accept GED and School of Tomorrow qualifications for entry into our programmes.

Transferring students

Candidates previously registered at UP or at another university
The faculty's Admissions Committee considers applications of candidates who have already completed the final NSC or equivalent qualification examination and/or were previously registered at UP or another university, on grounds of their final NSC or equivalent qualification results as well as academic merit.

Candidates previously registered at a FET college or a university of technology
The faculty's Admissions Committee considers the application of these candidates on the grounds of their final NSC or equivalent qualification results as well as academic merit.

Qualifications from countries other than South Africa

- Citizens from countries other than South Africa and South African citizens with foreign qualifications must comply with all the other admission requirements and the prerequisites for subjects/modules.
- In addition to meeting the admission requirements, admission is based on the performance in the **TOEFL**, **IELTS or SAT**, if required.
- Candidates must have completed the National Senior Certificate with admission to degree studies or a certificate of conditional exemption on the basis of a candidate's foreign qualifications, the so-called "Immigrant" or "Foreign Conditional Exemption". The only condition for the "Foreign Conditional Exemption"

that is accepted is: 'completion of the degree course'. The exemption certificate is obtainable from Universities South Africa (USAf). Detailed information is available on the website at click here.

University of Pretoria website: click here

Minimum requirements Achievement level English Home Language or English First Additional Language		**Mathematics**		**Physical Sciences**		**APS**
NSC/IEB	AS Level	NSC/IEB	AS Level	NSC/IEB	AS Level	
5	C	5	C	5	C	**34**

* Cambridge A level candidates who obtained at least a D in the required subjects, will be considered for admission. Students in the Cambridge system must offer both Physics AND Chemistry with performance at the level specified for NSC Physical Sciences in the table above.

* International Baccalaureate (IB) HL candidates who obtained at least a 4 in the required subjects, will be considered for admission. Students in the IB system must offer both Physics AND Chemistry with performance at the level specified for NSC Physical Sciences in the table above.

Candidates who do not comply with the minimum admission requirements for BSc (Geology), may be considered for admission to the BSc – Extended programme – Physical Sciences. This programme takes a year longer than the normal programmes to complete.

BSc – Extended Programme – Physical Sciences Minimum requirements Achievement level English Home Language or English First Additional Language		**Mathematics**		**Physical Sciences**		**APS**
NSC/IEB	AS Level	NSC/IEB	AS Level	NSC/IEB	AS Level	
4	D	4	D	4	D	**28**

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 relevant 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 relevant 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 relevant 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 relevant 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 Senate Appeals Committee.
- Any decision taken by the Senate 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

Fundamental = 14
Core = 112
Elective = 16

Additional information:

- Students who do not intend to continue with a second major in Physics or Mathematics may replace WTW 124 with WTW 146 and WTW 148.
- Students cannot take both WTW 124 and [WTW 146 + WTW 148]
- Students must select to do one of the following electives in semester 2: PHY 124 First Course in Physics, SWK 122 Mechanics, or both GMC 110 Cartography and GGY 166 Southern African Geomorphology.
- Students who select PHY 124 are able to continue with a second major in Chemistry, Mathematics, Soil Science or Physics. Students intending to continue with a second major in Physics must take WTW 124.
- Students who select SWK 122 may continue with a second major in Engineering Geology, Mathematics, Chemistry, Soil Science or Mechanics. Students intending to continue with a second major in Engineering Geology must take WTW 124.
- Students who select GMC 110 and GGY 166 can carry on with a second major in Applied Earth Science, Mathematics, Chemistry, or Soil Science. Students intending to continue with a second major in Mathematics must take WTW 124.

Fundamental modules

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
Calculus 114 (WTW 114) - Credits: 16.00

Elective modules

Southern African geomorphology 166 (GGY 166) - Credits: 8.00
Cartography 110 (GMC 110) - Credits: 10.00
First course in physics 124 (PHY 124) - Credits: 16.00
Statics 122 (SWK 122) - Credits: 16.00
Mathematics 124 (WTW 124) - Credits: 16.00
Linear algebra 146 (WTW 146) - Credits: 8.00
Calculus 148 (WTW 148) - Credits: 8.00

Curriculum: Year 2

Minimum credits: 142

Core = 54
Elective = 88

Additional information:

Students who do not intend to continue with Mathematics on third year level may replace WTW 220 with WTW 224

Students must select 2 groups of modules (either 2 x 48 credits = 96 credits or 48 + 40 = 88 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 264 (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:** GKD 250, GGY 283, GMA 220 (40 credits)

Core modules

Sedimentology 253 (GLY 253) - Credits: 12.00
Fundamental and applied mineralogy 255 (GLY 255) - Credits: 12.00
Igneous and metamorphic petrology 263 (GLY 263) - Credits: 24.00
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
Introductory geographic information systems 283 (GGY 283) - 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
Techniques of analysis 224 (WTW 224) - Credits: 12.00
Vector analysis 248 (WTW 248) - Credits: 12.00
Differential equations 264 (WTW 264) - Credits: 12.00

Curriculum: Final year

Minimum credits: 144

Core = 78
Elective = 66

Additional information:
Elective Modules (Credits = 66)

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:** CMY 382, CMY 383, CMY 384, CMY 385 (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)
- **Engineering Geology/Soil Science/Mechanics:** GKD 350, SGM 311, GLY 369 (66 credits)
- **Applied Earth Science:** GMA 320, GIS 310, GKD 320, GKD 350 (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 chemistry 320 (GKD 320) - Credits: 14.00
Soil classification and surveying 350 (GKD 350) - Credits: 14.00
Engineering geology and rock mechanics 369 (GLY 369) - Credits: 36.00
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

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.