University of Pretoria Yearbook 2023

BSc (Meteorology) (02133313)

Department	Geography, Geoinformatics and Meteorology
Minimum duration of study	3 years
Total credits	404
NQF level	07

Programme information

Those students registered for the BSc (Meteorology) programme and who have opted to select any of the dual major fields of study offered within this programme must take note of the following:

- Their Academic Record will list all the modules that they have completed towards a second major field of study (based on final year modules completed).
- Their Degree certificate will only print the officially approved programme name:

Bachelor of Science
Meteorology

Admission requirements

Important information for all prospective students for 2023

The admission requirements below apply to all who apply for admission to the University of Pretoria with a **National Senior Certificate (NSC) and Independent Examination Board (IEB) qualifications. Click here for this Faculty Brochure.**

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

Life Orientation is excluded when calculating the APS.

You will be considered for final admission to degree studies if space allows, and if you have a National Senior Certificate (NSC) or equivalent qualification with admission to bachelor's degree studies, and comply with the minimum subject requirements as well as the APS requirements of your chosen programme.

Applicants with qualifications other than the abovementioned should refer to the Brochure: Undergraduate Programme Information 2023: Qualifications other than the NSC and IEB, available at click here.

International students: Click here.

Transferring students

A transferring student is a student who, at the time of applying at the University of Pretoria (UP) is/was a registered student at another tertiary institution. A transferring student will be considered for admission based on NSC or equivalent qualification and previous academic performance. Students who have been dismissed from other institutions due to poor academic performance will not be considered for admission to UP.

Closing dates: Same as above.

Returning students

A returning student is a student who, at the time of application for a degree programme is/was a registered student at UP, and wants to transfer to another degree at UP. A returning student will be considered for admission based on NSC or equivalent qualification and previous academic performance.

Note:

- Students who have been excluded/dismissed from a faculty due to poor academic performance may be considered for admission to another programme at UP, as per faculty-specific requirements.
- Only ONE transfer between UP faculties and TWO transfers within a faculty will be allowed.
- Admission of returning students will always depend on the faculty concerned and the availability of space in the programmes for which they apply.

Closing date for applications from returning students

Unless capacity allows for an extension of the closing date, applications from returning students must be submitted before the end of August via your UP Student Centre.

Candidates who do not comply with the minimum admission requirements for BSc (Meteorology), may be considered for admission to the BSc – Extended programme – Physical Sciences, which requires an additional year of study.

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

Note:

*The BSc – Extended programmes are not available for students who meet all the requirements for the corresponding mainstream programme.

*Please note that only students who apply in their final NSC or equivalent qualification year will be considered for admission into any of the BSc – Extended programmes. Students who are upgrading or taking a gap year will not be considered.

Other programme-specific information

1.1 Requirements for specific modules

A candidate who:

a. does not qualify for STK 110, must enrol for STK 113 and STK 123;
b. registers for Mathematical Statistics (WST) and Statistics (STK) modules must take note that WST and STK modules, except for STK 281, may not be taken simultaneously in a programme; a student must take one and only one of the following options:

- WST 111, WST 121, WST 212, WST 211, WST 221, WST 311, WST 312, WST 322, WST 321, and STK 353

  or

- WST 111, WST 121, WST 212, WST 211, WST 221, WST 311, WST 312, WST 322, STK 320, STK 353.

  or

- STK 110, STC 122, STK 210, STK 220, WST 212, STK 310, STK 320, STK 353.

c. registers for a module presented by another faculty must take note of the timetable clashes, prerequisites for that module, subminimum required in examination papers, supplementary examinations, etc.

1.2 Fundamental modules

a. It is compulsory for all new first-year students to satisfactorily complete the Academic orientation (UPO 102) and to take Academic information management modules (AIM 111 and AIM 121) and Language and study skills (LST 110). Please see curricula for details.
b. Students who intend to apply for admission to MBChB or BChD in the second semester, when places become available in those programmes, may be permitted to register for up to 80 module credits and 4 core modules in the first semester during the first year provided that they obtained a final mark of no less than 70% for Grade 12 Mathematics and achieved an APS of 34 or more in the NSC.

Transitional measures

Please note that changes were approved to the curriculum and is applicable as from 2022 for all students who registered for this programme from 2021 onwards. The following transitional measures need to be taken into consideration:

- Students who registered for the first time in 2021 will switch to the revised programme in 2022.
- Students who registered for the first time in 2021 and fail some core modules, will have to repeat the corresponding core modules of the new curriculum in 2022.
- Students who registered for the first time prior to 2021, will complete that existing curriculum. The modules WKD 351 and WKD 366 will be discontinued once all these students have graduated.

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.

General 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 (HEQF) 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.

Curriculum: Year 1

Minimum credits: 136

Fundamental = 14
Core = 90
Elective = 32

Additional information:
Students are advised to choose elective modules based on the requirements for a second major of interest. It is the student's responsibility to ensure that all prerequisites are taken into account. Electives must be chosen according to the combinations below with a view to pursuing specialisation in the relevant field. Students continue with the electives pertaining to the specific second major chosen, through to the second and third years of study.

- **Applied mathematics as second major:** WST 111, WTW 123, WTW 162 (32 credits)
- **Geography and environmental science as second major:** GGY 156, GGY 166, ENV 101 and one of [ZEN 161, WTW 123] (32 credits)
- **Geoinformatics as second major:** INF 154, INF 112, INF 164, WTW 123 (38 credits)
- **Statistics as second major:** STK 110, STC 122, WTW 123 (34 credits)
- **Zoology as second major:** ZEN 161, BOT 161, MLB 111 (32 credits)

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

Biometry 120 (BME 120) - Credits: 16.00
Cartography 110 (GMC 110) - Credits: 10.00
First course in physics 114 (PHY 114) - Credits: 16.00
Atmospheric structure and processes 155 (WKD 155) - Credits: 16.00
Calculus 114 (WTW 114) - Credits: 16.00
Mathematics 124 (WTW 124) - Credits: 16.00

Elective modules

Plants and society 161 (BOT 161) - Credits: 8.00
General chemistry 117 (CMY 117) - Credits: 16.00
General chemistry 127 (CMY 127) - Credits: 16.00
Introduction to environmental sciences 101 (ENV 101) - Credits: 8.00
Aspects of human geography 156 (GGY 156) - Credits: 8.00
Southern African geomorphology 166 (GGY 166) - Credits: 8.00
Introduction to geology 155 (GLY 155) - Credits: 16.00
Earth history 163 (GLY 163) - Credits: 16.00
Informatics 112 (INF 112) - Credits: 10.00
Informatics 154 (INF 154) - Credits: 10.00
Informatics 164 (INF 164) - Credits: 10.00

Molecular and cell biology 111 (MLB 111) - Credits: 16.00
First course in physics 124 (PHY 124) - Credits: 16.00
Exploring the universe 154 (SCI 154) - Credits: 16.00
Statistics 122 (STC 122) - Credits: 13.00
Statistics 110 (STK 110) - Credits: 13.00
Mathematical statistics 111 (WST 111) - Credits: 16.00
Mathematical statistics 121 (WST 121) - Credits: 16.00
Numerical analysis 123 (WTW 123) - Credits: 8.00
Dynamical processes 162 (WTW 162) - Credits: 8.00
Animal diversity 161 (ZEN 161) - Credits: 8.00

Curriculum: Year 2

Minimum credits: 124

Core = 64
Elective = 60

Additional information:
Students must continue with electives pertaining to the second major chosen in the first year of study.

- **Applied mathematics as second major:** WTW 218, WTW 286, WTW 248, WTW 211, WTW 220 (60 credits)
- **Geography and environmental science as second major:** GGY 201, GGY 252, GGY 283, GIS 220, GMA 220 (68 credits)
- **Geoinformatics as second major:** GMA 220, GGY 283, GIS 220, INF 214, INF 225, INF 261 (77 credits)
- **Statistics as second major:** STK 210, STK 220, WST 212 and one of [GGY 283, GMA 220, GIS 220] (66 credits)
- **Zoology as second major:** ZEN 251, ZEN 261, GGY 283, GMA 220 and choose one of [BOT 251, PLG 251, PPK 251, WTW 218, WTW 264, WTW 286] (64 or 67 credits).

Core modules

Environmental sciences 201 (ENV 201) - Credits: 14.00
Programming in meteorology 254 (WKD 254) - Credits: 12.00
Physical meteorology 261 (WKD 261) - Credits: 12.00
Introduction to dynamic meteorology 263 (WKD 263) - Credits: 14.00
Satellite meteorology 265 (WKD 265) - Credits: 12.00

Elective modules

South African flora and vegetation 251 (BOT 251) - Credits: 12.00
City, structure, environment and society 201 (GGY 201) - Credits: 14.00
Process geomorphology 252 (GGY 252) - Credits: 12.00
Introductory geographic information systems 283 (GGY 283) - Credits: 14.00
Geographic data analysis 220 (GIS 220) - Credits: 14.00
Introductory soil science 250 (GKD 250) - Credits: 12.00
Remote sensing 220 (GMA 220) - Credits: 14.00
Informatics 214 (INF 214) - Credits: 14.00
Informatics 225 (INF 225) - Credits: 14.00
Informatics 261 (INF 261) - Credits: 7.00
Waves, thermodynamics and modern physics 255 (PHY 255) - Credits: 24.00
General physics 263 (PHY 263) - Credits: 24.00
Introduction to crop protection 251 (PLG 251) - Credits: 12.00
Sustainable crop production and agroclimatology 251 (PPK 251) - Credits: 15.00
Statistics 210 (STK 210) - Credits: 20.00
Statistics 220 (STK 220) - Credits: 20.00
Surveying 220 (SUR 220) - Credits: 14.00
Mathematical statistics 211 (WST 211) - Credits: 24.00
Applications in data science 212 (WST 212) - Credits: 12.00
Mathematical statistics 221 (WST 221) - Credits: 24.00
Linear algebra 211 (WTW 211) - Credits: 12.00

Calculus 218 (WTW 218) - Credits: 12.00
Analysis 220 (WTW 220) - Credits: 12.00
Vector analysis 248 (WTW 248) - Credits: 12.00
Differential equations 264 (WTW 264) - Credits: 12.00
Differential equations 286 (WTW 286) - Credits: 12.00
Invertebrate biology 251 (ZEN 251) - Credits: 12.00
African vertebrates 261 (ZEN 261) - Credits: 12.00

Curriculum: Final year

Minimum credits: 144

Core = 72
Elective = 72

Additional information:
Students must continue with electives pertaining to the second major chosen in the previous years of study.

- **Applied mathematics as second major:** WTW 382, WTW 383, WTW 386 and WTW 387 (72 credits)
- **Geography and environmental science as second major:** ENV 301, GGY 301, GGY 361 and GIS 310 (76 credits).
- **Geoinformatics as second major:** GMA 320, GIS 310, GIS 311, GMC 310 (88 credits). Students who are accepted for BScHons Geoinformatics will have to complete GIS 320 in addition to the other honours modules.
- **Statistics as second major:** STK 310, STK 320 and STK 353 (75 credits)
- **Zoology as second major:** ZEN 351, ZEN 352, ZEN 353, ZEN 354 (72 credits)

Core modules

Mid-latitude and polar meteorology 315 (WKD 315) - Credits: 18.00
Tropical meteorology 316 (WKD 316) - Credits: 18.00
Synoptic-scale circulation dynamics and vorticity in mid-latitudes 352 (WKD 352) - Credits: 18.00
Quasi-geostrophic analysis 361 (WKD 361) - Credits: 18.00

Elective modules

Human environmental interactions 301 (ENV 301) - Credits: 18.00
Theories and applications of human geography 301 (GGY 301) - Credits: 18.00
Environmental geomorphology 361 (GGY 361) - Credits: 18.00
Geographic information systems 310 (GIS 310) - Credits: 22.00
Geoinformatics 311 (GIS 311) - Credits: 22.00
Soil chemistry 320 (GKD 320) - Credits: 14.00
Remote sensing 320 (GMA 320) - Credits: 22.00
Geometrical and space geodesy 310 (GMC 310) - Credits: 22.00
Electronics, electromagnetism and quantum mechanics 356 (PHY 356) - Credits: 36.00
Statistical mechanics, solid state physics and modelling 364 (PHY 364) - Credits: 36.00
Statistics 310 (STK 310) - Credits: 25.00
Statistics 320 (STK 320) - Credits: 25.00
The science of data analytics 353 (STK 353) - Credits: 25.00
Principles of veld management 310 (WDE 310) - Credits: 12.00
Multivariate analysis 311 (WST 311) - Credits: 18.00
Time-series analysis 321 (WST 321) - 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
Population ecology 351 (ZEN 351) - Credits: 18.00
Mammalogy 352 (ZEN 352) - Credits: 18.00
Community ecology 353 (ZEN 353) - Credits: 18.00

Evolutionary physiology 354 (ZEN 354) - Credits: 18.00

Regulations and rules

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

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.

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