University of Pretoria Yearbook 2020

BSc Meteorology (02133313)

Minimum duration of study	3 years
Total credits	396
NQF level	07

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 conditional admission of prospective students. Final admission is based on the Grade 12 results.

Minimum requirements Achievement level English Home Language or English First Additional Language		**Mathematics**		**Physical Science**		**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. International Baccalaureate (IB) HL candidates who obtained at least a 4 in the required subjects, will be considered for admission.

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. 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 Science**		**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: 134

Fundamental = 12
Core = 106
Electives = 16

Additional information:

- Students who do not qualify for AIM 102 must register for AIM 111 and AIM 121.
- Students must select elective modules to the value of at least 16 credits. Depending on a student's interests, the following combinations of modules are recommended:
- Meteorology students who also want to be train in **Geography or Geoinformatics** usually choose from GGY 156 (8), GGY 166 (8) and ENV 101 (8).
- Additionally students who are interested in **Mathematics and Applied Mathematics** normally choose from WTW 115 (8), WTW 152 (8) and WTW 162 (8)
- Meteorology students who are interested in **Mathematical Statistics** choose from WST 111 (16) and WST 121* (16): Both required to continue with WST at second-year level.)
- Students in Meteorology may choose modules from any other subject/faculty to meet their specific needs

***Prerequisite required**

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

Biometry 120 (BME 120) - Credits: 16.00
Cartography 110 (GMC 110) - Credits: 10.00
First course in physics 114 (PHY 114) - Credits: 16.00
First course in physics 124 (PHY 124) - Credits: 16.00
Atmospheric structure and processes 155 (WKD 155) - Credits: 16.00
Calculus 114 (WTW 114) - Credits: 16.00
Mathematics 164 (WTW 164) - Credits: 16.00

Elective modules

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
Cartography 110 (GMC 110) - Credits: 10.00
Exploring the universe 154 (SCI 154) - Credits: 16.00

Mechanics 122 (SWK 122) - Credits: 16.00
Mathematical statistics 111 (WST 111) - Credits: 16.00
Mathematical statistics 121 (WST 121) - Credits: 16.00
Discrete structures 115 (WTW 115) - Credits: 8.00
Mathematical modelling 152 (WTW 152) - Credits: 8.00
Dynamical processes 162 (WTW 162) - Credits: 8.00

Curriculum: Year 2

Minimum credits: 136

Core = 88
Elective = 48

Additional information:
Students must select elective modules to the value of at least 48 credits. Depending on a student's interests, the following combinations of modules are recommended:

- Meteorology students who also want to be trained in Geography or Geoinformatics usually choose from GGY 252* (12), GGY 201 (12), ENV 201* (12) GGY 283* (14) and SUR 220* (14)
- Meteorology students who are interested in Mathematics and Applied Mathematics normally choose from WTW 211* (12), WTW 221* (12), WTW 285*(12), WTW 286* (12) or WTW 264* (12)
- Meteorology students who are interested in Mathematical Statistics choose from WST 211* (24) and WST 221* (24)
- Meteorology students who also want to be trained in Physics should choose from PHY 255* (24) and PHY 263* (24)
- Students in Meteorology may choose modules from any other subject/faculty to meet their specific needs.

***Prerequisites required**

Core modules

Environmental sciences 201 (ENV 201) - Credits: 12.00
Geographic data analysis 220 (GIS 220) - Credits: 14.00
Remote sensing 220 (GMA 220) - Credits: 14.00
Programming in meteorology 254 (WKD 254) - Credits: 12.00
Physical meteorology 261 (WKD 261) - Credits: 12.00
Differential equations 256 (WTW 256) - Credits: 8.00
Calculus 258 (WTW 258) - Credits: 8.00
Numerical methods 263 (WTW 263) - Credits: 8.00

Elective modules

Environmental sciences 201 (ENV 201) - Credits: 12.00
City, structure, environment and society 201 (GGY 201) - Credits: 12.00
Process geomorphology 252 (GGY 252) - Credits: 12.00
Introductory geographic information systems 283 (GGY 283) - Credits: 14.00
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
Surveying 220 (SUR 220) - Credits: 14.00
Mathematical statistics 211 (WST 211) - Credits: 24.00
Mathematical statistics 221 (WST 221) - Credits: 24.00
Linear algebra 211 (WTW 211) - Credits: 12.00
Linear algebra 221 (WTW 221) - Credits: 12.00
Differential equations 264 (WTW 264) - Credits: 12.00
Discrete structures 285 (WTW 285) - Credits: 12.00

Differential equations 286 (WTW 286) - Credits: 12.00

Curriculum: Final year

Minimum credits: 126

Core = 108
Elective = 18

Additional information:

- Depending on a student's second major and other interests, the following modules are recommended:
- Meteorology students who also want to be trained in Geography usually choose from GGY 301 (18), GGY 363* (12)
- Meteorology students who also want to be trained in Geoinformatics usually choose from GMA 320* (22), GMC 310* (22), GIS 310* (22), GIS 311* (22) and GIS 320* (22),
- Meteorology students who are interested in Mathematics and Applied Mathematics normally choose from WTW 382* (18 credits), WTW 383* (18 credits), WTW 386* (18 credits) or WTW 387* (18 credits)
- Meteorology students who are interested in Mathematical Statistics choose WST 311* (18) and WST 321* (18)
- Meteorology students who also want to be trained in Physics should choose from PHY 356* (36), PHY 364* (36)
- Students in Meteorology may choose modules from any other subject/faculty to meet their specific needs.

*Prerequisites required

Core modules

Human environmental interactions 301 (ENV 301) - Credits: 18.00
Atmospheric balance laws 351 (WKD 351) - Credits: 18.00
Atmospheric vorticity and divergence 352 (WKD 352) - Credits: 18.00
Quasi-geostrophic analysis 361 (WKD 361) - Credits: 18.00
Fundamentals of weather forecasting 366 (WKD 366) - Credits: 36.00

Elective modules

Theories and applications of human geography 301 (GGY 301) - Credits: 18.00
Applied geomorphology 363 (GGY 363) - Credits: 12.00
Geoinformatics 311 (GIS 311) - Credits: 22.00
Spatial analysis 320 (GIS 320) - 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
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
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

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.