University of Pretoria Yearbook 2018

BSc Mathematical Statistics (02133274)

Minimum duration of study	3 years
Total credits	428

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**				**APS**
NSC/IEB	HIGCSE	AS-Level	A-Level	NSC/IEB	HIGCSE	AS-Level	A-Level	
5	3	C	C	6	2	B	B	32

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

BSc - Extended programme for Mathematical Sciences:

Minimum requirements								
Achievement level								
	Afrikaans or English				**Mathematics**				**APS**
	NSC/IEB	HIGCSE	AS-Level	A-Level	NSC/IEB	HIGCSE	AS-Level	A-Level	
BSc – Extended programme for Mathematical Sciences	4	3	D	D	5	3	C	C	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 = 64

Elective = 65

Additional information:

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

It is recommended that COS 132 be taken as a first-year elective by all students in this programme.

Additional electives should be chosen as follows:

Students in Mathematical Statistics who also want to be trained for the Mathematics industry normally choose from WTW 123 (8), 115 (8), 152 (8), 162 (8) and COS 110 (16)

Students in Mathematical Statistics who also want to be trained for the Insurance industry, Econometrics, normally choose:

EKN 113, 123 (30), FBS 110, 120 (20) or FBS 112, 122 (20) and COS 110 (16)

Students in Mathematical Statistics with other career requirements, choose modules from any other subject/faculty to meet their specific needs.

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

Mathematical statistics 111 (WST 111) - Credits: 16.00
Mathematical statistics 121 (WST 121) - Credits: 16.00
Calculus 114 (WTW 114) - Credits: 16.00
Mathematics 124 (WTW 124) - Credits: 16.00

Elective modules

Program design: Introduction 110 (COS 110) - Credits: 16.00
Imperative programming 132 (COS 132) - Credits: 16.00
Introduction to computer science 151 (COS 151) - Credits: 8.00
Economics 113 (EKN 113) - Credits: 15.00
Economics 123 (EKN 123) - Credits: 15.00
Financial management 110 (FBS 110) - Credits: 10.00
Financial management 112 (FBS 112) - Credits: 10.00
Financial management 120 (FBS 120) - Credits: 10.00
Financial management 122 (FBS 122) - Credits: 10.00

Discrete structures 115 (WTW 115) - Credits: 8.00
Numerical analysis 123 (WTW 123) - Credits: 8.00
Mathematical modelling 152 (WTW 152) - Credits: 8.00
Dynamical processes 162 (WTW 162) - Credits: 8.00

Curriculum: Year 2

Minimum credits: 144

Minimum credits:

Core = 96

Elective = 48

Additional information:

Students in Mathematical Statistics who also want to be trained for the Mathematics industry normally choose from WTW 264 (12) or WTW 286 (12), 285 (12).

Students in Mathematical Statistics who also want to be trained for the Insurance Industry normally choose IAS 221 (12), IAS 282 (12) (note the prerequisite specified by the Department of Insurance and Actuarial Science).

Students in Mathematical Statistics who also want to be trained for the Econometrics industry normally choose from: EKN 214(16), 224 (16) and STK 281 (10).

Students in Mathematical Statistics with other career requirements, choose modules from any other subject/faculty to meet their specific needs.

Core modules

Mathematical statistics 211 (WST 211) - Credits: 24.00
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
Linear algebra 221 (WTW 221) - Credits: 12.00

Elective modules

Economics 214 (EKN 214) - Credits: 16.00
Economics 224 (EKN 224) - Credits: 16.00
Actuarial mathematics 211 (IAS 211) - Credits: 12.00
Actuarial mathematics 221 (IAS 221) - Credits: 12.00
Financial mathematics 282 (IAS 282) - Credits: 12.00
Informatics 214 (INF 214) - Credits: 14.00
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: 144

Minimum credits:

Core = 97

Elective = 47

Additional information:

Students in Mathematical Statistics who also want to be trained for the Mathematics industry normally choose from: WTW 310 (18), 320 (18), 354 (18), 364 (18), 381 (18), 382 (18), 383 (18), 385 (18), 386 (18), 387 (18), 389 (18).

Students in Mathematical Statistics who also want to be trained for the Insurance industry normally choose IAS 382 (20).

Students in Mathematical Statistics who also want to be trained for the Econometrics industry normally choose from: EKN 310, 320 and 314 (60).

Students in Mathematical Statistics with other career requirements, choose modules from any other subject/faculty to meet their specific needs.

Core modules

The science of data analytics 353 (STK 353) - Credits: 25.00
Multivariate analysis 311 (WST 311) - Credits: 18.00
Stochastic processes 312 (WST 312) - Credits: 18.00
Time-series analysis 321 (WST 321) - Credits: 18.00
Actuarial statistics 322 (WST 322) - Credits: 18.00

Elective modules

Economics 310 (EKN 310) - Credits: 20.00
Economics 314 (EKN 314) - Credits: 20.00
Economics 320 (EKN 320) - Credits: 20.00
Actuarial modelling 382 (IAS 382) - Credits: 20.00
Analysis 310 (WTW 310) - Credits: 18.00
Complex analysis 320 (WTW 320) - Credits: 18.00
Financial engineering 354 (WTW 354) - Credits: 18.00
Financial engineering 364 (WTW 364) - 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.