BSc extended programme - Mathematical Sciences (02130016)

Department	Natural and Agricultural Sciences Dean's Office
Minimum duration of study	4 years
Total credits	144
NQF level	07

Admission requirements

Candidates who do not comply with the minimum admission requirements of programmes in the Department of Mathematical Sciences, may be considered for admission to the BSc – Extended programme for the Mathematical Sciences, which requires an additional year of study.

Please note: Progression from the BSc – Extended programme – Mathematical Sciences to the mathematics-intensive programmes will be considered only if students obtained a GPA of 65% in their first-year modules. Students who pass all first-year modules will be advised on alternative academic pathways.

In addition, admission into the BSc (Actuarial and Financial Mathematics) programme will only be considered if students have passed IAS 111 and achieved a minimum mark of 60% in WTW 153 and WST 153.

BSc – Extended Programme – Mathematical Sciences
Minimum requirements
Achievement level

English Home Language or English First Additional Language	Mathematics	APS
NSC/IEB	NSC/IEB	
4	5	**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.

Additional requirements

- Students in the BSc Extended: Mathematical Sciences programme must achieve a minimum GPA requirement of 65% in year 1, in order to progress from semester two to semester three.

- Students in the BSc Extended: Mathematical Sciences programme who pass all their modules in semester one and two, may be considered in other programmes in the Faculty of Natural and Agricultural Sciences as well as other faculties.
  a. Students who are admitted to one of the BSc extended programmes register for one specific programme. Three extended programmes are available:

- BSc (extended programme) – Mathematical Sciences
- BSc (extended programme) – Biological and Agricultural Sciences
- BSc (extended programme) – Physical Sciences

  b. These programmes are followed by students who, as a result of exceptional circumstances, will benefit from an extended programme.
  c. Students who do not comply with the normal three-year BSc entrance requirements for study in the Faculty of Natural and Agricultural Sciences, may nevertheless be admitted to the Faculty by being placed on the BSc (extended programme). Generally the BSc (extended programme) means that the first study year in Mathematics, Physics, Biology and Chemistry is extended to take two years. After completing the BSc (extended programme) successfully, students join the second year of the normal BSc programme to complete their degrees. The possibility of switching over to other faculties such as Engineering, Built Environment and Information Technology, Veterinary Science and Health Sciences, after one or two years in the extended programme, exists. This depends on selection rules and other conditions stipulated by the other faculties.
  d. Students who wish to follow one of the BSc extended programmes will be subjected to an Institutional Proficiency Test and will be considered for admission by the Admissions Committee. Information in this regard is available at the Client Services Centre.
  e. Applications for admission to the BSc (extended programme) should be submitted before 30 September each year. Details are obtainable from the Student Administration at the Faculty of Natural and Agricultural Sciences.
  f. The rules and regulations applicable to the normal study programmes apply mutatis mutandis to the BSc (extended programme), with exceptions as indicated in the regulations pertaining to the BSc (extended programme). For instance, students placed in the BSc (extended programme) must have a National Senior Certificate with admission for degree purposes.
  g. An admissions committee considers applications for the BSc (extended programme) annually. Regarding subject choices, admitted students are individually placed on the BSc (extended programme) according to their prospective field of study. Students may NOT change this placement without the permission of the Chairperson of the admissions committee.

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. egisters 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, STK320, STK353.

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.

a. The BSc extended programmes are not available for students who meet all the requirements for the corresponding mainstream programme.

b. 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.

c. Students who are placed on the BSc extended programme will take a minimum of five years to complete the BScAgric, BSc (Culinary Science) or BSc (Nutrition) programmes.

d. Students enrolled for the BSc extended programme – Biological and Agricultural Sciences, do not qualify to apply for the mid-year intake in the Faculty of Health Sciences.

e. Progression from the BSc extended programme – Mathematical Sciences 02130016 to the mathematics-intensive programmes will be considered only if students obtained a GPA of 65% in their first-year modules. Students who pass all first-year modules will be advised on alternative academic pathways. In addition, admission into the BSc (Actuarial and Financial Mathematics) programme will only be considered if students have passed IAS 111 and achieved a minimum mark of 60% in WTW 153 and WST 153.

Promotion to next study year

Academic promotion requirements

It is expected of students who register for the first year of the BSc (extended programme) to pass all the prescribed modules of the first year.

It is expected of students accepted into the BSc (extended programme) to finish a complete corresponding BSc first year within the two years of enrolment in the BSc (extended programme). Students who do not show progress during the first semester of the first year will be referred to the Admissions Committee of the Faculty.

Curriculum: Year 1

Minimum credits: 88

Fundamental = 24
Core   = 56
Elective   = 8

Additional information:

- In the second semester, students register for PHY 143 or PHY 144.
- **NB Students may register for an extended module only once.**
- Admissions from the BSc -- Extended programmes to the BSc (Actuarial and Financial Mathematics) programmes will only be considered if students have passed all their first-year modules with an average of at least 60%, passed IAS 111 and achieved a minimum percentage of 60% for WTW 143 and WTW 153.

Fundamental modules

Academic information management 111 (AIM 111) - Credits: 4.00
Academic information management 121 (AIM 121) - Credits: 4.00
Language, life and study skills 133 (LST 133) - Credits: 8.00
Language, life and study skills 143 (LST 143) - Credits: 8.00
Academic orientation 120 (UPO 120) - Credits: 0.00

Core modules

Physics 133 (PHY 133) - Credits: 8.00
Mathematical statistics 133 (WST 133) - Credits: 8.00
Mathematical statistics 143 (WST 143) - Credits: 8.00
Precalculus 135 (WTW 135) - Credits: 16.00
Calculus 143 (WTW 143) - Credits: 8.00
Mathematical modelling 155 (WTW 155) - Credits: 8.00

Elective modules

Physics 143 (PHY 143) - Credits: 8.00
Physics 144 (PHY 144) - Credits: 8.00

Curriculum: Year 2

Minimum credits: 28

Core   =   16
Elective   =   According to degree programme of choice

Additional information:

Possible third semester electives: PHY 154, PHY 153

Students must register for the applicable third-semester modules (second year, first semester) and the second-semester, modules must be selected from the normal degree programme of the student's choice.

Equivalent modules:

- Physics extended modules: PHY 133, PHY 143 and PHY 153: Equivalent to BSc module PHY 114
- PHY 133, PHY 144 and PHY 154: Equivalent to BSc module PHY 131
- Mathematics extended modules:
  - WTW 135, WTW 143 and WTW 153: Equivalent to BSc module WTW 114
  - WTW 155: Equivalent to WTW 152
  - WTW 135 GS, WTW 144 and WTW 154: Equivalent to BSc module WTW 134
  - WTW 133, WTW 144 and WTW 154: Equivalent to BSc module WTW 134
- Mathematical Statistics extended modules: WST 133, WST 143 and WST 153: Equivalent to BSc module WST 111

Please note: If FRK is selected as an elective, INF 183 has to be taken as well.

Core modules

Mathematical statistics 153 (WST 153) - Credits: 8.00
Calculus 153 (WTW 153) - Credits: 8.00

Elective modules

Program design: Introduction 110 (COS 110) - Credits: 16.00
Economics 110 (EKN 110) - Credits: 10.00
Economics 120 (EKN 120) - Credits: 10.00
Financial management 112 (FBS 112) - Credits: 10.00
Financial management 122 (FBS 122) - Credits: 10.00
Financial accounting 111 (FRK 111) - Credits: 10.00
Actuarial and Financial Mathematics in practice 111 (IAS 111) - Credits: 6.00
Actuarial and Financial Mathematics in practice 121 (IAS 121) - Credits: 6.00
Informatics 183 (INF 183) - Credits: 3.00
Physics 153 (PHY 153) - Credits: 8.00
Mathematical statistics 121 (WST 121) - Credits: 16.00
Discrete structures 115 (WTW 115) - Credits: 8.00
Numerical analysis 123 (WTW 123) - Credits: 8.00
Mathematics 124 (WTW 124) - Credits: 16.00
Mathematical modelling 152 (WTW 152) - Credits: 8.00
Mathematics 154 (WTW 154) - Credits: 8.00
Dynamical processes 162 (WTW 162) - Credits: 8.00

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.