

# University of Pretoria Yearbook 2021

## 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. The BSc – Extended programme takes a year longer than the normal programmes to complete.

#### BSc — Extended programme — Mathematical Sciences

##### Minimum requirements

##### Achievement level

##### English Home Language or

##### English First Additional

##### Language

NSC/IEB

4

AS Level

D

##### Mathematics

NSC/IEB

5

AS Level

C

##### APS

28

This programme is not available for students who meet all the requirements for the corresponding mainstream programme.

**Note:** Only students who apply in the final year of their NSC or equivalent qualification, will be considered for admission into any of the BSc – Extended programmes.

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 a weighted average of at least 60%, passed IAS 111 and achieved a minimum mark of 60% for WTW 143 and WTW 153.

### 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.
  - 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

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 ascertain, 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

### 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 BSc module WTW 114
  - 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 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.