Faculty of Natural and Agricultural Sciences
Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tša Tlhago le Temo

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Make today matter

Bachelor of Science *Mathematics* and Bachelor of Science *Applied Mathematics*

Mathematics, which originated from arithmetic and geometry, is based on patterns and structures and is the fundamental language of science and technology. Applied mathematics is concerned with the modelling and treatment of real-life problems in a variety of fields, such as engineering, finance, statistics, physics and biology. The power of mathematics and applied mathematics lies in their abstract, analytical and computational nature. Nowadays, mathematics is essential for all technological, financial and managerial industries, which form the backbone of the South African economy.

Who is the ideal candidate?

Mathematics students who enjoy the course and excel in it are those who enjoy solving problems and have a strong background in the basics of the subject.

What makes this programme unique?

The Department of Mathematics and Applied Mathematics is not only one of the largest departments on the Hatfield Campus, but also one of the largest mathematics departments in the country, with approximately 17 500 student enrolments for mathematics modules. The Department prides itself on excelling in teaching and research, as well as in community-based activities.

The diverse and competent staff has expertise in various fields. The Department regularly hosts international visitors and its researchers frequently travel abroad to attend conferences and pay research visits. No fewer than 31 of its researchers have received NRF ratings in fields ranging from more traditional abstract analysis to contemporary epidemiology, where the modelling of biological phenomena leads to exciting options.

A degree in mathematics trains students to apply, evaluate and adapt existing problem-solving techniques, or to develop new mathematical models and techniques to solve problems stemming from natural, technological and financial phenomena.

Career opportunities

Graduates in mathematics and applied mathematics are employed by research institutions, in education (universities and schools), the public sector (government and medical institutions) and the private sector (engineering companies, financial institutions and the computer industry).

The training of these graduates in abstract, analytical and computational thinking provides them with the versatile background required to easily adjust to changing circumstances in the professional environment and to construct mathematical models of natural, technological and financial phenomena. Mathematicians and applied mathematicians apply, evaluate and adapt existing problem-solving techniques or develop new techniques to solve those problems.

Which companies employ our graduates?

A Bachelor of Science *Mathematics* or Bachelor of Science *Applied Mathematics* degree is a solid foundation for a professional career in many fields. Many of our graduates are employed by the banking and financial sector, but also in new fields like bioinformatics, genetics, management consulting, weather forecasting, etc. As there is a general shortage of mathematicians in South Africa, top performing students opt for further studies and an academic career.

Bachelor of Science *Mathematics*
Compulsory modules are:
- Analysis
- Abstract algebra
- Geometry (third-year level)
- Calculus
- Linear algebra
- Differential equations
- Discrete structures (second-year level)
- Mathematical modelling
- Mathematical statistics
- Numerical analysis
- Dynamical processes (first-year level)

Bachelor of Science *Applied Mathematics*
Compulsory modules are:
- Analysis
- Continuum mechanics
- Numerical analysis
- Partial differential equations
- Dynamical systems (third-year level)
- Calculus
- Linear algebra
- Discrete structures
- Differential equations (second-year level)
- Mathematical modelling
- Mathematical statistics
- Dynamical processes (first-year level)

Minimum admission requirements

Programmes	Minimum requirements for NSC/IEB for 2025		
	Achievement level		APS
	English Home Language or English First Additional Language	Mathematics	
Bachelor of Science *Mathematics* **Bachelor of Science *Applied Mathematics*** [3 years]	5	6	34

Faculty of Natural and Agricultural Sciences
Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tša Tlhago le Temo

Minimum requirements for applicants with a school leaving certificate not issued by Umalusi (South Africa)

Make today matter

Refer to the International undergraduate prospectus at www.up.ac.za/programmes > Undergraduate > Admission Information or **click here** for more information.
- The closing date for applications for programmes in this faculty is 30 June.
- Meeting the minimum admission requirements does not guarantee admission into a programme.

FACULTY OF NATURAL AND AGRICULTURAL SCIENCES **Programmes**	Compulsory subjects	GCSE # The qualifications in the two columns below will be considered only for conditional admission. If final AS and/or A levels have been completed, these two columns will not apply. It can also not be used for final admission and/ or registration.		HIGCSE NSSC HL	AS Level	A Level	IB		KOMBI ABITUR	KCSE
		CIE IGCSE LGCSE BGCSE SGCSE O Level NSSC OL CGCE UCE NECO WAEC ZIMSEC	UK England Wales Northern Ireland		GCE CIE NSSC AS	GCE CIE CGCE UACE WAEC ZIMSEC	IB SL	IB HL		
Bachelor of Science *Biochemistry*										
Bachelor of Science *Biotechnology*										
Bachelor of Science *Ecology*										
Bachelor of Science *Zoology*										
Bachelor of Science *Entomology*										
Bachelor of Science *Genetics*										
Bachelor of Science *Human Genetics*										
Bachelor of Science *Human Physiology*										
Bachelor of Science *Human Physiology, Genetics and Psychology*										
Bachelor of Science *Medical Sciences*	English	C	4	3	C	E	4	3	60-69%	B
Bachelor of Science *Microbiology*	Mathematics	C	4	3	C	E	4	3	60-69%	B
Bachelor of Science *Plant Science*	Physics	C	4	3	C	E	4	3	60-69%	B
Bachelor of Science *Chemistry*	Chemistry	C	4	3	C	E	4	3	60-69%	B
Bachelor of Science *Physics*										
Bachelor of Science *Geography* [Option: Geography and Environmental Science]										
Bachelor of Science *Geoinformatics*										
Bachelor of Science *Geology*										
Bachelor of Science *Meteorology*										
Bachelor of Science *Environmental and Engineering Geology*										

Minimum requirements for 2025 / Achievement level

\# Only English with at least a C symbol on this level can be used for final admission.
NOTE: The Faculty of Natural and Agricultural Sciences requires the following achievement levels for IELTS and TOEFL: TOEFL – Writing=22; Speaking=23; Reading=21; Listening=17
IELTS – Writing=6; Speaking=6; Reading=6; Listening=6

FACULTY OF NATURAL AND AGRICULTURAL SCIENCES **Programmes**	Compulsory subjects	GCSE # The qualifications in the two columns below will be considered only for conditional admission. If final AS and/or A levels have been completed, these two columns will not apply. It can also not be used for final admission and/or registration.		HIGCSE NSSC HL	AS Level GCE CIE NSSC AS	A Level GCE CIE CGCE UACE WAEC ZIMSEC	IB IB SL	IB HL	KOMBI ABITUR	KCSE
		CIE IGCSE LGCSE BGCSE SGCSE O Level NSSC OL CGCE UCE NECO WAEC ZIMSEC	UK England Wales Northern Ireland							
Bachelor of Science *Food Science*	English Mathematics Physics Chemistry	C C C C	4 4 4 4	3 3 3 3	C C C C	E E E E	4 4 4 4	3 3 3 3	60-69% 60-69% 60-69% 60-69%	B B B B
Bachelor of Science in Food Management [Option: Culinary Science]										
Bachelor of Science in Food Management [Option: Nutrition]										
Bachelor of Science in Agriculture in Agricultural Economics and Agribusiness Management										
Bachelor of Science in Agriculture in Animal Science										
Bachelor of Science in Agriculture in Plant Pathology										
Bachelor of Science in Agriculture in Applied Plant and Soil Sciences										
Bachelor of Science *Actuarial and Financial Mathematics*	English Mathematics	C A	4 7	3 1	C A	E C	4 6	3 5	60-69% 80-100%	B A
Bachelor of Science *Mathematics*	English Mathematics	C B	4 5	3 2	C B	E D	4 5	3 4	60-69% 70-79%	B B+
Bachelor of Science *Applied Mathematics*										
Bachelor of Science *Mathematical Statistics*										
Bachelor of Consumer Science *Clothing Retail Management*	English Mathematics	C D	4 3	3 3	C D	E E	4 2	3 2	60-69% 50-59%	B C+
Bachelor of Consumer Science *Food Retail Management*										
Bachelor of Consumer Science *Hospitality Management*										

Only English with at least a C symbol on this level can be used for final admission.
NOTE: The Faculty of Natural and Agricultural Sciences requires the following achievement levels for IELTS and TOEFL: TOEFL – Writing=22; Speaking=23; Reading=21; Listening=17
IELTS – Writing=6; Speaking=6; Reading=6; Listening=6