



Make today matter

The Division of Genetics offers internationally recognised undergraduate and postgraduate degrees. Genetics is at the core of the biological, agricultural, veterinary and medical sciences and has become essential in fields as diverse as virology and epidemiology, biodiversity conservation and sustainable agriculture.

Both the Bachelor of Science in Genetics and Bachelor of Science in Human Genetics programmes offer single- and double-major options. Students can choose to specialise in genetics as a single major or combine genetics with a second major, such as biochemistry, microbiology, plant science, or zoology in the Genetics programme, or with human physiology in the Human Genetics programme.

The interdepartmental Bachelor of Science in Biotechnology programme places particular emphasis on molecular biology and is aimed at empowering students to pursue their interest in biotechnology. Undergraduate training includes exposure to aspects of biochemistry, genetics and microbiology, in addition to the other subjects chosen by the student.

Our degrees are research-oriented and place a strong emphasis on understanding underlying concepts and principles, as well as on developing the necessary problem-solving and analytical skills. Students are encouraged to decide on their postgraduate research direction during their undergraduate studies and to choose their electives accordingly.



What makes this programme unique?

At the undergraduate level, students are provided with a thorough background in the principles of genetics, as well as the application of those principles in fields as diverse as genomics, plant and animal biotechnology, diagnostics and risk determination, bioethics, conservation ecology and population, and behavioural and evolutionary studies. Graduates acquire skills in analytical and critical thinking, as well as creativity in problem solving and data handling, which equip them for success in both scientific and non-scientific careers.



Which companies employ our graduates?

Genetics graduates are employed by institutes such as the CSIR, NHLS, ARC, NRF, SANBI and NICD. Some of the fields in which graduates have been employed are:

- academia;
- plant and crop breeding;
- animal health;
- microbiology;
- virology;
- agriculture and wildlife;
- medical and pharmaceutical;
- computational biology and bioinformatics;
- biomedical science communication;
- corporate business and sales; and
- human and medical genetics.



Who is the ideal candidate?

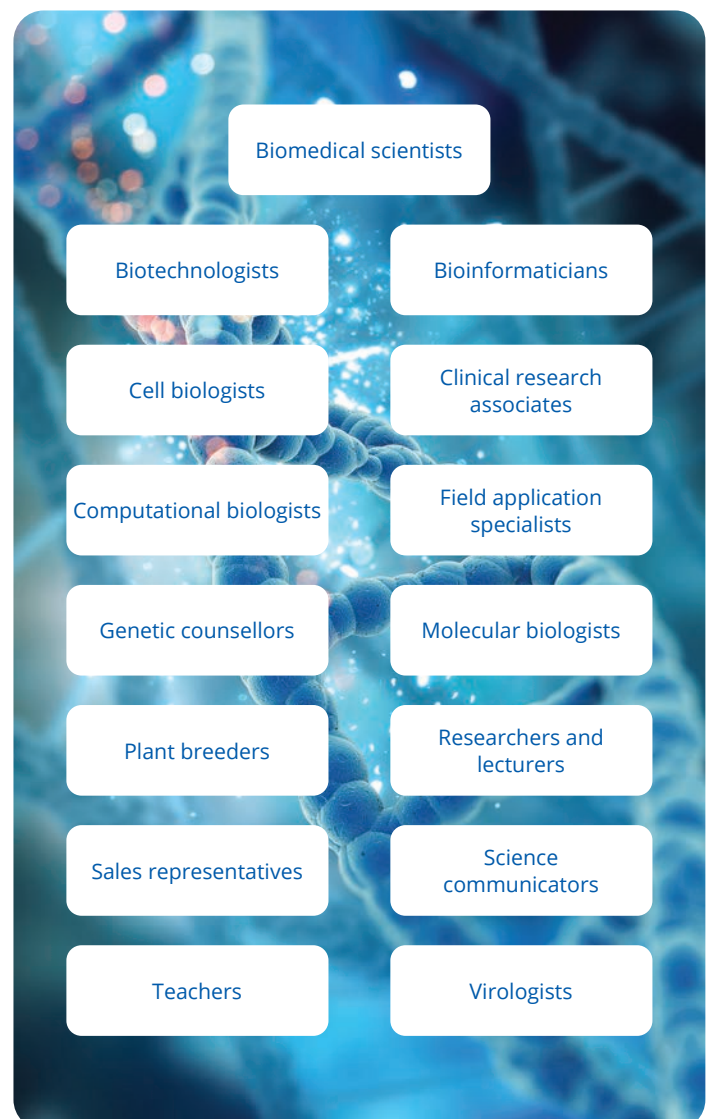
Effective science is increasingly becoming transdisciplinary and involves multifaceted research teams and expertise.

Individuals seeking to enrol in programmes such as Genetics should be innovative and creative thinkers with curious minds who exhibit inquiry-driven tenacity, display a passion for life-science-related topics and have a fair understanding of mathematics.



Career opportunities

Employment opportunities are available in various fields and graduates may be employed as:





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YUNIBESITHI YA PRETORIA

Faculty of Natural and Agricultural Sciences

Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tša Tlhago le Temo

Bachelor of Science in Genetics, Bachelor of Science in Human Genetics and Bachelor of Science in Biotechnology (continued)



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Minimum admission requirements

Programmes	Minimum requirements for NSC/IEB for 2026			
	Achievement level			APS
	English Home Language or English First Additional Language	Mathematics	Physical Sciences	
Bachelor of Science in Genetics Bachelor of Science in Human Genetics [3 years]	5	5	5	32
Bachelor of Science in Biotechnology [3 years]	5	5	5	32

Bachelor of Science in Genetics

Students complete all five of the final year **Genetics** modules together with three modules chosen from either Biochemistry, Plant Science, Zoology or Microbiology.

Single Major

Double Major

Genetics modules can be combined with an equivalent number of modules from either Biochemistry, Plant Science, Microbiology, Zoology or Entomology.

Bachelor of Science in Human Genetics

Final year **Genetics** modules can be taken together with a selection of modules from Human Physiology, Biochemistry, Pharmacology or Microbiology.

Single Major

Double Major

Genetics modules can be combined with an equivalent number of modules from Human Physiology.

Bachelor of Science in Biotechnology

Elective modules may be chosen from either Genetics, Biochemistry, Plant Science or Microbiology. The choice of modules determine a student's postgraduate outcomes.

Bachelor of Science in Medical Sciences

Double Major

Genetics modules can be combined with an equivalent number of modules from Human Anatomy.

Bachelor of Science in Human Physiology, Genetics and Psychology

Triple Major

Modules from all three fields are taken at final year level. Students may continue with postgraduate studies in Genetics by adding one additional final year Genetics module.

Postgraduate study options

Additional postgraduate study options are available in other Departments and programmes depending on the student's choice of modules at final year level.



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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	Minimum requirements for 2026									
	Achievement level									
	Compulsory subjects	GCSE #		HIGCSE NSSC HL	AS Level	A Level	IB		KOMBI ABITUR	KCSE
		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.			GCE CIE NSSC AS	GCE CIE CGCE UACE WAEC ZGCE	IB SL	IB HL		
		CIE	UK							
IGCSE LGCSE BGCSE EGCSE O Level NSSC OL CGCE UCE NECO WAEC WASSCE ZGCE		England Wales Northern Ireland Pearson Edexcel GCSE								
Bachelor of Science in Biochemistry	English Mathematics Physics Chemistry	C	4	3	C	E	4	3	60-69%	B
Bachelor of Science in Biotechnology		C	4	3	C	E	4	3	60-69%	B
Bachelor of Science in Ecology		C	4	3	C	E	4	3	60-69%	B
Bachelor of Science in Zoology		C	4	3	C	E	4	3	60-69%	B
Bachelor of Science in Entomology										
Bachelor of Science in Genetics										
Bachelor of Science in Human Genetics										
Bachelor of Science in Human Physiology										
Bachelor of Science in Human Physiology, Genetics and Psychology										
Bachelor of Science in Medical Sciences										
Bachelor of Science in Microbiology										
Bachelor of Science in Plant Science										
Bachelor of Science in Chemistry										
Bachelor of Science in Physics										
Bachelor of Science in Geography [Option: Geography and Environmental Science]										
Bachelor of Science in Geoinformatics										
Bachelor of Science in Geology										
Bachelor of Science in Meteorology										
Bachelor of Science in Environmental and Engineering Geology										

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



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IGCSE LGCSE BGCSE EGCSE O Level NSSC OL CGCE UCE NECO WAEC WASSCE ZGCE	England Wales Northern Ireland Pearson Edexcel GCSE									
Bachelor of Science in 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: Nutritional Science]										
Bachelor of Science in Agriculture in Agricultural Economics in 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 in 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 in 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 in Applied Mathematics										
Bachelor of Science in Mathematical Statistics										
Bachelor of Consumer Science specialising in Clothing and 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 specialising in Food Management										

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		CIE	UK							
IGCSE LGCSE BGCSE EGCSE O Level NSSC OL CGCE UCE NECO WAEC WASSCE ZGCE		England Wales Northern Ireland Pearson Edexcel GCSE								
Bachelor of Science in Mathematics [4-year programme]	English Mathematics	D C	3 4	3 3	D C	E E	2 4	2 3	58% 65%	B- B
Bachelor of Science in Chemistry [4-year programme]	English Mathematics Physics Chemistry	D D D D	3 3 3 3	3 3 3 3	D D D D	E E E E	2 2 2 2	2 2 2 2	58% 58% 58% 58%	B- B- B- B-
Bachelor of Science in Geoinformatics [4-year programme]										
Bachelor of Science in Geology [4-year programme]										
Bachelor of Science in Meteorology [4-year programme]										
Bachelor of Science in Physics [4-year programme]										
Bachelor of Science in Ecology [4-year programme]										
Bachelor of Science in Human Physiology [4-year programme]										
Bachelor of Science in Agriculture in Applied Plant and Soil Sciences [5-year programme]										
Bachelor of Science in Agriculture in Plant Pathology [5-year programme]										

Only English with at least a C symbol on this level can be used for final admission.

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