

# BSc Human Genetics

- [University of Pretoria](#)
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- BSc Human Genetics

Genetics is the study of how the genetic material in the cells of all living organisms is transmitted from parent to offspring across generations and how that genetic material is encoded and decoded to provide the blueprint of all life on earth. This pioneering discipline 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.

The advent of advanced technologies continues to enhance existing research strategies. This allows for dynamic interdisciplinary collaboration, not only within the life sciences, but also in fields such as informatics and mathematics. The genomes of numerous animals, plants and pathogens, as well as those of humans, have been decoded. This has led to new informative methods for studying gene interactions at various cellular levels. Computational modelling has proven invaluable to novel gene discovery and understanding the origins and spread of emerging viruses, such as the H1N1-influenza virus and the SARSCoV-2 Coronavirus (COVID-19).

The Division of Genetics is an active player on the international scientific stage and offers internationally recognised undergraduate and postgraduate degrees. These degrees are research oriented and have a strong emphasis on developing analytical skills. The Department of Genetics offers both single- and dual-major options in its Genetics and Human Genetics programmes. This gives students the choice to specialise in genetics as a single major, or to combine their genetics subjects with a second multidisciplinary major, such as biochemistry, microbiology, plant science or zoology, as well as human physiology in the Human Genetics programme.

At the undergraduate level students are provided with a thorough background in the principles of genetics, as well as the applications of these principles in fields as diverse as genomics, plant and animal biotechnology, diagnostics and risk determination, bioethics and conservation ecology, as well as population, behavioural and evolutionary studies.

For more information, please consult the Faculty webpage.

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## Career Opportunities

Graduates generally choose to work as molecular biologists, medical or clinical geneticists, cytogeneticists, biotechnologists, agricultural scientists, molecular ecologists, forensic scientists, genetic counsellors, bioinformaticists and computational analysts, veterinary scientists, teachers or lecturers at various institutions and in bioscience-related industries. If students combine genetics with additional qualifications such as law, they will be equipped for success in careers such as patent law, pharmaceutical sales and marketing, project management, computer programming (natural computation) and science journalism. Note that the level of training and qualification plays an important role in determining the type of work in which a qualified geneticist can become involved.

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## Programme Code

02133409

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## Closing Dates

Applications for this plan have closed.

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## Admission Requirements

### Important information for all prospective students for 2022

- The admission requirements apply to students who apply for admission to the University of Pretoria with a **National Senior Certificate (NSC) and Independent Examination Board (IEB) qualifications**.
  - **Applicants with qualifications other than the abovementioned** should refer to:
    - **Brochure:** Undergraduate Programme Information 2022: Qualifications other than the NSC and IEB, available at [click here](#).
  - **Citizens from countries other than South Africa (applicants who are not South African citizens)** should also refer to:
    - **Brochure:** Newcomer's Guide 2021, available at [click here](#).
    - **Website:** [click here](#).
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- **School of Tomorrow (SOT), Accelerated Christian Education (ACE) and General Education Development Test (GED):** The University of Pretoria no longer accepts qualifications awarded by these institutions.
- **National Certificate (Vocational) (NCV) Level 4:** The University of Pretoria may consider NCV candidates, provided they meet the exemption for bachelor's status criteria and the programme requirements.

## Transferring students

A transferring student is a student who, at the time of application for a degree programme at the University of Pretoria (UP) –

- is a registered student at another tertiary institution, **or** was previously registered at another tertiary institution and did not complete the programme enrolled for at that institution, and is not currently enrolled at a tertiary institution, **or** has completed studies at another tertiary institution, but is not currently enrolled at a tertiary institution, **or** has started with tertiary studies at UP, then moved to another tertiary institution and wants to be readmitted at UP.

A transferring student will be considered for admission based on

- an NSC or equivalent qualification with exemption to bachelor's or diploma studies (whichever is applicable); **and** meeting the minimum faculty-specific subject requirements at NSC or tertiary level; **or** having completed a higher certificate at a tertiary institution with faculty-specific subjects/modules passed (equal to or more than 50%), as well as complying with faculty rules on admission;
- previous academic performance (must have passed all modules registered for up to the closing date of application ) or as per faculty regulation/promotion requirements;
- a certificate of good conduct.

**Note:** Students who have been dismissed at the previous institution due to poor academic performance, will not be considered for admission to UP.

## Returning students

A returning student is a student who, at the time of application for a degree programme –

- is a registered student at UP, and wants to transfer to another degree at UP, **or** was previously registered at UP and did not complete the programme enrolled for, and did not enrol at another tertiary institution in the meantime (including students who applied for leave of absence), **or** has completed studies at UP, but is not currently enrolled or was not enrolled at another tertiary institution after graduation.

A returning student will be considered for admission based on



- an NSC or equivalent qualification with exemption to bachelor's or diploma studies (whichever is applicable); **and** meeting the minimum faculty-specific subject requirements at NSC or tertiary level; **or** previous academic performance (should have a cumulative weighted average of at least 50% for the programme enrolled for);
- having applied for and was granted leave of absence.

**Note:** Students who have been excluded/dismissed from a faculty due to poor academic performance may be considered for admission to another programme at UP. The Admissions Committee may consider such students if they were not dismissed more than twice. Only ONE transfer between UP faculties will be allowed, and a maximum of two (2) transfers within a faculty.

### Important faculty-specific information on undergraduate programmes for 2022

- The closing date is an administrative admission guideline for non-selection programmes. Once a non-selection programme is full and has reached the institutional targets, then that programme will be closed for further admissions, irrespective of the closing date. However, if the institutional targets have not been met by the closing date, then that programme will remain open for admissions until the institutional targets are met.
- The following persons will be considered for admission: Candidates who have a certificate that is deemed by the University to be equivalent to the required National Senior Certificate (NSC) with university endorsement; candidates who are graduates from another tertiary institution or have been granted the status of a graduate of such an institution, and candidates who are graduates of another faculty at the University of Pretoria.
- Life Orientation is excluded when calculating the Admission Point Score (APS).
- Grade 11 results are used for the conditional admission of prospective students. Final admission is based on the final NSC/IEB results.

**University of Pretoria website:** [click here](#)

#### Minimum requirements

##### Achievement level

##### English Home

##### Language or

##### English First

##### Additional

##### Language

NSC/IEB

5

##### Mathematics

NSC/IEB

5

##### Physical Sciences

NSC/IEB

5

##### APS

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Candidates who do not comply with the minimum admission requirements for BSc (Human Genetics), may be considered for admission to the BSc – Extended programme – Biological and Agricultural Sciences, which requires an additional year of study.



## BSc - Extended Programme - Biological and Agricultural Sciences

### Minimum requirements

#### Achievement level

#### English Home

#### Language or

#### English First

#### Additional

#### Language

NSC/IEB

4

#### Mathematics

NSC/IEB

4

#### Physical Sciences

NSC/IEB

4

#### APS

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### 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.

### Duration of study

3 years, full-time.

### Faculty Notes

The Faculty of Natural and Agricultural Sciences is home to more than 6 500 undergraduate and postgraduate students. The Faculty presents degrees in fields ranging from the proverbial A to Z - from actuaries to zoologists, and consists of 13 departments.

All degree programmes are designed to develop problem-solving individuals who can easily adapt to changing circumstances and take the lead in their chosen fields of specialisation. The qualifications awarded are of world-class and provide access to a multitude of career opportunities for dynamic and creative people. According to the latest Times Higher Education World University Rankings the University has achieved new world rankings in Physical Sciences, a discipline which features strongly in NAS and also maintains excellent positions on the ISI Web of Science (WOS) field rankings in Plant and Animal Sciences, Agricultural Sciences, and Environment and Ecology Sciences.

In the Faculty of Natural and Agricultural Sciences, we strive to continuously improve our high impact research and significantly address the national shortage of PhD graduates that respond to global and



local challenges.

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## Enquiries about the programme

[Click Here](#)

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## How to apply



# Online Application





Note: Also consult General Rules and Information on the Yearbook website for additional information.

Disclaimer: Due to the continuous restructuring of the Faculty and this website, some of the information displayed here may not fully reflect the most recent developments in the Faculty. Any discrepancies that are experienced may be taken up with Student Administration of the Faculty.