

Genetics is the bioscience where we investigate the molecular structure of genes, as well as their function and behavior in the context of both cells and organisms. Genetics deals with patterns of inheritance from parent to offspring and with gene distribution, variation and the resulting changes in populations over time.

Since genes are universal to all living organisms, genetics can be applied to the study of all living systems. It therefore plays a central, defining role in the biological, as well as the medical and veterinary sciences.

The Department of Genetics is a strong, vibrant, research active genetics facility. The members of our staff share a strong commitment to provide our students with exceptional, relevant and internationally recognised training in genetics. Our degrees are research oriented and have a strong emphasis on *understanding* the underlying concepts and principles, as well as on developing the necessary problem-solving and analytical skills.

▼ FOR MORE INFORMATION:

For admission requirements and detailed information about the curricula, please consult:

<http://programmes.up.ac.za/>

Visit our WEBSITE for more information about our undergraduate and postgraduate study programmes, our staff and postgraduate students, as well as the ongoing research programmes in the Department:

www.up.ac.za/genetics

The University's CLIENT SERVICE CENTRE is ready to assist prospective undergraduate students with enquiries regarding, registration, bursaries and housing:

csc@up.ac.za or 012 420 3111



All life on the planet is made up of DNA and genes; DNA provides the genetic make-up for a being.
(= Anonymous)

Department of Genetics
University of Pretoria
Private Bag X20, Hatfield
PRETORIA, 0083
South Africa

Phone: +27 (0)12 420 3258
Fax: +27 (0)12 365 5327
E-mail: lucille.hermann@up.ac.za

**Department of
Genetics**

*...fundamental to the
biosciences!*



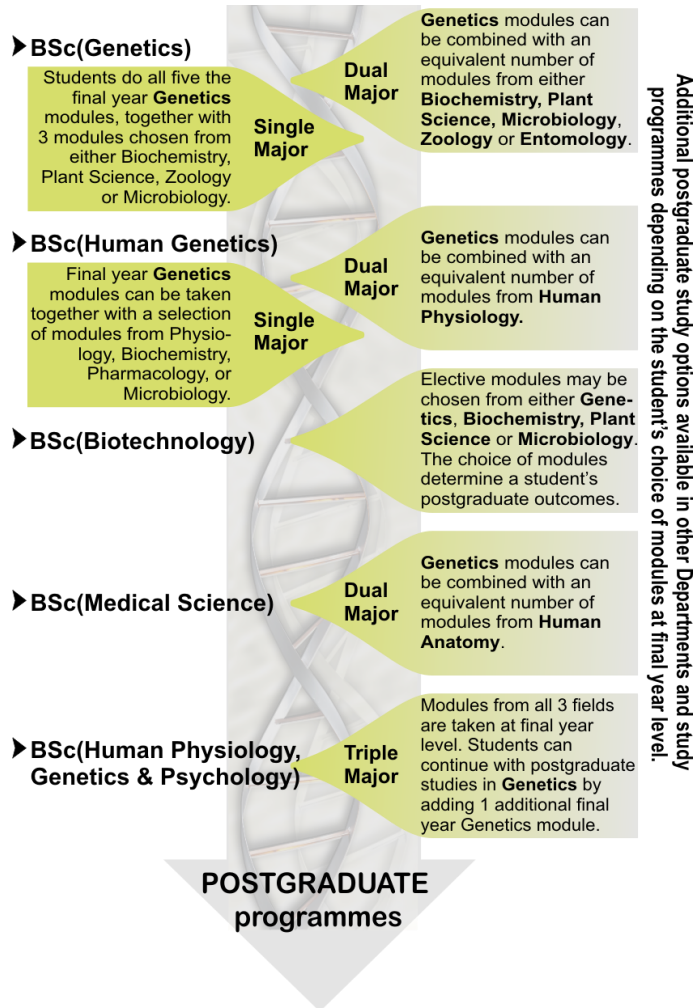
UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Natural and Agricultural Sciences

▼ ACADEMIC OFFERING

Undergraduate Study Programmes

Biology is by nature a multifaceted science. This is also reflected in the growing awareness that researchers need to employ integrative approaches to effectively address contemporary research challenges, combining elements from different scientific fields.

We offer both single and dual major options in Genetics. This allows you to either specialize in your research field of interest, or to embrace the opportunity to develop a multidisciplinary background to augment your interest in Genetics.



Postgraduate Study Programmes

The Dept of Genetics offers all levels of postgraduate qualifications:

- **BSc(Honours)** - one year degree in either **Genetics or Biotechnology**. Includes both coursework and a limited research project;
- **MSc** - two year, research based degree in either **Genetics or Biotechnology**;
- **MSc(Agric) (Genetics)** - two year degree that includes both coursework and a full research project. Follows directly on a BSc(Agric) degree;
- **PhD** in either **Genetics or Biotechnology**.

Admission to the postgraduate programmes requires at least a 60% grade point average (GPA) for the preceding degree. Our degrees are all internationally recognised and all research projects form part of the ongoing research programmes within the Department.

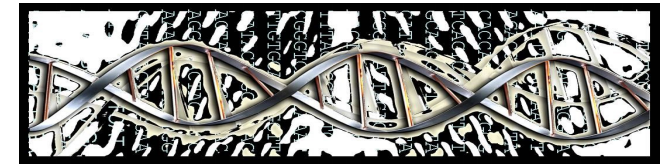
▼ RESEARCH ACTIVITIES

The concept of 'genetic diversity', its significance, causes and consequences, is central to the discipline of Genetics and is a unifying theme in almost all basic and applied research in this field.

This is also the case in our Department. We use cutting edge technologies in everything from laboratory techniques to computational analyses and modelling to effectively address our research aims. We have several ongoing research programmes addressing topics such as molecular virology, anti-tick vaccine development, cancer genetics, fruit tree biotechnology, forest genomics, plant/pathogen interactions, the molecular phylogeny, ecology and evolution of various pathogens and vertebrates, as well as dispersal and reproductive strategies of both animals and humans.

"By being an active player on the international scientific stage, the Department of Genetics contributes toward increasing the harmony between mankind and the rest of the biosphere."

(= UP Research Report 2004; www.research.up.ac.za/2004/)



▼ CAREER OPPORTUNITIES

The type of careers our graduates embark on is very much dependent on their level of qualification. Possible careers involve:

Basic and applied research; Genetic engineering; Veterinary virology; Vaccine development; Nature conservation; Molecular ecology and evolutionary studies; Computational biology and bioinformatics; Population genetics; Human or animal disease research; Molecular diagnostics; Genetic counselling; Behavioural genetics; Pharmacogenetics; Forensic sciences; Plant breeding and crop cultivation; Animal breeding.

Our graduates are employed e.g. by industry, academic institutions, forensic and pathology laboratories; biotechnology entrepreneurial enterprises; various governmental agencies and parastatal research institutes, e.g. the CSIR, NHLS, ARC, NRF and SANBI.



For more information on careers in Genetics and its related fields visit the DST's website on the "Public Understanding of Biotechnology" at www.pub.ac.za/ or visit <http://www.ashg.org/education/careers.shtml>.