

# 2021



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Faculty of Natural and  
Agricultural Sciences

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

# FACULTY

## AT A GLANCE





## 1999

The amalgamated Faculty of Natural and Agricultural Sciences was established in 1999. It was made up of the Faculty of Natural Science, which has been around since 1908, although established in 1919, and the Faculty of Agriculture (1917).



# LEGACY OF EXCELLENCE

## 1908

The University of Pretoria was established in 1908. Today, it is one of the largest research universities in South Africa. UP has transformed into a dynamic university community of staff and students who come from a range of diverse backgrounds and cultures showcasing South African and global societies.



# TEACHING & LEARNING



**Our educational approach has a strong focus on inclusivity and equitable access to education, but ultimately on equity of outcomes.**

UP effectively uses contact sessions in traditional lectures, seminars, laboratories and practical sites, together with online learning platforms. This has enabled access and success for an increasing number of students. The teaching and learning approach is based on inquiry-based learning, hybrid learning and community-based learning. This means that students can ask questions and do research in their field to learn and discover answers on their own; while also being taught in a classroom environment and accessing additional resources online.

# VISION & GOALS



## OUR VISION IS TO BE

A leading research-intensive university in Africa, recognised internationally for its quality, relevance and impact, and also for developing people, creating knowledge and making a difference locally and globally.



## OUR GOALS ARE TO

1. enhance access and successful student learning
2. strengthen the University's research and international profile
3. foster and sustain a transformed, inclusive, and equitable University community
4. optimise resources and enhance institutional sustainability
5. strengthen the University's social responsiveness and impact in society.



# HYBRID LEARNING AMIDST DISRUPTION

Through UP's hybrid model of teaching and learning, part of the learning is dependent on access to the online learning management system known as ClickUP.

A system is in place for students to buy their own devices at very competitive rates but more than **6 000** computers are available in computer laboratories across all campuses and within residences for student use. There are Wi-Fi hot spots across all campuses for use by students with their own devices.



**95%**

Undergraduate modules  
available online

# NAS

The Faculty of Natural and Agricultural Sciences is the largest of its kind in Africa. This diverse faculty is renowned for its expertise in forestry and agriculture, food systems, biotechnology, life sciences, and mathematical and statistical sciences. Our broad range of disciplines allows us to tackle interdisciplinary societal problems by finding solutions to complex issues in modern society such as the sustainability of food production and food security and cures for poverty-related and infectious diseases such as Tuberculosis, HIV/AIDS and Malaria. This is achieved through targeted research, and appropriate training focused on the latest technology and innovation.



## ACADEMIC OFFERING

**33**

Specialised  
undergraduate  
degree programmes

**142**

Specialised  
postgraduate  
degree programmes

### UNIQUE DEGREES

BSc Meteorology (only degree of its kind offered in sub-Saharan Africa)

BSc Culinary Science (only degree of its kind in Africa)

**13**

specialised academic  
departments

## STUDENTS

**4 791**

Undergraduate  
students



**1 759**

Postgraduate  
students

## 2020 GRADUATES

**618** Undergraduate degrees

**311** Honours degrees

**201** Master's degrees

**106** Doctoral degrees

**806**

International students



**81%**

Undergraduate pass rate

# RESEARCH EXCELLENCE

**301**

Academic staff members

**20**

Research Chairs

**85%**

Academic staff members  
with a doctorate

**4**

Research  
Institutes

**6**

Research Centres

**214**

NRF-rated researchers

### WORLD-RENOWNED

- Centre for Microbial Ecology and Genomics (CMEG)
- Mammal Research Institute (MRI)
- UP Natural Hazard Centre

# RANKINGS



## TOP 101-150

in the world for Agriculture and Forestry  
*2020/21 QS Rankings*

## TOP 301-350

in the world for Biological Sciences and Environmental Sciences  
*2020/21 QS Rankings*

## TOP 401-450

in the world for Mathematics  
*2020/21 QS Rankings*

**IN  
SA**

**#1**

Centre for Science and  
Technology Studies (CWTS)  
Leiden Rankings

## TOP 1%

globally for Agricultural Sciences, Biology and Biochemistry,  
Molecular Biology and Genetics, Environment/Ecology,  
Microbiology, and Plant and Animal Science  
*Essential Science Indicators*

**1ST**

## WORLD FIRSTS

- A study using SA's MeerKAT telescope has led to the discovery of a group of 20 galaxies, likely the most neutral hydrogen gas-rich group ever discovered.
- The Faculty contributed to the first interactive app in the country that provides real-time data on COVID-19 using R-Shiny.

# RESEARCH FOCUS AREAS



**AGRICULTURE:** Wide-ranging expertise in crop breeding, pre and post-harvest applications, crop pests and pathogens, animal breeding, animal welfare, agricultural economics and extension, food production, consumer adoption, sensory evaluation, African crops, food systems and food security.



**BIG DATA AND DATA SCIENCE:** Bioinformatics and computational biology, mathematical modelling in bioengineering and biosciences



**ENVIRONMENTAL SCIENCES:** Hazards modelling, environmental modelling, sustainable environmental management and biodiversity conservation



**INFECTIOUS DISEASES:** Human (Tuberculosis, HIV/AIDS, malaria) and veterinary diseases (ticks and tick-borne diseases, rabies, Helminths, African Horse sickness, bluetongue disease, etc)



**PHYSICAL SCIENCES:** Radio astronomy, biophysics, green chemistry, drug discovery, separation science, renewable energy



**TRADITIONAL MEDICINES AND NATURAL PRODUCTS:** Bioprospecting, medicinal plant science

## INTERFACULTY RESEARCH CHAIRS



Ampath Chair in Human Genetics



York Timbers Chair in Wood Engineering



DSI/NRF South African Research Chairs Initiative (SARChI) in Sustainable Malaria Control

# The UP Way

It's as much about where UP comes  
from as to **where we are headed**

It's about UP's excellence, innovation,  
diversity, growth, kindness and  
**making a difference** every day

It's about what we do to...



[www.up.ac.za/  
faculty-of-natural-  
agricultural-sciences](http://www.up.ac.za/faculty-of-natural-agricultural-sciences)



ENQUIRIES

Admission

Student Service Centre  
+27 (0)12 420 3488

Make today matter