

# FACULTY

*At a Glance 2024*



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

## Faculty of Natural and Agricultural Sciences

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

Make today matter

# Make today matter

## THE UP WAY

The University of Pretoria (UP) is one of Africa's top universities and the largest contact university in South Africa. We produce socially impactful research to find solutions for the world's most pressing issues. We have a high quality of teaching and learning inside the classroom, online and in communities. We also have support in place for our students to graduate on time as well-rounded, responsible citizens – fully prepared for the world beyond university.



### VISION

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



### MISSION

In pursuing recognition and excellence in its core functions of research, teaching and learning, and integrating engagement with society and communities into these, the University of Pretoria will use quality, relevance, diversity and sustainability as its navigational markers.

*With UP behind your name, you can rely on a competitive, recognised qualification.*

122

Undergraduate  
programmes

806

Postgraduate  
programmes

660<sup>+</sup>

Industry-relevant  
short courses

*Our degrees are locally accredited and internationally recognised. We have agreements in place with the relevant legal accreditation bodies around the world to ensure the recognition of our programmes.*



## Fostering excellence in teaching and learning

Our educational approach has a strong focus on inclusivity and equitable access to education, but ultimately on equity of outcomes. Our committed academics have multiple approaches to teaching to ensure that students with a variety of learning strengths succeed.

Our 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; be taught in a classroom or other formal contact environment, but also find additional activities, notes, resources and videos to supplement their classes online; or apply their knowledge in a practical way to help communities around university campuses.



## Enabling student success for an equitable future

UP is dedicated to fostering an environment where students can thrive and achieve success. We are fully committed to providing support and opportunities to our students in order to get them ready for work.

**Learn more:** [www.up.ac.za/education-innovation](http://www.up.ac.za/education-innovation)



## Promoting research with real-world impact

UP's research is focused on making a lasting impact and on changing the lives of people. Our theme-based approach leverages knowledge fields and research platforms for the greatest impact. Transdisciplinary research projects with the potential to make a real-life difference are strongly encouraged.

# 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

**139**

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

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## STUDENT LIFE

**6 400+**

NAS  
students

**77%**

Undergraduate  
student pass  
rate

**590+**

International  
students

# RESEARCH EXCELLENCE

86%

Academic staff members  
with a doctorate

20

Research Chairs

4

Research  
Institutes

219

NRF-rated researchers

6

Research Centres

## WORLD-RENOWNED

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

IN  
SA

#1

Centre for Science and Technology  
Studies (CWTS) Leiden Rankings

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# RANKINGS

## TOP 101-150

in the world for Agriculture and Forestry (2<sup>ND</sup> in SA)\*

## TOP 251-300

in the world for Environmental Sciences (3<sup>RD</sup> in SA)\*

## TOP 301-350

in the world for Biological Sciences (2<sup>ND</sup> in SA)\*

## TOP 401-450

in the world for Mathematics (1<sup>ST</sup> in SA)\*

## TOP 450

in the world for Materials Science (3<sup>RD</sup> in SA)\*

## TOP 500

in the world for Natural Sciences (4<sup>TH</sup> in SA)\*

## TOP 650

in the world for Physics and Astronomy (7<sup>TH</sup> in SA)\*

Achieving position number **30** globally for SDG 15 and  
ranked **1<sup>ST</sup>** for the same SDG in South Africa  
*Times Higher Education (THE) Impact Rankings (2022)*

## TOP 1%

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

\*2022 QS Rankings

# 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

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## INTERFACULTY RESEARCH CHAIRS



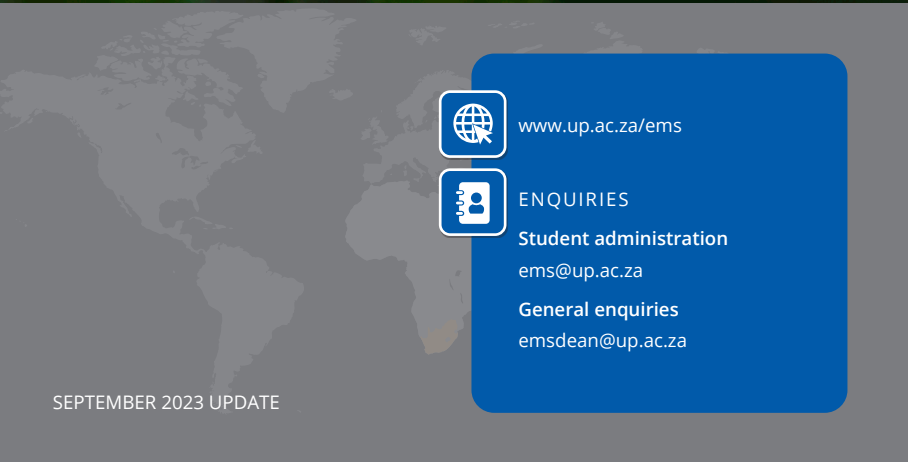
Ampath Chair in Human Genetics



York Timbers Chair in Wood Engineering



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



[www.up.ac.za/ems](http://www.up.ac.za/ems)



#### ENQUIRIES

**Student administration**

[ems@up.ac.za](mailto:ems@up.ac.za)

**General enquiries**

[emsdean@up.ac.za](mailto:emsdean@up.ac.za)