

## FACULTY FACT SHEET



## ON GOOD AUTHORITY

### Message from the executive dean, Prof Liezl van Dyk



At the Faculty of Engineering, we want to change the world for the better and develop exceptional engineers by creating an industry-relevant environment, based on cutting-edge research and academic excellence.

We are deeply invested in the progress of our students, whom we choose with great attention and care. We want our graduates to have a solid academic foundation as well as practical applications experience within the world of work.

Therefore, groundbreaking research and the commercialisation of our expertise – both locally and abroad – have always been top priorities for us.

If you sign up for a qualification within the field of engineering, be prepared to grow, thrive, and succeed.

## THIS IS US

### Changing the world for the better through digital health

#### Cyathlon

The Cyathlon is a unique international competition that brings together people with disabilities, engineers, and scientists to develop and test the latest assistive technologies. It is a great platform for showcasing innovations and promoting inclusivity for people with disabilities.

The NWU team comprises dedicated students from diverse backgrounds who share a common goal of developing a cutting-edge prosthetic leg and wheelchair for the race. Their aim is to design and create a device that is efficient, user-friendly, and able to withstand the rigorous demands of the competition. Their design has the potential to transform the lives of those living with mobility impairments in Africa.

### Changing the world for the better through responsible and sustainable energy

#### HySA (Hydrogen South Africa)

The Department of Science and Technology (DST) HySA Infrastructure Centre of Competence is co-hosted by NWU and the Council for Scientific and Industrial Research (CSIR). It focuses on developing cost-competitive solutions for generating hydrogen by using renewable energy and other chemical carriers for hydrogen storage and distribution.

The key facilities of HySA Infrastructure continue to develop state of the art production technologies that have the capacity to supply hydrogen on-site and on-demand for both stationary and non-stationary uses.

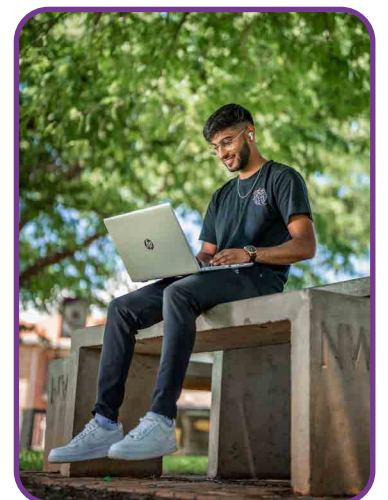
The overall vision of the high frequency current transformer (HFCT) research, development and innovation (RDI) strategy is to bring about wealth, jobs and intellectual property rights creation through the initiation of new high-technology industries based on minerals found on South African soil. It also aims to improve lives through reliable and clean electricity generation.

#### Nuclear engineering

Studies in nuclear engineering concern the optimal design, construction, operation, maintenance, and decommissioning of nuclear power plants.

#### Clean stove project

Sasol launched a pilot community engagement project in the community of Orangeville, Free State, next to the Vaal Dam. The Faculty of Engineering is tasked to manage the construction, installation, and monitoring of the air quality of 50 low emission coal stoves for the community.



We are currently in the construction phase and will train members of the community of Orangeville to assist with the installation. These unemployed people will be empowered to assist with the full-scale project that will be launched in 2024.

## Faculty facts

### The NWU's solar car, AKA Naledi 2.0

The NWU has competed in solar car challenges since 2012. The NWU solar car project stands out as a symbol of engineering excellence in the pursuit of energy efficient transport technology. This flagship inter-disciplinary project not only focuses on research and the application of new technologies in renewable energy, but also aims to inspire communities and prospective students to engage with renewable technology.

Naledi has competed in seven Sasol Solar Challenges to date. The last was in 2022, where Naledi 2.0 managed to secure an impressive fourth place in the #SasolSolarChallenge.

Naledi 2.2 also won the award for best structural design. Not only is it one of the most beautiful solar cars to look at, but it also has a unique rotating solar panel, making it one of a kind.

The NWU Faculty of Engineering is a dynamic training hub for world-class, versatile, and innovative engineers who are able to develop engineering solutions in fields such as integrated energy and Industry 4.0 (smart factories equipped for digital manufacturing).

### Engineering is for anyone

The ratio between female and male engineering students decreased from 1:4 in 2018 to less than 1:3 in 2023. This is because of initiatives such as Femmegineering, InnovatHER and increasing the number of female lecturers who serve as role models to support the global realisation that engineering is for anyone.

### Engineering week for School Learners

The NWU Faculty of Engineering weeks are especially designed for grade 10, 11 and 12 learners with a keen interest in pursuing a career in engineering. The unique programme affords them the opportunity to experience the NWU in Potchefstroom for 4 days. Registered learners become acquainted with all 7 of the NWU's engineering programmes.

## Internationally known

Our BEng programmes meet the requirements of the Engineering Council of South Africa (ECSA) and international standards through the Washington Accord.

South Africa is a member of the accord, along with Australia, Canada, Chinese Taipei, Hong Kong China, India, Ireland, Japan, Republic of Korea, Malaysia, Russia, New Zealand, Singapore, Sri Lanka, Turkey, the United Kingdom and the United States of America.

## Our faculty in numbers

(Staff and student figures as on 3 April 2023)



Undergraduate students:  
1 363



Postgraduate students:  
262



International students:  
65



Academic staff:  
94

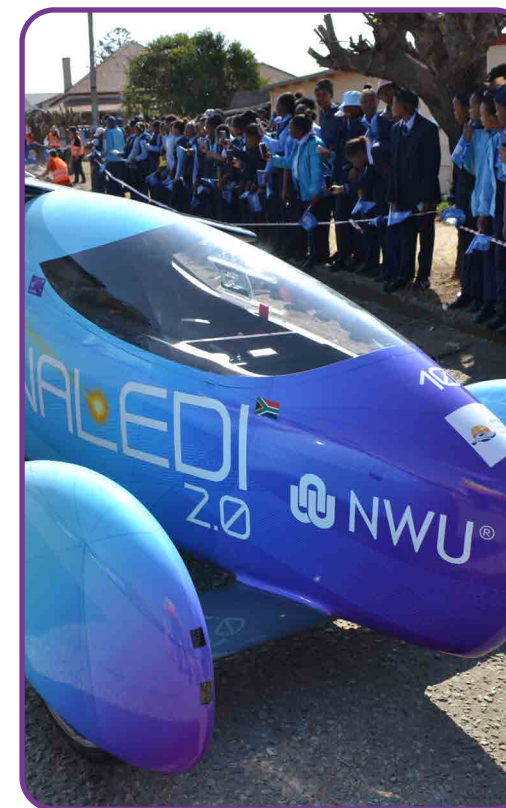


Support staff:  
104



NRF-rated researchers:  
20

## SCHOOLS & PROGRAMMES



### The faculty consists of four schools:

- Chemical Engineering
- Electrical Engineering
- Electromechanical Engineering
- Electronic and Computer Engineering
- Industrial Engineering
- Mechatronic Engineering
- Mechanical Engineering

[Click here to see which undergraduate programmes we offer](#)

[Click here for our Post Graduate Diploma programmes](#)

[Click here for our M and PhD programmes](#)



## RESEARCH

### Research chairs

- DSI/NRF Chair in Coal Research (SARChI)
- DSI/NRF Chair in Biofuels and Other Clean Alternative Fuels (SARChI)
- ESKOM EPPEI Specialisation Centre for Emission Control

### Research entities

- Centre of Excellence in Carbon-based Fuels
- Unit for Energy and Technology Systems
- Multilingual Speech Technologies (MuST)

### Hosted entities, platforms and institutes

- DSI HySA Infrastructure Centre of Competence in hydrogen production, storage, reticulation and safety codes and standards



## APPLICATIONS

### Admission requirements

- Full matriculation exemption, with an APS score of at least 34
- Mathematics (70%+)
- Physical Sciences (70%+)
- Language (60%+)
- For prospective engineers who do not quite meet the minimum requirements, an optional engineering test may provide the necessary entrance.

### How do I apply?

Please refer to our [website](#) for online application.

### Money matters

The Bursary Office assists in the distribution of advertisements for various bursaries in the field of engineering. For more information, contact

**Claudie Kroese** (018 288 1530) or **Angie Danster** (018 299 1985). For additional financial support, please contact 018 299 2672.

### We want to hear from you

Phone 018 285 2453 or contact **Sonette Becker** (prospective students) or **Bernice Mackenzie** (faculty administrator) or visit our [webpage](#).

