



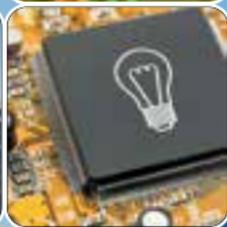
UNIVERSITY OF  
KWAZULU-NATAL™

INYUVESI  
YAKWAZULU-NATALI

# SCHOOL OF ENGINEERING

Electrical Engineering

we power **er**  
we connect



INSPIRING GREATNESS

The Electrical Engineering curriculum is designed to prepare the student for the environment in which the generation, transmission and use of electrical power takes place. This environment varies from large generators in a power station to the latest microprocessor used to control a process in a factory or the supply of electricity to a house. We believe that the best way to accomplish this preparation is by a broad-based degree in which the third year includes courses such as Electromagnetic Theory, Electrical Machines, Power Systems, Electronics, Digital Systems, Power Electronics and Control Systems. The study of electronics and the use of computers are integrated into the electrical engineers training because they are vital tools. They also attend a course on Engineering Management and Labour Practices in preparation for industry employment.

Final year students take two compulsory courses in each semester including Engineering Business and Entrepreneurship. Apart from these courses, the Electrical Engineering programme offers six design projects starting from first year to final year that allows the students to grow doing hands-on work on physical models and real time simulation studies of electrical engineering phenomenon. The remaining course credits required are selected from a wide range of options to suit a student's specific interests and chosen career specialisation area. These options address issues likely to be experienced in practice and so familiarise the future graduate with problems that will be faced in industry. Options that may be offered include High Voltage Engineering, Power Systems, Power Electronics, Electrical Machines, Control Systems, Automation, Digital Signal Processing, Embedded Systems, Illumination and Data Communications and Telematics. Currently, Electrical Engineering is enjoying the Real Time Digital Simulator facility that is used to simulate power systems on real time and to test hardware connected with it in-loop, e.g. protection relays for power systems.

## Practical Experience

For the integration of the theory with the practice of engineering to take place, the student is required to complete a minimum period of 13 weeks of practical vacation work in industry. This is normally undertaken during the long vacations of second and third years. After each such period of training the student is required to submit a formal report on the work



completed. In addition, second year students are required to attend a one-week general workshop training course held in the Electrical & Electronic Engineering Buildings during the July/August vacation.

## Career Opportunities

With the increasing demand for electricity and the tremendous growth of the information, manufacturing and telecommunications industries there are many challenging and exciting jobs awaiting each graduating Electrical Engineer.

## Profession Registration

The Bachelor of Science degree in Engineering (Electrical Engineering) is recognised as the qualifying degree for registration as a professional engineer with the Engineering Council of South Africa under the Professional Engineers Act 1969. A period of at least three years of relevant postgraduate experience is required before full registration as a Professional Engineer. Professional registration is currently a requirement, in South Africa, for those wishing to become consulting engineers, whether in the private or public sectors.

## Subject Requirements

- NSC degree pass
- Mathematics and Physical Science Level 6 (70%)
- English and Life Orientation Level 4 (50%)
- 3 other subjects with at least 2 from the designated list





## Application Requirements

The discipline of Electrical Engineering accepts only a limited number of students into first year on the Durban campus. A smaller additional number are accepted to do first year in Pietermaritzburg but have to transfer to Durban from second year onwards.

Prospective students are invited to visit Electrical Engineering to discuss their future careers with members of staff, attend a University Open Day, or phone the contacts listed below.

The actual application is done through the Central Applications Office (CAO). Apply to UKZN online at: [www.cao.ac.za](http://www.cao.ac.za). Contact the CAO on: 031 268 4444

Should you have any queries please contact one of the staff members below who will assist you:

For Teaching and Learning Enquiries only: Ms Dumisile Ngcobo/  
Ms Bennedin Mokoena

Electrical Engineering, Howard Campus, UKZN

Tel: 031 260 2753/2744

Email: [Ngcobod@ukzn.ac.za](mailto:Ngcobod@ukzn.ac.za)/[mokoena@ukzn.ac.za](mailto:mokoena@ukzn.ac.za)

### ADMISSION ENQUIRIES FOR NEW ADMISSIONS

Undergraduate:

Tel: 031 260 8038/1220/3218; Email: [engineering@ukzn.ac.za](mailto:engineering@ukzn.ac.za)

Postgraduate (MSc and PhD): Ms Aussie Luthuli

Tel: 031 260 1668; Email: [Luthulia@ukzn.ac.za](mailto:Luthulia@ukzn.ac.za)

Ms Nombuso Dlamini

Tel: 031 260 2070; Email: [Dlaminin7@ukzn.ac.za](mailto:Dlaminin7@ukzn.ac.za)