

# Career Profile: Electrical Engineering Technician

We see the results of electrical engineering all around us. Lighting in our homes, streets, offices and factories and the use of computers, appliances, equipment and machinery all rely on the application of electrical energy. An electrical engineering technician gets involved in the practical application of electrical energy using proven techniques in a variety of electrical fields. Technicians may focus on the generation and distribution of electricity for power, heat and light and work with electric motors, generators, transmission lines, and cables. Possibilities also exist in electronics where technicians work with industrial instrumentation, communication or micro-electronics. A technician may work independently or as member of a team composed of an electrical engineer and an electrical engineering technologist. Technicians may also work in multi-disciplinary teams in large projects.

## Education Requirements

### National Senior Certificate (NSC)

For a career in mechanical engineering students are advised to select English, Mathematics, and Physical Science and to add to this a selection from the *designated* subjects. These are subjects that are particularly suitable for tertiary study.

Students who study at an FET College must ensure that they take the appropriate subjects that will enable them to continue their studies at a University of Technology.

### National Diploma / BTech

The National Diploma is a three year course which includes gaining practical experience under the guidance of a professional engineer. The diploma is a pre-requisite for admission to a Bachelor of Technology - BTech.

#### Offered at:

- [Tshwane University of Technology](http://www.fe.tut.ac.za/)<sup>1</sup> (Faculty of Engineering and Built Environment)
- [University of Johannesburg](http://www.uj.ac.za/Home/tabid/2254/Default.aspx)<sup>2</sup> (Department of Electrical and Electronic Engineering Science)
- [Vaal University of Technology](http://www.vut.ac.za/metadot/index.pl?id=2367&isa=Category&op=show)<sup>3</sup> (Electronic Engineering)

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## **Specializations Offered:**

### **Tshwane University of Technology**

**National Diploma:** Clinical engineering, Communication engineering, Digital technology, Electronic engineering, High-frequency technology, Power engineering

**BTech:** Clinical engineering, Communication engineering, Digital technology, Electronic engineering, High frequency technology, Power engineering

### **University of Johannesburg**

**National Diploma:** Computer systems engineering, Electrical engineering

**BTech:** Computer systems engineering, Electrical engineering

### **Vaal University of Technology**

**National Diploma:** Electronic communications, Electronics, Power engineering

**BTech:** Computer systems, Power engineering, Process instrumentation

### **UNISA (Florida campus)**

**National Diploma:** Clinical engineering, Computer systems, Electronics and electronic communication, Mechatronics, Power engineering, Process instrumentation

**BTech level:** Clinical engineering, Computer systems, Power engineering, Process instrumentation, Telecommunication

## **Admission requirements**

As admission requirements vary from one institution to another, find out what the specific requirements are by checking on the website and contacting the university if you have any queries.

## **Registration as a professional engineering technician**

The purpose of professional registration is to ensure that only properly qualified people influence the health and safety of the population. Therefore, while registration is not compulsory, many tasks can only be performed by people registered at an appropriate level for the task.

A person who has obtained a National Diploma in Engineering is eligible for registration as Candidate Engineering Technician. After gaining at least 3 years of appropriate practical experience a mechanical engineering technician may qualify as a Professional Engineering Technician under the auspices of the Engineering Council of South Africa.

## Possible Employers

Electrical engineering technicians specializing in heavy current electricity can be employed by organizations such as:

- [Eskom](#)<sup>4</sup>
- [Transnet](#)<sup>5</sup>
- Manufacturers of electrical appliances and contractors

Communication technicians involved in the transmission of sound and images may be employed by:

- [South African Broadcasting Corporation](#)<sup>6</sup>
- Manufacturers of radio and television equipment

For those in the industrial instrumentation field, job opportunities exist in:

- Computer industry
- Industries concerned with remote control, steel plants and the transport services.

Technicians specializing in telecommunications may find work at the following:

- [Telkom](#)<sup>7</sup>
- [Transnet](#)<sup>8</sup>
- [Eskom](#)<sup>9</sup>
- Other companies in the telecommunications field.

The registered engineering technician with the necessary experience and initiative can work as consultant for any of the above-mentioned companies and organisations.

## Find out more

Find out more about electrical engineering, bursaries and jobs:

- [Institute of Electrical and Electronic Engineers](#).<sup>10</sup>
- You will find more useful and detailed information about electrical engineering technology on this [website](#).<sup>11</sup>

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<sup>4</sup> <http://www.eskom.co.za/>

<sup>5</sup> <http://www.transnet.co.za/>

<sup>6</sup> <http://www.sabc.co.za>

<sup>7</sup> <http://www.telkom.co.za/>

<sup>8</sup> <http://www.transnet.co.za/>

<sup>9</sup> <http://www.eskom.co.za/>

<sup>10</sup> <http://www.vuma.ac.za/drupal/%E2%80%9Dhttp://www.ieee.org/portal/site>

<sup>11</sup>

<http://www.vuma.ac.za/drupal/%E2%80%9Dhttp://www.bmdnet.co.za/E/Electrical%20and%20Electronic%20Engineering.htm>

## Are you suited to this career?

This quick quiz can help you to identify whether you are suited for this occupation. The questions are based on interests, characteristics and values typical of people who work as engineers.

Quiz	Yes	No
Do you enjoy doing practical tasks and working with your hands?		
Do you have good mathematical ability?		
Do you enjoy analysing problems and finding solutions?		
Do you have good eyesight and hearing?		
Can you think creatively?		
Do you work well with other people?		
Do you have good health and physical stamina?		
Do you like working with computers?		
Do you have the capacity for accurate, careful work?		
Do you want to participate in projects that will benefit the long term development of the country?		

If you have mainly yes answers it may be an indication that this is an occupation to consider.