

# Career Profile: Mechanical Engineering Technologist

Almost any machine or process we use has benefited from the influence of mechanical engineering. Everyday appliances, equipment and machines such as refrigerators, air conditioners, microwaves, high-fidelity sound equipment, elevators, cars, aircraft, and trains are possible mainly because mechanical and other engineers worked together to make them happen.

The mechanical engineering technologist is mainly concerned with the practical application of engineering knowledge and skills to support engineering activities in almost every type of industry and technology. The technologist differs from the technician by having detailed knowledge of the scientific and engineering theory behind the operation. S/he differs from the mechanical engineer by having first-hand knowledge of the technical and production processes required for the manufacturing of goods and services. Mechanical engineering technologists may work with simple mechanisms and equipment to complex machinery such as aircraft, ships, elevators and escalators, industrial production equipment, and robots used in manufacturing.

## 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

#### 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/Default.aspx?alias=www.uj.ac.za/mechtech)<sup>2</sup> (Department of Mechanical Engineering Technology)
- [Vaal University of Technology](http://www.vut.ac.za/metadot/index.pl?id=2372&isa=Category&op=show)<sup>3</sup> (Mechanical Engineering)
- [University of South Africa](http://www.vut.ac.za/metadot/index.pl?id=2372&isa=Category&op=show)<sup>4</sup> (College of Science, Engineering and Technology)

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<sup>1</sup> <http://www.fe.tut.ac.za/>

<sup>2</sup> <http://www.uj.ac.za/Default.aspx?alias=www.uj.ac.za/mechtech>

<sup>3</sup> <http://www.vut.ac.za/metadot/index.pl?id=2372&isa=Category&op=show>

## Specializations offered:

The universities offer a range of specializations.

### Tshwane University of Technology

**National diploma:** Mechanical engineering, Manufacturing engineering, *Mechatronics*

**BTech:** Mechanical engineering, Manufacturing engineering, *Mechatronics*

### University of Johannesburg

**National diploma:** Mechanical engineering

**BTech:** Mechanical engineering

### Vaal University of Technology

**National diploma:** Manufacturing engineering, Maintenance engineering, Design engineering, Electro-Mechanical engineering

**BTech:** Mechanical engineering

### UNISA (Florida campus)

**National diploma:** Mechanical engineering

**BTech:** Mechanical engineering

*Mechatronics* is the integration of electronic and electrical engineering, computer technology and control engineering with mechanical engineering.

## Admission requirements

The standard admission requirement for the BTech is a relevant National Diploma.

## Registration as a professional engineering technologist

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 recognised BTech degree is eligible for registration as Candidate Engineering Technologist. After gaining at least 3 years of appropriate practical experience a mechanical engineering technologist may qualify as a Professional Engineering Technologist under the auspices of the Engineering Council of South Africa.

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<sup>4</sup> [http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l\\_4\\_26&f=p\\_BTMEET](http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l_4_26&f=p_BTMEET)

## **Possible Employers**

- Government departments
- [Transnet](#)<sup>5</sup>
- [Eskom](#)<sup>6</sup>
- [Iskor](#)<sup>7</sup>
- [CSIR](#)<sup>8</sup>
- Municipalities
- Universities
- Manufacturers
- Engineering consultants
- The registered engineering technologist 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 mechanical engineering, bursaries and jobs:

- [South African Institution of Mechanical Engineering](#)<sup>9</sup>
- [The South African Association of Consulting Engineers](#)<sup>10</sup> will enable you to get some idea of how engineering consultants are organised and enable you to see which occupations are included in which consultancy.

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

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

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

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

<sup>9</sup> <http://www.saimeche.org.za/>

<sup>10</sup> <http://www.saace.co.za/>

## 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 have an inquiring, analytical mind?		
Are you able to visualize three dimensional objects from drawings?		
Are you good at analysing problems and finding solutions?		
Do you want a career that makes extensive use of science and technology?		
Can you think creatively and come up with original ideas?		
Are you able to make decisions under pressure?		
Can you communicate clearly?		
Do you work well with other people?		
Do you have good health and physical stamina?		
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.