



# **WATER@WORK**

## **A CAREER GUIDE**

3<sup>rd</sup> EDITION



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# FOREWORD



Almost all human activities, from domestic, to industrial to farming and even power generation require water of suitable quantity and quality.

To this end, every day, water professionals work together to provide clean water and essential services for their communities while adapting to and finding solutions to issues such as the impacts of climate change, ageing infrastructure, and issues of water security. This makes the water sector one of much opportunity, accommodating various career paths.

Despite its relatively small size, the South African water industry is recognised globally for its innovation and creativity in science and technology. South Africa is also among only a handful of countries that have a dedicated national water research and development agency in the form of the Water Research Commission.

Living in a country that receives less than half the world's average yearly rainfall, and where only 9% of that rain ends up in our river systems, has meant that the sector has had to find resourceful ways to ensure that every citizen in the country has access to clean water, that our water-powered industries can be sustained, while protecting our aquatic environment.

By choosing to work in water you become part of a unified team that works together to accelerate water innovation with creative approaches and technologies. These are also opportunities for a new generation of water specialists to create the solutions to ensure our country remains on a sustainable path in the future.

The Water Research Commission (WRC) recognises the importance of growing a robust and well-skilled water sector to tackle the country's water challenges. Every year, the WRC supports hundreds of postgraduate students through its research. Many of these students have become leading experts and managers at research institutions and organisations.

This third edition of the WRC's popular Water@ Work Career Guide offers information on more than 60 different career options in the water sector.

We hope that you will use the information in this guide to inform your career plans as you continue on your journey.

A handwritten signature in black ink, appearing to read 'Dhesigen'.

**Dhesigen Naidoo**  
WRC CEO



# INTRODUCTION



Deciding on a career requires careful planning and determination.

This means you need to think of the bigger picture, grow the necessary skills and be open to challenges.

Career guides provide baseline information on careers available within a particular sector, highlighting scarce and critical skills and employment trends. This guide gives you a snapshot of careers and the work opportunities related to water.

Each career description provides details about the tasks and responsibilities involved, and the training and qualifications needed. The guide includes information on where you can apply for scholarships and bursaries.

Careers related to water in different fields of study and interest are highlighted in this career guide. Each career

group is colour-coded to help you find your way in this guide. Icons show how different careers relate to the water cycle.

The guide is divided into five sections.

- **Section 1** provides an overview of the future of skills and work and how it relates to careers in the water sector.
- **Sections 2 and 3** focus on different careers across the water cycle, providing details about the necessary skills and qualifications needed.
- **Section 4** includes useful contact details for learners and students who want to find out more about a particular career or field of study.
- **Section 5** highlights options for sourcing funding for your studies. We provide a useful list of organisations and institutions that offer bursaries and scholarships.



## WATER@WORK SUCCESS STORIES

*The WRC has been collaborating with non-governmental organisations, such as African Hands for Youth, to create awareness around water-related careers and guide learners in the selection of subjects and with university and bursary applications. A number of students have subsequently selected water as a career path with great success.*



**Letsoalo Douglas Mathebuthebu**

Douglas matriculated at Motsipa Secondary School in Duiwelskloof, Limpopo Province, in 2014. He has gone on to achieve both a B.Sc Chemistry Degree and a B.Eng Chemical Degree, graduating in 2020. *"Career guidance helped me to make a better and informed decision when choosing my career path considering my passion, strengths and abilities,"* says Douglas. *"I was informed about varsity admission requirements and the opportunities available in the water sector. This inspired my career choice. I am confident that I will contribute to society through the water sector."*



**Teko Shai**

Teko also matriculated at Motsipa Secondary School in 2014, but went on to complete his B.Tech Degree at the Tshwane University of Technology. He has since benefited from vocational work at Rand Water. *"The WRC career guide brought enlightenment to the career path I took,"* says Teko. *"The exhibition was revelatory as we got an idea what our career choices are about, what to expect and what different opportunities are available under each career choice."*





### Motsatsi Mabulana

Motsatsi matriculated at Machepelele High School in Ga-Raphahlelo, Limpopo Province, in 2014. She graduated in 2020 at Tshwane University of Technology with a B.Tech Degree in water care. At the time of writing she was an intern at Rand Water.



### Temoso Shai

Temoso is a matriculant from Motsipa Secondary School. He studied analytical chemistry at the Tshwane University of Technology. He then went on to work for private company, Umzamo Analytical Services. *"[Career guidance] showed me that, when we set goals, first of all we have to be determined to achieve, and then work hard to maintain good marks,"* notes Temoso. *"Research about courses is important before making a career choice. It is important to weigh the pros and cons of a particular qualification."*

### Thabo Ramatapa

Thabo matriculated from Motsipa Secondary School in 2015. He has gone on to study Botany and Biochemistry at the University of Johannesburg. At the time of writing he was busy with his Honours Degree. *"The WRC career guide helped me identify key features to look at when choosing a career path,"* says Thabo. *"The [career guidance] programme helped me to have a display of a wide range of courses to choose from for tertiary education. This is important because it supports learners in making well informed choices about tertiary courses, which subsequently leads them to having a more optimistic outlook on life, a sense of purpose and greater level of contribution to society."*





# 01 TION





# WORKING IN THE FIELD OF WATER

## WHY WATER MATTERS

*We all need safe drinking water to survive. Plants, animals, people and communities depend on it. It is used domestically, in science, industry, and agriculture.*

*Globally, water resources are under threat. Increased urbanisation, industrialisation, and growing populations, climate change and pollution all have negative effects on water as a resource. Concomitant with the threats are a number of confounding factors: there is a scarcity of skilled people, especially in the water space.*

*Climate change is having a large impact not only on the location of rainfall, but also on the intensity of rainfall. And across much of the world, the last few years have seen some of the worst droughts in recent history, especially in Southern Africa, a problem which is exacerbated by ageing urban infrastructure.*

*South Africa is considered a water-scarce country. There are significant challenges with water availability and quality across the country.*

*Our water resources are national assets under increasing pressure. We need healthy catchments and water source areas to supply us with a reliable source of water.*

*The precarious state of South Africa's water supply is now a well-known fact, and science-based information regarding how this precious resource must best be used is integral. We need to invest in our water future – a future that will look very different due to climate change.*

*Unless we take drastic measures to conserve our water sources and promote efficient use, water insecurity can become the country's biggest developmental and economic challenge.*



## THE FUTURE OF JOBS AND SKILLS

The world of work is changing – and some jobs are changing faster than others.

Five years from now, many of the skills that are considered necessary in today's workforce will have changed. Some jobs will disappear, and others will grow. Jobs that do not even exist today will become commonplace.

The Fourth Industrial Revolution (4IR) has brought us artificial intelligence and machine learning, advanced materials, biotechnology and genomics, among others. These developments are transforming the way we live and the way we work.

According to the World Economic Forum (WEF), such job disruptions are counter-balanced by job creation in new fields, the 'jobs of tomorrow'. Over the coming decade, a substantial share of newly created jobs will be in wholly new occupations, or existing occupations undergoing significant transformations in terms of their content and skills requirements. ([You can read more about it in the WEF The Future of Jobs report 2020](#))

Globally, the pace of technology adoption is expected to remain unabated and may accelerate in some areas. Automation, in tandem with the COVID-19 recession, is creating a 'double-disruption' scenario for workers across the globe.

Skills gaps continue to be high as in-demand skills across jobs change in the next five years. According to the WEF, "the skill sets required in both old and new occupations will change in most industries and transform how and where people work."

The nature of the change in the world of work over the next few years will depend very much on the industry itself. Global media and entertainment and the communication sector, for example, have already seen a great deal of change in the past few years.

The [Institute for the Future](#) has identified several disruptors that will probably affect your work, such as needing to work past 65 years of age to ensure you have enough resources, the rise of smart technology, and organisations functioning outside traditional organisational boundaries, enabled by social technologies.

The world is changing at a rate we have not seen before. People have to deal with uncertainty and change in a way that they have not had to previously. What is certain is that the future workforce will need to align its skillset to keep pace. This will also apply to work in the world of water.

*"In a rapidly evolving employment landscape, the ability to prepare for future skills requirements and job content becomes increasingly critical."*

In such a rapidly evolving employment landscape, the ability to prepare for future skills requirements and job content becomes increasingly critical. Today's job seekers also usually change career direction more than once in their working life. The key to being employable is being able to adapt and learn new skills.



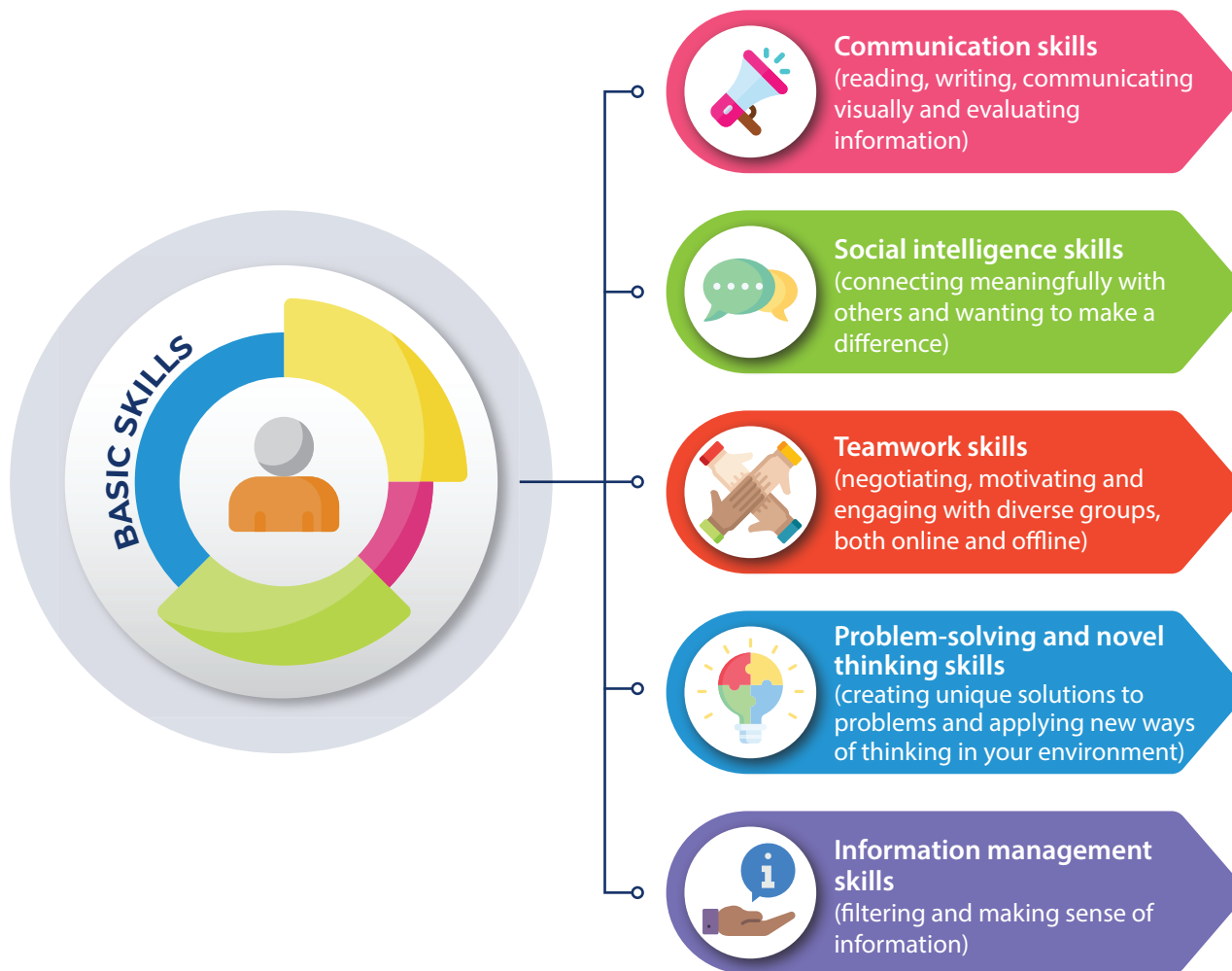




## SKILLS FOR THE FUTURE

Skills are abilities you have developed and can use effectively. You learn skills from your experiences.

Basic skills that are important when working within a fast-changing society include:



## SKILLS YOU WILL NEED TO THRIVE IN THE FUTURE

Due to the dynamic nature of the workplace, people employed in the water sector and those not currently employed could find themselves lacking certain skills. In other words, there is a supply of qualified people, but they lack a particular skill required.



These gaps in skills are sometimes referred to as critical skills, which are basically skills that are critical for a particular job or occupation but are lacking amongst those qualified and available to do the work.

The attributes that employers are seeking when they try to fill positions in their organisations are important. These may be qualifications, specific skills and experience, or a combination of these attributes.

Scarce skills in the financial services sector are, for instance, mainly in the professional, technical and associated professional occupations.

## WHAT ARE SKILLS GAPS?

Some of the careers that are in high demand include careers in the digital economy, energy, infrastructure development, manufacturing, tourism and agriculture. There are also opportunities for data scientists, web developers, computer network technicians, electrical engineers, concentrated solar power process controllers, mechatronic technicians, toolmakers, crop analysts and agricultural scientists. For these occupations people need both high, as well as intermediate skills levels. You can read more about high-demand careers in the report, [\*The 2020 list of occupations in high demand\*](#).

## What are the top 10 skills you will need?

### 1. Complex problem-solving skills

This is the skill to craft creative solutions for problems that are yet still scenarios.

### 2. Judgement and decision-making skills

The ability to condense vast amounts of data into insightful interpretations and measured decisions is a skill that will be useful in the information age.

### 3. People management skills

This covers all aspects of how people work, behave, engage and grow at work.

### 4. Critical thinking skills

The ability to turn data into insightful interpretations will be sought after due to the complexity and interconnectedness of fields like computer science, engineering, and biology.

### 5. Coordinating with others

Effective communication and team collaboration skills will be a demand among job candidates in any industry.

### 6. Service orientation skills

People who know the importance of offering value to clients in the form of services and assistance will be in demand.

### 7. Cognitive flexibility skills

Cognitive flexibility, or mental flexibility, is the ability to switch between tasks and adapt to a changing situation quickly and efficiently.

### 8. Creativity skills

This is the ability to think about a task or a problem in a new or different way or use the imagination to generate new ideas.

### 9. Emotional intelligence

Qualities related to emotional intelligence, such as empathy and curiosity, will be factors for consideration for hiring people in the future.

### 10. Negotiation skills

The ability to negotiate with businesses and individuals to come up with a win-win situation is considered a valuable skill in the workplace of the future.



## MAPPING YOUR CAREER PATHWAY

Making a career choice is not something that happens only once. You will make many career choices throughout your life.

To choose the right career, you need to find out what you like and enjoy doing. Then you can decide which careers appeal to you and if your personality matches your career of choice.

Remember that your career journey does not end when you decide what to study or when you receive your qualification. You will need to invest in your career development.

Choosing a degree is also not the same as choosing a career. Some degrees prepare you for a multitude of careers.

## CHOOSE YOUR SUBJECTS WISELY

While you are still at school and deciding on your future, you will need to think carefully about your career direction and what subjects and marks you will need for that career.

When you select your subjects, you should take subjects that you love as you are likely to excel in these. However, it would be best if you also choose wisely with your intended career in mind.

If you have no clear vision of what your future holds, it is advisable to not drop maths, particularly as this will seriously limit your career options. Science, technology, engineering and mathematics are highly sought after, particularly in industries and occupations that have emerged with tremendous advances in technology, finance and communications.

You should also consider the following:

- *What kind of work will suit your personality best? Are you outgoing and sociable? Or do you prefer to work alone?*
- *Are you practical and technical?*
- *Where are you most comfortable – in an office or outdoors?*
- *Are you good at negotiating? Do you tolerate different viewpoints?*
- *Are you good at researching, interpreting, classifying, selecting and organising?*
- *Do you enjoy working with numbers – measuring, estimating and calculating?*
- *How good are you at planning, assessing, analysing and strategising?*
- *Do you prefer to focus on implementing ideas or projects? Do you feel the need to start new projects? Or do you like seeing a particular job or activity through to its conclusion?*
- *Do you need to feel you are making a difference? Do you need to be in charge?*

Many students start their degree being unsure of where it may lead. If you are unsure, speak to a career adviser.

## IDENTIFY YOUR SKILLS AND INTERESTS

It is important to understand your range of skills and knowledge to see if they are a good fit for the job you would like to do. Start by asking yourself the following questions:

- *What am I good at?*
- *What are my interests and values?*
- *What motivates me?*
- *What did I most enjoy at school or university?*
- *What do I want from my career?*



If you struggle to identify your strengths, weaknesses and character traits, psychometric tests could bring them to light.

## EXPLORE CAREER IDEAS

Consider what your ideal job sector would be and discover its trends by researching the job market. This will help you discover more potential career paths and understand which roles are expanding or declining. To help make a career decision, ask yourself the following questions:

- *Will I enjoy doing the job every day?*
- *Do I have the right skills?*
- *Are there any limitations with regards to location, finances or skills that I need to take into account?*
- *Do as much research as possible on the careers you are considering. Are these the types of organisations you would like to work in? Check the opportunities for advancement in your chosen field.*

Keep in mind that you will probably be suited to more than one career. Career choice is not a once-off decision taken in Grade 12. Career development is an ongoing process, and most people have a number of different careers during their working life.

## CHOOSING YOUR STUDY PATHWAY

There are many options available for you to obtain qualifications and training for your career of choice. These include an apprenticeship or learnership, study at a university or university of technology and vocational training, among others.

Make an appointment with a careers service to ask an adviser. This will help you to identify suitable career paths and make an informed decision.

## UNIVERSITY EDUCATION

### Universities

Universities are higher education learning institutions that provide a wide range of theory intensive education with an emphasis on academic knowledge and research. You can obtain numerous qualifications from a university.

Many water-related careers require completion of undergraduate or postgraduate degrees, with specific subjects taken at different levels. To study for an undergraduate degree at a university, you will normally need at least a senior certificate with university exemption. Certain degrees and faculties have additional minimum requirements.

All universities use a point rating system, which differs from university to university. Some degrees may require an admissions test and a personal interview.

### Universities of technology

These institutions offer a range of programmes that are vocationally and/or professionally orientated, primarily at undergraduate level.

## VOCATIONAL EDUCATION

Technical and Vocational Education and Training (TVET) colleges offer high-quality vocational education and training programmes.

TVET courses are vocational or occupational by nature, meaning that the student receives education and training with a view towards a specific range of jobs, employment or entrepreneurial possibilities. Under certain conditions, some students may qualify for admission to a university of technology to continue their studies at a higher level in the same field of study as they were studying at the TVET college.



## COMMUNITY EDUCATION

Community education and training colleges target post-school youth and adults who wish to raise the base for further learning, improve their skills for employability and/or progression to opportunities in the TVET colleges and university education.

## SKILLS DEVELOPMENT

The national skills development programmes are implemented through the Sector Education and Training Authorities (SETAs).

- **Apprenticeship**  
*What is an apprenticeship?*  
Apprenticeships combine theory, practical work and workplace practice in a chosen trade field, and in the case of a listed trade ends in a trade test and an artisan certificate of competence.
- **Learnership**  
*What is a learnership?*  
A learnership is a structured learning programme that consists of a theoretical and practical component and that leads to a qualification which is registered on the National Qualifications Framework (NQF). A learnership provides a learner with an excellent opportunity to gain experience in the labour market while studying towards a qualification. The qualification is recognised both nationally and is benchmarked against international standards. The employer provides the workplace experience for the learnership and signs a learnership agreement with the learner stating the employer's rights and responsibilities. A learnership is outcomes-based and not time-based and allows for recognition of prior learning. The duration of a learnership varies but the average is about 18 months.
- **Internships**  
*What is an internship?*  
An internship is a temporary position in a company that provides work experience through supervised, on-the-job training. Internships are usually offered to university graduates. Interns are usually paid a small stipend by the company.
- **Adult education and training (ABET)**  
ABET provides an opportunity for continued education for those that have not completed grade 9 or 10 and cannot study further because they lack the minimum requirements. ABET is offered by many large employers at the workplace. It is flexible, offering part or full-time study, and is usually designed around the needs of the learners. ABET provides access to nationally recognised certificates.
- **Skills programmes**  
Skills programmes are short learning programmes that are either stand-alone courses or courses that form part of a full qualification. They are job focused and are often a response to the need for a skillset in a particular industry.



## WHAT ABOUT ADMISSION REQUIREMENTS?

Qualifications at all levels are available in the different South African tertiary education institutions. Find out what institutions offer by way of vocational or structured courses, or what options they offer in more general courses.

It is best to choose your subjects as early as possible as your choice of subjects will affect your study path and career. If you need a university exemption, you have to take six subjects from four different subject groups. Each university has a different requirement for its admission points score (APS).

The admission requirements differ depending on what you want to study. The criteria for certificate courses, diplomas and degrees are listed below:

## WHAT ARE THE MINIMUM REQUIREMENTS FOR FURTHER STUDIES?

Qualifications at all levels are available in the different South African tertiary education institutions. Find out what institutions offer by way of vocational or structured courses, or what options they offer in more general courses.

Check with each school or faculty that seems to offer what you want and ask for assistance from the student counselling or career counselling division of the institution.

## HIGHER CERTIFICATE

The minimum admission requirement is a National Senior Certificate (NSC) with a minimum of 30% in the language of learning and teaching of the higher education

institution as certified by Umalusi (the Council for Quality Assurance in General and Further Education and Training). Institutional and programme needs may require additional combinations or recognised NSC subjects, and specified levels of achievement.

## DIPLOMA

The minimum admission requirement is a NSC with a minimum of 30% in the language of learning and teaching of the higher education institution as certified by Umalusi, coupled with an achievement rating of 3 (40%-49%) or better, in four recognised subjects for 20 credits. Institution and programme needs may require additional combinations of recognised NSC subjects and levels of achievement.

## BACHELOR'S DEGREE

The minimum admission requirement is a NSC with a minimum of 30% in the language of learning and teaching of the higher education institution as certified by Umalusi, coupled with an achievement rating of 4 (50%-59%) or better, in four recognised subjects with a 20-credits value.

Institution and programme needs may require additional combinations of recognised NSC subjects and levels of achievement.

Learners must check their results against specific institutional requirements. If you have not met the minimum statutory requirements or are short of one requirement for degree studies, you should contact the admissions office of the institution you are interested in studying. They will advise you of possible options.

## BRIDGING PROGRAMMES

Students who do not meet the required university registration requirements but who would like to study



further can enquire about attending special access programmes for courses in, for example, conservation ecology and natural sciences.

Such courses are offered at certain tertiary education institutions and also at private colleges. One-year courses, for example, are available to help students upgrade their marks in mathematics, physical science, and accounting, or to prepare students for further study towards careers in auditing or electronic, computer or mechanical engineering.

#### Where can I find out more?

- [Department of Education](#)
- [Umalusi](#)
- Higher education institutions

## CAREER FIELDS AND WATER-RELATED CAREERS

South Africa is critically short of skilled staff at all levels in water-related careers. The jobs are at all levels of education and in every type of environment across the country – in cities, in nature reserves, on farms, and in rural areas. Careers in water are also to be found across many fields of study and interests, ranging from engineering and the built environment to health sciences.

Some institutions cluster subject areas to provide for particular employment. Check with each school or faculty that seems to offer what you want and ask for assistance from the student counselling or career counselling division of the institution.

Below are some examples of career fields and associated water-related careers. The career fields described below do not always have a central focus on water, but all of them contain possibilities for work in water-related activities.



### Commerce and management sciences

**Careers:** Administrators and managers trained in the administration of water-resources are in demand. This is also the case for accountants, bookkeepers, secretaries and economists.



### Data science & computational thinking

**Careers:** Computer scientists and technicians and information managers play a key role in providing data used to make decisions around the management of water resources. Increasingly, data science is playing a key role in conservation efforts.





### Engineering and the built environment

**Careers:** Many types of engineers address water-resource issues. Agricultural, civil, environmental, and hydraulic engineers survey water resources, measure water flows above and below ground, gather and analyse data about floods, and construct facilities to store, treat, transport and distribute water.



### Health sciences

**Careers:** Nurses, doctors, community health workers are specialists in waterborne diseases, and other health professionals are involved in work associated with the provision of water that is safe for humans to use.



### Humanities and social sciences

**Careers:** Political scientists, geographers and sociologists are involved in the growing public interest in water and the quality of our environment. As water resources become increasingly scarce, we need more effective administrative and political institutions for water planning, development and management. Policies, guidelines, and laws about water use have to be developed.



### Sciences

**Careers:** Hydrologists, laboratory technicians, climatologists, microbiologists, biotechnologists, chemists, geologists, engineering technicians, statisticians, hydrogeologists, geomorphologists, botanists, and ecologists all play essential roles in water-related activities and industries. Whether you are interested in maths, biology, physics, chemistry or geosciences there are dozens of career options in the field of water.



### Law

**Careers:** Lawyers specialising in environmental law play a key role in ensuring the responsible use of water resources across the country.



### Technical • Practical • Tradesperson • Artisan

**Careers:** Fitters and turners, boilermakers, plumbers and instrument makers are crucial for delivery in the world of water.





SECTION

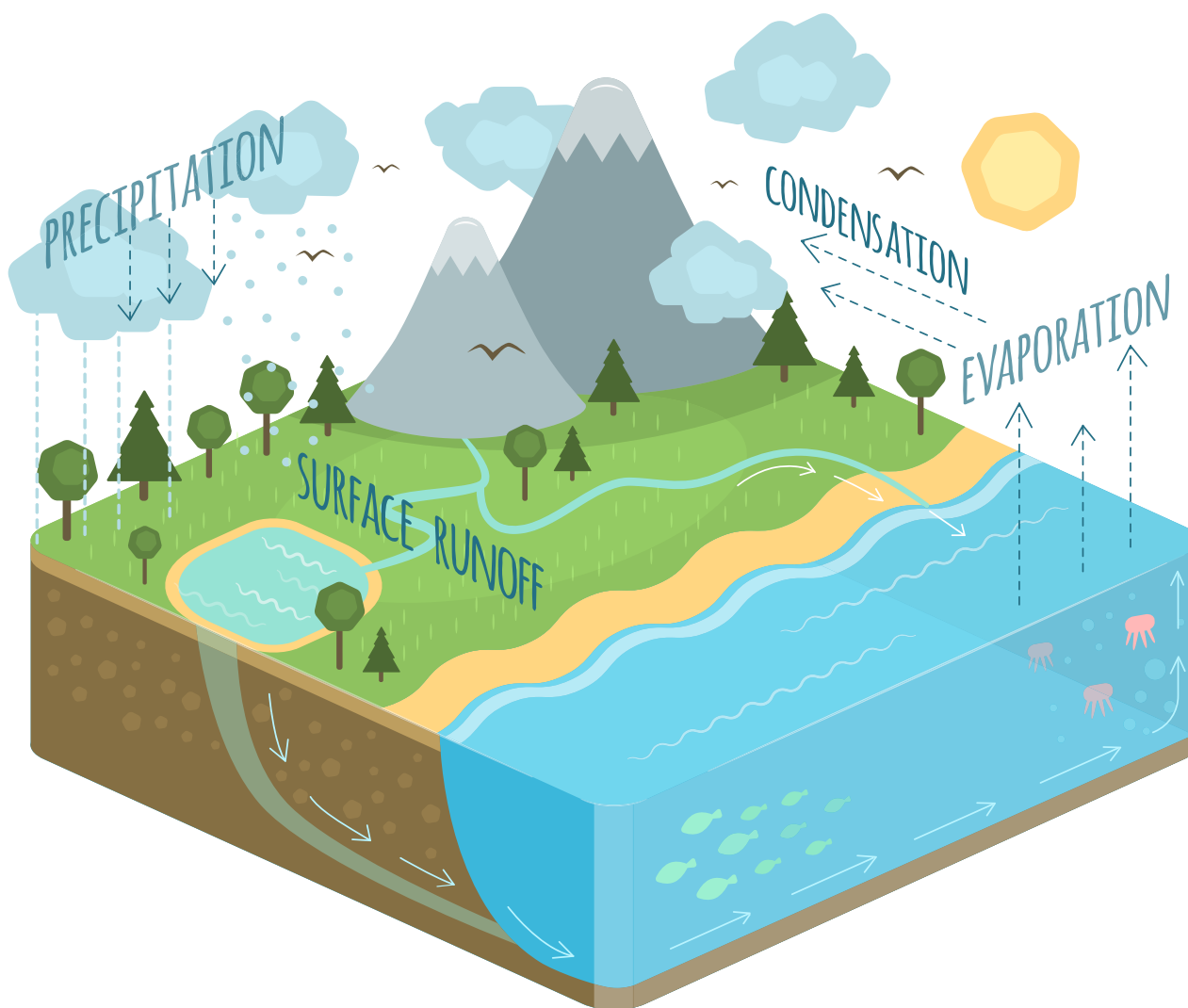
02



# CAREERS IN THE WATER SECTOR

South Africa has limited water supplies, so it needs skilled and qualified people to look after its water resources and each part of the water cycle to ensure there is enough of the right quality water to serve all our needs.

## ABOUT THE WATER CYCLE





Water circulates continually between the earth and the atmosphere. This circulation is known as the water or hydrological cycle. This cycle is what links the different water resources – rivers, wetlands, estuaries and groundwater.

Because we rely on it for all our water needs, we need to appreciate how this cycle works if we want to understand water resources and how best to manage them.

Water is available in nature as a solid, a liquid, or a gas: as ice, snow, water, and steam (water vapour).

This is how the cycle works:

**Evaporation:** The sun evaporates water from oceans, lakes, and rivers, for example, or plants transpire water into the atmosphere.

**Condensation:** As the air filled with moisture rises, it cools and condenses into clouds.

**Precipitation:** The water in the clouds falls back to the earth as rain, snow, sleet, or hail.

**Surface runoff:** Some of the rain runs into streams and rivers and returns to the oceans.

**Infiltration:** Some of the water infiltrates the soil and is evaporated directly. Some of it moves through the roots of plants and is transpired by the leaves.

**Percolation:** Other water percolates or seeps deeper into groundwater aquifers (layers of rocks or soil underground that are able to hold water). In arctic

regions, groundwater may be frozen. It can take decades, centuries, or even millions of years for water in deep underground aquifers to join the hydrological cycle.

Groundwater is essential to humans, as it is the largest reserve of drinkable water. Because it has filtered through the ground, it has less organic contamination than river water. It may appear at the surface in the form of springs or reach it through wells and boreholes.

People interrupt the natural water cycle to obtain water when and where they need it. For example, we sink boreholes and build dams to supply municipal, industrial, and agricultural water needs, and we return treated wastewater to our rivers.





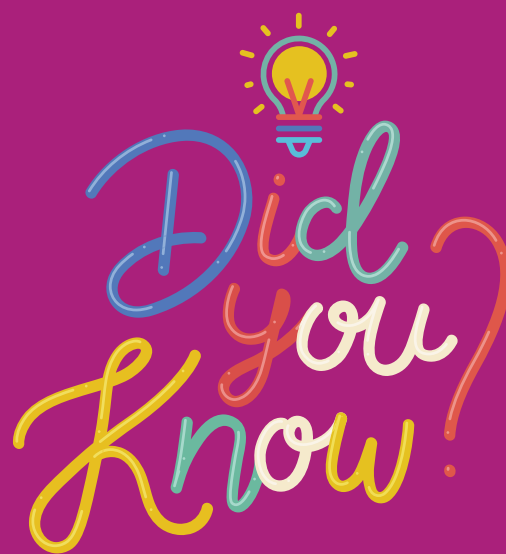
## WATER AS A RESOURCE



Our water resources need to be managed so everyone can benefit from them, now and in the future. People working with water resources are responsible for finding water and monitoring, analysing, and conserving it.

To protect and use water resources properly, we need information about the following:

- The quantity, quality, and reliability of freshwater. Where can we find it? Can we drink it? Is there enough for our future needs?
- The effect of human activities on water resources and the hydrological cycle. Too many boreholes can use up the groundwater; chemicals and mining can pollute rivers and dams; soil erosion can speed up evaporation.
- The effect of natural phenomena on water resources. Global climate change could alter rainfall patterns; droughts and floods need to be managed.
- The effect of human activities on ecosystems such as rivers, estuaries and wetlands. We need to know these effects to protect, sustain and rehabilitate them.



*Various pieces of legislation regulate the use of water in South Africa, including the National Water Act (Act 36 of 1998). This act governs how surface water and groundwater resources are protected, used, developed, conserved, managed, and controlled sustainably and equitably for the benefit of everyone in the country, while also protecting the environment.*



People working in the field of water resource management consider the availability of water, how much is needed, and for what uses. They consider options for meeting it by means of new resources (such as dams and reservoirs) and ensuring that enough is reserved to provide for the needs of people and ecosystems. They also try to manage demand by changing people's water use behaviour.

### **Some career opportunities in this field**

Water resource planner • Water resource engineer •  
Water resource analyst • Water resource economist •  
Hydrologist • Hydrogeologist • Ecologist

## **PREPARING WATER FOR DISTRIBUTION**

The next step in the process of providing water for society's needs is to make it available for different uses. People employed in this area may be involved in water storage, for instance. Others are responsible for ensuring efficient access to water to draw it, transport it further, treat it, and prepare it for safe use.

### **Some career opportunities in this field**

Civil engineer • Mechanical engineer • Electrical engineer • Surveyor • Electrician • Fitter and turner • Plumber • Ecologist • Hydrologist • Microbiologist • Laboratory analyst

## **TREATMENT OF RAW WATER**

Careers in water treatment are available in two important parts of the cycle of water use.

Firstly, we need people who treat water before it is used and before it reaches our taps, for example, treating raw water. Secondly, we need people who treat water after

it has been used. This includes people responsible for the treatment of wastewater.

For an outline of careers that apply to both aspects of water treatment, see the water treatment overview.

## **WATER SUPPLY**



People working in this field make sure that we have enough water for all its different users. They can work for large employers, such as a water services authority or water board.

The water services authority (municipality) is responsible for making sure that the infrastructure for reticulation (the overall supply network) is developed, operated and maintained.



Bulk water service providers are responsible for developing, operating and maintaining abstraction works for drawing water; bulk potable (drinking) water treatment plants and pump stations, and reservoirs and pipelines for distributing clean water to municipal reservoirs.

A water board provides bulk treated water and may be contracted as a service provider.

The water services authority is responsible for water and sanitation systems, and it may contract another provider to develop, operate, and maintain the infrastructure, manage revenue collection and customer relations, and promote health and hygiene awareness.

Pipeline networks underground carry clean water and wastewater to its users. These networks distribute the water from the water treatment works to taps for domestic and commercial use. They also bring water to the treatment works from rivers, reservoirs that collect upland stream water, and boreholes where the water is pumped from underground aquifers.

Wastewater pipes (or sewers) take sewage away from properties to the sewage treatment works. Other networks discharge purified water into streams or rivers, or into the sea.

To ensure a consistent water supply, we need people who operate dams, pumping stations, reservoirs, and people in various auxiliary careers. We also need people to construct, manage and maintain the systems that supply and distribute water.

### **Some career opportunities in this field**

Pipeline engineer and technician • Civil engineer • Mechanical engineer • Electrical engineer • Surveyor

• Electrician • Fitter and turner • Plumber • Ecologist • Hydrologist • Plant operators

## **WATER USE**

Water use refers to activities that have an impact on a water resource. These activities affect the amount of water, the quality of that water and the environment. Examples include activities that reduce streamflow or remove underground water.

People with water-related careers in agriculture are responsible for creating and applying water-efficient production technologies, finding practical solutions to problems and protecting water resources. They encourage efficient water use and manage water quality for irrigation of crops, livestock watering, and aquaculture in rivers, ponds and dams.

Drawing water from rivers, dams, and boreholes affects the natural environment. People are needed in careers that protect our terrestrial and aquatic ecosystems.

Mines and industries produce high concentrations of waste and effluents that can seep into underground water and degrade the water quality. People with careers in water related to mines and industries are concerned with the treating and disposing of waste (including sewage, effluents, polluted drainage and solid wastes). They develop and promote management systems, technologies and processes that allow water to be used more efficiently and reduce pollution. This could involve investigating the possibilities of recovering waste and reusing it as an energy source or selling it.

Water use also offers careers of various kinds, such as work in the use of water to generate electricity or enabling water transfers between catchments.



## WATER TREATMENT

People with careers in water treatment may be involved in treating raw water or with wastewater treatment and sanitation.

Those who work in wastewater treatment and sanitation treat wastewater to remove or neutralise harmful organic and inorganic matter, for example, human excreta or chemicals used in agricultural, mining and industry.

Natural processes and human activities add pollutants and contaminants to water.

Water high in plant nutrients, such as treated domestic sewage, can provide excellent water for irrigation but could cause problems if discharged into a drinking water source. The challenge is to provide the right water for the right use and at the right price.

Early in the water cycle, raw water is pumped from wells, rivers, and streams to water treatment plants. There it is treated and then distributed to customers.

After it has been used by the customers, it becomes wastewater. Liquid waste travels through sewage pipes to waste treatment plants where it is treated. It could then be returned to streams, rivers and oceans, or reused for irrigation and landscaping.

Operators in both types of water treatment plant control the processes and equipment that removes or destroys harmful materials, chemicals and micro-organisms from the water.

Work opportunities are wide-ranging in raw water treatment and in wastewater treatment and sanitation.

## Some career opportunities in this field

Network engineers (who design sewage and water distribution networks) • Analytical chemists and other specialist laboratory-based scientists • Laboratory and field technicians • Desalination and filtration plant operators • Regulators (government officials)

## Auxiliary and support services

People providing auxiliary and support services look after the various service needs of different communities of water users.

They include those who educate customers in responsible water use, and who make the arrangements for ensuring that safe water reaches everyone who needs it.

Large water facilities need managers, accounting personnel, administrators, clerks, legal expertise, and people who can provide training and information technology support, and many other functions. Support staff are essential for enabling such facilities to operate reliably or cost-effectively.











































## CAREERS ACROSS THE WATER CYCLE

No matter what you are good at or enjoy doing, or what kind of education or training you have, there is a job for you in the world of water that is interesting and worth doing.

The colours of the columns in the table below represent areas of the water cycle next to each career listed in this section. The colour codes tell you in which parts of the water cycle you will make a contribution if you choose any one of these careers.



	<i>Water as a resource</i>		<i>Water use</i>
	<i>Preparing water for distribution</i>		<i>Wastewater treatment and sanitation</i>
	<i>Treatment of 'raw' water</i>		<i>Auxiliary services</i>
	<i>Water supply</i>		<i>Support services</i>

CAREERS	Resource	Distribution	Treatment	Supply	Use	Wastewater treatment & sanitation	Auxiliary services	Support services
Accountant								
Administrator								
Agriculturalist								
Aquaculturalist								
Aquatic scientist								
Boilermaker								
Biochemist								
Biologist								
Biotechnologist								
Botanist								
Cartographer								
Chemical engineer								
Chemist								
Civil engineer								
Climatologist or metereologist								
Community worker								
Diver								



CAREERS	Resource	Distribution	Treatment	Supply	Use	Wastewater treatment & sanitation	Auxiliary services	Support services
Ecologist	💧	💧	💧	💧	💧	💧		
Economist	💧							💧
Education and training practitioner								💧
Electrical engineer		💧	💧	💧		💧		
Electrician		💧	💧	💧		💧		
Environmental engineer	💧	💧	💧	💧	💧			
Environmental health practitioner		💧	💧	💧	💧			💧
Environmental protection and control officer	💧	💧	💧	💧	💧			
Environmental scientist	💧	💧	💧	💧	💧			
Fitter and turner		💧	💧	💧	💧	💧		
Geographer	💧							💧
Geologist	💧							💧
Geophysicist	💧							
Geotechnician	💧							
Geotechnical engineer	💧							
Historian								💧
Human resources manager								💧
Hydrologist	💧	💧		💧	💧		💧	
Ichthyologist or fisheries scientist	💧	💧	💧		💧	💧		
Information technology practitioner								💧
Instrument maker				💧			💧	
Journalist or media practitioner								💧



CAREERS	Resource	Distribution	Treatment	Supply	Use	Wastewater treatment & sanitation	Auxiliary services	Support services
Laboratory worker or analyst	💧	💧	💧	💧	💧	💧		
Lawyer								💧
Leisure and recreation provider								💧
Manager	💧	💧	💧	💧	💧	💧	💧	💧
Marketing specialist								💧
Mathematician or statistician or actuary								💧
Mechanical engineer	💧	💧	💧	💧	💧	💧	💧	
Microbiologist	💧	💧	💧	💧	💧			
Nature conservationist	💧	💧			💧		💧	
Plumber		💧	💧	💧	💧	💧		
Political scientist		💧	💧	💧	💧	💧		
Polymer scientist or technologist								💧
Public relations professional								💧
Researcher	💧	💧	💧	💧	💧	💧	💧	
Social scientist		💧	💧	💧	💧	💧		
Social worker								💧
Soil scientist	💧				💧	💧		
Surveyor	💧	💧	💧	💧	💧			
Urban and regional planner	💧	💧	💧		💧			
Water and wastewater plant operator	💧	💧	💧			💧		
Welder			💧	💧		💧		
Zoologist	💧					💧	💧	





SECTION

03



# CAREERS IN THE WORLD OF WATER (A-Z)

## CATEGORISATION OF CAREERS FEATURED IN THIS PUBLICATION



### Commerce and management sciences

Accountancy · Business sciences · Economics and finance · Law · Governance



### Data science & computational thinking

Computer science and applied mathematics



### Engineering and the built environment

Architecture and planning · Civil and environmental engineering · Chemical and metallurgical engineering · Construction economics and management · Mining engineering · Electrical and information engineering · Mechanical, industrial and aeronautical engineering



### Health sciences

Anatomical sciences · Clinical medicine · Oral health sciences · Pathology · Physiology · Public health · Therapeutic sciences



### Humanities and social sciences

Arts · Education · Human and community development · Literature, language and media · Social sciences



### Law



### Sciences

Animal, plant and environmental sciences · Chemistry · Geography, archaeology and environmental sciences · Geosciences · Mathematics · Molecular and cell biology · Physics · Statistics and Actuarial Science



### Technical or practical career; tradesperson and artisan

An asterisk (\*) after the name of a career listed as a specialisation or related occupation indicates that this career is described more fully elsewhere in this guide. (For a list of careers, consult the Index.)



Green  
Career



Tradesperson  
or artisan



### Careers in high demand

\*High demand \*\*Higher demand  
\*\*\*Highest demand





## ACCOUNTANT



*Accountants use their numerical, analytical, statistical and management skills to maintain reliable accounting and financial systems and advise businesses on various financial matters.*



Accountants have one of the most critical roles in any business or organisation – they keep track and record the flow of money. They are involved in all essential areas of business, such as accounting, strategic business planning, information technology and financial management.

Accountants record transactions and use summarised information to communicate financial information. Their

financial reports are used by investors, management, entrepreneurs, lenders, economic analysts and government bodies for matters relating to decision-making and planning.

Most financial managers start their careers as accountants, financial accountants or auditors, and only become financial managers after gaining years of experience.



- **Chartered accountants** work in all business and finance fields, in public practice, the private sector, and in government.
- **Cost accountants** collect, analyse, summarise and evaluate products, manufacturing and other processes.
- **Financial accountants** advise about planning and prepare financial statements for decision-makers.
- **Financial managers** prepare company accounts and financial reports and give information about the money needed to run a business.
- **Auditors** examine the accounting records of a business, certify them as being correct and offer financial advice.
- **Credit controllers** open new accounts for clients, monitor their payment, and investigate the creditworthiness of those who apply to open accounts.
- **Bookkeepers** keep financial records, and compute, classify and verify the information.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

**Cost accounting:** It includes the calculation of expenses and the implementation and development of cost-accounting measures.

**Taxation specialist:** A tax specialist advises on tax-related matters.

**Computer science:** This field comprises the development and implementation of electronic information processing programs, the planning of financial models, and giving advice about hardware and software purchases.

**Planning and management:** Planning is an important management function. Accountants must carry out planning forecasts, feasibility studies and the financial

planning of projects continuously. Management includes administration, secretarial, financial and various other facets of business management.

## WHAT DO ACCOUNTANTS DO?

- Process and maintain financial information for decision-making purposes
- Maintain accurate and reliable financial records
- Compile, analyse and perform financial audits
- Identify assets, liabilities, and capital to prepare a balance sheet, statements and other reports
- Assist with strategic planning to control costs
- Provide recommendations on investment opportunities
- Ensure adherence to legislation and relevant regulations
- Interact with internal and external auditors in completing audits
- Prepare and review budgets, revenue, expenses, payroll entries, invoices, and other accounting documents
- Advise management to enable them to make informed business decisions
- Evaluate financial performance
- Monitor spending and financial control
- Provide financial advice
- Prepare financial statements

## RELATED CAREERS

- Actuary
- Financial analyst, valuer and appraiser
- Taxation specialist
- Economist\*
- Stockbroker
- Banker
- Risk manager
- Investment analyst
- Treasurer



- General manager
- Business advisor
- Internal auditor
- Accountant clerk

## HOW TO BECOME AN ACCOUNTANT

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Good aptitude for mathematics
- Integrity
- Ability to work accurately and convey recommendations clearly
- Logical, intelligent and able to make sound judgements
- Good social and communication skills
- Analytical and strategic thinking skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BCom:** Accounting; Accounting Sciences; Financial Accounting; Information Systems
- **BAdmin:** Public Management and International Relations; Public Administration and Local Government
- **Bachelor of Accounting Science** (BAccSC)

#### Certificates and diplomas

- **Higher certificate:** Small Business Financial Management; Office Administration; Business Accounting; Accounting Sciences; Accounting Practices
- **National diploma:** Accounting; Cost and Management Accounting; Internal Auditing
- **Diploma:** Financial Accounting; Accounting

Sciences; Accounting, Cost and Management Accounting

### Additional professional qualifications

- **Professional qualification:** Chartered Certified Accountant; Chartered Management Accountant
- **Chartered Accountant:** Auditing; Financial Management

### Learnerships

- **Chartered Certified Accountant**, offered by the Association of Chartered Certified Accountants
- **Certified Accounting Technician**
- **Certificate:** Local Government Accounting
- **Chartered Management Accountant**
- **Postgraduate diploma:** Professional Accountant in Business and Postgraduate Diploma: Professional Accountant in Practice offered by the South African Institute of Professional Accountants

### Graduate development programmes

Postgraduate diplomas are awarded to students with bachelor's degrees and who have fulfilled the requirements of honours, master's or doctoral programmes, or to those who have passed the examinations set by professional bodies.

[BANKSETA](#) development programme – the International Executive Development Programme complements the executive development programmes offered by employers in the sector

[FASSET](#) development programme – facilitate skills development and transform the financial and accounting sector

To practise as a chartered accountant – a CA(SA) – you need a bachelor's degree plus an Honours degree or a certificate in accounting theory to enter into articles of clerkship for three years while working



for a firm of accountants. You also need to pass the Public Accountants and Auditors Board final qualifying examination, apply to the South African Institute of Chartered Accountants for membership and register with the Public Accountants and Auditors Board.

### Professional bodies

Membership of a professional body is not a legal requirement to practice as an accountant. Note that the professional designations listed below are linked to membership of the various professional bodies. Also, note that some employers may also require you to be a member of a professional body.

### WHO WILL EMPLOY ME?

The list includes the government and the private sector. Every company has a finance department, which

means there is a substantial demand for those skilled in accountancy.

### WHERE CAN I FIND OUT MORE?

- [Association for the Advancement of Black Accountants of Southern Africa \(ABASA\)](#)
- [Chartered Association of Certified Accountants \(ACCA\)](#)
- [Chartered Institute of Management Accountants \(CIMA\)](#)
- [Financial and Accounting Services Sector Education and Training Authority \(FASSET\)](#)
- [Independent Regulatory Board for Auditors \(IRBA\)](#)
- [South African Institute of Chartered Accountants \(SAICA\)](#)
- [South African Institute of Professional Accountants \(SAIPA\)](#)







*Administrators plan and undertake the administration of organisational programmes, special projects and support services.*

Administrators and clerks do all the general office work that help other professional staff and managers to do their jobs.

Depending on your level of training, you could be in charge of a company's administration, or you could become an office manager, bookkeeper, cashier, personal assistant, secretary or receptionist.

Administrative managers perform a broad range of duties in virtually every sector of the economy. They coordinate and direct support services to organisations as diverse as insurance companies, computer manufacturers and government offices.

### SOME OPPORTUNITIES IN THIS FIELD

- **Project managers and coordinators** play the lead role in planning, executing, monitoring, controlling and closing projects. They are accountable for the entire project scope, project team, resources and the success or failure of the project.

- **Administration managers** perform a range of duties in virtually every sector of the economy, coordinate and direct support services to organisations as diverse as insurance companies, computer manufacturers and government offices.
- **Company secretaries** carry out the legal duties of a business, such as keeping records and taking charge of the company's administration.
- **Finance clerks** make entries in cash books, journals and ledgers for the financial records.
- **Personnel clerks** support the human resources manager\* by keeping staff records, reports, regulations, and manuals up to date.
- **Stores clerks** help with purchasing and controlling stock such as stationery, furniture and other company equipment.

### WHAT DO ADMINISTRATORS DO?

- Develop, review and negotiate variations to contracts, programmes, and services
- Manage the paperwork associated with programmes and projects, and with services provided





- Work with project managers, architects, engineering professionals and business owners
- Oversee the work by contractors and report on variations to work orders
- Collect and analyse data associated with projects and programmes undertaken
- Report on outcomes

## RELATED CAREERS

- Project administrator
- Business administrator
- Receptionist
- Personal assistant
- Secretary
- Office manager
- Payroll clerk
- Payroll manager
- Customer service manager

## HOW TO BECOME AN ADMINISTRATOR

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Organisational skills
- Good communication and writing skills
- Planning skills
- Computer literacy skills
- An aptitude for figures
- Attention to detail

### QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Government, Administration and Development
- **BComm:** Management; Business Management; Information Systems
- **BBusAdmin:** Information Management
- **BAdmin:** Public Management and Administration; Business Management; Public Management and International Relations; Public Administration
- BCom (Law)

### Certificates and diplomas

- **Diploma:** Advanced Management; Business Administration; Administrative Management; Public Administration and Management
- **Advanced diploma:** Applied Management
- **Postgraduate diploma:** Business Administration; Public Management; Project Management

### Learnerships

In-service training

## WHO WILL EMPLOY ME?

Businesses • Government departments • Universities and training institutions • Large industrial organisations • Local authorities • Research organisations • Commercial firms • Engineering and consulting firms • Agricultural sector • Food and beverage sector • Entrepreneurs

## WHERE CAN I FIND OUT MORE?

- [Institute of Business Studies](#)
- [Institute of Administration and Commerce](#)
- [Financial and Accounting Services Sector Education and Training Authority \(FASSET\)](#)
- [Services SETA \(SSETA\)](#)
- [The Institute of Chartered Secretaries and Administrators](#)





*A career in agriculture involves both the theoretical study and practical application of farming practices, such as the cultivation of crops.*



Providing food for South Africa's growing population is a priority. Increasingly, people working in the agricultural sector focus on 'sustainable intensification' – that is, doing more with less.

There are many careers in agriculture, research, project management, forestry, water resources, food production, consulting and environmental conservation. The business and management side of agriculture is also increasingly important.

### SOME OPPORTUNITIES IN THIS FIELD

- **Agriculturists** are scientists who specialise in improving agricultural production, and may also be involved in agricultural research.
- **Agricultural advisers** help and advise farmers, agricultural businesses, rural industries, and government to produce, process, and distribute farm products.



- **Agricultural biotechnologists** use techniques such as genetic engineering to improve the quality and diversity of plant and animal products.
- **Agricultural extension officers** operate as facilitators and communicators, helping farmers in their decision-making and ensuring that appropriate knowledge is implemented to help ensure sustainable production.
- **Agricultural or resource economists** apply economic principles to managing farms, marketing, and natural resource policies.
- **Agricultural entomologists** investigate the reasons for insect infestations and research ways to control them using integrated pest management, biological control, and chemical products.
- **Agricultural control officers** inspect and evaluate the quality and standard of agricultural products.
- **Agricultural managers** study agricultural economics to increase the managerial efficiency of farms to ensure sustainable and profitable agricultural production.
- **Agricultural scientists** study farming, investigate ways to improve quality and to conserve soil and water to make farming more effective.
- **Agricultural technicians** perform tests and experiments and provide technical support to assist agricultural scientists and technologists in areas such as research and production.
- **Agronomists** develop and implement production systems so that crop production is maximised without harming the environment.

### WHAT DO PEOPLE DO WHO WORK IN AGRICULTURE?

- Study the effects of agriculture on the environment by collecting and analysing samples of groundwater, soil and plants
- Conduct experiments in controlled environments to develop better farming methods

- Give technical and scientific information to farmers and commercial firms that trade in agricultural goods and produce
- Help farmers to plan and monitor agricultural activities, and diagnose, treat and manage problems that arise (including weeds and plant diseases)
- Develop scientific methods for breeding, caring for and managing farm animals
- Identify pathogenic microorganisms and insects, parasites, fungi and weeds harmful to crops and livestock, and assist in devising methods of control
- Analyse products to set and maintain standards of quality
- Train and coordinate the work of technicians and fieldworkers
- At a senior level you supervise and coordinate research teams and prepare funding applications, communicate research results, prepare policy advice, and help enact government policy

### RELATED CAREERS

- |                                 |                                  |
|---------------------------------|----------------------------------|
| • Agricultural economist        | • Ecologist*                     |
| • Meteorologist*                | • Plant breeder                  |
| • Animal scientist              | • Agricultural engineer*         |
| • Crop scientist                | • Agricultural extension officer |
| • Community development worker* | • Botanist*                      |
| • Food security analyst         | • Horticulturist*                |
| • Forest scientist              | • Agricultural advisor           |
| • Nutritionist                  | • Agricultural chemist           |
| • Soil scientist*               | • Agricultural technologist      |
| • Hydrologist*                  | • Agricultural entomologist      |
| • Conservation manager          | • Irrigation engineer            |
| • Agricultural technician       |                                  |

### HOW TO QUALIFY FOR A CAREER IN AGRICULTURE

You will need the following:



## SKILLS AND PERSONAL QUALITIES

- Good communication and interpersonal skills
- Keen interest and knowledge of farming and the environment
- Mathematical, analytical and scientific aptitude
- Creative and analytical thinking
- Problem-solving skills

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BAgric:** Agribusiness; Management; Plant Pathology; Agricultural Economics; Crop Science; Soil Science; Agribusiness Management; Extension and Rural Resource Management; Agricultural Science: Environmental Management; Agricultural Production and Management; Animal Production Systems; Forestry and Food Science; Plant and Soil Science; Viticulture (cultivation and harvesting of grapes) and Oenology (study of wine and wine-making); Agricultural Economics; Agricultural Plant Sciences; Plant Pathology; Agricultural Economics and Agribusiness Management; Agronomy; Biochemistry; Commercial Forestry; Conservation Ecology; Crop Science; Crop and Horticultural Science; Environmental Microbiology; Food Science; Horticulture; Ecology; Soil Science; Water Resource Management; Agriculture; Agricultural Economics; Engineering
- **BScAgric:** Crop Production Systems; Wildlife Management; Agricultural Economics and Agribusiness Management; Agricultural and Economic Analysis; Agricultural Economic Analysis and Management with Food Science
- **BCom:** Agricultural Economics; Agribusiness Management; Agricultural Economy and

Agribusiness Management; Agricultural Economics with Risk Management

- **BSc:** Agricultural Science; Agriculture; Food Science; Agricultural Economics; Agricultural Economic Analysis and Management; Forestry and Wood Sciences
- **BScEng:** Bioresource Engineering (Agricultural Engineering)
- **BTech:** Agriculture; Agricultural Management; Animal Health; Agriculture; Forestry; Horticulture; Water Care; Animal Production; Crop Production
- **BA(Hons):** Land Reform and Rural Development
- **BCom(Hons):** Agricultural Economics
- **BAgric(Hons):** Extension; Rural Development
- **BSc(Hons):** Agrometeorology; Soil Science
- **MScAgric:** Animal Science; Aquaculture; Sustainable Agriculture

### Certificates and diplomas

- **National diploma:** Agricultural Extension; Animal Health; Community Extension; Rural Development; Agricultural Management; Forestry; Horticulture; Water Care; Farming Management; Animal Health; Animal Production, Plant Production; Food and Meat Hygiene; Nature Conservation; Analytical Chemistry; Veterinary Technology; Food Technology; Viticulture and Oenology; Crop Production
- **Diploma:** Agriculture; Agricultural research; Engineering Technology; Food Technology; Marine Science; Extension; Cellar Technology; Agricultural Management; Animal Health; Nature Conservation
- **Certificate:** Agriculture; Forestry; Irrigation; Community Agriculture; Animal Welfare; Agricultural Extension; Landscape Irrigation; Landscaping; Horticulture
- **Higher certificate:** Agriculture; Animal Welfare; Life and Environmental Sciences
- **Advanced diploma:** Sustainable Agriculture in Rural Development; Agricultural Management;





Animal Health; Nature Conservation; Ornamental and Landscape Horticulture; Agricultural Extension

- **Postgraduate diploma:** Agricultural Economics; Agricultural Extension; Agriculture; Agriculture and Rural Engineering; Food Security; Nature Conservation; Sustainable Development

### Learnerships

- Informal training includes a variety of short courses for commercial farmers such as financial planning and management, and strategic approaches to farming success
- Short courses for emerging farmers include farm management and budgets
- Study at an agricultural college does not lead to registration as an agriculturalist

[AgriSETA](#) offers a detailed list of learning programmes and training providers in this sector.

### WHO WILL EMPLOY ME?

Government departments • Research institutions • South African Bureau of Standards • Agricultural unions • Manufacturers of agricultural products, equipment and supplies • Universities, colleges and universities of technology • Consulting firms • Food processors and manufacturers • Agricultural co-operatives • Large farming enterprises • Consultants • Financial institutions • Development organisations • Agricultural boards and development corporations • Commercial banks • Insurance companies • Commercial and manufacturing companies • Self-employment (working as a consultant)

### WHERE CAN I FIND OUT MORE?

- [Agricultural Research Council](#)
- [Agriculture Sector Education Training Authority \(AgriSETA\)](#)
- [ARC-Institute for Soil, Climate and Water \(ARC-ISCW\)](#)





## AQUACULTURIST

*An aquaculturist specialises in large-scale aquaculture and fishery products as cash crops.*



Aquaculture is the breeding, rearing and harvesting of aquatic plants and animals from all types of water environments. It entails the cultivation of plants and animals, including fish, shellfish, waterblommetjies, crustaceans, and even crocodiles. These creatures are harvested for food, pets, aquariums, and for restocking wild populations.

Many aquaculturists are involved in commercial fish farms and specialise in either freshwater or marine

animals. Aquaculturists usually work as farmers, farm managers or technicians.

### WHAT DO AQUACULTURISTS DO?

- Plan and manage the operation of hatcheries
- Check and maintain water quality
- Plan, direct and control farming operations
- Assist with experiments on nutrition or methods to control predators, parasites and other disease-causing organisms



- Coordinate the selection and maintenance of breeding-stock
- Monitor aquaculture and fishery market activity and plan production and fishing activities to meet contract requirements and market demand
- Catch and harvest, raise and culture, fish and shellfish such as shrimps, clams, lobsters or oysters under controlled conditions for release into fresh or saltwater
- Stock ponds, feed fish, monitor water quality, check for diseases, harvest fish and maintain equipment
- Oversee the selection, training and performance of aquaculture or fishery workers and contractors, purchasing machinery, equipment and supplies such as vessels and nets

### RELATED CAREERS

- |                              |                           |
|------------------------------|---------------------------|
| • Biologist*                 | • Marine biologist        |
| • Ecologist*                 | • Food scientist          |
| • Zoologist*                 | • Oceanographer           |
| • Microbiologist*            | • Quality control officer |
| • Aquatic science technician | • Researcher*             |
| • Hydrologist*               | • Veterinarian            |
|                              | • Animal scientist        |

### HOW TO BECOME AN AQUACULTURIST

You will need the following:

#### SKILLS AND PERSONAL QUALITIES

- Ability to identify, analyse and solve problems
- Good communication skills
- Can work without supervision and accept responsibility
- Logical, practical and innovative thinking
- Creative and analytical skills
- General scientific interest
- Enthusiasm and perseverance





## TRAINING AND QUALIFICATIONS

These include:

### Degrees

- **BScAgric:** Animal Sciences
- **BSc:** Animal Science (with Aquaculture); Marine Biology
- **BTech:** Water Care
- **MScAgric:** Animal Science; Aquaculture; Sustainable Agriculture

A Master's degree is usually needed for managerial positions at larger facilities, senior scientist positions at large fisheries, or on research projects. With experience, aquaculture workers can qualify for positions as consultants in private firms or as senior scientists.

### Certificates and diplomas

- **National certificate:** Water Care; Nature Conservation; Fisheries Resource Management; Fisheries Observation: Inshore; Fishing Operations
- **National diploma:** Fisheries Resource Management; Water Care; Oceanography
- **Diploma:** Marine Science
- **Advanced diploma:** Marine Science

- **Postgraduate diploma:** Aquaculture

### Learnerships

On-the-job training

Once you have completed a degree, it is usual to work as a trainee or technician to gain practical experience.

## WHO WILL EMPLOY ME?

Aquaculture farms or businesses • Government departments (including Department of Environment, Forestry and Fisheries) • Private farms • Government fish hatcheries • Experimental aquatic farms • Food industry • Hatcheries

## WHERE CAN I FIND OUT MORE?

- [Agricultural Research Council](#)
- [AgriSETA](#)
- [Aquaculture Association of Southern Africa](#)
- [Department of Science and Innovation](#)
- [Department of Trade, Industry and Competition](#)
- [Department of Forestry, Fisheries and Environment](#)
- [South African Institute for Aquatic Biodiversity](#)







## AQUATIC SCIENTIST

*An aquatic scientist studies the physical, chemical, biological and ecological aspects of freshwater and marine environments.*



Aquatic scientists study aspects of the inland and marine water environment. These include:

- Physical aspects – temperature, available light and water movement
- Chemical aspects – the organic and inorganic composition of water, the importance and role of nutrients
- Biological factors – including the types, migration, distribution, behaviour, environmental requirements of the different types of plants, bacteria, algae and organisms associated with water
- Pollution aspects – the occurrence, intensity, treatment and control of different types of pollution that results in the death of fish, the colour, smell and taste of pure water that is affected by the excessive growth of certain organisms



Other areas of study include the multi-purpose utilisation of inland and coastal waters such as the reuse of water for certain activities. Some aquatic scientists focus on the cultivation of organisms to manufacture chemicals and food, including oyster-cultivation.

Aquatic scientists use advanced technology and various methods, such as biological monitoring, chemical analysis, and computer models, depending on their academic qualifications. In this career, you could also be involved in managing water resources, such as water storage and supply and the allocation of water for use in agriculture and industries.

Aquatic scientists spend time in laboratories and the field. The development of new methods and procedures forms an integral part of their projects. Working time is divided between research in the laboratory and field research in a water environment.

## WHAT DO AQUATIC SCIENTISTS DO?

- Monitor and collect water samples to determine water quality, organisms, levels of silt and pollution
- Record data and perform experiments in the field or a laboratory
- Analyse samples in a laboratory and write up the results
- Develop methods for cleaning water of sewage and pollutants
- Manage and allocate water resources
- Find ways to reuse waste materials
- Research new products
- Manufacture products through chemical processes and reactions (biotechnology)

## RELATED CAREERS

- Aquaculturist\*
- Marine biologist
- Biologist\*
- Ecologist\*





- Agricultural engineer\* researchers in laboratory and fieldwork)
- Zoologist\*
- Microbiologist\* • Researcher\*
- Hydrologist\* • Limnologist (studies inland freshwater systems)
- Aquatic science technician (assists scientists and

## HOW TO BECOME AN AQUATIC SCIENTIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Keen interest in the natural environment
- Scientific aptitude
- Good observation skills
- Curiosity
- Being able to work accurately and take initiative
- Having a conservationist attitude
- Patience and perseverance

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Biological Sciences; Natural Sciences; Biochemistry; Chemistry; Environmental Chemistry; Environmental and Water Science; Marine Biology; Oceanography; Biology; Zoology; Ecology; Biodiversity and Conservation Biology
- **BTech:** Hydrology; Water Care; Analytical Chemistry; Chemistry
- **Bachelor:** Hydrology and Water Resources Management
- **BSc(Hons):** Environmental and Water Science; Environmental Sciences

Specialisation through postgraduate studies is recommended.

### Certificates and diplomas

- **National diploma:** Analytical Chemistry
- **Diploma:** Marine Sciences; Hydrology and Water Resources Management

### Learnership programmes

The Energy and Water Sector Education and Training Authority (EWSETA) offers learning programmes in this field. Visit [EWSETA's website](#) for more information.

### WHO WILL EMPLOY ME?

Universities • Research organisations and institutes • Municipalities • Science councils (including the Council for Scientific and Industrial Research) • Government departments (including the Department of Water and Sanitation and provincial departments for nature conservation) • Consulting firms • Private sector (including water purification companies) • Self-employment (as a consultant)

### WHERE CAN I FIND OUT MORE?

- [AgriSETA](#)
- [Energy and Water Sector Education and Training Authority \(EWSETA\)](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [South African Institute for Agricultural Engineers](#)
- [Southern African Society of Aquatic Scientists](#)





*A biochemist studies the chemical and physical principles of living things and biological processes, such as cell development, growth and diseases.*



Biochemistry is a fundamental science, which deals with the building blocks and components of living organisms, as well as their functioning and physical qualities.

It is a very broad discipline with two main objectives: to identify and describe the chemical components of life and to discover how these components act and interact in processes essential to life.

Biochemists aim to improve our quality of life by understanding living organisms at the molecular level. They study the role of individual biomolecules and relate this function to its unique structure.

Biochemists apply their knowledge in fields such as medicine, veterinary science, agriculture, forestry, horticulture, environmental science and manufacturing. They may also be involved in genetics or forensic science. Some biophysicists working for energy



companies, meanwhile, have made advances in developing fuel such as ethanol from plants.

The nature of the work varies with the field of work chosen. Some biochemists research new products or ways of reusing waste materials. Others try to develop better methods for water purification or are involved in the control and purification of foods.

Some biochemists work in industries where products are manufactured through chemical processes and reactions (biotechnology). Those biochemists work for biotechnology companies or divisions work in applied research, meaning they are looking to use their findings to solve a specific problem.

The difference between biochemists and other types of chemists are as follows:

- **Biochemists** study the chemical reactions in living materials.
- **Analytical chemists** determine which substances are present in a sample and in what quantities.
- **Industrial chemists** apply their chemical knowledge to the manufacturing of essential products in everyday life.
- **Inorganic chemists** investigate the reactions of compounds other than carbon compounds.
- **Organic chemists** study the reactions of carbon compounds and the production of new compounds.
- **Physical chemists** investigate the fundamental aspects of chemical reactions.
- **Nuclear chemists** use the developments made in the field of nuclear science.
- **Theoretical chemists** attempt to refine existing theories and develop new theories.
- **Clinical biochemists** help to diagnose and manage disease through the analysis of blood, urine and other body fluids.

More recently, genetic biology, which is the analysis and alteration of genetic material, has become an important field.

## WHAT DO BIOCHEMISTS DO?

- Study the cells of living organisms such as animals, plants, and microorganisms, their chemical composition and their metabolic processes
- Carry out detailed chemical analysis using sophisticated instruments and techniques
- Observe, research, analyse and interpret results
- Study the processes, such as digestion and growth of organisms
- Manage laboratory teams
- Prepare technical reports
- Present research findings
- Analyse enzymes, DNA and other molecules
- Use electron microscopes, lasers and other laboratory instruments and computer modelling software to determine the structures of molecules

## RELATED CAREERS

- |                           |                    |
|---------------------------|--------------------|
| • Microbiologist*         | sector*            |
| • Zoologist*              | • Soil chemist     |
| • Geneticist •            | • Chemist*         |
| • Botanist*               | • Biotechnologist* |
| • Food scientist          | • Biologist*       |
| • Work in the agriculture | • Pharmacist       |

## HOW TO BECOME A BIOCHEMIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- An enquiring mind and above-average intelligence
- Ability to concentrate well and work accurately
- Interest in science, particularly chemistry and



biology

- Ability and foresight to plan and carry out complicated projects
- Ability to work independently and as part of a team
- Good hand-eye coordination
- Analytical thinking skills
- Good communication skills

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Biological Sciences; Biochemistry; Plant Sciences; Environmental Microbiology; Hydrobiology; Industrial and Applied Biotechnology; Biotechnology; Life and Environmental Sciences (Biochemistry and Botany); Physical Sciences (Chemistry and Biochemistry)
- **BTech:** Biotechnology

### Certificates and diplomas

- **National certificate:** Biotechnology; Life and Environmental Sciences
- **Certificate:** Biology
- **National diploma:** Biotechnology
- **Diploma:** Biology

Since biochemistry covers such a broad field, an Honours degree is recommended. Postgraduate study, up to Doctoral level, is needed for high-level research and for many management and administrative positions.

## WHO WILL EMPLOY ME?

Technology-based institutions • Industrial organisations  
• Private sector • Science councils • Hospitals •  
Government departments • South African Bureau of  
Standards (SABS) • South African Medical Research

Council (SAMRC) • Food and beverage manufacturers  
• Producers of insecticides, cosmetics and other  
products • Municipalities • Water utilities • Chemical and  
waste-processing industries • Council for Scientific and  
Industrial Research (CSIR) • Forensic and pathology  
laboratories • Pharmaceutical and biotechnology  
companies and related industries • Universities and  
research institutions • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Chemical and Allied Industries' Association](#)
- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Institute of Waste Management Southern Africa](#)
- [South African Chemical Institute](#)
- [South African Society of Biochemistry and Molecular Biology](#)
- [Water Institute of Southern Africa](#)







## BIOLOGIST



*A biologist studies all aspects of living organisms, as well as the relationships between animals, plants and their environment.*



Biology is the scientific study of life and living organisms and can focus on many facets of life – how an organism has come to exist, how it is built, grows, functions and what it does or where it lives.

Biologists may work with life at a microscopic level up to the largest living specimens. Most of these scientists will specialise during their studies. They tend to study ecology, zoology and plant sciences.

In the field of water, their work includes studying natural systems and how they are affected by human activities.

You could specialise in biochemistry, microbiology, genetics, botany, zoology, medicine, agriculture, biotechnology or as a cellular and molecular biologist.



## SOME OPPORTUNITIES IN THIS FIELD

- **Biotechnologists** apply techniques of using living organisms, such as bacteria, to perform chemical processes (e.g. in the wastewater treatment industry), to make products such as animal feed or to modify microorganisms, plants and animals. Biotechnologists create and improve products and processes for agriculture, medicine and conservation using biological organisms. They study the genetic, chemical and physical attributes of cells, tissues and organisms, and identify industrial uses for them. This career is described further elsewhere in this publication.
- **Geneticists** study genes, including how they are inherited, mutated, activated or inactivated. These scientists may focus on these events at the molecular, organism or population level. Some treat people with genetic disorders. Many environmental geneticists try to understand how environmental factors or exposures interact with genes to cause disease. They often study the role that genes play in disease and health. You could become a molecular, human, animal, or plant geneticist.

- **Limnologists** study waterways and freshwater ecosystems. They conduct chemical analyses and take plant and water samples to understand impacts on ecology and observe and report on freshwater inland ecosystems, such as streams and rivers.
- **Marine biologists** study the biology of life in the sea, such as saltwater fish and algae. Key areas of research include migration patterns and the impact of human activity on coral reefs, among others.
- **Molecular biologists** examine the processes of life (including where organisms synthesise essential chemicals from food, store and generate energy, or pass on characteristics genetically). These scientists conduct research and experiments on the molecular and cellular level to better understand cell function.
- **Cell biologists** focus on how single molecules integrated into complex molecular networks work in a coordinated manner.

## WHAT DO BIOLOGISTS DO?

- Study animal and plant life in terms of their origin, structure, function and development





- Collect and analyse data related to the interrelationships between organisms and the environment
- Identify and classify species or specimens
- Study the genetic, chemical, physical, and structural composition of cells, tissues and organisms
- Find out how internal and external environments influence life processes in animals (including humans), plants and other organisms
- Study, predict, and learn to manage the effects of humans and other influences on natural ecosystems (including the effect of sewage plants that open close to rivers)
- Conduct research projects and prepare related reports
- Supervise biological technologists, technicians and other scientists

## RELATED CAREERS

- |                           |                               |
|---------------------------|-------------------------------|
| • Biological technologist | • Parasitologist              |
| • Microbiologist*         | • Clinical research associate |
| • Biochemist*             | • Healthcare scientist        |
| • Botanist*               | • (immunologist)              |
| • Aquatic scientist*      | • Plant breeder               |
| • Zoologist*              | • Soil scientist*             |
| • Ecologist*              | • Animal breeder              |
| • Pathologist             |                               |

## HOW TO BECOME A BIOLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Ability to identify, analyse and solve problems
- Good communication skills
- Can work without supervision and accept responsibility
- Aptitude for and interest in biology, including soil, plants and animals

- Logical, practical and innovative thinking
- Creative and analytical skills
- General scientific interest
- Enthusiasm and perseverance

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Biological Sciences; Plant Science; Agricultural Science; Biochemistry; Environmental Microbiology; Life Sciences; Molecular and Cellular Biology; Microbiology; Genetics; Genetics and Developmental Biology; Environmental Science; Life and Environmental Science; Biochemistry and Cell Biology; Biodiversity and Ecology; Molecular Biology and Biotechnology; Human Life Sciences
- **BTech:** Biotechnology; Oceanography
- **MSc:** Biochemistry and Cell Biology

## WHO WILL EMPLOY ME?

Government departments • SANParks • Universities • Science councils • Water utilities • Research and development divisions of large corporations • Research councils (including the CSIR) • Research or clinical laboratories • Commercial game reserves and zoos • Pharmaceutical companies • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Southern African Society of Aquatic Scientists](#)
- [South African Council for Natural Scientific Professions](#)
- [Zoological Society of Southern Africa](#)





*Biotechnologists seek to understand and manipulate the basic building blocks of living things, and they use the techniques of molecular biology to do so.*



Biotechnologists manipulate organisms or components of a biological system to create new products or processes. They study the physical, genetics and chemical characteristics of cells and tissues and explore industrial applications of them.

Biotechnologists are in the business of solving problems by pushing the envelope of scientific innovation. They work in agriculture, medicine, environmental conservation, waste treatment, health care and food production.

Biotechnology is a broad multidisciplinary area defined as any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use. Biotechnology has a range of applications in medicine, industry, agriculture and the environment.

Biotechnology is an expanding field. Some areas of specialisation in this field include molecular biotechnology and medical biotechnology.



**Molecular biotechnologists** aim to correct, modify, enhance or exploit specific genetic traits in their target organisms for a wide range of practical purposes. This includes improving food production, managing diseases, and conservation.

Biotechnologists working in the agriculture sector might produce enzymes and preservatives for use in food and drink products or genetically modify crops to increase yields.

An **environmental biotechnologist** might convert plants into biofuels.

A **medical biotechnologist** will research and produce new pharmaceutical drugs and medical treatments.

Biotechnologists doing water-related studies examine bacteria isolated from wastewater treatment plants and the impact of irrigation water quality on the safety of fresh fruits and vegetables.

Many biotechnologists work in a laboratory setting assisting scientists and doctors with different types of research. Some biotechnologists go out in the field to collect data and measure how products or processes work in a non-clinical environment.

It is typical to specialise in a form of biotechnology by completing postgraduate studies. Some common specialisations include biochemistry, genetics, stem cell research, pharmacology and molecular biology.

Career options in biotechnology include research and development positions, regulatory affairs and quality assurance, manufacturing, and policymaking.

## RELATED CAREERS

- Microbiologist\*
- Biochemist\*

- Botanist\*
- Aquatic scientist\*
- Zoologist\*
- Ecologist\*
- Pathologist
- Agricultural engineer\*
- Plant scientist\*
- Environmental engineer\*
- Chemist\*
- Agricultural manager\*
- Food scientist and technologist\*
- Soil scientist\*
- Research scientist
- Biologist\*

## WHAT DO BIOTECHNOLOGISTS DO?

- Study the genetic and physical characteristics of cells and organisms
- Create products and improve processes in fields such as agriculture and medicine
- Design and implement research studies
- Observe, research, analyse and interpret results
- Work with laboratory technicians on research
- Set up the laboratory equipment to conduct and monitor experiments
- Prepare technical reports

## HOW TO BECOME A BIOTECHNOLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Complex problem-solving and analytical skills
- Ability to concentrate well and work accurately
- Deep interest in science, particularly chemistry and biology
- Teamwork and good communication skills
- An investigative mind
- Attention to detail
- Innovative thinking
- Ability to react quickly to any unexpected developments or results
- Must be a fast learner to keep up with technological advances in the field



## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Biotechnology; Biochemistry; Molecular Cell Biology; Biological Sciences; Environmental Microbiology; Chemistry; Life and Environmental Sciences (Biochemistry and Botany); Physical Sciences (Chemistry and Biochemistry)
- **BTech:** Biotechnology
- **BSc(Hons):** Biotechnology; Microbiology
- **MTech:** Biotechnology

### Certificates and diplomas

- **National certificate:** Biotechnology; Life and Environmental Sciences
- **Certificate:** Biology
- **National diploma:** Biotechnology; Food Technology
- **Specialist diploma:** Biology

The level of training and qualification plays an important role in determining the type of work a biotechnologist can pursue. An undergraduate biotechnology degree qualifies graduates for several

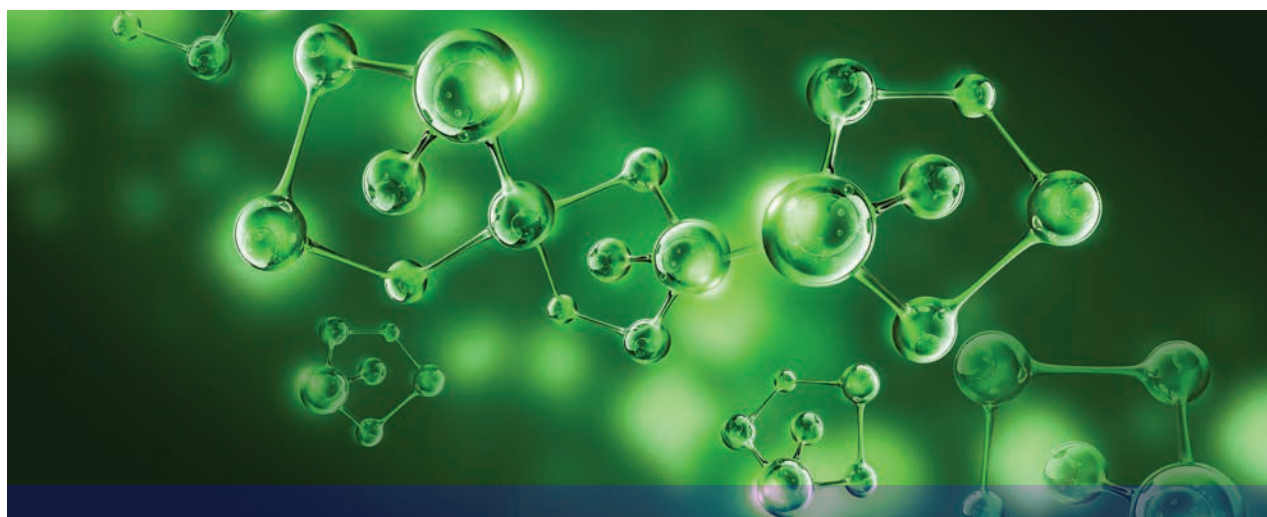
entry-level jobs in the field. Postgraduate study is needed for high-level research and many management and administrative positions.

## WHO WILL EMPLOY ME?

Biotechnology companies • Universities and research institutions • Hospitals • Pharmaceutical, agricultural and biotechnology companies • Government departments (including the Department of Health and the Department of Agriculture, Land Reform and Rural Development) • Agriculture and crop production companies • Food and drink manufacturers • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Agriculture Sector Education Training Authority \(AgriSETA\)](#)
- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [South African Society of Biochemistry and Molecular Biology](#)







## BOILERMAKER



*Boilermakers cut, shape and assemble metal sheets to make containers that have to withstand pressure.*



Boilermakers manufacture and build structures of steel, plate and piping. These structures range from boilers for steam engines and pressure vessels for power stations and petrochemical plants, to mine headgear, bridges and oil-drilling platforms.

Boilermakers are responsible for cleaning and inspecting boilers to ensure that they work effectively. They straighten or reshape bent pressure vessel plates or structure parts, using hammers, jacks or torches. They also install manholes, handholes, taps, tubes, valves,

gauges or feedwater connections in drums of the water tube boilers, using hand tools.

Because boilers have to last a very long time, a lot of work is devoted to maintaining and repairing them.

Boilermakers work in industrial plants near boilers, vats, tanks and other vessels or at the construction site of these vessels. In this career, you could also be involved in constructing and repairing towers, bridges, girders and ships.



## WHAT DO BOILERMAKERS DO?

- Convert blueprints into shop drawings to be followed in the construction and assembly of sheet metal products
- Cut, roll, bend, mould, hammer, and shape metal sections and pipes, using hand and machine tools, welding equipment and computers
- Assemble the parts by welding, riveting and bolting them together
- Fit pressure gauges, valves and other parts
- Finish, clean, polish, file or bath the products in acid solutions and paint them
- Make and repair boilers, tanks, vats and similar containers
- Inspect product quality and installation to ensure it conforms to specifications

## RELATED CAREERS

- Fitter and turner\*
- Sheet metal worker
- Boatbuilder
- Welder\*

## HOW TO BECOME A BOILERMAKER

You will need the following:

## SKILLS AND PERSONAL QUALITIES

- Mechanical skills
- Be practical and hands-on
- Be unafraid of heights or confined spaces
- Physical strength and stamina
- Problem-solving skills

## QUALIFICATIONS AND TRAINING

These include:

### Learnerships

- **Practical training** – apprenticeship with an employer that offers in-service training under qualified tradespeople or artisans
- **Theoretical training** – qualification at a training college or through a correspondence course
- **A compulsory trade test** – to qualify as an artisan (set by the Department of Employment and Labour).

To become a boilermaker, you should be at least 16 years old and have a Grade 9 certificate.

## WHO WILL EMPLOY ME?

Engineering factories • Construction companies • Mines • Iron and steel plants • Railways and shipyards • Sasol • Construction companies • Iron and steel plants • Power plants • Petroleum refineries • Water treatment plants • Self-employment (as an entrepreneur)

## WHERE CAN I FIND OUT MORE?

- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Construction Education and Training Authority \(CETA\)](#)
- [Manufacturing, Engineering and Related Service Education and Training Authority \(MerSETA\)](#)
- [Steel and Engineering Industries Federation of Southern Africa](#)
- [Southern African Institute of Welding](#)





## BOTANIST



*A botanist studies the anatomy, physiology, biochemistry and ecology of plants, fungi and other organisms. This includes life at a microscopic level up to entire ecosystems.*



Through the study of plants, botanists can record the impacts of human activity on the environment, the way plants breed and grow, and the structure and genetic makeup of species.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Plant taxonomists** identify and classify plants. They study plant systematics, chemistry, structure and genetics. These scientists usually work in herbaria where collected plants are kept, collect plant specimens in the field and work in laboratories or greenhouses.
- **Ethnobotanists** study how people and regions make use of indigenous plants. They research the plants traditionally used for food and medicine.
- **Palaeontologists** study fossilised fungi spores and plant pollen, and their relationships within an environment.



- **Palaeobotanists** study ancient plants, using plant fossils and pollen found in rocks. Their studies often shed light on the historical background of a region and provide useful information for studies in archaeology and ecology.
- **Plant physiologists** study how plants function (including their growth, development, nutrient intake and biochemical processes).
- **Mycologists** study the genetic and biochemical properties of fungi. These organisms are often microscopic and play an important part in food cycles in ecosystems. Some areas of mycology include medicine (for example, penicillin) and food (for instance, beer, wine, cheese and edible mushrooms).
- **Plant pathologists** study the functioning of plants. This involves the growth, development, nutrient uptake and biochemical processes of plants. They specialise in plant health just like a doctor specialises in human health or a veterinarian in animal health. Plant pathologists study the diseases found in specific cultivated crops or trees. They also play a key role in agriculture by focusing on drought-resistant crops, crop production, the nutritional value and quality of crops.
- **Plant geneticists** deal mainly with crop cultivation or with evolutionary genetics.
- **Weed scientists** study different types of weeds and implement ways to control them.

Botanists have a wide choice of jobs, ranging from basic to high-tech research-based careers to jobs that requires practical fieldwork.

As a botanist, you could use your knowledge in conservation, natural resource management, agriculture, forestry, horticulture, medicine and biotechnology.

## WHAT DO BOTANISTS DO?

- Investigate the effects of rainfall, temperature, climate and soil on plant growth, from seed to mature plants
- Grow plants under controlled conditions to find out how environmental factors affect them
- Study plant chromosomes, cells and tissues
- Conduct environmental studies, focusing on plants
- Prepare scientific articles and reports
- Collaborate with other scientists to develop products from plants (including medicines)
- Identify, classify, record and monitor plant species
- Advise on how to manage the environment and conserve wild plants

## RELATED CAREERS

- |                                    |  |
|------------------------------------|--|
| • Agricultural scientist*          | • Agronomist                           |
| • Biologist*                       | • Researcher*                          |
| • Ecologist*                       | • Tree surgeon                         |
| • Zoologist*                       | • Landscaper                           |
| • Microbiologist*                  | • Forestry scientist or silviculturist |
| • Food scientist and technologist* | • Conservationist                      |
| • Groundskeeper                    | • Soil scientist*                      |
| • Horticulturist*                  | • Biotechnologist*                     |
| • Nature conservationist           |  |

## HOW TO BECOME A BOTANIST

You will need the following:

## SKILLS AND PERSONAL QUALITIES

- Keen interest in science
- An inquiring mind
- Enjoy studying and observing nature
- Able to work independently and as part of a team



- Good communication skills
- Patience and curiosity
- Love of nature

## QUALIFICATIONS AND TRAINING

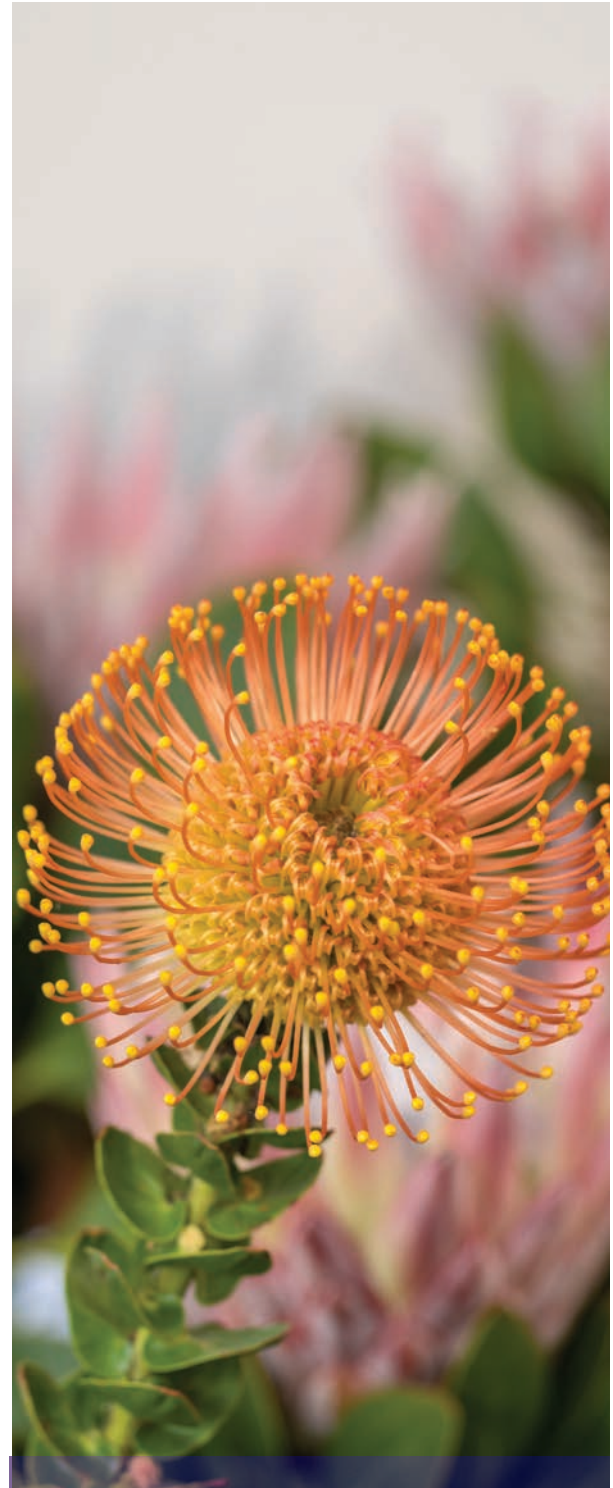
These include:

### Degrees

- **BSc:** Plant Science; Botany and Plant Science; Botany and Plant Breeding; Botany and Plant Pathology; Plant Health Ecology; Biodiversity and Conservation Biology; Crop and Horticultural Science; Zoology and Botany; Life and Environmental Science; Environmental Sciences; Botany and Zoology; Botany and Chemistry; Geology and Botany; Biochemistry and Botany; Plant Science; Biodiversity and Ecology
- **BScAgric:** Plant Breeding; Applied Plant and Soil Sciences; Plant Pathology; Plant Science; Crop Production Systems; Grassland Science
- **BScHons:** Medicinal Plant Science; Botany; Plant Breeding; Plant Pathology
- **BTech:** Environmental Management; Forestry; Horticulture
- **Postgraduate diploma:** Environmental Health; Nature Conservation; Sustainable Development
- **Advanced postgraduate certificate:** Environment and Development
- **Advanced postgraduate diploma:** Environmental Management

### Certificates and diplomas

- **National diploma:** Horticulture; Nature Conservation; Forestry; Environmental Management
- **National certificate:** Horticulture; Forestry; Nature Conservation; Conservation; Environmental Management
- **Diploma:** Forestry; Natural Resource Management;





Nature Conservation; Nature Management; Rural Resource Management; Nature Conservation

- **Advanced diploma:** Sustainable Agriculture in Rural Development; Environmental Practice; General Forestry

## WHO WILL EMPLOY ME?

Universities and research institutions • Government departments (including the Department of Forestry, Fisheries and the Environment, and the Department of Water and Sanitation) • Science councils • Conservation agencies • Environmental organisations • Botanical gardens • Seed cultivators and nurseries • Farmers • Biotechnology and pharmaceutical firms • Food and

beverage industry • Consulting firms and private companies • Agricultural Research Council • South African National Biodiversity Institute • Provincial nature conservation organisations (including CapeNature) • Municipalities • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Botanical Society of South Africa](#)
- [Culture, Arts, Tourism, Hospitality and Sport Sector Education and Training Authority \(CATHSSETA\)](#)
- [South African National Biodiversity Institute](#)
- [Southern African Institute for Ecologists and Environmental Scientists](#)







## CARTOGRAPHER

*A cartographer collects information about an area's geography to design and produce maps, charts and plans.*



Cartography is the science of making maps as well as their study as scientific documents and works of art.

Modern cartography, like many other fields of information technology, has undergone rapid changes in the last decade. The traditional analogue methods of map-making have been replaced by digital systems capable of producing dynamic interactive maps that can be manipulated digitally. Maps function as visualisation tools for spatial data.

The introduction of geographic information systems (GIS) and other computer-assisted mapping systems, wireless applications and global positioning systems (GPS) have added new dimensions to cartographic techniques and the use of digital spatial information. GIS, for instance, represents a revolution in the way spatial data can be captured, processed, analysed, displayed and stored.



Rather than merely drawing maps, cartographers are now concerned with data manipulation, data capture, image processing and visual display. They must communicate information about the Earth in an easily understandable form that is scientifically accurate and aesthetically pleasing.

The types of maps produced depend on the employer and why someone will use the map. Cartographic representations may appear in printed form or as dynamic images generated on a computer display screen.

Thematic maps, such as geological and meteorological maps, are produced within specific organisations and represent data relating to specific themes (such as geology or the weather). Maps produced by the Department of Water and Sanitation will, for instance, relate mainly to the management of South Africa's water resources.

Although cartography is regarded as a specialist field in itself, you can consider specialising in geological mapping or remote sensing (mapping involving satellite and other remotely sensed imagery). As a cartographer, you can also train in surveying and photogrammetry (the science of compiling maps and plans from aerial photographs or satellite images).

Cartographers work closely with other professionals involved in planning and development related to spatial information.

## WHAT DO CARTOGRAPHERS DO?

- Apply scientific and mathematical principles to design, prepare and revise maps and charts
- Collect, digitally capture and edit information to produce maps
- Select, classify, simplify and visualise complex data





- Design maps, graphics, illustrations and layouts
- Produce graphs for specialist and general users
- Analyse and evaluate mappable information
- Design and maintain geographical information databases
- Check the content and accuracy of maps, charts and printing proofs

## RELATED CAREERS

- Geographer
- Geologist\*
- Geographic information specialist
- Surveyor\*
- Topographical and engineering surveyor
- Information technologist
- Hydrologist\*

## HOW TO BECOME A CARTOGRAPHER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Analytical thinking skills
- Creativity
- Interest in science and geography
- Being able to pay attention to detail
- Design skills and knowledge
- The ability to work well with others
- Patience, concentration and perseverance

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Land Surveying; Geomatics; Geoinformatics
- **BTech:** Cartography; Surveying

### Certificates and diplomas

- National diploma: Surveying
- Certificate: Cartography
- Diploma: Geomatics; Geo-information and Technology
- National certificate: Cartography

## WHO WILL EMPLOY ME?

Government departments (including the Department of Forestry, Fisheries and the Environment) • National science councils • Council for Geoscience • CSIR • Municipalities • Provincial planning departments • Consulting companies • Conservation organisations • Agricultural sector • Universities and research institutions • Mining companies • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Department of Agriculture, Land Reform and Rural Development](#)
- [South African Geomatics Council](#)







## CHEMICAL ENGINEER



*A chemical engineer designs and operates processes that turn raw materials into useful everyday products such as pharmaceuticals, petrol, toothpaste, plastics, synthetic fibres, paper, fertilisers and cement.*



Chemical engineering relates to the design, management and optimisation of processes used to produce valuable products from raw materials.

Chemical engineering plays an important role in society by minimising and controlling the impact of modern industry on the environment, society and businesses.

These engineers work on the design, construction and operation of industrial plants in which materials undergo physical and chemical change. They design

and prepare specifications for chemical process systems and the construction and operation of commercial-scale chemical plants.

Process engineering is an alternative description used to define the broader group of engineers who apply chemical engineering principles in chemical engineering. These include petrochemical and biochemical engineering principles, environmental engineering, mineral processing and many more.



Chemical engineers are needed in fields such as plastics, oil refinery, explosives, fertilisers, detergents, and food and mineral processing. They also supervise industrial processing, fabrication and manufacturing of products undergoing physical and chemical changes, and related technologies.

Chemical engineers can work in the following fields:

- **Research and development:** Chemical engineers are concerned with improving the efficiency and productivity of existing processes or developing new processes and products.
- **Project evaluation and design:** Should an existing plant need to be extended or replaced, chemical engineers evaluate the commercial prospects and technical feasibility of the proposals. They also design new plants using different production processes.
- **Project management:** They ensure that a new plant's construction will proceed as smoothly and speedily as possible from the design stage to the start of production.
- **Production management:** Chemical engineers have to overcome day-to-day operational difficulties, improve production efficiencies and optimise the utilisation of the plant.
- **General management:** Chemical engineers are often appointed in senior management positions.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Process design engineers** design chemical and waste treatment plants to make them work efficiently.
- **Process control engineers** specialise in the control systems, instruments, computer applications and measurement techniques used to operate a plant smoothly, safely and efficiently.

- **Biochemical engineers** use chemistry, biology and processing techniques to improve the workings of processes that use living organisms in producing beer or pharmaceuticals, for instance, and in treating effluent.
- **Petrochemical engineers** convert oil and gas into plastics, synthetic rubber, and other, similar products.
- **Mineral processing** refers to the application of chemical engineering in the mining and minerals industry. More specifically, it involves the design, management and optimisation of processes used to extract valuable minerals from ore.

**Chemical engineering technicians** link chemical engineers and plant operators, solve technical problems and test engineers' theories. Chemical engineering technologists assist chemical engineers in the design, manufacture and operation of chemical plants. They also perform tests for industries, agriculture and medicine. As laboratory instrumentation and procedures become more complex, their roles in research and development are expanding.

## WHAT DO CHEMICAL ENGINEERS DO?

- Analyse chemicals to produce new products
- Research and develop new chemical processes
- Design plant and equipment, such as heating and cooling systems
- Analyse possible safety hazards
- Test and commission plants
- Build and test experimental or pilot plants
- Solve complex technical problems
- Perform calculations and write reports
- Analyse samples and take measurements
- Establish control standards and procedures to ensure safe and efficient production operations
- Prepare estimates of production costs and production progress reports



## RELATED CAREERS

- Biochemist\* development manager
- Biomedical engineer • Metallurgical engineer
- Agricultural engineer\* • Petroleum engineer
- Chemist\* • Environmental engineer\*
- Food scientist and technologist • Researcher\*
- Research and technologist • Quality assurance

## HOW TO BECOME A CHEMICAL ENGINEER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Ability to solve complex problems
- Ability to concentrate well and work accurately
- Interest in science, particularly chemistry
- An investigative mind
- Innovative thinking and analytical skills
- Aptitude for mathematics and chemistry
- Good communication skills to convey findings or concerns
- Ability to react quickly to any unexpected developments or results
- Must be a fast learner to keep up with technological advances in the field
- Stress- and time-management skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BEng:** Chemical Engineering
- **BScEng:** Chemical Engineering

- **BSc:** Community Water Services and Sanitation; Water Resource Management
- **BTech:** Water Care

### Certificates and diplomas

- **National diploma:** Chemical Engineering; Water Care
- **National certificate:** Wastewater Process Control; Water and Wastewater Treatment Practice; Water Care; Community Water, Health and Sanitation Monitoring; Water Purification Process Operations
- **Advanced diploma:** Chemical Engineering

The Engineering Council of South Africa (ECSA) registers professional engineers, technologists, technicians and certified engineers. [Visit ECSA's website for more information.](#)

## WHO WILL EMPLOY ME?

Water processing and effluent treatment industries

- Eskom • Sasol • Municipalities • Water authorities
- Chemical manufacturing companies • Food and beverage companies • Textile, fertiliser, explosives, coal and gas, and metallurgical industries • Pharmaceutical companies • Mintek • Nuclear Energy Corporation of South Africa • Government departments • Paper and pulp manufacturers • Energy research companies
- Universities and research institutions • Petroleum refineries • Synthetic fuel manufacturers • CSIR • Biochemical producers • Oil industry • Mining industry • Self-employment (as an entrepreneur and consultant)

## WHERE CAN I FIND OUT MORE?

- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Engineering Council of South Africa](#)
- [Institute of Professional Engineering Technologists](#)





## CHEMIST

*A chemist studies and applies the chemistry and physics of substances to find out what they are, to develop substances and processes, and to increase scientific knowledge.*



Chemists investigate the properties of matter at the level of atoms and molecules. They measure proportions and reaction rates to understand unknown substances and how they behave, or to create compounds for use in many practical applications.

These scientists typically specialise in fields such as biochemistry, neurochemistry and nuclear chemistry.

In the pharmaceutical industry, chemists develop drugs and study their properties to determine the quality and stability of medicines. Some focus on forensic



chemistry and work with law enforcement in criminal investigations.

A chemist usually works as part of a research team and also uses advanced computer software to develop technologies. These include developments in drug formulation, product testing and validation, quality control, and toxicology. Experienced chemists are also involved in preparing documentation for product licences.

Applied chemistry covers a variety of chemical fields, working on various materials including metal compounds, inorganic and organic compounds, polymers and proteins.

The research field is divided into organic and macromolecular chemistry, physical and inorganic chemistry as well as biotechnology and chemical engineering.

Applied chemistry is the application of the principles and theories of chemistry to answer a specific question or solve a practical problem, as opposed to pure chemistry, which is aimed at enhancing knowledge within the field.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Analytical chemists** use a range of methods to investigate the chemical composition of substances. They develop new analysis methods and explore which substances are present within an item of study. In the pharmaceutical industry, for example, these chemists are involved in drug development.
- **Aquatic chemists** are interested in organic, inorganic, and trace metals found in water and

sediments and how living organisms change chemicals. They often use their knowledge about water for applications that affect entire ecosystems. Aquatic chemists can work as water purification chemists, wastewater treatment plant chemists, surface water chemists and groundwater chemists.

- **Biochemists** examine the structure and functions of chemical compounds in all living organisms such as plants, animals, insects, viruses and microbes. Biochemists work only with those chemicals and reactions that occur in living organisms. They study the building blocks and components of living organisms and their functioning and physical qualities.
- **Geochemists** use physical and inorganic chemistry to investigate the amount and distribution of chemical elements in rocks and minerals. They use their expertise in geology and chemistry to help search for natural resources or clean up the environment.
- **Research chemists** find solutions to chemical problems through research and applications.

Chemistry is a highly prized qualification. Postgraduate degrees are in demand in many industries.

## WHAT DO CHEMISTS DO?

- Develop formulations to be tested
- Conduct experiments to identify chemical compositions
- Accurately record all experimental data
- Research and develop theories, techniques and processes
- Create compounds and processes
- Supervise and coordinate the work of technical support staff
- Create or synthesise substances
- Conduct quality control tests





- Analyse compounds to determine chemical or physical properties
- Prepare test solutions and compounds for laboratory testing
- Work collaboratively in cross-functional teams
- Liaise with customers, staff and suppliers
- Prepare scientific papers and reports

### RELATED CAREERS

- |                                    |                      |
|------------------------------------|----------------------|
| • Agricultural scientist*          | • Toxicologist       |
| • Biologist*                       | • Pharmacist         |
| • Chemical engineer*               | • Quality controller |
| • Pharmacologist                   | • Hydrogeologist     |
| • Forensic scientist               | • Biotechnologist*   |
| • Hydrologist*                     | • Biochemist*        |
| • Laboratory worker or technician* | • Clinical scientist |
| • Physicist                        | • Nanotechnologist   |
|                                    | • Researcher*        |

### HOW TO BECOME A CHEMIST

You will need the following:

#### SKILLS AND PERSONAL QUALITIES

- Must be highly skilled technically
- Must adhere to strict procedures and health and safety requirements
- Ability to identify, analyse and solve problems
- Pay attention to detail
- Excellent communication and reporting skills
- Can work without supervision and accept responsibility
- Practical and analytical skills
- General scientific interest
- Enthusiasm and perseverance



## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Chemistry; Applied Chemistry; Pure and Applied Chemistry; Chemistry and Physics; Chemistry with Chemical Engineering; Biochemistry and Cell Biology
- **BPharm** (Pharmacy)
- **BSc(Hons):** Chemistry, Applied Chemistry; Life Sciences (Biochemistry and Microbiology); Chemistry and Applied Mathematics
- **BTech:** Chemistry; Analytical Chemistry
- **MTech:** Chemistry; Analytical Chemistry

Membership to a professional body is not compulsory but is advisable. However, students at BTech, MTech and DTech level are advised to affiliate with the South African Chemical Institute, regulating all chemistry-related matters in both universities and industries. [Visit SACI's website for more information.](#)

### Certificates and diplomas

- **National certificate:** Analytical Chemistry, Chemistry
- **National diploma:** Analytical Chemistry; Chemistry

Positions for chemists require a bachelor's degree and usually a PhD. You would need an MSc or a doctoral degree to be considered for lecturing positions, research and administration.

## WHO WILL EMPLOY ME?

South African Medical Research Council • Academic institutions • Pharmaceutical, medical and chemical industries • Laboratories • Water treatment plants • South African Bureau for Standards (SABS) • Chemical and other manufacturing industries • Research

institutes and companies • Educational institutions • CSIR • Government departments • National Energy Commission of South Africa • Eskom • Environmental consultancies • Water utilities • Chemical laboratories • Energy sector • Agrochemical companies • Mining sector • Food and beverage industry • Government departments • Self-employed (as an entrepreneur and consultant)

## WHERE CAN I FIND OUT MORE?

- [Chemical and Allied Industries Association](#)
- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [South African Chemical Institute](#)







## CIVIL ENGINEER



*Civil engineers plan, design, organise and oversee large engineering projects such as structural, transportation or hydraulic engineering systems.*



They create large, permanent structures such as irrigation systems, bridges, dams, harbours and sewerage systems that require heavy construction work.

Through their work, they recreate, improve and conserve the environment, and provide the facilities required for efficient community life.

They plan, design, construct and manage the physical infrastructure and facilities needed for the optimal

functioning of human settlements, society and commerce. A civil engineer could, for instance, design a building that can survive a major earthquake without substantial damage.

Civil engineers often work on water-supply systems, dams, irrigation, water purification plants, stormwater systems, flood control structures, sewerage systems, sewage works, harbours, docks, tunnels and canals.



Civil engineers are helped by **civil engineering technicians**, who do much of the practical and functional work, and **civil engineering technologists**, who do the more theoretical work including planning, design or research.

A degree in civil engineering prepares you for work in the construction industry, business, management and financial sectors. Specific tasks and responsibilities of civil engineers, technicians, and technologists depend on what area of specialisation you choose.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Hydraulics (water resources) engineers** design, build and advise how to operate, maintain and repair water resource facilities, such as dams and sewerage systems.
- **Irrigation and drainage engineers** determine soil characteristics, salinity, surface profile and water table level to inform construction plans; calculate rates of water flow and develop models to study construction and flow problems.
- **Municipal engineers** develop cities and towns; design, build and maintain water, sewerage, roads and stormwater infrastructure.
- **Geotechnical engineers** inspect proposed construction sites to find out about soil, rocks, groundwater and other conditions that could affect foundations. They make recommendations for engineering solutions for problems and ensure that large structures, such as high buildings, dams, or roads, are designed correctly.
- **Water system and pipeline engineers** design, construct, and manage systems to supply clean drinking water; map and survey sites to lay out pipelines; analyse operations and do maintenance costs.

- **Waste and wastewater treatment engineers** plan and design water treatment plant processes.
- **Structural engineers** design the framework of water treatment structures, tunnels, power plants, towers and bridges. They also study the development of materials and methods for construction; build reinforced concrete, structural steel, timber and masonry structures.

## WHAT DO CIVIL ENGINEERS DO?

- Research and develop new theories and methods
- Design structures such as bridges, flood-control systems and industrial buildings
- Analyse the stability of structures
- Determine construction methods, materials and quality standards
- Establish control systems
- Organise and repair structures
- Test the durability of construction materials

## RELATED CAREERS

- |                              |                             |
|------------------------------|-----------------------------|
| • Town and regional planner* | • Architect                 |
| • Land surveyor*             | • Sustainability consultant |
| • Aeronautical engineer      | • Process design engineer   |
| • Quantity surveyor          | • Structural engineer       |
| • Mechanical engineer*       | • Agricultural engineer*    |
|                              | • Planning technician       |

## HOW TO BECOME A CIVIL ENGINEER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Ability to think critically
- Attention to detail
- Creative approach to problem-solving
- Ability to interpret data





- Numeracy, information technology and communication skills
- Analytical and decision-making abilities
- Awareness of ethical issues

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BEng:** Civil Engineering
- **BSc(Eng):** Civil Engineering
- **BTech(Eng):** Engineering: Civil
- **BEngTech:** (Civil Engineering)
- **Bachelor:** Hydrology and Water Resources Management; Civil Engineering
- **BSc:** Construction Studies
- **M(Eng)**
- **MSc(Eng):** Water Quality Engineering

### Certificates and diplomas

- **National diploma:** Civil Engineering; Engineering
- **National certificate:** Engineering Studies
- **Diploma:** Civil Engineering
- **Advanced diploma:** Civil Engineering; Engineering Technology (Civil Engineering)
- **Postgraduate diploma:** Engineering

The Engineering Council of South Africa (ECSA) registers professional persons who are engineers, technologists, technicians and certified engineers. [Visit ECSA's website for information.](#)

## WHO WILL EMPLOY ME?

Government departments (such as the Department of Water and Sanitation and the Department of Transport and Public Works) • Engineering companies • Ports and railway companies • Municipalities • Sasol • Eskom • Research councils (such as the CSIR) • Universities



and research institutions • Passenger Rail Agency of South Africa (Prasa) • Mining companies • Construction companies • Consulting companies • Architectural firms • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Engineering Council of South Africa](#)
- [Energy and Water Sector Education Training Authority \(EWSETA\)](#)
- [Institute of Municipal Engineering of Southern](#)

## [Africa](#)

- [Institute of Professional Engineering Technologists](#)
- [Geotechnical division of the South African Institution of Civil Engineering](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [South African Association of Consulting Engineers](#)
- [South African Society for Professional Engineers](#)
- [South African National Council of Tunnelling](#)
- [South African Forum of Civil Engineering Contractors](#)
- [South African Institute for Industrial Engineers](#)
- [The South African Institution of Civil Engineering](#)







## CLIMATOLOGIST / METEOROLOGIST



*A climatologist studies the physics and dynamics of the atmosphere to increase understanding of weather and climate, and forecasts changes in the weather and long-term climatic trends.*



Climatologists study weather patterns and how these might affect it in the future. Their work is similar to that of meteorologists but focuses on a much longer timescale, examining trends over months, years or centuries.

Meteorologists study the planet's atmosphere and the changes in it that affect the weather, long-term climate and extreme weather conditions. These scientists forecast the weather by examining trends in

the atmosphere such as wind currents, rainfall and air pressure.

Meteorologists and atmospheric scientists are interested in understanding how the physics and dynamics of the atmosphere work.

Meteorologists use scientific principles to explain, understand, observe, or forecast atmospheric phenomena and ascertain how the atmosphere affects the Earth and life on the planet.



Meteorologists can specialise in dynamic and synoptic meteorology, numerical weather prediction, physical meteorology, or the microphysics of clouds and climatology.

## SOME OPPORTUNITIES IN THIS FIELD

- **Broadcast meteorologists** interpret and report the weather for media. They use real-time satellite imagery, radar images, analyse weather charts, computer-generate model fields and numerical weather products to issue forecasts.
- **Agrometeorologists** study the weather and use of weather and climate information to enhance or expand crops and increase agricultural production.
- **Specialised forecasters** interpret the weather for aviation, marine forecasting for forestry (fire warnings), farming, and whenever extreme weather conditions are expected.
- **Research meteorologists** study all aspects of weather and the climate to improve our understanding of atmospheric phenomena.
- **Climate change scientists** gather and analyse data from the atmosphere, oceans and land. They create computer models to simulate the effects of changes to climate, and design and study past climates to understand what might happen in the future.
- **Forensic meteorologists** use historical weather





data to reconstruct the weather conditions for a specific location and time. They investigate what role weather played in unusual events such as traffic accidents and fires.

- **Air pollution meteorologists** deal with meteorological processes occurring close to the earth's surface, including the effects of meteorology on air pollutants and the effects of pollutants on meteorology.
- **Hydrometeorologists** evaluate methods for modelling and forecasting processes related to energy and moisture fluxes happening between the atmosphere and the hydrosphere, crucial aspects for flood control, water management and drought monitoring.
- **Meteorological technicians** collect meteorological information and operate and maintain weather observation networks.

## WHAT DO CLIMATOLOGISTS AND METEOROLOGISTS DO?

- Gather and analyse data from the atmosphere, oceans and land
- Create computer models to simulate the effects of changes to climate
- Study past climates to understand what might happen in the future
- Consider how global climate affects regional weather patterns
- Collect data from satellite images, radar, remote sensors and weather stations
- Study and interpret data to predict patterns
- Measure factors such as temperature and humidity at different atmospheric levels
- Develop and use scientific techniques to forecast and interpret climatic conditions
- Analyse and interpret satellite cloud images, remote sensing data, and other information about atmospheric conditions

- Prepare weather forecasts, including special forecasts for airports, agriculture, fishing and shipping
- Predict rainfall and runoff
- Develop models to predict atmospheric processes and improve the accuracy of forecasts
- Monitor climate variability and change
- Analyse historical climate information to help predict trends
- Conduct research to control air pollution

## RELATED CAREERS

- |  |                                |
|--|--------------------------------|
| • Electronic engineering technician    | • Ecologist*                   |
| • Geographer*                          | • Geoscientist                 |
| • Meteorological instrument technician | • Oceanographer                |
| • Weather forecaster                   | • Environmental scientist**    |
| • Palaeoclimatologist                  | • Pollution control technician |
|  | • Researcher*                  |

## HOW DO I BECOME A CLIMATOLOGIST OR METEOROLOGIST?

You will need the following:

## SKILLS AND PERSONAL QUALITIES

- Interest in all things concerned with natural science
- Aptitude for science and mathematics
- Analytical skills
- Able to communicate well in speech and writing
- Curious and imaginative nature
- Sense of responsibility and good judgement
- Able to focus and concentrate well
- The ability to work well with others
- Pay attention to detail





## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Meteorology; Geographical Sciences; Geography; Applied Mathematics; Physical Science and Mathematics; Geoinformatics
- **BGeogInformation Science** (GISc)
- **BSc(Hons)** Meteorology or Atmospheric Sciences; Applied Mathematics; Physics; Mathematical Statistics; Geoinformatics; Geography and Environmental Sciences
- **BSocSciHons:** Geographical Sciences

A BScHons Meteorology degree is required to become a professional meteorologist. To be considered for the BScHons Meteorology degree, you should first complete your BSc Meteorology degree.

## LEARNERSHIPS

The South African Weather Service offers a weather observer course to successful applicants. [Visit its website for more information.](#)

## WHO WILL EMPLOY ME?

South African Weather Service • Research institutions • Agricultural institutions • Scientific councils (including the CSIR) • Universities • International weather services and companies • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Council for Scientific and Industrial Research](#)
- [Department of Forestry, Fisheries and Environment](#)
- [Institute for Soil, Climate, and Water \(ARC-ISCW\)](#)
- [Society of South African Geographers](#)
- [South African Weather Service](#)





## COMMUNITY WORKER

*A community worker encourages and helps communities identify their own needs and develop ways to meet those needs.*



Community development workers link communities and a range of local authorities and voluntary sector providers.

Community work offers many opportunities in the fields of social welfare, social security and community development.

Social workers promote social change and well-being and empower people to solve relationship problems

and reach their potential. They interact with individuals, families, groups and communities in life-skills training, adult education, economic empowerment and various prevention programmes.

Social workers analyse the deep-rooted causes of social problems, such as poverty and unemployment, and help them overcome them. They assess the social needs of individuals, families and groups.





Their work involves the analysis and formulation of social policies and the management of social service programmes. Communities may, for example, need housing, improvement of the environment and day-care for preschool children. In some cases, social workers work closely with doctors, psychologists and educationalists.

## WHAT DO COMMUNITY WORKERS DO?

- Identify client and community skills, strengths and needs
- Prepare reports and policies
- Develop and implement strategies
- Mediate in matters of conflict
- Implement life skills workshops, youth services programmes and other community and social

service programmes

- Liaise with community groups, welfare organisations, government offices, NGOs and the private sector
- Play an awareness-raising role on issues of concern to those communities (such as water conservation and efficient water use)
- Provide counselling, therapy and mediation services and facilitate group sessions

## RELATED CAREERS

- Community psychologist
- Social worker
- Trauma counsellor
- Community development officer
- Health worker



## HOW DO I BECOME A COMMUNITY WORKER?

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Excellent communication and interpersonal skills
- Knowledge and understanding of community and social issues
- A non-judgemental and positive attitude
- Compassion and the ability to empathise with people's life experiences
- Enjoy working with different kinds of people
- Be reliable and resourceful
- Even-tempered and tolerant
- Emotional intelligence
- Have a desire to help people improve their living standards
- Respect different cultures
- Have patience and perseverance

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Community Development; Social Work; Community Development and Leadership; Development Studies
- **BSocSci:** Social Work; Social Sciences, Community Development; Development Studies
- **Bachelor:** Social Work; Social Science (Psychology); Social Science (Social Development)
- **BA(Hons):** Development Studies

A bachelor's degree enables students to register as professional social workers with the South African Council for Social Service Professions (SACSSP). [Visit SACSSP's website for more information.](#)

### Certificates and diplomas

- **National diploma:** Social Work; Community Development
- **National certificate:** Community Work
- **Higher certificate:** Community Development Work
- **Postgraduate diploma:** Community Work; Community Development

### LEARNERSHIPS

Many organisations involved in community and development work offer learnerships.

Graduate development programmes  
Internship programmes are available for unemployed graduates with a completed degree or diploma who require work experience to obtain occupational or professional accreditation with a professional or occupational body.

### WHO WILL EMPLOY ME?

Community organisations • Municipalities • Government departments (including the Department of Social Development) • Non-governmental organisations • Provincial hospitals Welfare councils and organisations • National Council of and for Persons with Disabilities • Private organisations • Families South Africa (FAMSA) • Schools

### WHERE CAN I FIND OUT MORE?

- [Department of Employment and Labour](#)
- [Department of Social Development](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [South African Council for Social Services Professions](#)





*Commercial diving typically refers to professional divers who have completed specialised diving training programmes and who use diving equipment suited to performing underwater work.*



As a professional diver, you spend much of your time working in the sea, in inland rivers, or dams.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Commercial divers** explore and participate in production (including shipping divers, pipeline divers, civil and mechanical works divers and oil rig divers).
- **Scientific divers** conduct underwater research for the fields of oceanography, mineralogy and biology. They carry out scientific surveys of the seabed and marine life to gather information about marine biology and minerals and explore the seabed for raw materials and food sources.
- **Tourism divers** work as tour operators taking tourists on shark dives and other adventurous diving experiences.
- **Clearance divers** undertake tasks such as seafood gathering, research, salvage and construction.



- **Navy divers** help during disaster and salvage operations at sea and locate and place underwater objects. They perform repair and maintenance, submarine rescue and other functions. Navy divers form military operational diving teams, serve on board ships and assist in rescue operations and humanitarian missions.
- **Police divers** help in police investigations, search and recovery operations and crime prevention tactics.
- **Search and recovery divers** retrieve lost items that have fallen overboard or from a dock.
- **Underwater navigators** mark or relocate a submerged object or position from the surface.

## RELATED CAREERS

- Digital underwater photographer
- Digital videographer
- Underwater equipment specialist
- Marine biologist

## WHAT DO DIVERS DO?

- Perform maintenance on ships and oil rigs
- Work under water to lay and repair bridges, piers and harbour-wall foundations
- Drill holes for under water blasting
- Repair pipelines and remove underwater obstructions
- Inspect ships for suspected damage and make minor repairs to ships' hulls and underwater installations
- Report on the condition of wrecked ships
- Recover bodies submerged in water
- Take film footage of ocean life
- Recover parts of sunken ships

## HOW DO I BECOME A DIVER?

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Be passionate about the sea and diving
- Have good stamina, eyesight and hearing
- No claustrophobia or fear of heights
- Work well under pressure
- Work well in teams and individually

### QUALIFICATIONS AND TRAINING

- **Diving schools** - you can obtain basic training at diving schools registered with the Department of Employment and Labour. Dive training consists of theoretical and practical components.
- **Registration** - To register as a professional diver, you will have to pass practical, theoretical and legal examinations.
- **South African Navy** - offers diving training opportunities which are physically and psychologically challenging.

## WHO WILL EMPLOY ME?

South African Police Service • South African Navy • Minerals explorations companies • Commercial diving companies • Diving schools • Oil industry • Marine research institutes • Aquaculture companies • Tourism industry • Self-employed (as a freelance diver)

## WHERE CAN I FIND OUT MORE?

- [Department of Defence](#)
- [South African International Maritime Institute](#)
- [Transport Education and Training Authority \(TETA\)](#)





*Ecologists are environmental biologists who study the interactions between organisms and their environment and between organisms themselves.*



Ecology is a scientific discipline that helps us to understand and manage ecosystems and environmental problems. It covers fields such as climatology, hydrology, limnology, oceanography, physics, chemistry, geology and soil analysis. This discipline can also involve animal behaviour, taxonomy, physiology, mathematics, statistics and the study of human settlement patterns.

Ecologists undertake environmental studies by investigating the influence of human activity on the natural environment. They help protect and restore the natural environment by providing information about how human activity affects individual species and ecosystems.

Ecologists conserve aquatic ecosystems, design nature reserves and investigate the condition of rivers and wetlands, among other things.



## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Animal ecologists** develop and implement programmes and regulations for the protection of fish, wildlife and other natural resources.
- **Marine ecologists** study the marine environment and try to prevent pollution and the degradation of the environment.
- **Plant ecologists** study plants, animals and cultivation techniques to enhance the productivity of farms and agricultural industries. They also investigate the distribution and abundance of plants and the interactions between plants and other organisms.
- **Ecological consultants** advise on and solve ecological problems and examine the environmental impact of human activities on the natural world.
- **Industrial ecologists** study and develop plans to control factors which may produce pollution or the degradation of the environment.
- **Aquatic environment assessors** focus on water resources, conduct water audits and monitor practices that may harm aquatic environments.
- **Aquatic ecologists** examine freshwater areas such as wetlands, streams and rivers.
- **Freshwater ecologists** focus on freshwater habitats and species. They provide river and wetland ecological assessments, conduct hydro-ecological investigations and work to improve conditions in catchments.
- **Conservation officers** help to protect natural resources (such as wildlife, natural vegetation, soil and water) and to use them in a sustainable way.

## WHAT DO ECOLOGISTS DO?

- Conduct research and collect samples
- Analyse and interpret data

- Assess the likely impact that potential or proposed activities, projects and developments may have on the environment
- Provide technical advice and support services
- Advise on long-term environmental policy and the impact of specific projects
- Write reports and issue recommendations
- Contribute ideas about changes to policy and legislation, based on ecological findings

## RELATED CAREERS

- |  |                              |
|--|------------------------------|
| • Microbiologist*                      | • Botanist*                  |
| • Oceanographer*                       | • Conservationist            |
| • Zoologist*                           | • Environmental              |
| • Environmental education officer      | consultant                   |
| • Environmental engineer*              | • Biologist*                 |
| • Environmental health officer         | • Toxicologist               |
| • Ichthyologist (fisheries scientist)* | • Natural resource economist |
|  | • Water chemist              |

## HOW TO BECOME AN ECOLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Love nature and be conservation-minded
- Excellent observational skills
- Be technologically and analytically proficient
- An enquiring mind
- Physical stamina for fieldwork
- Be able to network
- A scientific and technical aptitude
- Ability to work as a member of a team
- Enthusiasm about, and fascination for, animals and plants



- Excellent written communication, research and presentation skills
- Self-motivation, energy and drive

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Conservation Ecology; Entomology; Geography and Environmental Sciences; Ecology; Biodiversity; Life Sciences; Microbiology and Biotechnology; Biological Sciences; Marine Biology
- **BSocSc:** Geography and Environmental Management
- **BTech:** Nature Conservation
- **BSc(Hons):** Ecology

A BSc Honours degree specialising in ecology is essential for securing research positions. Some employers look for candidates with postgraduate qualifications (an MSc or PhD), particularly for work requiring specialist knowledge, including consultancy work or academic research and teaching.

### Certificates and diplomas

- **Diploma:** Nature Conservation
- **Advanced diploma:** Nature Conservation
- **National certificate:** Nature Conservation; Conservation Resource Guardianship; Conservation: Fisheries Resource Management; Conservation: Natural Resources Management
- **National diploma:** Nature Conservation
- **Postgraduate diploma:** Nature Conservation

## WHO WILL EMPLOY ME?

National and provincial conservation authorities (including CapeNature and SANParks) • Research organisations • Non-governmental organisations •

Conservation organisations • Catchment management agencies • Environmental consultancies • Academic and training institutions • Science councils (such as the CSIR) • Government departments (including the Department of Forestry, Fisheries and Environment) • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Culture, Arts, Tourism, Hospitality and Sport Sector Education and Training Authority \(CATHSSETA\)](#)
- [Southern African Institute for Ecologists and Environmental Scientists](#)
- [Southern African Society of Aquatic Scientists](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Wildlife and Environment Society of South Africa \(WESSA\)](#)







*An economist is an expert in the study of the production, distribution and application of resources.*



Economists specialise in economics, which they may combine with ecology, environmental sciences or agricultural sciences, to specialise as a natural resource or agricultural and environmental economists.

They study the ways societies use resources such as land, labour, raw material and machinery to produce goods and services.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Natural resource economists** help decision-makers understand market and other values associated with natural resource usage and management decisions. They assist in informed decision-making regarding the allocation of scarce resources and attribute value to natural resources



such as land, freshwater, grasslands and marine resources.

- **Environmental economists** study the economics of natural resources. They research the economics of environmental issues, such as renewable energy use, conduct cost-benefit analyses of industrial activities or proposed regulations involving natural resources, and advise the government and organisations on subjects relating to ecology.
- **Agricultural economists** apply management and economic principles to solve practical problems in the food and agricultural industry. They conduct research to ensure the sustainable and profitable supply of food and clothing across the various supply chains.



- **Financial economists** perform economic research and analysis. They develop and apply theories about production and distribution of goods and services and people's spending and financial behaviour.
- **Building economists** estimate and monitor construction cost from the feasibility stage, through tender preparation to the construction period and beyond.
- **Health economists** investigate how resources are used in health care, evaluate health care policies and tackle challenges in the sector.
- **Industrial economists** focus on the effect of factors such as government policy, international trade regulations and labour relations on business and consider social, political and other factors that affect the economy.
- **Business economists** research and collect information, evaluate business economic aspects, conduct research and advise companies and organisations.

## WHAT DO ECONOMISTS DO?

- Compile, analyse and interpret economic data
- Monitor economic trends and develop forecasts
- Analyse, develop and apply theories about production and distribution of goods and services
- Provide advice to governments and organisations on subjects related to the economy
- Forecast changes in the economic environment
- Formulate recommendations, policies and plans for the economy, corporate strategies and investment
- Conduct research on economic and environmental topics, such as land use and water pollution control
- Study the effects of government economic and monetary policies, expenditure, taxation, and other national budgetary controls
- Determine the value of the ecosystem services that nature provides and people benefit from, such as water purification and natural flood control



## RELATED CAREERS

- Agronomist
- Accountant\*
- Actuary
- Agricultural economist\*
- Political scientist
- Stockbroker
- Financial and investment manager
- Sociologist\*

## HOW TO BECOME AN ECONOMIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Broad interest in social and economic matters
- Enjoy detailed work
- Able to think clearly and logically
- Good literacy and numerical skills
- Have a methodical and inquiring mind
- Good verbal and written communication skills
- Be accurate and objective
- Mathematical ability and abstract reasoning skills
- Able to analyse and interpret information

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Politics, Philosophy and Economics
- **BSc:** Agricultural Economics
- **BAgric:** Agricultural Economics; Agribusiness Management; Agricultural Economic Analysis; Agricultural Economics and Agribusiness Management; Agricultural Economics with Food Science
- **BBusSc:** Economics with Law; Economics
- **BCom:** Applied Development Economics; Economics, Economics and Finance: Economics with Law; Economics and Econometrics;

Mathematical Statistics and Economics; Economic Sciences; Management Sciences; Accounting; Agribusiness Management; Risk Management

- **Bachelor of Economic Science:** Finance; Economics; Economics and Informatics; Business Science; Economics, Risk and Investment Management; Economics and International Trade; Economics and Risk Management; Commerce and Economic Sciences
- **BCom(Hons):** Economics; Econometrics

Postgraduate study is recommended to qualify for research, administrative and permanent teaching positions in universities and universities of technology.

### Certificates and diplomas

- Diploma: Economics
- Advanced diploma: Economics
- Postgraduate diploma: Applied Economics

## WHO WILL EMPLOY ME?

Universities and universities of technology • Government departments (including the Department of Agricultural, Land Reform and Rural Development) • Manufacturing firms • Agricultural organisations • Consultancy firms • Trade unions • Agribusinesses • Manufacturing or retail trade sectors • Research councils • Consulting firms • Banking and finance sector • Insurance companies • Health care companies • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [The Agricultural Economics Association of South Africa](#)
- [Finance and Accounting Services Sector Education and Training Authority \(FASSET\)](#)





## EDUCATION AND TRAINING PRACTITIONER

*An education and training practitioner plans, develops, implements and evaluates training and development programmes.*



Education and training are essential within organisations (to help, by means of in-service training programmes, to educate and train skilled people for the future and to improve service delivery) and in local communities (to raise awareness of water, for example, and the need to use it and look after it wisely).

A learning and development practitioner plans, writes learning objectives, selects and adapts learning resources required for the delivery of learning

interventions, and facilitates learning in an occupational context.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Human resources development practitioners** plan, develop, and provide employees with training to help with skills development and raise productivity (including on-the-job training and



apprenticeships). They assist line management with identifying and solving performance problems of individual employees, workgroups or organisational processes.

- **Adult educators** work mainly in professional development, adult basic education, skills development, and personal enrichment.

## WHAT DO EDUCATION AND TRAINING PRACTITIONERS DO?

- Plan, design, carry out and evaluate training and education programmes
- Assess training needs and develop training resources
- Assist with the upgrading of employees' skills and in communities
- Liaise with training providers to arrange delivery of specific training and development programmes
- Identify the education and training needs and requirements of people and organisations
- Handle training and development programmes for individual or group instruction and monitor workshops, meetings, demonstrations and conferences
- Monitor and assess training quality and effectiveness
- Advise management on the development and placement of staff, and give career counselling
- Evaluate the impact of learning and development interventions

## RELATED CAREERS

- Development officer
- Lecturer
- Community development worker
- Skills development practitioner
- Training analyst

## HOW DO I BECOME AN EDUCATION AND TRAINING PRACTITIONER?

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Good communication skills
- Empathy with learning clients
- Practical, adaptable and tactful
- Able to work well with people
- Willing to work as part of a team
- Intelligence and self-control
- Capable of organising, planning and motivating people





## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Human Sciences; Social Sciences
- **Bachelor:** Education; Commerce (Human Resources Management); Human Resources Development
- **BTech:** Human Resource Development; Adult Basic Education; Education; Training and Development

### Certificates and diplomas

- **Diploma:** Training and Development; Human Resource Management; Occupationally Directed Education Training and Development Practices
- **Advanced diploma:** Environmental Education
- **Postgraduate certificate:** Training and Development

## WHO WILL EMPLOY ME?

Medium and large organisations • Government departments • Industry • Education and training providers • Municipalities • Local authorities • Mining companies • Commerce

## WHERE CAN I FIND OUT MORE?

- [Council on Higher Education](#)
- [Council for Quality Assurance in General and Further Education and Training \(UMALUSI\)](#)
- [Department of Employment and Labour](#)
- [Education, Training and Development Practices Sector Education and Training Authority \(ETDP SETA\)](#)







## ELECTRICAL ENGINEER



*Electrical engineers research, design, install and test electrical and electronic equipment and supervise the manufacturing thereof. Their work involves generating and managing appliances and installations that generate or use electrical energy.*



The field of electrical engineering covers a broad range of activities involving the generation and use of electrical energy, including the planning and operation of large power-generating stations, computing and information transfer, and telecommunication systems.

**Electrical engineering technologists** and **electrical engineering technicians** are part of the electrical engineering team.

An electrical engineering technician conducts tests of electrical systems, prepares charts and tabulations, and helps estimate costs in support of electrical engineers and engineering technologists.

An electrical engineering technologist analyses and modifies new and existing electrical engineering technologies and applies them in the testing and implementation of electrical engineering projects.



Electrical engineering is often called “heavy current” engineering while electronic engineering is referred to as “light current” engineering.

The difference between electrical and electronic engineering lies in the generation and distribution of electricity (electrical engineering), as distinct from electronic engineering’s concern with the storage, retrieval, transfer and processing of information utilising computers, software, transmission networks, telephones, radio, television, signal processing and optics.

Electronic engineering is concerned with the discipline of electronic information handling. This includes aspects such as telecommunications, the design of computers and microcomputer systems, microwave engineering and electronic equipment manufacturing.

Electronic engineers design and use electronic equipment such as computers, telecommunications, robotics, medical (clinical) equipment, radar and missile guidance.

Electronic and computer engineers work in similar environments. Computer engineers focus on the applications of computer technology. Computer engineering is the design and prototyping of computing devices and systems, concentrating on the application of computing.

The fields of electronic and computer engineering include:

- **Artificial intelligence** – developing computers that simulate humans’ learning and reasoning ability
- **Computer architecture** – designing new computer instruction sets, and combining electronic or optical components to provide

powerful but cost-effective computing

- **Telecommunications** – satellite and telephone signal networks and technology
- **Electrical power generation and transmission** engineers work on hydroelectric power stations, coal power stations, solar cells, wind turbines and high-voltage transmission lines and substations.
- **Data engineering** contains all the tasks required to make data available for analysis, knowledge discovery and decision-making processes. The data engineer’s most important task is to develop and maintain an organisation’s data pipeline systems and implement algorithms to transform data into a usable format for analysis.

## WHAT DO ELECTRICAL ENGINEERS DO?

- Design, install, test and maintain electrical motors, generators, alternators, transformers, cables, lighting and electrical systems
- Generate, distribute and manage appliances and installations that generate or use electrical energy
- Research energy-efficient resource use
- Manage projects and supervise operating and maintenance staff
- Optimise existing processes and systems
- Design and produce drawings of electrical systems
- Calculate and specify the arrangements of circuits, transformers, circuit-breakers, and transmission lines
- Prepare and interpret specifications, drawings and regulations for using electric power equipment
- Responsible for the design, management and specification of an almost endless list of technologically advanced appliances, equipment and systems



## RELATED CAREERS

- Automotive technician
- Broadcasting and sound technician
- Chemical engineer\*
- Civil engineer\*
- Computer engineer
- Electrician\*
- Telecommunications electrician
- Mechanical engineer\*
- Network technician
- Systems technician
- Satellite communication technician
- Aeronautical engineering technician
- Radar technician
- Microwave engineering technician
- Television technician
- Systems analyst
- Antennas engineer
- Control and automation Engineer
- Power systems manager

## HOW TO BECOME AN ELECTRICAL ENGINEER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Skills for solving complex problems
- Ability to concentrate well and work accurately
- An interest in science
- Analytical skills
- Aptitude for mathematics
- Good communication skills
- Ability to react quickly to any unexpected developments or results





## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BEng:** Electrical Engineering; Electrical and Electronic; Engineering Science; Agricultural Engineering; Data Engineering; Electrical and Computer Engineering
- **BScEng:** Engineering and Environmental Geology; Engineering Science; Electrical and Computer Engineering; Electrical and Information Engineering; Mechatronics
- **BTech:** Engineering; Engineering Technology; Engineering: Electrical; Digital Technology; Power Engineering; Telecommunication Technology; High-Frequency Technology; Computer; Clinical; Electronics; Electromechanical; Process Instrumentation

### Certificates and diplomas

- **National diploma:** Electronic Engineering; Electrical Engineering; Engineering
- **Diploma:** Electrical Engineering
- **Advanced diploma:** Electrical Engineering in Telecommunications; Electronic Engineering
- **Postgraduate diploma:** Engineering
- **Advanced postgraduate diploma:** Engineering

### Professional development

The Engineering Council of South Africa ([ECSA](#)) registers professional engineers, technologists, technicians and certified engineers.

## WHO WILL EMPLOY ME?

Government departments • Mining industry • Municipalities • Educational institutions • Electrical equipment manufacturers • Eskom • Research councils (including the CSIR) • Municipalities • Engineering firms

and consultancies • Manufacturers of radios, televisions sets and electrical appliances • Telkom • MTN • Vodacom • Cell C • South African Broadcasting Corporation (SABC) • Government departments (including the Department of Communications and Digital Technologies) • Telecommunications industry • Defence industry • Electronic manufacturing industry • Computer companies • Software developers • Spoornet • Sasol • Steel and paper manufacturers • Processing industries • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Engineering Council of South Africa](#)
- [Electrical Engineering and Allied Industries Association](#)
- [Energy and Water Sector Education and Training Authority \(EWSETA\)](#)
- [Institution of Certificated Mechanical and Electrical Engineers South Africa](#)
- [Institute of Professional Engineering Technologists](#)
- [South African Institute of Electrical Engineers](#)







## ENVIRONMENTAL ENGINEER



*An environmental engineer is involved in managing and reducing waste and minimising pollution to protect, restore and preserve the planet.*



Environmental engineering is the field of engineering linked with civil engineering and infrastructure development and is concerned with environmental issues.

These engineers integrate environmental science and engineering principles to improve and manage the natural environment.

Environmental engineers apply their engineering knowledge and skills to such things as environmental impact assessment, natural resources management and pollution control.

Environmental engineers provide practical solutions to problems, most significantly in the planning, design, repair and construction of public infrastructure systems such as water and sewage treatment plants, landfills, stormwater and river control works.





Environmental engineering involves, among others, civil engineering\*, chemical engineering\*, and environmental sciences. As an environmental engineer, you can specialise in minerals, chemical industries or civil engineering projects.

**Environmental engineering technicians** test and implement engineering technologies relating to pollution control, recycling and waste disposal to remedy negative impacts of human activity on the environment.

## WHAT DO ENVIRONMENTAL ENGINEERS DO?

- Design, plan and implement measures to prevent, control or remediate environmental hazards
- Incorporate innovations or develop technologies to enhance environmental protection
- Make sure that business and industry comply with environmental regulations
- Develop safe methods to dispose of waste
- Design clean-up programmes (including for oil spills or toxic chemical leaks)
- Conduct research, assess and report on the environmental impact of construction, civil engineering and other activities
- Design and oversee the development of systems, processes and equipment for control, management, or remediation of water, air or soil quality
- Provide engineering and technical support for environmental remediation and litigation projects

## RELATED CAREERS

- Geotechnical engineer
- Environmental scientist\*
- Chemical engineer\*
- Civil engineer\*



- Sustainability consultant
- Air pollution control engineer

## HOW TO BECOME AN ENVIRONMENTAL ENGINEER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Be able to work both independently and in teams
- Good mathematical and technical skills
- Good verbal and written communication skills
- Interest in conservation and environmental issues
- Practical and creative approach and skills
- Be able to work under pressure
- Be technically inquisitive, with imaginative problem-solving skills
- Confident to ask questions and challenge the norm

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Engineering
- **BScEng:** Civil Engineering; Chemical Engineering
- **Bachelor of Civil Engineering:** Engineering
- **BTech Engineering:** Civil; Civil Engineering; Water Care
- **BEng(Hons):** Environmental Engineering
- **Meng:** Environmental Engineering
- **MSc:** Environmental Management

#### Certificates and diplomas

- **Advanced diploma:** Environmental Management; Chemical Engineering
- **Postgraduate diploma:** Integrated Water Management; Environmental Management

## WHO WILL EMPLOY ME?

Government departments • South African National Energy Council • Eskom • Water processing and effluent treatment industries • Mining companies • Sasol • Municipalities • Water authorities • Food and beverage companies • Textile, fertiliser, explosives, coal and gas and metallurgical industries • Pharmaceutical companies • Nuclear Energy Corporation of South Africa • Paper and pulp manufacturers • Universities and research institutions • Petroleum refineries • Synthetic fuel manufactures • CSIR • Biochemicals producers • Large construction and mining organisations • Forestry companies • Waste management companies • Consulting engineering and architectural firms • Steel and energy producers • Chemical and petrochemical industries • Environmental consultancies • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Energy and Water Sector Education and Training Authority \(EWSETA\)](#)
- [Engineering Council of South Africa](#)
- [Institute of Professional Engineering Technologists](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [The South African Institution of Civil Engineering](#)





*Environmental health practitioners use their scientific and technical ability to ensure people can live, work and play in safe, healthy environments.*



These practitioners deal with elements of safety, health and the sustainability of various environments. These include, among others, industrial and household developments, waste management, water services, food and transport safety, tourism and leisure, and pollution control.

In this career, you develop, regulate, enforce and monitor laws and regulations that deal with public

health, building and environment management. This is done to promote good health, hygiene and safety. You may work in many areas of the industry, or choose to specialise in one particular area, such as environmental protection, food safety and food standards, occupational health and safety, pollution control, public health and waste management.



## WHAT DO ENVIRONMENTAL HEALTH PRACTITIONERS DO?

- Develop, enforce and evaluate environmental health policies, programmes and strategies
- Assess industrial, commercial and residential sites for their environmental impact
- Prepare strategies for the safe disposal of commercial, industrial, medical and household waste
- Develop, implement and monitor programmes to minimise workplace and environmental pollution
- Investigate health-related complaints and inspect facilities (such as restaurants)
- Carry out food hygiene and food standards inspections



- Inspect sanitation and drinking water in rural areas to prevent the spread of diseases (including cholera and typhoid)
- Investigate accidents at work and complaints about poor standards of health and safety, identifying any areas of negligence
- Monitor pollution, and collect and test samples of water, food and other products
- Advise on planning and licensing applications
- Monitor levels of noise, air, land and water pollution

## RELATED CAREERS

- Environmental manager
- Air pollution control engineer
- Chemical engineer\*
- Civil engineer\*
- Geotechnical engineer
- Environmental scientist\*
- Sustainability consultant
- Environmental protection and control officer
- Health surveyor
- Environmental inspector
- Health and safety officer
- Health advisor
- Occupational health and safety officer
- Researcher\*

## HOW TO BECOME AN ENVIRONMENTAL HEALTH PRACTITIONER

You will need the following:

## SKILLS AND PERSONAL QUALITIES

- Interest in science and environmental issues
- Analytical and problem-solving skills
- Good verbal and written communication skills
- Confident to ask questions and challenge the norm
- Ethical and honest
- The ability to work independently and as a member of a team
- A methodical, careful approach to gathering facts



and assessing evidence

- The ability to work to tight deadlines and under pressure
- Good time-management and organisational skills
- A flexible approach to work

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Environmental Health; Environmental Management; Environmental Science and Society; Environmental Studies
- **BSc:** Environmental Science; Geography and Environmental Management; Environmental; Community Water Services and Sanitation; Water Resource Management; Applied Environmental Sciences; Life and Environmental Sciences; Ocean and Atmospheric Science
- **Bachelor's** in Environmental Health; Environmental Technology; Environmental Sciences: Geography; Environmental Education, Training and Development Practice
- **BScEng:** Civil Engineering; Chemical; Chemical Engineering; Chemical: Mineral Processing
- **BEng:** Civil Engineering; Chemical Engineering
- **Bachelor** of Civil Engineering; Engineering; Engineering Technology
- **BTech Engineering:** Civil; Civil Engineering; Water Care; Environmental Health; Environmental Management; Environmental Engineering
- **Graduate diploma:** Engineering
- **BEng(Hons):** Environmental Engineering
- **BA(Hons):** Geography: Environmental Studies
- **MEng:** Environmental Engineering
- **MSc:** Environmental Management

### Certificates and diplomas

- **Diploma:** Environmental Management
- **National diploma:** Environmental Health; Chemical Engineering; Water Care; Water and Waste
- **National certificate:** Wastewater Process Control; Water and Wastewater Treatment Practice; Water Care; Community Water, Health and Sanitation Monitoring; Water Purification Process Operations
- **Advanced diploma:** Environmental Management
- **Postgraduate diploma:** Environmental Management; Integrated Water Management

## WHO WILL EMPLOY ME?

Government departments (including the Department of Health and the Department of Forestry, Fisheries and Environment) • Eskom • Food and manufacturing sector • Water processing and effluent treatment companies • Municipalities • Water authorities • Pharmaceutical companies • Paper and pulp manufacturers • Universities and research organisations • Research councils • Waste management companies • Factories • Hotel groups • Mining companies • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Council for Geoscience](#)
- [Energy and Water Sector Education and Training Authority \(EWSETA\)](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Health Professions Council of South Africa](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [Society of South African Geographers](#)
- [The South African Council for Natural Scientific Professions](#)
- [The South African Institution of Civil Engineering](#)





## ENVIRONMENTAL PROTECTION AND CONTROL OFFICER

*An environmental protection and control officer ensures that sound management practices are in place to support plant and animal life on land and in water.*



If you become an environmental protection officer, you will look after the environment by monitoring the quality of effluents being discharged from individual plants, processes or larger industrial sites.

### **Environmental technologists and technicians**

work with other environmental professionals such as scientists and engineers to control and prevent pollution.

Officers, technologists and technicians may be concerned with pollution in streams and rivers near industrial sites, for instance, or problems with managing hazardous waste. They may also be involved in developing new technology to reduce such problems.

Depending on your field of expertise, you might need to know how to deal with dangerous chemicals or polluted air, soil and water.



## WHAT DO ENVIRONMENTAL PROTECTION AND CONTROL OFFICERS DO?

- Collect and analyse samples to determine the extent of pollution in the water, soil or air of a particular area
- Communicate with polluters to make sure that they comply with acceptable standards and with the terms of their licences
- Operate and maintain field and laboratory equipment
- Use computers to prepare spreadsheets and graphs
- Analyse results and write reports
- Make recommendations to improve site management

## RELATED CAREERS

- Chemical engineer\*
- Sustainability consultant
- Environmental lawyer
- Environmental health officer\*
- Waste management officer
- Hazardous waste technician
- Ecologist\*
- Soil scientist\*
- Environmental scientist\*
- Fisheries control officer

## HOW TO BECOME AN ENVIRONMENTAL PROTECTION AND CONTROL OFFICER

You will need the following:





## SKILLS AND PERSONAL QUALITIES

- Interest in conservation and environmental issues
- Able to identify, analyse and solve problems
- Able to work both independently and in teams
- Good judgement
- Be good at collecting, analysing and manipulating scientific data
- Strong at report writing and interpreting reports written by other people
- A good communicator, for discussing problems with other professionals

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Science; Environment Management; Environmental Sciences; Geography and Environmental Management; Life and Environmental Sciences
- **Bachelor of Environmental Health;** Health Sciences
- **BScEng:** Civil Engineering; Chemical Engineering; Chemical: Mineral Processing
- **BEng(Hons):** Environmental Engineering
- **BA(Hons):** Environmental Management
- **Masters of Public Health**
- **MEng:** Environmental Engineering
- **MSc:** Environmental Management; Air Quality Management; Integrated Water Management
- **BTech:** Environmental Health; Environmental Management; Environmental Sciences; Engineering: Civil; Civil Engineering

See environmental health practitioner\*.

### Certificates and diplomas

- **National certificate:** Health and Sanitation

Monitoring; infrastructure Management; Community Water, Health and Sanitation Promotion

- **Certificate:** Water and Wastewater Treatment; Water and Wastewater Reticulation Services
- **National diploma:** Environmental Health; Water and Waste Treatment
- **Diploma:** Environmental Management; Public Accountability
- **Advanced diploma:** Environmental Management; Environmental Sciences
- **Postgraduate diploma:** Environmental Management; Integrated Water Management; Water Management

## WHO WILL EMPLOY ME?

Government departments (including the Department of Water and Sanitation) • Water authorities • Eskom • Food and manufacturing sector • Large industries • Engineering firms • Research laboratories • Water treatment and waste management companies • Municipalities • Paper and pulp manufacturers • Universities and research institutions • CSIR • Environmental consultants • Non-governmental organisations • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Energy and Water Sector Education and Training Authority \(EWSETA\)](#)
- [Health and Welfare Sectoral Education and Training Authority ETA \(HWSETA\)](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [The South African Council for Natural Scientific Professions](#)
- [The South African Institution of Civil Engineering](#)





## ENVIRONMENTAL SCIENTIST



*An environmental scientist observes, records and interprets features of the environment.*



Environmental science is a holistic and multidisciplinary field that integrates the biological, physical and earth sciences.

Environmental scientists are problem solvers. They find ways to control or minimise the harmful effects of human activity on the environment.

These scientists research environmental and health problems to determine their causes and come up with solutions.


Some environmental scientists and specialists focus on environmental issues, while others focus on human health issues.

### SOME AREAS OF SPECIALISATION IN THIS FIELD




**Environmental control officers\*** ensure that sound management practices are in place to support plant and animal life on land and in water.






**Ecologists\***, water research officers and conservation officers conserve aquatic ecosystems and biodiversity; assess the health of rivers and wetlands; conduct tests on water, and use aquatic plants, invertebrates, and fish as indicators of conditions in the water.



**Conservation biologists\*** and zoologists\* explore solutions to many of the world's environmental problems.



**Environment planners** are responsible for developing land use plans while balancing considerations such as social, economic and environmental issues.

## WHAT DO ENVIRONMENTAL SCIENTISTS DO?

- Research the physical and biological nature of the environment
- Study and assess production processes, environment laws, and physical, biological, and social conditions, and how they affect the environment
- Research matters of immediate and long-term importance to governments and communities, including the impact of alien species and ways on rivers and wetlands
- Help to develop policies, strategies, and codes of practice in environment management
- Study animal and plant life in terms of origin, structure, function and development
- Study, predict, and learn to manage the effects of humans and other influences on natural ecosystems
- Conduct research projects and prepare related reports

## RELATED CAREERS

- Botanist\*
- Environmental engineer\*
- Environmental technologist
- Geologist\*
- Hydrographer
- Natural resource manager
- Marine biologist
- Environmental manager
- Chemical engineer\*
- Zoologist\*
- Sustainability consultant
- Environmental health practitioner
- Climatologist\*
- Ecologist\*
- Soil scientist\*
- Water resources manager

## HOW TO BECOME AN ENVIRONMENTAL SCIENTIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Keen interest in the natural environment
- Scientific aptitude
- Good observation skills
- Problem-solving and creative thinking skills
- Flexibility to work in all kinds of environments
- Good verbal and written communication skills
- Able to identify, analyse and solve problems
- The ability to work independently and as a member of a team
- Have a conservationist attitude

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Environmental Studies; Biodiversity; Biological Sciences; Ecology and Conservation; Environmental and Water Science; Biological Sciences; Oceanography; Biological Sciences;



Biochemistry; Life Sciences; Geography and Environmental Management; Agricultural Science; Plant Pathology; Microbiology; Molecular and Cellular Biology; Microbiology; Genetics and Developmental Biology; Environmental Science; Life and Environmental Science; Biochemistry and Cell Biology; Biodiversity and Conservation Biology; Marine Biology; Geography and Environmental Management; Environmental Management

- **Bachelor:** Hydrology and Water Resource Management; Environmental Health
- **BScAgric:** Applied Plant and Soil Science
- **BA:** Environmental Planning and Development; Development Studies; Development and Environment; Geography; Environment Studies; Environmental Health; Environmental Management; Environmental Science and Society; Environmental Studies
- **BSc(Hons):** Limnology and Ecology; Zoology; Aquatic Health; Biodiversity and Conservation
- **MSc:** Environmental Management; Water Resources Science; Hydrology; Environmental Sciences

Master's degrees may be required for advancement in this field. Environmental scientists aspiring to academic careers will need a Doctoral degree.

## CERTIFICATES AND DIPLOMAS

- **Certificate:** Geographical Science
- **Diploma:** Geographical Science; Environmental Management; Marine Sciences; Hydrology and Water Resources Management
- **National diploma:** Environmental Health
- **Advanced diploma:** Environmental Management
- **Postgraduate diploma:** Geographical Science; Environmental Management; Integrated Water Management

## GRADUATE DEVELOPMENT PROGRAMMES

Specialist and short courses are offered at some higher education institutions.

## WHO WILL EMPLOY ME?

Research institutions (including the South African National Biodiversity Institute) • Conservation authorities • Science councils • Universities and research institutions • Some government departments (including the Department of Forestry, Fisheries and Environment and the Department of Water and Sanitation) • Water authorities • Municipalities • SANParks • Consulting firms • Environmental organisations (including WWF-SA) • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Council for Scientific and Industrial Research](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Local Government, Water, and Related Services Sector Education and Training Authority \(LGWSETA\)](#)
- [Society of South African Geographers](#)
- [Southern African Society of Aquatic Scientists](#)
- [The South African Council for Natural Scientific Professions](#)
- [Zoological Society of Southern Africa](#)





## FITTER AND TURNER



*Fitters and turners are highly skilled craftsman who manufacture, construct, assemble and fit components for machinery, vehicles, installations and other apparatus or articles.*



Fitters and turners first select and mark the material required according to exact measurements on blueprints, drawings, or models. They then shape the material into its final form with power-operated tools such as lathes, milling and drilling machines. Finally, they fit the parts required to complete the machine or article and inspect and test the final assembly for a true fit.

### WHAT DO FITTER AND TURNERS DO?

- Read and interpret blueprints, drawings and models
- Use power tools to shape metal
- Fit machine parts
- Inspect, test, repair, and maintain components and machinery
- Construct and maintain waste and wastewater treatment works



- Operate and monitor metalworking machines
- Perform similar tasks when machining plastics and other metal substitutes
- Observe machine operations to detect workpiece defects or machine malfunctions, adjusting machines as necessary
- Inspect workpieces for defects
- Measure workpieces to determine the accuracy of machine operation
- Change machine accessories

## RELATED CAREERS

- Boilermaker\*
- Sheet metal worker
- Aircraft engine mechanic
- Airframe fitter

## HOW TO BECOME A FITTER AND TURNER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Be meticulously accurate
- Enjoy working with your hands
- Practical and responsible
- Mathematical aptitude
- Able to concentrate in noisy working conditions
- Able to read three-dimensional drawings

### QUALIFICATIONS AND TRAINING

These include:

### Certificates and diplomas

**Certificate:** Fitter and Turner

**National certificate:** Mechanical Engineering: Fitting

### Learnerships

- Practical training at an accredited training centre
- In-service apprenticeship training supervised by a qualified tradesman
- Compulsory trade test needed to qualify as an artisan

Many institutions and large companies offer learnerships for fitters and turners, including Sasol. [Visit Sasol's website for information.](#) To become a fitter and turner, you need to be at least 16 years old and have a Grade 9 certificate.

## WHO WILL EMPLOY ME?

Water utilities • Large engineering works or industrial plants • Factories • Iron and steel plants • Shipyards • Transnet • Mining companies • Garages • Government departments • Municipalities • Contractors engaged in manufacturing, construction or maintenance and repair • Aircraft manufacturers

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Manufacturing, Engineering and Related Service Education and Training Authority \(MerSETA\)](#)
- [Steel and Engineering Industries Federation \(SEIFSA\)](#)





## GEOGRAPHER

*A geographer studies the relationships between human activities and the natural and built environment.*



Geography includes the study of environmental change, policy, systems, information systems and remote sensing.

Geographers relate the Earth's physical characteristics to the distribution and habits of people. They study the world's physical features, such as its landforms, bodies of water, climates, soils, and plants as well as people, their distribution, habitation and migration patterns and interactions.

Geographers typically gather data from field observations, maps, satellite and air photos, laser scans, and censuses. They then use technologies like geographic information systems (GIS) to map and understand the data. For example, a geographer might overlay data on slopes, rainfall, wind speed, locations of energy grids and other buildings to find an optimal location for a new wind farm.



## SOME AREAS OF SPECIALISATION IN THIS FIELD

Graduates could also be employed as environmental consultants, air quality managers, public health educators, researchers, water quality specialists, natural resource managers, risk managers, wetlands scientists, programme and project managers, natural resources experts and researchers.

## WHAT DO GEOGRAPHERS DO?

- Observe, measure, and collect data and compile or edit maps, charts, and atlases of land surface features, soils, populations, land use, climate, vegetation, and animals
- Analyse and interpret statistical information and satellite imagery to assess and map natural resources, land use, and human activities
- Use remote sensing equipment and computers to generate maps
- Create and modify maps, graphs, diagrams, or other visual representations of geographic data
- Combine geographic data with data from other disciplines such as economics, health and politics
- Write reports and present scientific findings
- Advise on aspects such as land usage and city planning
- Help plan human settlement and the built environment
- Acts as a consultant to governments and organisations on resource management, urban and rural land use, regional economic development, tourism, boundaries, and the environment

## RELATED CAREERS

- Anthropologist
- Climatologists\*
- Cartographer\*
- Ecologist\*

- Environmental scientist\*
- Geoinformatics specialist
- Geologist\*
- Geophysicist
- Hydrographic surveyor
- Hydrologist\*
- Global information system (GIS) and remote sensing practitioner
- Meteorologist\*
- Professional surveyor
- Political scientist\*
- Rural development practitioner
- Sociologist\*
- Town and regional planner\*

## HOW TO BECOME A GEOGRAPHER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Scientific ability and technical understanding
- Good communications skills, both written and verbal
- Flexible and adaptable nature
- Analytical thinker
- Creativity
- Interest in natural and social science and geography
- Being able to pay attention to detail
- Design skills and knowledge
- The ability to work well with others

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Geography and Environmental Studies; Development and the Environment; Geography; Geo-Informatics/Geographic Information Science
- **BSc:** Geography and Environmental Science; Geosciences; Geoinformatics; Geographical Sciences; Geography; Geography and





Environmental Management; Geomatics; Geography and Archaeological Sciences; Geospatial Science; Earth Sciences

- **BSocSc:** Geography and Environmental Management
- **BA(Hons):** Geography: Environmental Studies
- **BSc(Hons):** Geoinformatics; Geography and Environmental Sciences
- **BSocSci(Hons):** Geographical Sciences

To become a practising geographer, you will need advanced postgraduate study.

## WHO WILL EMPLOY ME?

Government departments (including the Department of Forestry, Fisheries and Environment) • Municipalities • Environmental consultants • Parks boards • Universities and research institutions • South African Bureau for Standards (SABS) • Research institutions • Conservation authorities • Science councils • South African Defence Force • Consulting firms • Real estate and property developers • Planning, architecture and engineering firms • Tourism authorities • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [National Geo-spatial Information](#)
- [Society of South African Geographers](#)





## GEOLOGIST



*A geologist is a scientist who studies the history and structure of the Earth and the processes which shape it.*



Geologists are interested in the changes that the planet has undergone and how its physical, chemical and biological systems have interacted during its history. They study rocks, soil, fossils and features on the earth's surface and underneath it.

They investigate the composition, structure and other physical attributes of the earth to increase scientific knowledge and develop practical applications in fields such as mineral exploration, civil engineering and environmental protection.

Some geologists study the earth's processes such as earthquakes, landslides and volcanoes and their impact. They may supervise and coordinate well drilling as well as mining activities.

Geological research helps locate mineral deposits, predict earthquakes, and advise on the suitability of sites for buildings, dams, and highways.

The broad areas of specialisation in geology include earth material, earth processes and earth history.



## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Engineering geologists** use technical analysis of soil, rock, groundwater and other natural conditions and the risk assessment of geological hazards to determine the suitability of sites for construction development.
- **Geochemists** use physical and inorganic chemistry to investigate the amount and distribution of chemical elements in rocks and minerals.
- **Geotechnical engineers** support design and construction by carrying out testing and analysis to assess risks to humans and the environment. They also evaluate the soil and rock and determine the feasibility of construction or engineering plans.
- **Mining geologists** study the relationship between geology and ore formation and locate new mineral resources. They are mainly responsible for assessing and analysing geological data.
- **Hydrogeologists** investigate how water interacts with the natural environment of rocks and soils.
- **Structural geologists** consider changes of the surface and below that reflect past changes in local and regional stress and strain and reconstruct past crustal movements and dynamics.
- **Marine geologists** consider the history and the processes of the ocean floor.
- **Palaeontologists** study all fossilised past life to uncover and understand what the earth was like in the past.
- **Economic geologists** study fossil fuels, metals and other materials. They evaluate the costs and benefits of mining natural resources in terms of their recovery value and availability.
- **Environmental geologists** analyse the interaction between human activities and the geological environment, such as soil and groundwater pollution. They also research sediments deposited in river valleys, on beaches and in the oceans. This

is done to collect information on climatic changes, erosion of coastlines and the influence of human activities on the environment.

- **Engineering geologists** study the deposit of economic minerals and processes leading to their formation. They also undertake technical and scientific analysis of rock, soil, groundwater and other conditions to determine the likely impact of major construction developments on sites.
- **Exploration geologists** are involved in the search for rock and mineral deposits of economic value.
- **Mining geologists** are exploration geologists are involved in the search for oil and natural gas.
- **Petroleum geologists** prospect for fossil fuels using all the tools at their disposal.
- **Geological engineers** study the properties of rocks and soil to ensure that dams, road, tunnels and buildings are built at the most suitable sites and in the most cost-effective way.
- **Geohydrologists** investigate the water-storing capacity of geological formations and the flow of groundwater in these formations.

## WHAT DO GEOLOGISTS DO?

- Analyse the age, nature and components of rock, minerals, soil and other environmental samples
- Locate and determine the nature and extent of oil, gas and mineral deposits
- Estimate the weight, size and mass of the earth and composition and structure of its interior
- Study the nature, activity and predictability of volcanoes
- Investigate and measure seismic, gravitational, electrical, thermal and magnetic forces affecting the planet
- Plan detailed field investigations by drilling and analysing samples of deposits and bedrock
- Apply knowledge of fundamental geology to develop an understanding of how rock types



and structure in an area impact on groundwater occurrence and movement

- Use computers to model groundwater flow, chemistry and temperature according to geological formations, surface water flow and human-made influence
- Undertake fieldwork and site visits for investigative and monitoring purposes
- Design and commission boreholes, and sample and measure groundwater and surface water
- Undertake environment impact assessments of groundwater abstraction and management activities
- Analyse collected information, to assess and predict the impact of activities such as landfills, construction developments and mining or agriculture, on groundwater quality and resource availability

## RELATED CAREERS

- Geographer\*
- Geophysicist
- Environmental manager
- Rural development practitioner
- GIS and remote sensing practitioner
- Surveyor
- Ecologist\*
- Environmental scientist\*
- Hydrologist\*
- Sociologist\*
- Hydrographic surveyor
- Anthropologist
- Agriculturalist\*
- Town and regional planner\*
- Cartographer\*
- Geoinformatics specialist

## HOW TO BECOME A GEOLOGIST

You will need the following:





## SKILLS AND PERSONAL QUALITIES

- Be curious and imaginative
- Observant, responsible and objective
- Good communications skills, both written and verbal
- Flexible and adaptable nature
- Analytical and problem-solving skills
- Interest in science and geology in particular
- Being able to pay attention to detail
- Think laterally in the application of basic principles of science
- An organised and flexible approach to work
- The ability to work to deadlines and under pressure



## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Geology; Geological Sciences; Geosciences (Geography and Geology); Earth Sciences; Engineering and Environmental Geology; Geology and Applied Geology; Applied Geology
- **BTech:** Geology
- **BScHons:** Geochemistry; Geology; Geophysics; Palaeontology; Geology; Engineering and Environmental Geology; Hydrogeology

Postgraduate study is essential for a career in some geology fields.

### Certificates and diplomas

- **Diploma:** Geology
- **National diploma:** Geology
- **Advanced diploma:** Geology
- **Postgraduate diploma:** Geology

## WHO WOULD EMPLOY ME?

Mining and petroleum companies • Science councils (including the Council for Geoscience) • Universities and research institutions • Investment companies • Consulting geology, geophysics, engineering firms • Government departments (including the Department of Water and Sanitation and the Department of Mineral Resources and Energy) • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Council for Geoscience](#)
- [Geological Society of South Africa](#)
- [Organisation for African Geological Surveys](#)





*A geophysicist studies the physical aspects of the Earth using a range of methods, including gravity, magnetic, electrical and seismic measurements.*



Geophysicists explore our planet – from its hot core to its crust and oceans, atmosphere and beyond. They examine the behaviour of the planet's deep interior and understanding how the earth and other planets were formed and changed over their lifetime.

These scientists use physics, mathematics, and chemistry to understand and explain the physical features of the planet's surface and its interior, as well as its atmosphere and hydrosphere.

They analyse data to compute the Earth's shape, estimate the composition and structure of its interior, determine flow patterns of ocean tides and currents, and help locate petroleum and mineral deposits. They also investigate the origin and activity of volcanoes, glaciers and earthquakes.

Geophysical observations are fundamental to our understanding of the earth and how it works for and against us. Geophysics is also fundamental to the needs of society. It is essential for exploration for energy, water,



and mineral resources, monitoring environmental impact and change and assessing natural and human-made hazards. Geophysics is also used in subsurface investigations for engineering and archaeology, and in forensic science, such as nuclear test ban treaty verification.

Geophysics has a significant impact on the welfare of society and our world. Exploration geophysics has helped us find the energy sources that have driven many social and economic advances over the last century.

Now, these techniques are increasingly being used to safeguard our natural environment. For example, gravity surveys can tell us about mass losses from the ice sheets of Antarctica, as well as changes in the water table in regions reliant on groundwater. Seismology has also helped us to identify areas at risk from earthquakes and tsunamis to save lives.

Geophysicists play a vital role in the oil and gas industries by creating a picture of what lies below the earth's surface. Geophysicists examine the physical properties of rocks, as well as gather and evaluate well data to build reservoir models.

While many of these scientists work for oil and gas companies, there are opportunities in construction, mining, water companies and environmental agencies. Some geophysicists may be involved in providing environmental consultancy by investigating landfill sites using geophysical techniques. They may also work within a research institute to investigate seismological structures.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Environmental geophysics** identify, map or predict the presence and potential movement

of surface water and groundwater and identify contaminants in the soil.

- **Borehole geophysics** record and analyse measurements of physical properties made in wells or test holes.
- **Seismologists** are geophysicists who specialise in earthquakes and the origins and transmission of seismic waves within the earth. They use the basic physical principles of planets to investigate subsurface conditions of the earth, often to address environmental and engineering problems.
- **Engineering geophysicists** conduct spatial studies of the earth's surface and subsurfaces.
- **Exploration geophysics** use physical methods, such as seismic, gravitational, magnetic, electrical and electromagnetic at the surface of the earth to measure the physical properties of the subsurface, along with the anomalies in those properties.

## WHAT DO GEOPHYSICISTS DO?

- Compute the Earth's shape and composition and the structure of its interior
- Study winds, tides, glaciers, earthquakes, volcanoes and their effects
- Analyse the flow patterns of ocean tides and currents
- Examine and measure seismic, gravitational, electrical, thermal, and magnetic forces
- Help to locate petroleum and mineral deposits
- Develop mathematical models to help interpret geophysical survey results
- Interpret and map seismic data
- Measure reservoir volumes
- Assess potential oil and gas yield
- Design, test and modify seismic equipment
- Provide a range of geophysical support and technical advice
- Map environmental pollution above and below ground



- Measure rock and soil properties before civil engineering work starts

## RELATED CAREERS

- Geologist\*
- Hydrologist\*
- Environmental consultant
- Minerals surveyor
- Seismologist\*
- Meteorologist\*

## HOW TO BECOME A GEOPHYSICIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Good communications skills, both written and verbal
- Able to work independently and in teams
- Analytical thinking skills
- Interest in science and geology in particular
- The ability to interpret complex systems
- Analytical and problem-solving skills
- Flexibility and adaptability
- Attention to detail
- The ability to work to deadlines and under pressure
- Curiosity about how our planet works
- A love of the outdoors
- An aptitude for physics and maths

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Development and the Environment; Geography
- **BSc:** Geological Sciences; Earth Sciences; Geology; Geology and Geography; Geology and Physics;

Physical Sciences; Geoinformatics; Geography and Environmental Science

- **Bachelor of Geography;** Life and Environmental Sciences
- **BSc(Hons):** Biophysics; Geography; Geoinformatics; Geographical Information Systems; Geography and Environmental Studies

## WHO WILL EMPLOY ME?

Mining, exploration, and petroleum companies • Civil engineering firms • Government departments (including the Department of Water and Sanitation) • Chamber of Mines • Universities and research institutes • Science councils (including the Council for Geosciences) • Consulting and engineering companies • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Council for Geoscience](#)
- [Geological Society of South Africa](#)





## GEOTECHNICIAN

*A geotechnician works with geoscientists to collect and analyse data from soil, rocks and water.*



Geotechnicians are civil engineering scientists who study the earth's crust to help locate and extract natural resources (such as water, minerals and metals) and determine conditions below the surface.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Exploration geology:** These geotechnicians research and explore natural resources. They look for precious and semi-precious stones, basic metal, fossil fuels, building material or underground water supplies.
- **Geophysics:** The main aspect of this field is to evaluate the bedrock of large construction or civil construction sites so that the required re-enforcing can be done.
- **Mining:** Geotechnicians working in this field collect information on rock surfaces and soil samples, which will help to locate precious metals, ores or



even predicting hazardous conditions.

- **Geohydrology:** This is the science of finding new water resources. It also involves finding suitable waste-disposal sites and evaluating pollution in underground water supplies.
- **Engineering geology:** Geotechnicians in this field work on large civil construction projects. This field may also find geotechnicians locating building materials which can be used on site.

## WHAT DO GEOTECHNICIANS DO?

- Investigate the geology of the Earth's subsurface so that large construction projects (such as dams, tunnels and bridges) can be built safely, on firm foundations (engineering geology)
- Use sophisticated instruments to find water and mineral resources underground and study conditions below the surface (geophysics and exploration geotechnology)
- Locate and establish the quality of underground water resources (geohydrology)
- Analyse rocks, soil and water
- Locate ores and minerals, and investigate underground conditions regularly to make sure that they are safe for mining (mining geotechnology)
- Find building material (such as rocks, granite, marble and limestone) for building projects
- Drill, take soil samples and collect rock samples
- Take measurements, make calculations and write detailed notes

## RELATED CAREERS

- |                                   |                           |
|-----------------------------------|---------------------------|
| • Geophysicist*                   | • Environmental engineer* |
| • Geologist*                      | • Cartographer*           |
| • Civil engineering technologist* | • Ecologist*              |
| • Surveyor*                       | • Geochemist              |
|                                   | • Geographer*             |

- |                  |                   |
|------------------|-------------------|
| • Geohydrologist | • Oceanographer*  |
| • Metallurgist   | • Palaeontologist |
| • Mineralogist   |                   |

## HOW TO BECOME A GEOTECHNICIAN

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Strong scientific ability and technical understanding
- Aptitude for mathematics and physical science
- Good communications skills, both written and verbal
- Analytical thinking skills
- Interest in science and geology in particular
- Being able to pay attention to detail
- The ability to work well with others
- The ability to interpret complex systems

### QUALIFICATIONS AND TRAINING

See also geophysicist above.

These include:

#### Degrees

- **BSc:** Geological Sciences; Earth Sciences; Geology; Geology and Geography; Geology and Physics; Physical Science; Applied Earth Sciences; Applied Geology; Engineering and Environmental Geology
- **BSc(Eng):** Environmental Engineering
- **BTech:** Geology; Exploration and Mining Geology
- **BTech(Eng)**
- **BEarth Sciences (Hons):** Mining and Environmental Geology



### Certificates and diplomas

- **National diploma:** Geology; Economic Geology
- **Diploma:** Geology
- **Advanced diploma:** Geology
- **Postgraduate diploma:** Applied Geology

Students considering a career in geotechnology may consider starting with a National Diploma course in civil engineering and then specialise in a particular field. Further studies, including a BTech or MTech degree, is recommended.

### WHO WILL EMPLOY ME?

Mining companies • Government departments (including the Department of Water and Sanitation) • Civil engineering companies • Universities and research institutions • Self-employment (as a consultant)

### WHERE CAN I FIND OUT MORE?

- [Council for Geoscience](#)
- [Geological Society of South Africa](#)
- [Local Government, Water and Related Services Sector Education and Training Authority \(LGWSETA\)](#)
- [South African Association of Geotechnology](#)







## GEOTECHNICAL ENGINEER



*A geotechnical engineer applies the sciences of soil mechanics and rock mechanics, engineering geology and other related disciplines to civil engineering construction, the extractive industries and the preservation and enhancement of the environment.*



This type of engineering includes specialist fields such as soil and rock mechanics, geophysics, hydrogeology and associated disciplines such as geology.

The use of natural soil and rock makes geotechnical engineering different from many other branches of engineering where most engineers specify the materials they use. Geotechnical engineers must use the material existing in the ground and in general, cannot control its properties.

Geotechnical engineers plan and design the structures for buildings, roads, embankments, canals and hundreds of other construction projects. Beyond their construction role, the geotechnical engineer will also deal with geological hazards like landslides, soil erosion and, in some extreme conditions, including earthquakes.

These engineers determine the physical, mechanical and chemical properties of soil and rock to design



foundations, retaining structures and earthworks.

Geotechnical engineering is linked to and overlaps with both engineering geology and ground engineering. It is possible to specialise in geotechnics or work for a geotechnical company but be known as an engineering geologist or a ground engineer.

Geotechnical engineering plays a key role in all civil engineering projects since all construction is built on or in the ground. It also forms an integral part of extractive industries, such as open cast and underground mining and hydrocarbon extraction. It is essential in evaluating natural hazards such as earthquakes and landslides.

For a career in geotechnical engineering, you will need an in-depth knowledge of soil and rock, combined with an investigative problem-solving approach, for working on diverse infrastructure projects.

Working as a geotechnical engineer, you will support design and construction by carrying out testing and analysis to assess risks to humans and the environment. Risk can arise from natural hazards such as landslides, sinkholes, rock falls and earthquakes.

## WHAT DO GEOTECHNICAL ENGINEERS DO?

- Study and apply engineering geology and geomechanics (rock mechanics and soil mechanics)
- Investigate risks or geological hazards for a particular site
- Drill and analyse samples of bedrock, soil, groundwater and additional materials
- Solve technical issues as they arise, such as unexpected structures at drill sites
- Monitor conditions during and after construction
- Create geotechnical calculations, drawings, and two or three-dimensional computer models

interpreting the data

- Make recommendations about the proposed use of the site
- Design foundations, stabilise slopes and improve ground conditions
- Excavate tunnels and other underground openings
- Analyse ground behaviour and assess ground movements
- Evaluate construction sites
- Create designs for structures
- Supervise construction
- Write and present reports
- Meet with clients for evaluations of project progress

## RELATED CAREERS

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| • Soil scientist*                 | • Geotechnologist or geotechnician* |
| • Geophysicist*                   | • Mineralogist                      |
| • Geologist*                      | • Physicist •                       |
| • Environmental engineer*         | • Oceanographer*                    |
| • Civil engineering technologist* | • Civil engineer*                   |
| • Surveyor*                       | • Palaeontologist                   |
| • Cartographer*                   |                                     |

## HOW TO BECOME A GEOTECHNICAL ENGINEER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Scientific ability and technical understanding
- Be curious, motivated and dedicated
- Aptitude for mathematics and physical science
- Good communications skills, both written and verbal
- Ability to work independently
- Analytical and problem-solving skills
- Interest in science and geology in particular



- Be able to pay attention to detail
- The ability to work well with others
- The ability to interpret complex systems
- Able to apply technical knowledge to analyse problems and create solutions
- Capable of building and maintaining relationships with clients and operating in a competitive and commercial environment
- Detail-orientated with the ability to make correct judgements

## QUALIFICATIONS AND TRAINING

(Also see geophysicist above).

These include:

### Degrees

- **BSc:** Geological Sciences; Earth Sciences; Geology; Geology and Geography; Geology and Physics; Physical Science; Engineering and Environmental Geology
- **BSc(Eng):** Environmental Engineering; Civil Engineering; Mining Engineering
- **BEng:** Civil Engineering
- **BTech(Eng):** Civil Engineering; Engineering: Civil
- **BEngTech** (Civil Engineering)

## CERTIFICATES AND DIPLOMAS

- **National diploma:** Geology; Economic Geology
- **Postgraduate diploma:** Applied Geology

The Engineering Council of South Africa (ECSA) registers professional persons who are engineers, technologists, technicians and certified engineers. [Visit ECSA's website for more information.](#)

## WHO WILL EMPLOY ME?

Mining companies • Municipalities • Government departments (including the Department of Water and Sanitation) • Engineering companies • Universities and research institutes • Construction companies • Architectural firms • Research councils (such as the CSIR) • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Engineering Council of South Africa](#)
- [Geotechnical division of the South African Institution of Civil Engineering](#)
- [South African Society for Professional Engineers](#)







## HISTORIAN

*A historian examines historical records to learn about the past and the context of peoples' attitudes towards those events.*



Historians research the history of human activity and prepare accounts of findings. They use their knowledge of the past to attempt to explain current events.

Historians are experts at recognising, accounting for, and explaining records and their context, including bias, social situation and attitudes, and importance to the overall record.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

**Art historians** study and write about works of art. They may also deliver lectures on art history, advise on art, look after historical and contemporary art collections and conduct research and present exhibitions.





**Environmental historians** consider the history of human impacts on nature and the interactions between humans and nature.

**Cultural historians** study and interpret the record of human societies. They bring to life a past time and place. In this search, cultural historians study beliefs and ideas.

**Economic historians** focus on economic history, capitalism, financial crises, monetary history and the history of economic thought.

**Water historians** link the humanities and social sciences and the natural and applied sciences with civil engineering and hydrology. The study of the history of water contributes to understanding economic, political, social, and environmental history, the history of science, medicine, technology, environmental sciences, and geography.

The history of exploration and trade remains a major area of historical scholarship dealing with water. Some history scholarship focuses on how a major river, for instance, links different areas and communities and provides the backbone for a common culture.

Increasingly, historians find themselves working across disciplines, either as part of a team of people drawn from many fields or by adapting methods drawn from other disciplines for their research.

History students are trained to examining the bigger picture, efficiently analyse data and navigate their way through conflicting versions and uncertain information.

## WHAT DO HISTORIANS DO?

- Conduct research in past and present theory and practice of social systems, institutions, behaviour or events



- Consult and compare primary sources, such as original or contemporary records of past events, and secondary sources such as archaeological or anthropological findings
- Develop theories, models and methods to interpret and describe the nature of human experience and historical and political events and behaviour
- Extract relevant material, check its authenticity, research into and describe the history of a particular period, country or region, or a particular facet of society, for example, the economy
- Present findings and conclusions for publication or use by government, political parties or other organisations and interested persons
- Advise or consult with individuals and institutions regarding issues such as the historical authenticity of materials or the customs of a specific historical period

## RELATED CAREERS

- Sociologist\*
- Researcher\*
- Economist\*
- Political scientist\*
- Journalist\*
- Archeologist
- Anthropologist
- Museum curator
- Archivist
- Librarian
- Information manager

## HOW TO BECOME A HISTORIAN

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Enquiring and accurate, with an eye for detail
- Special interest in history and research
- Curious and persistent
- Able to communicate ideas clearly, both in speech and in writing
- Able to work independently and as part of a group

- Ability to understand details as well as broad concepts
- Ability to organise and communicate their insights to others in a convincing and accessible way
- A keen eye for attention to detail
- Conduct field studies and historical research at job sites
- Analyse historical archives and compose reports
- Maintain accurate records

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** History
- **BA(Hons):** History

Postgraduate studies are essential for senior positions. A PhD is required for permanent teaching positions at university level and for many research and administrative positions.

## WHO WILL EMPLOY ME?

Universities, research institutions and think tanks • Science councils and research institutions • Water utilities • Government departments and agencies • Museums • Human Sciences Research Council (HSRC) • Publishing companies • Schools • Tourism sector • Law firms • NGOs • Scientific or professional consulting services • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Historical Association of South Africa](#)





## HUMAN RESOURCES MANAGER

*A human resources manager provides staffing and personnel administration services in support of an organisation's human resources policies and programmes.*



Human resources managers and personnel managers are responsible for policies and practices in an organisation dealing with the recruitment and selection of employees, improving performance and productivity, pay and fringe benefits, and for creating a good relationship between managers and employees.

The tasks of human resources managers differ according to the size and type of organisation.

They are responsible for tasks such as the development and updating of human resources development programmes or training programmes, payment practices and staff administration.

Emerging specialists within this field include international human resources managers, who handle human resources issues related to a company's foreign operations, and human resources information system specialists, who match job seekers with job openings



and handle other personnel matters.

A human resource management degree can be applied to almost any organisation in any sector. It is a versatile qualification for dealing with hiring, training, development and general people skills.

This is an office role, involving working with people.

## WHAT DO HUMAN RESOURCE MANAGERS DO?

- Recruit, select, evaluate, appoint and place staff in suitable posts
- Handle employee-related services, regulatory compliance and employee relations
- Coordinate promotions, transfers, dismissals, retirements, salary increases and reinstatements
- Solve personnel problems
- Assist with performance interviews
- Interpret and advise on labour laws, deal with grievances and implement disciplinary procedures
- Plan and sometimes deliver training, including induction for new employees
- Advise about health and safety in the workplace and promote employee welfare (including housing schemes and medical aid)
- Management in negotiations with trade unions and employees
- Recommend new policies, approaches and procedures

## RELATED CAREERS

- |                                |                                    |
|--------------------------------|------------------------------------|
| • Industrial relations manager | • Social worker*                   |
| • Administrator*               | • Industrial psychologist          |
| • Counsellor                   | • Sociologist*                     |
| • Economic adviser             | • Training and development officer |

- Ergonomist
- Management consultant
- Training and development manager

## HOW TO BECOME A HUMAN RESOURCES MANAGER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Excellent communication skills
- Enjoy working as part of a team
- Fair and objective
- Able to detect problem areas and offer solutions
- Work well with all kinds of people
- Practical, adaptable and tactful
- Enjoy taking the lead
- Tolerant of different views
- Be diplomatic, but also firm and decisive
- Good communication skills
- Organisational and time management skills
- Problem-solving skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Human Resources Management
- **BAdmin:** Personnel
- **BBusAdmin:** Human Resources Management
- **BBusSci:** Management Studies; Organisational Psychology
- **BCom:** Management Sciences; Human Resource Management
- **BTech:** Human Resources Development; Human Resources Management; Human Resources
- **BA(Hons):** Human Resources Management



### Certificates and diplomas

- **National diploma:** Human Resource Management; Labour Relations
- **Diploma:** Human Resources Management
- **Advanced diploma:** Human Resources Management
- **Certificate:** Human Resources Administration
- **Postgraduate diploma:** Labour; Industrial Relations; Human Resource Management (Industrial Relations); Human Resources; Labour Law; Strategic Human Resources Management

### Professional development

The Institute of People Management (IPM) offers programmes for ongoing professional development. [Visit the IPM's website for information.](#)

### WHO WILL EMPLOY ME?

Large and medium-sized organisations and companies

- Municipalities • Government departments • Private companies • Non-governmental organisations • Commerce and industry • Self-employment, for example as an employment agent • Leisure and tourism companies • Consultancy firms • Engineering, media, banking and finance sector • Production and manufacturing companies • Mining companies • Professional, scientific, and technical services

### WHERE CAN I FIND OUT MORE?

- [Institute of People Management](#)
- [South African Institute of Management](#)
- [Services Sectoral Education and Training Authority \(SSETA\)](#)







## HYDROLOGIST

*A hydrologist makes an accurate assessment of the available water and future needs and makes recommendations on long-term management practices.*



Hydrology is a field of study that focuses on the management of water. It entails the study of the movement, distribution and quality of water on earth.

Hydrologists work within the fields of earth or environmental science, physical geography, geology, or civil and environmental engineering. They study how water interacts with the earth's crust. For example, they may study how rainfall cause erosion, create

caves, percolate through soil and rock to become groundwater or eventually reach the sea.

Hydrologist may also investigate how precipitation affects people by influencing river levels or groundwater availability. Their work contributes to the efficient planning, development and sustainable use of natural and domestic water resources, ensuring water is supplied in a cost-effective way.



Hydrologists also help investigate contaminated sites to assess how water flow might disperse pollutants and how to deal with polluted water. They try to secure the optimal utilisation of the country's water resources by advising civil engineers on the flow of rivers and where to build the most economical water schemes.

Hydrologists identify underground water as sources of water supply and evaluate the effect of human activities on the quantity and quality of water. They study the interaction between components within the water cycle.

Most hydrologists develop a speciality, such as groundwater remediation. In this career, you could be involved in environmental management, controlling soil erosion and developing water resources. You might also advise civil engineers on the flow of rivers, where to build dams and reservoirs, and how to minimise and control the risk of floods.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Groundwater hydrologists** study the water below the earth's surface. They focus on cleaning up polluted groundwater at industrial contamination sites and work with water supply.
- **Surface water hydrologists** study aboveground water sources such as streams and glaciers. They may work with usage and precipitation data to estimate water levels in reservoirs. Their estimates help water managers make decisions about storing and releasing water to meet demand. They also create flood forecasts and help develop flood management plans.
- **Hydrometry technicians** support and assist engineers and hydrologists. They also design and plan storage dams, canals, tunnels, pipelines, and pumping and irrigation schemes.

- **Hydrogeologists** (geohydrologists) investigate and evaluate underground water resources; work with groundwater and moisture variation in the soil, locate the position of waste disposal dumps and evaluate groundwater pollution.
- **Geohydrological technicians** gather data about boreholes, measures groundwater levels and provide information for geohydrologists.

## WHAT DO HYDROLOGISTS DO?

- Collect water and soil samples and measure their properties
- Gather data about boreholes and measure groundwater levels
- Analyse data to assess the environmental impacts of pollutants, erosion, sedimentation, drought and other water-related issues, and research ways to minimise their effects
- Measure water levels in rivers, lakes and underground
- Help design and plan dams, canals, bridges, irrigation projects, water supply schemes and flood protection
- Analyse the effect of environmental changes on water flow
- Plan responses to specific weather conditions (such as floods) and assess the impacts of such events on water catchments and supplies
- Undertake hydrological modelling to allow the development of flood forecasting and drought management strategy
- Assist in the planning of water resource development by forecasting and monitoring water usage and rainfall
- Apply hydrological and statistical techniques to water resource modelling and analysis
- Collect and analyse water and sediment samples
- Work closely with engineers, scientists and officials to help manage water supplies



## RELATED CAREERS

- Ecologist\*
- Civil engineer\*
- Natural resource manager\*
- Soil scientist\*
- Water resources manager
- Physicist\*
- Geologist\*
- Meteorologist\*
- Biologist\*
- Geographical information systems specialist
- Civil engineer\*
- Environmental scientist
- Researcher\*

## HOW TO BECOME A HYDROLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Interest in conservation and environmental issues
- A logical, systematic approach and good organisational skills
- A high level of commitment and self-motivation
- A flexible approach to work and the ability to adapt to change
- Ability to gather, analyse and report on complex data
- Planning, time management and project management skills
- The ability to work as part of a team on projects, as well as independently
- Good verbal and written communication skills
- Analytical and problem-solving skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **Bachelor:** Hydrology and Water Resources Management
- **BSc:** Environmental and Water Science

- **BTech:** Engineering: Civil: Environmental
- **BEng:** Civil Engineering
- **BSc (Hons)** Engineering Geology and Hydrogeology; Environmental and Water Science
- **MSc:** Hydrology
- **M(Eng)**
- **MSc(Eng):** Water Quality Engineering

Although not necessary for all positions, a postgraduate degree is recommended.

### LEARNERSHIPS

The Department of Water and Sanitation offers an in-service training programme. [Visit the department's website for more information.](#)

### WHO WILL EMPLOY ME?

Universities and research institutions • Science councils (including the Council for Scientific and Industrial Research) • Government departments (including the Department of Water and Sanitation) • Eskom • Agricultural sector • Non-governmental organisations • Municipalities • Water authorities • Consultancies and engineering firms • Construction sector • Paper and pulp manufacturers • Self-employed (as a consultant)

### WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Council for Geoscience](#)
- [Department of Water and Sanitation](#)
- [Engineering Council of Southern Africa](#)
- [Institute for Soil, Climate and Water \(ARC-ISCW\)](#)
- [Institute for Water Research](#)
- [Local Government, Water, and Related Services Sector Education and Training Authority \(LGWSETA\)](#)





## ICHTHYOLOGIST (FISHERIES SCIENTIST)

*An ichthyologist is a zoologist\* specialising in the study of fish.*



Ichthyology is the scientific study of different aspects of various fish species, including their history, behaviour, growth patterns, and place in the ecosystem.

Ichthyologists are fisheries scientists who dedicate their time to study different kinds of fish species, though many will focus on one family of fish in particular. They generally focus on the biological history, behaviour, growth patterns, and ecological importance of these fish.

Most ichthyologists specialise further in fish that are found in a particular region or type of ecosystem.

The daily routine of the ichthyologist is varied, involving field study, laboratory work, reading research literature, writing up research results and lecturing.



## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Aquaculture\*** – the study or practice of fish farming and management
- **Fisheries science** – the study and management of harvesting fish for human consumption
- **Conservation** – the conservation of natural fish populations and the marine environment

## WHAT DO ICHTHYOLOGISTS DO?

- Study and manage fishery resources
- Plan and coordinate stock assessment activities
- Collect samples and conduct research
- Consult on environmental and site assessments
- Coordinate data collection and input, interpretation and reporting
- Navigate environmental regulations and approvals processes
- Design erosion and sediment control systems
- Test water levels and filtration systems
- Monitor for fish diseases
- Monitor breeding patterns

## RELATED CAREERS

- |   |                                |
|---|--------------------------------|
| • Microbiologist*                             | • Marine biologist             |
| • Oceanographer*                              | • Aquatic scientist*           |
| • Natural resource or environmental economist | • Fisheries compliance officer |
| • Ecologist*                                  | • Environmental scientist*     |
| • Animal scientist                            | • Environmental manager*       |
|   | • Zoologist*                   |

## HOW TO BECOME A FISHERIES SCIENTIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Strong scientific ability and technical understanding
- Be passionate about fish and marine life
- Analytical thinking skills
- Pay attention to detail
- The ability to work well with others
- Love of nature
- Capacity for independent and original thought
- Practical aptitude
- Entrepreneurial skills

### QUALIFICATIONS AND TRAINING

(See also aquatic scientist\* and biologist\*.)

These include:

#### Degrees

- **BSc:** Zoology; Marine Biology; Biological Sciences; Environmental and Water Science; Zoology and Environmental Management; Zoology and Biochemistry; Life and Environmental Sciences; Genetics
- **BscAgric:** Animal Science with Aquaculture
- **BSc(Hons):** Ichthyology and Fisheries Science; Environmental and Water Science

An MSc or Doctoral degree is required to secure research positions. Ichthyologists must obtain their doctorates before gaining access to the best research and teaching positions available.



### Certificates and diplomas

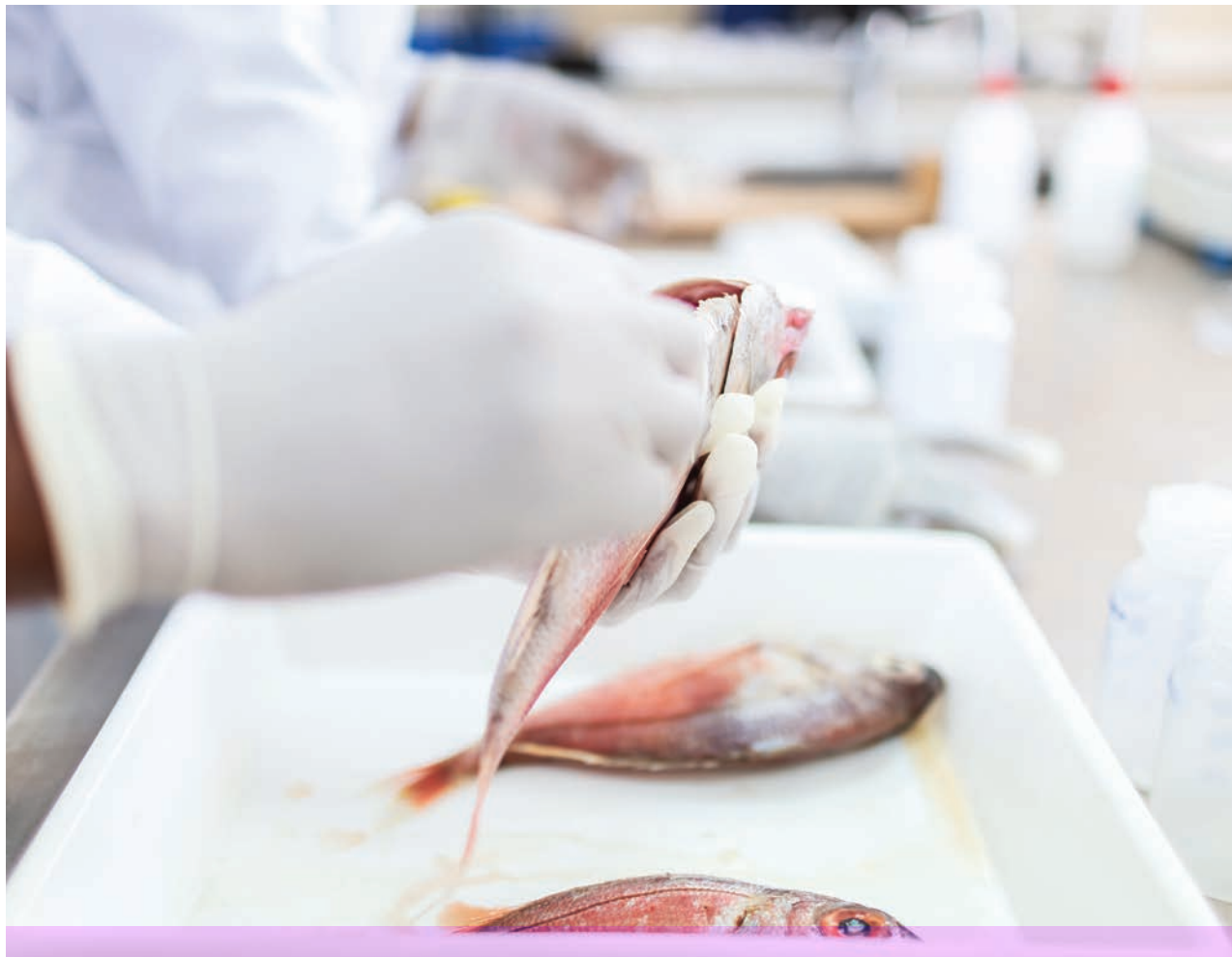
- **National diploma:** Marine Science

### WHO WILL EMPLOY ME?

Government departments (including the Department of Forestry, Fisheries and Environment) • Universities and research institutions • SANParks • Environmental consultancies • Museums • Aquariums • Fish or shellfish farms • Self-employment (as a consultant or entrepreneur)

### WHERE CAN I FIND OUT MORE?

- [Department of Ichthyology and Fisheries Science](#)
- [South African Association for Marine Biological Research](#)







## INFORMATION TECHNOLOGY PRACTITIONER



*An information technology practitioner evaluates processes and methods used in existing information and communication technology systems and proposes modifications or new systems to meet user needs.*



Information technology is a broad term that incorporates all computer-based technologies. It plays a role in every business, from large multinational corporations to small startups.

People who work in information technology are involved in computer programming, designing and analysing computer programmes (systems analysis),

administering databases and networks, operating computer systems and designing hardware.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Computer programmers** create the code for software applications and operating systems,



write code that converts that design into a set of instructions a computer can follow, test the program to look for errors and evaluate programs in use.

- **Systems analysts** are the link between computer programmers and users, converting the user's requirements into system designs. These analysts research problems, plan solutions, recommend software and systems, and coordinate development to meet business or other requirements.
- **Information and communication technology analysts** work with users to formulate system requirements, develop system plans, review and evaluate existing systems, and design and modify systems to meet users' needs.
- **Information technology** security specialists manage an organisation's information technology security policy and procedures. They ensure preventative and recovery strategies are in place and minimise the risk of internal and external security threats.
- **Software developers** create, maintain and modify computer and software programs, such as operating systems. They participate in computer design and programming, or software project management.
- **Multimedia designers and developers** create graphic images, animations, sound, text and video. Multimedia developers may specialise as computer-based graphic designers, instructional designers, multimedia programmers, author-based programmers, project managers, digital video and sound editors, animators or a combination of these.
- **Systems architects** establish the basic structure of a computer system and define the essential core design features and elements.
- **Computer and information systems managers** oversee a company's computer operations.
- **Software engineers** apply mathematical analysis and the principles of computer science to design





- and develop computer software.
- **Computer network and systems engineers**  
design and implement computer systems to solve problems for large organisations. They integrate technologies, establishes data, voice, and image communicating systems and designs computer systems.

## WHAT DO INFORMATION TECHNOLOGY PRACTITIONERS DO?

- Coordinate and link the computer systems within an organisation to increase compatibility
- Expand or modify information systems to improve workflow or serve new purposes
- Identify and analyse processes, procedures and practices
- Identify and evaluate inefficiencies
- Recommend optimal business practices
- Help determine technical and business goals
- Involved with the upkeep, maintenance and security of networks
- Analyse the computer and information needs of their organisations from an operational and strategic perspective
- Determine immediate and long-range personnel and equipment needs

There is a chronic shortage of information technology professionals. The demand is steadily increasing as business opportunities require well-trained specialists in the latest innovative technology.

## RELATED CAREERS

- |                               |                                      |
|-------------------------------|--------------------------------------|
| • Computer support specialist | • Business and e-commerce consultant |
| • Software engineer           | • Network architect                  |
| • Database administrator      | • Computer support technician        |

- |  |                        |
|--|------------------------|
| • Internet services and support technician | • Website designer     |
| • Web developer                            | • Network controller   |
| • Computer analyst                         | • Electronics engineer |

## HOW TO BECOME AN INFORMATION TECHNOLOGY PRACTITIONER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Management and leadership skills
- Production efficiency skills
- Good communication skills
- Customer service skills
- Problem-solving abilities
- Attention to detail
- Must have the ability to work independently
- Need to be self-directed and self-motivated
- Analytical and critical thinking skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BCom:** Information Management; Information Systems; Business Information Technology; Information Systems and Computer Science; Information Systems and Finance
- **BAdmin:** Information Management
- **BBusSc:** Information Systems; Computer Science
- **Bachelor:** Data Science; Computer and Information Sciences; Information Science; Information Systems; Information Technology
- **BSc:** Applied Information Systems; Computer Science; Computer Science and Informatics; Computer Science and Applied Mathematics;



Information Systems; Information Technology; Information Technology (Information and Knowledge Systems); Information Technology Management; Information Technology (Computer Science); Information Technology (Computer Systems)

- **BTech:** Business Information Systems; Information Technology; Computer Systems; Business Information Systems; Computer Studies
- **BEng:** Electrical and Electronic Engineering; Electrical Engineering
- **BA(Hons):** Information Science
- **BCom(Hons):** Information Technology
- **BSc(Hons):** Computer Science; Information Technology; Big Data Analytics

### Certificates and diplomas

- **National certificate:** Information Technology; Information Systems
- **National diploma:** Information Technology; Information Technology (Communication Networks); Information Technology (Software Development)
- **Advanced diploma:** Information Technology;

Electrical Engineering in Telecommunications; Business Information Technology

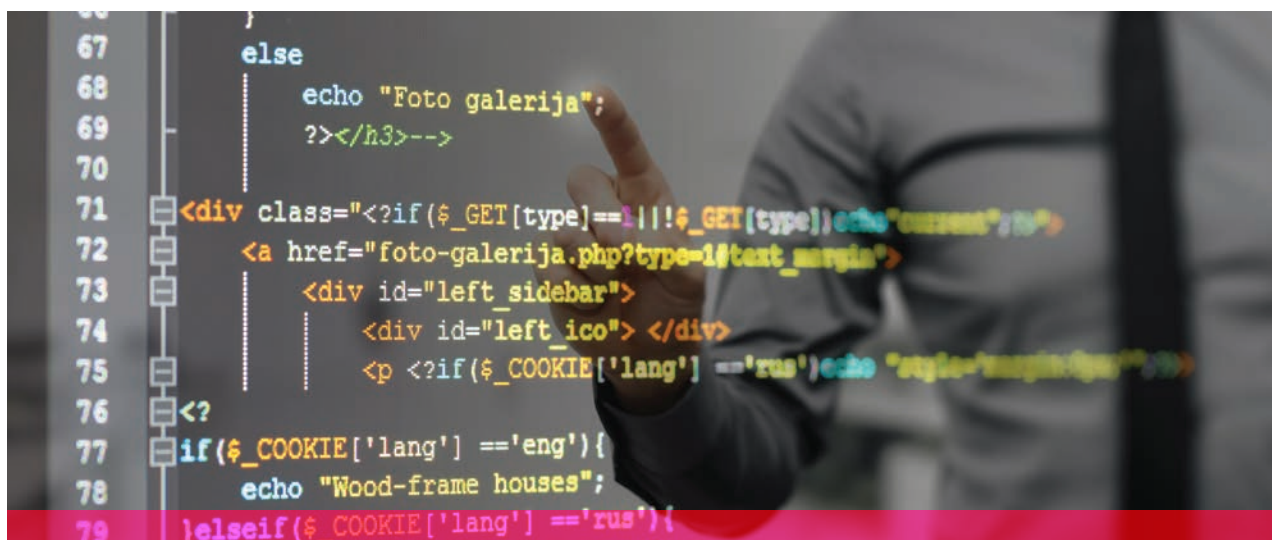
- **Diploma:** Business Information Technology

## WHO WILL EMPLOY ME?

Finance, banking and insurance sectors • Internet service providers • Water utilities • Education institutions • Government departments • Mining companies • Software developers • Research organisations • Municipalities • Manufacturing sector • Large business and industrial organisations • Computer and technology companies • Telkom • Transport enterprises • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Engineering Council of South Africa](#)
- [Information Technology Association of South Africa](#)
- [Institute of Professional Engineering Technologists](#)
- [Media, Information and Communication Technologies Sector Education and Training Authority \(MICTSETA\)](#)
- [South African Institute of Electrical Engineers](#)







## INSTRUMENT MAKER



*An instrument maker designs, manufactures, installs and repairs instruments.*



Instrument makers specialise in installing, troubleshooting, and repairing instrumentation, automation and control systems. In this career, you also ensure that automatic processes and plant systems operate efficiently.

Instrument makers work mostly indoors in designing and manufacturing plants. Working conditions depend on the field of specialisation: mechanical, electrical, hydraulic, chemical or optical.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

Instrument makers and mechanics can specialise in different types of instruments:

- **Hydraulic** – including flow meters and pressure gauges
- **Meteorological** – including automatic weather stations, electronic airport systems and radar



- **Chemical** – including thermometers
- **Mechanical** – including pressure gauges, odometers, thermometers and watches
- **Electrical** – including voltmeters, kilowatt gauges and ammeters
- **Optical** – including telescopes, spectacles and cameras
- **Medical and dental** – including pincers, scalpels, scissors
- **Avionics** – including instruments used in aeroplanes
- **Telecommunications** – including telephones and satellites

## WHAT DO INSTRUMENT MAKERS DO?

- Design and manufacture instruments
- Work according to sketches and instructions from scientists and engineers
- Install and diagnose faults in electronic instruments and control systems
- Calibrate and make sure that instrumentation equipment is working correctly
- Repair and maintain instruments and systems

- Examine and test machines, instruments, components, other equipment, instruments and control systems to identify faults
- Maintain machines, equipment and instruments
- Install electronic instruments and control systems
- Interpret test data to diagnose malfunctions and systemic performance problems
- Install, adjust, repair or replace electrical and electronic components using hand tools, power tools and soldering iron

## RELATED CAREERS

- |                              |  |
|------------------------------|--|
| • Biomedical technologist    | • Engineering technician               |
| • Scientific glassblower     | • Fitter and turner*                   |
| • Laboratory technician      | • Instrument mechanician               |
| • Process technician         | • Meteorological instrument technician |
| • Musical instrument builder |  |

## HOW TO BECOME AN INSTRUMENT MAKER

You will need the following:





## SKILLS AND PERSONAL REQUIREMENTS

- Work meticulously
- Be very accurate and precise
- Have a mathematical ability and mechanical aptitude
- Diligence and patience
- Good hand and finger dexterity
- Practical and problem-solving
- Enjoy the design and manufacture of scale models
- Good eyesight

## QUALIFICATIONS AND TRAINING

These include:

### Diplomas and certificates

- **National certificate:** Engineering Studies; Process Instrumentation

### Learnerships

- **Training** consists of theoretical and practical work.
- **In-service training** as an apprentice under the supervision of a qualified instrument maker

- **Compulsory trade test**, set by the Department of Employment and Labour, to qualify as an artisan

## WHO WILL EMPLOY ME?

Sasol • Mittal Steel • Telkom • South African Airways • Eskom • Municipalities • Opticians • Electrical factories • Medical and technology companies • Manufacturing industries • Transnet • CSIR • Chemical engineering businesses • Electrical precision tool manufacturers • Universities and research institutions • Self-employment

## WHERE CAN I FIND OUT MORE?

- [Manufacturing, Engineering and Related Services Education and Training Authority \(MerSETA\)](#)
- [South African Institute of Measurement and Control](#)
- [Steel and Engineering Industries Federation of Southern Africa \(SEIFSA\)](#)







## JOURNALIST OR MEDIA PRACTITIONER

*A journalist gathers information on specific subjects, people, events or occurrences and presents the information in the form of a report for the press, radio, television, internet, public relations division of a company or other institution.*



Journalism is the profession of reporting, writing, recording or editing news about events, issues and trends via mass media outlets such as television, radio, print and online media. Topics range from politics and business to culture, arts, science and entertainment.

Journalists investigate, collect and present information as news stories. These stories can be presented through

newspapers, magazines, radio, television, the internet and social media. Journalists are relied upon to present news in a well-rounded, objective manner.

Communication, public relations and journalism are interdisciplinary professions that require a broad spectrum of knowledge and skills. Within different areas of media (television, radio, newspapers, magazines and



online media), there are specialised tasks for journalists. Journalists can work for newspapers and also for TV stations, radio stations, magazines and websites.

## SOME AREAS OF SPECIALISATION

- **Broadcast journalists** research, investigate and present news and current affairs content for television, radio and the internet. Broadcast journalists can occupy many roles within the media, including as an editor, reporter, presenter or news anchor, producer or correspondent.
- **Print journalists** collect and analyse facts about newsworthy events with interviews, investigations and observations and write stories for newspapers, magazines or journals.
- **Multimedia journalists** distribute news content using two or more media formats via the internet or disseminating news reports via multiple media platforms.
- **Photo or visual journalists** tell visual stories and facts about newsworthy events.
- **Corporate communicators** convey the image that an organisation wishes to present to the public.
- **Website content managers** ensure that the content of a website is well-structured and easy to find. They ensure that the content meets the needs of its users by covering all necessary topics and being up to date and accurate. Website content can include web pages, images, videos, blog posts, guest articles, reviews and occasionally social media and marketing copy.
- **Subeditors** check the written text of newspapers, magazines or websites before they are published. They are responsible for ensuring the correct grammar, spelling, style and tone of published work.
- **Copy-editors and proofreaders** ensure that material is clear, consistent, complete and credible, and that texts are well written, grammatically

correct and accessible to the audience. They take journalists' copy and make it ready for publication.

Studying journalism opens doors to a range of careers where your creativity, writing, as well as communication and research skills are invaluable. Jobs where your qualification and training would be useful include positions such as advertising copywriter, digital copywriter, market researcher, multimedia specialist, public relations officer, science writer and translator.

The news media landscape is evolving at an astonishing speed, and professionals working in this field need regular training and career development.

## WHAT DO JOURNALISTS OR MEDIA PRACTITIONERS DO?

- Collect, report and comment on news and current affairs
- Interview politicians and other public figures at press conferences and on other occasions
- Liaise with production and editorial staff
- Receive, analyse and verify news for accuracy
- Research and report on developments in specialised fields such as medicine, business, science and technology
- Select material for publication, checking style, grammar, accuracy and legality of content and arranging for any necessary revisions
- Producing complete packages for broadcast, online or print
- Select, compile and prepare publicity material about businesses or other organisations to be issued to the media
- Collaborate with editors and production teams to put together completed newsworthy items



## RELATED CAREERS

- Information technology specialist\*
- Public relations officer or manager
- Publisher
- Lecturer
- Multimedia developer
- Graphic designer
- Media strategist
- Web designer

## HOW TO BECOME A JOURNALIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Critical and analytical thinking skills
- Be intuitive, articulate and expressive
- Excellent communication skills
- Excellent general knowledge
- Interest in current events
- Be accurate, unbiased and adaptable
- Hardworking and able to take initiative
- Resourcefulness and self-motivated
- Good interpersonal skills
- The ability to meet deadlines and work under pressure
- The ability to listen and work productively in a team

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Journalism; Communication; Journalism and Media Studies; Corporate Communication; Media and Communication; Graphic Design with Communication
- **Bachelor of Journalism and Media Studies**
- **BTech:** Journalism; Public Relations Management
- **BAHons:** Journalism; Journalism and Media Studies

- **BA:** Design (Communication Design); Digital Media Design

To be hired as a reporter at a newspaper, broadcaster or current affairs news website you usually need either a journalism degree or an unrelated degree followed by a postgraduate course in journalism.

Common routes into journalism are to take an undergraduate degree in journalism or to take an undergraduate degree in a different subject followed by a postgraduate journalism qualification. Most people starting journalism careers are graduates, but apprenticeships are available too.

### Certificates and diplomas

- **National diploma:** Public relations and communications
- **Advanced certificate:** Journalist
- **Certificate:** Journalism
- **Diploma:** Journalism and Media Studies; Journalism
- **National diploma:** Journalism
- **Certificate:** Journalism for Print and Digital Media
- **Postgraduate diploma:** Journalism; Economic Journalism
- **Postgraduate diploma:** Journalism

Diplomas and certificates in journalism also offer professional entry to a range of careers in marketing, advertising, management, design and production.

### Learnerships

- In-house training in publishing and the print media links theory to practice.
- Experience and mentorships can be supplemented with short courses.
- Public and private institutions offer certificates in various aspects of media work.





### Career development

The Institute for the Advancement of Journalism (IAJ) offers many short courses developed to support career development. [Visit the IAJ's website for more information.](#)

Search for placements and find out more about work experience and internships. If you do not want to go to university, there are a limited numbers of journalism apprenticeships available for school leavers who want to work for newspapers or broadcast companies.

### WHO WILL EMPLOY ME?

Media and broadcast companies (including Naspers)

- News publications (print and online)
- Universities and research institutions
- Radio and television stations (including the SABC)
- Government departments
- Creative digital companies
- Media-related institutions
- Public relations consultancies
- Communication agencies
- Advertising and marketing companies and agencies
- Media-related publications
- Large and medium-sized companies
- Self-employment (as a freelancer or consultant)

### WHERE CAN I FIND OUT MORE?

- [Institute for the Advancement of Journalism](#)
- [Media, Information and Communication Technologies Sector Education and Training Authority \(MICTSETA\)](#)





## LABORATORY WORKER

*Laboratory workers assist scientists, engineers, technical officers and other laboratory analysts by collecting and preparing samples, carrying out experiments, making measurements with scientific equipment, recording results and presenting them for critical analysis.*



### SOME AREAS OF SPECIALISATION IN THIS FIELD

#### **Medical laboratory technologists and scientists**

conduct medical laboratory tests to provide information for diagnosing, treating and preventing disease.

**Chemical laboratory technicians** work with chemists and chemical engineers to develop, produce, sell and

utilise chemical and related products and equipment. Their work is almost entirely laboratory-based. Technicians may work alone or as part of a team of scientific staff. They can work in most areas of science, including forensics, health and manufacturing.

**Field laboratory technicians** work in will dictate the work they do. If they work in a medical environment, they might be analysing body fluids or tissues,



conducting blood tests and examining cells. If they work for a food and beverage manufacturer, they might be testing food and prepare beverage samples to detect contamination or ensure quality.

**Laboratory technicians** support laboratory-based scientific investigations by undertaking a range of routine technical tasks and experiments. They are the backbone of a scientific research laboratory.

**A laboratory manager** plans, organises, directs, controls and coordinates the operations of a research or production laboratory.

## WHAT DO LABORATORY WORKERS DO?

- Conduct and support scientific investigations and experiments
- Test materials, production processes and final products
- Set up, clean and maintain equipment for use in experiments
- Collect, classify and preserve specimens and samples, such as animal and plant tissues, food, soil and water
- Plan, set up and undertake controlled experiments and trials
- Use scientific equipment to record and analyse results
- Collect, prepare and test samples
- Provide technical support
- Write reports, reviews and summaries
- Carry out risk assessments

## RELATED CAREERS

- Chemist\*
- Chemical engineer\*
- Food technologist
- Medical laboratory technician
- Physicist

- Electronic engineer\*
- Analytical chemist
- Clinical technologist

## HOW TO BECOME A LABORATORY WORKER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Independence
- Meticulous attention to detail
- Excellent written and oral communication skills
- Analytical skills
- Time management
- Think creatively and work systematically
- Able to work as part of a team

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Agriculture; Biochemistry; Chemistry; Plant Biochemistry; Pure and Applied Chemistry; Physical Sciences: Environmental Chemistry; Biotechnology; Biology; Food Science; Health Sciences; Biochemistry and Cell Biology; Microbiology
- **BTech:** Laboratory Management; Chemistry

#### Certificates and diplomas

- **National certificate:** Analytical Chemistry

## WHO WILL EMPLOY ME?

- Scientific councils
- CSIR
- Consultancies
- Universities and research institutions
- Water companies



- Chemical and manufacturing industries
- Government departments (including the Department of Water and Sanitation)
- Biotechnology companies
- Chemical companies
- Food and beverage companies
- Pharmaceutical companies
- Hospitals and clinics

## WHERE CAN I FIND OUT MORE?

- [Chemical and Allied Industries' Association: Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Local Government, Water and Related Services Sector Education and Training Authority \(LGWSETA\)](#)







## LAWYER

*A lawyer gives legal advice to clients regarding rights and obligations.*



There are two main branches of legal practitioners: attorneys, who do legal work of all kinds, and advocates, who are specialists.

**Attorneys** are the business managers of cases. They decide when an advocate is or is not necessary to be engaged to act for the clients. Attorneys are the lawyers that clients see first with their problems. Attorneys give general advice about the law.

**Advocates** get 'briefed' to take on cases by attorneys when a specialist skill is needed in a court case or research into the law.

Lawyers or attorneys offer services to clients in all aspects of law, including company law, criminal law, taxation, contracts, leases, wills and trusts.

Attorneys form professional companies and firms and practice law in partnership with each other. Advocates



are individual practitioners and never form partnerships. Advocates may become members of the professional association of advocates. Advocates conduct criminal cases and civil cases. They also provide written legal opinions.

As a lawyer, you provide legal advice, write documents, conduct negotiations on legal matters, and you may represent clients in courts of law. Not all lawyers practise as legal professionals. Some also use their knowledge in business-related matters such as industrial relations, taxation, commercial transactions, the incorporation of new companies and journalism.

**Environmental or natural resources lawyers** apply the law of contract, law of delict, common law, public law, administrative law, criminal law, statutory interpretation, procedural law and others on matters that affect the environment.

**Water law attorneys** cover a myriad of issues regarding water supply and wastewater treatment, including legislation, regulatory matters, system operations/development, real estate, finance and litigation.

**Maritime lawyers** are concerned with the branch of law that governs international maritime zones and maritime resources. The international law of the sea and the network of conventions that governs navigation, fishing, seabed mining, naval warfare and marine pollution are within the sphere of interest of maritime lawyers.

**Patent lawyers** assess whether inventions are new and innovative, and therefore eligible to be patented. Specially trained in drafting patents and with knowledge of intellectual property law, these attorneys assist individual inventors or companies to obtain a patent and then act to enforce inventors' rights if patents are infringed.

**Legal advisers** advise individuals, organisations, and businesses on legal matters.

**Paralegals or legal assistants** help lawyers to solve legal problems and in preparing cases for court. They also liaise with the public and carry out legal research.

## WHAT DO LAWYERS DO?

- Advise clients on their legal rights, responsibilities and problems that may arise
- Represent clients in negotiations, courts and tribunals
- Research rules, regulations, laws and previous cases
- Prepare legal documents, such as contracts and wills
- Interpret law and apply it to specific situations
- Advise on problems and explain difficult choices to attorneys and clients
- Negotiate with colleagues over the settlement of cases or how it is to be conducted
- Guide witnesses to give their evidence by asking questions
- Test the integrity of the evidence given by witnesses by cross-questioning them
- Draft arguments setting out the facts and law relevant to the decisions to be decided
- Argue a case for a client to persuade a judge, magistrate or arbitrator

## RELATED CAREERS

- |                     |                    |
|---------------------|--------------------|
| • Public prosecutor | • Magistrate       |
| • State attorney    | • Legal researcher |
| • Conveyancer       | • Legal secretary  |
| • Notary            | • Judge            |

## HOW TO BECOME A LAWYER

You will need the following:



## SKILLS AND PERSONAL QUALITIES

- Excellent communication skills, both verbal and written
- Problem-solving and analytical skills
- Be an independent thinker
- Have self-confidence
- Fluency in more than one language is an advantage
- Excellent listening skills
- The capacity to concentrate and digest many documents
- The ability to extract from facts presented what is relevant and important
- Sense of responsibility and accountability
- Uncompromising personal ethical standards

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Law
- **Bachelor of Law**
- **BCom:** Law
- **LLB**
- **LLM**



Students with an LLB qualification can enrol for a Master of Law (LLM) degree in environmental law.

### Certificates and diplomas

- **Certificate:** Legal Studies
- **Diploma:** Law
- **Postgraduate diploma:** Environmental Law; Maritime Law

### Professional development

Professional training to become an advocate is provided by the constituent Societies of Advocates of the General Council of the Bar of South Africa.

To become a member of the Bar (the professional association of advocates), an advocate must complete practical experience under the supervision of a practising advocate and pass the Bar examination administered by the General Council of the Bar of South Africa.

## WHO WILL EMPLOY ME?

Law firms • Government departments, agencies and institutions • Large companies • Non-governmental organisations • Public interest groups • Legal-aid societies • Law schools • Private practice • Legal departments of banking institutions, insurance companies and estate agents • Courts • Public and private companies (legal adviser) • Self-employed (attorneys and advocates)

## WHERE CAN I FIND OUT MORE?

- [Department of Justice](#)
- [General Council of the Bar of South Africa](#)
- [Law Society of South Africa](#)
- [Lawyers for Human Rights](#)
- [Safety and Security Sector Education and Training Authority \(SASSETA\)](#)





## LEISURE AND RECREATION PROVIDER

*Tourism is the fastest growing industry in the country. It offers an exciting future in the area of water-related leisure activities as well as ecotourism and many others.*



If leisure, sport, and recreation interest you as a career, there are many options to choose from, such as working as a tour manager, tour operator, tour guide, tourist information officer, travel agent, or recreation manager or officer.

**Travel agents** research, plan, and book trips for individuals and groups. They can help with flight bookings, hotel selection, transfer arrangements and holiday activities.

**Tour operators** typically combine tour and travel components to create holiday packages. They prepare itineraries for various destinations and often monitor popular destinations to put together attractive holiday packages for clients.

**Tour guides** provide guided tours to groups of visitors and tourists. They must have expert knowledge of specific areas, including natural features and other



tourist destinations. Tour guides may give walking tours, bus or even boat tours.

**Leisure activity coordinators** usually work for resorts and hotel groups. They are responsible for the day-to-day management of a leisure centre and interacting with guests.

**Tourist information officers** provide travel and accommodation information to tourists.

Career choices can be found in sectors that include accommodation, attractions, food and beverage, adventure tourism, events and conferences, tourism services and the travel trade.

## WHAT WILL I DO IN THIS CAREER?

- Inform clients and visitors about the places they are visiting and deal with their problems and enquiries
- Escort and look after people on holiday
- Manage groups of holidaymakers and plan tours and entertainment
- Deal with the finances and administration of tourism and leisure activities

## RELATED CAREERS

- Nature conservationist
- Game ranger
- Executive chef
- Hotel manager
- Sommelier
- Event and conference organiser
- Restaurant and food services manager

## HOW TO BECOME A LEISURE AND RECREATION PROVIDER

You will need the following:

## SKILLS AND PERSONAL QUALITIES

- Excellent interpersonal skills
- Able to work with all kinds of people
- Strong communication skills
- Excellent knowledge of South Africa's places of interest, geography, its unique history, politics, flora and fauna
- Able to deal with unexpected situations
- Great customer service skills
- An outgoing and friendly personality
- Detail-orientated and dedicated to each task

## QUALIFICATIONS AND TRAINING

These include:

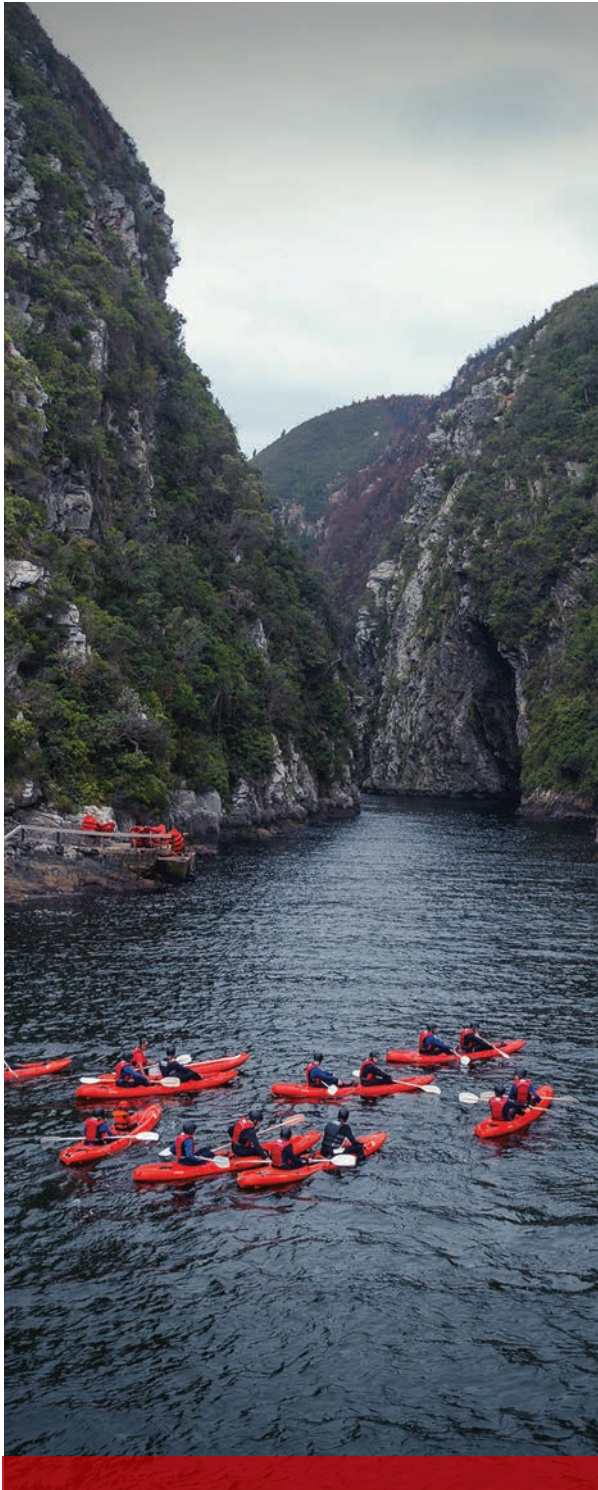
### Degrees

- **BA:** Tourism; Tourism Development and Management
- **BCom:** Tourism; Tourism Management
- **BSc:** Tourism
- **BTech:** Ecotourism Management; Tourism Management
- **Bachelor:** Tourism Development and Management
- **BA(Hons):** Tourism Development; Tourism Management
- **MA:** Management Sciences in Tourism Management

### Certificates and diplomas

- **Certificate:** Tourism Management; Advanced Game Ranging and Lodge Management
- **Higher certificate:** Tourism and Travel Management
- **Diploma:** Ecotourism Management; Tourism Management; Travel and Tourism; Adventure Tourism Management; Event Management
- **Advanced diploma:** Tourism Management





- **National certificate:** Ecotourism Management; Tourism Management; Tourism
- **Postgraduate diploma:** Tourism Management

### Learnerships

South African Tourism offers an internship programme for tour guides. [Visit its website for more information.](#)

### WHO WILL EMPLOY ME?

Game farms • Guesthouses • Holiday resorts • Hotels • Conservation authorities (like CapeNature) • South African National Parks (SANParks) • Tour operators and travel companies • Self-employment (as entrepreneur)

### WHERE CAN I FIND OUT MORE?

- [Association of Southern African Travel Agents](#)
- [Department of Tourism](#)
- [South African Tourism](#)







## MANAGER

*A manager is responsible for overseeing a department or group of employees within a specific organisation or company.*



Managers shape the culture of their teams and workplaces in countless ways. They have to play both an administrative and a leadership role. There are many options for managers working in the water sector, including at research institutions, municipalities and water utilities.

A manager is tasked with translating senior management's strategies and goals into operating plans that drive the organisation or business. In that position,

the manager is accountable to senior executives for performance and to employees for guidance, motivation and support.

Across every sector, managers contribute to businesses and organisations in significant ways, which are reflected in company profits, efficiency and overall workplace morale.



Managerial positions range from front-line supervisory positions to the top manager in the firm, who is the Chief Executive Officer (CEO).

As a manager, you provide leadership in organisations for them to achieve their objectives. As strategic thinkers, managers encourage innovation and change to make their teams and the organisations they work for more productive and profitable.

Managing a business includes organising, researching, planning, controlling and directing all or part of the work of other employees. You would need to manage and motivate people so that they do their jobs well, and you might also need to manage resources, such as finances and assets.

Companies make use of managers in all their departments. You can have a management career in any industry. Management jobs can involve managing people, projects, money or all three.

Different types of managers perform different tasks:

**Senior managers and directors** are typically responsible for a number of groups and departments. They are directly accountable to senior executives, often reporting to a person with a vice-president title.

**Functional managers** oversee specific functions or divisions within a company, such as administration, marketing, finances, or acquisitions.

**Operational or production managers** are responsible for the way a business works, for example, credit and cost control, or production.

**General managers** are responsible for the work of a number of managers with specific responsibilities. This job combines functional and operational management.

A general manager is accountable for all resources and results for a line of business in the company.

**Product managers** are focused on one or more offerings (products or services). They are charged with working across the organisation to bring new products to life and manage marketing decisions around features, pricing, packaging and promotion for their offerings.

**Management consultants** work independently as advisers to businesses on management matters. They investigate problems, provide solutions and help with strategic planning. Management consultants assist organisations to achieve greater efficiency and solve organisational problems.

**Management accountants** plan, review and administer accounting systems and procedures, analyse the financial information needs of organisations, provide advice on financial planning and risk management, and provide management with reports to assist in decision-making.

## WHAT DO MANAGERS DO?

- Ensure the daily functioning of a department or group of employees
- Interview, hire and train new employees
- Set standards and targets for their teams
- Decide on organisational policies and processes
- Help to prepare budgets, forecasts and reports
- Oversee the work of other employees
- Monitor and control expenses and budgets
- Track and report scorecard results to senior management
- Plan and set goals for future periods
- Resolve disagreements and resource-related issues

## RELATED CAREERS

Human resources or personnel manager\*



## HOW TO BECOME A MANAGER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Interpersonal skills
- Communication skills, both written and oral
- Excellent organisational skills
- Problem-solving and decision-making skills
- Prioritising tasks effectively
- Emotional intelligence

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **Bachelor:** Business Science; Management Studies; Management Leadership
- **BCom:** Management; Human Resources Management; Management Sciences; Management Accounting; Business Management
- **BSc:** Agricultural Science (Agricultural Business and Management); Agribusiness Management; Land Management; Water Resource Management; Construction Economics and Management
- **BScAgric:** Agribusiness Management; Agricultural Economic Analysis and Management; Agricultural Economic Analysis and Management with Food Science
- **BAgric:** Agricultural Production and Resource Management
- **BTech:** Management; Environmental Management; Laboratory Management
- **BCom(Hons):** Business Management
- **MBA**

#### Certificates and diplomas

- **Diploma:** Human Resource Management; Advanced Management; Ecotourism Management; Nature Management; Management Sciences

- **National certificate:** Environmental Management
- **Postgraduate diploma:** Environmental Management; Integrated Water Management

#### Learnerships

- In-service training
- Short courses offered by a variety of educational institutions

## WHO WILL EMPLOY ME?

Government departments • Private sector • Research organisations • Municipalities • Large companies and businesses • Agricultural and manufacturing sector • Energy and water companies

## WHERE CAN I FIND OUT MORE?

- [Chartered Governance Institute of Southern Africa](#)
- [Institute of Business Management](#)
- [Services Sector Education and Training Authority \(SSETA\)](#)
- [The South African Institute of Management](#)







*Marketing is the intermediary function between product development and increasing brand awareness. It is a term used for such fields as advertising, public relations, media planning and sales strategy*



Marketing is the process of interesting customers in products or services. Successful marketers know how to observe consumers' behaviour and habits to fully understand their motivations and what will make them fall in love with a product.

Successful marketers understand their product and know how to communicate their message effectively. Whether it is engaging in public relations, digital

marketing, search engine optimisation and even web design - marketers work across many different channels and skill areas.

The marketing world is constantly evolving, which is why marketers need to be ready to react quickly to new trends.



## WHAT DO MARKETING PRACTITIONERS DO?

- **Marketing managers** plan marketing campaigns, formulate marketing policies and evaluate the effectiveness of marketing strategies.
- **Brand managers** control product branding, packaging, labelling, pricing, advertising, promotions and distribution.
- **Product developers** research and provide ideas and facts about consumer needs for a product or service. They also collect information about competitors' products and services.
- **Content marketers** bring value to customers and build strong relations between the brand and the customers.
- **Advertising managers** promote a product or service using different media channels.
- **Public relations managers** keep the public informed about new products, policy changes and staff changes. They also keep management informed about public attitudes and reactions to the company and its products or services.
- **Sales managers** prepare forecasts and budgets, sales performance, liaise with dealers and distributors and monitor the preferences of customers. Sales managers prepare forecasts and budgets, sales performance, liaise with dealers and distributors and monitor customers' preferences.
- **Market researchers** mine data from different sources to market a product more effectively. They analyse and interpret marketing information and study sales records to determine trends and help plan campaigns.

### RELATED CAREERS

- Public relations manager\*
- Copywriter
- Creative director
- Product developer
- Media director

- Sales manager
- Content marketing specialist
- Digital brand manager
- Business development strategist
- Brand and account manager

## HOW TO BECOME A MARKETING PRACTITIONER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Excellent communication skills
- A creative and open-minded approach
- Strong organisational and planning abilities
- Team leadership qualities
- Self-motivated and persistent
- Strategic and analytical thinking
- Confidence and curiosity
- Good observational skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Marketing Communication; Creative Brand Communication; Strategic Brand Communication
- **BCom:** Marketing Management; Marketing; Digital Marketing; Strategic Brand Management; Marketing and Management Science
- **BBusSc:** Marketing
- **BBA:** Brand Building and Management
- **BCom(Hons):** Marketing Management
- **Bachelor of Marketing**
- **Bachelor of Business Administration** in Marketing Management
- **BTech:** Marketing





### Certificates and diplomas

- **Diploma:** Marketing Communication: Visual Communication; Marketing; Business Marketing; Marketing Research; Marketing and Public Relations; Marketing and Entrepreneurial Studies
- **Certificate:** Marketing and Sales; Marketing; Marketing Management
- **Postgraduate diploma:** Marketing; Marketing Supply; Marketing Management

### Learnships

Some universities and universities of technology offer short courses in marketing or marketing management

### WHO WILL EMPLOY ME?

Any industry or business that sells products and services • Advertising agencies • Marketing and media companies • Retail sector • Research and development organisations • Self-employment (as a consultant)

### WHERE CAN I FIND OUT MORE?

- [AAA School of Advertising](#)
- [Association of Communication and Advertising](#)
- [Southern African Marketing Research Association](#)
- [Red and Yellow Creative School of Business](#)
- [Vega School](#)





## MATHEMATICIAN



*A mathematician has extensive knowledge of mathematics and uses this knowledge to solve mathematical problems, and to develop theories and methods.*



Mathematicians work either in theoretical (pure) or applied mathematics. Both types of mathematicians develop new mathematical theories, techniques and approaches to solve problems.

Applied mathematics involves mathematical modelling, numerical analyses and operational research. It forms a bridge between mathematics' theory, and practice and concentrates on solving problems in engineering, physics and information technology, as well as practical

problems such as industrial research, research on population growth, the development of ecological systems and predictions on the performance of, for example, artificial limbs. Statistics and information technology are related fields of study.

Mathematical analyses are used to solve research problems, including in the medical and engineering field, and in ecology.



## AREAS OF SPECIALISATION IN THIS FIELD

**Statisticians** collect, classify, and analyse numerical information to make decisions and forecasts, for example, and to evaluate processes. They design and apply statistical principles and techniques for collecting, organising and interpreting quantifiable data. Statisticians also use statistical methodologies to produce statistical reports and analyses for government, commercial and other purposes.

**Actuaries** apply analytical, statistical and mathematical skills to financial and business problems. They analyse mathematical, statistical, demographic, financial or economic data to predict and assess the long-term risk involved in financial decisions and planning. They also advise life insurance companies on how to invest their money and to manage the risks of policy liabilities.

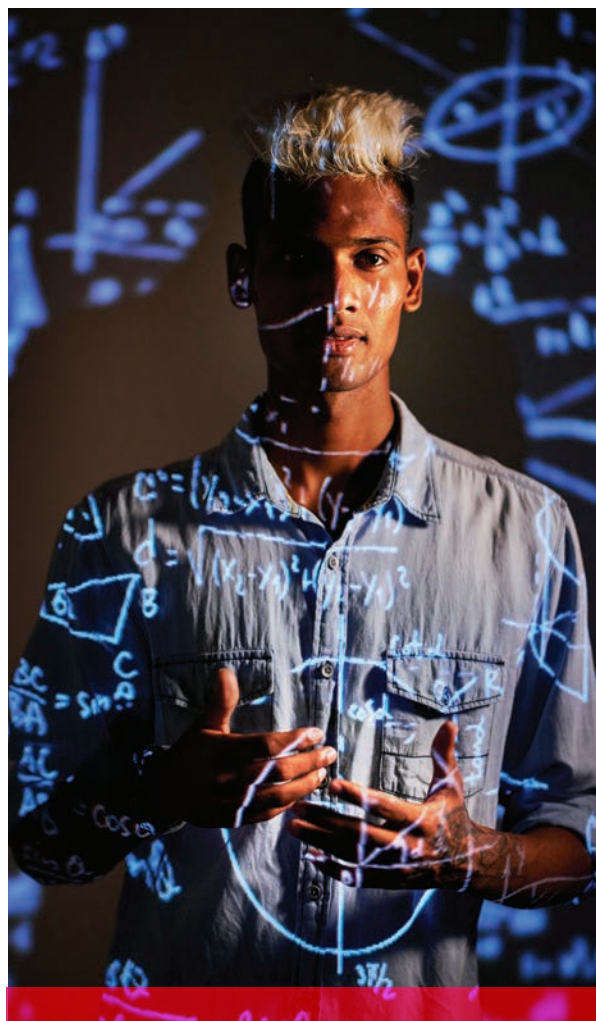
Using their broad knowledge of statistics, finance and business, actuaries help design pension plans and other financial strategies. Most actuaries are employed in the insurance industry, specialising in life and health insurance or property and casualty insurance.

Undergraduate training in mathematics is an important step along many career paths. A degree or major in mathematics can pave the way for careers in accounting, actuarial science, business, construction, engineering, finance, communications, information technology, research and teaching.

## WHAT DO MATHEMATICIANS DO?

- Financial and mathematical modelling
- Analyse risk and risk management
- Communicate complex financial concepts in easily understandable terms

- Develop mathematical models to describe natural phenomena such as weather and ocean currents
- Apply calculus and geometry to design objects and structures in such fields as computer graphics and robotics
- Analyse statistics and create models
- Analyse processes and solve problems in service, manufacturing, chemical, mining, agricultural, and engineering industries
- Apply theories and techniques to practical problems
- Process and analyse quantitative data





## RELATED CAREERS

- Operations research analyst
- Economist\*
- Financial analyst
- Accountant\*
- Systems analyst
- Computer scientist
- Statistical modeller
- Biometrician
- Epidemiologist

## HOW TO BECOME A MATHEMATICIAN, STATISTICIAN OR ACTUARY

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Have a strong mathematical capability
- Ability to analyse and manage uncertainty
- Good communication skills
- Enjoy working with abstract ideas
- Imaginative and intellectually curious
- Enjoy solving problems and have good reasoning ability
- Thorough and accurate
- A logical and creative mind
- Good interpersonal skills

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Applied Mathematics; Mathematical Sciences; Physical Science and Mathematics; Applied Statistics; Mathematical Statistics; Mathematics and Applied Mathematics; Mathematics and Finances; Mathematics and Physics; Mathematics and Statistical Science
- **Bachelor:** Business Science; Mathematics; Commerce

- **BBusSc:** Actuarial Science
- **BCom:** Actuarial Science

To qualify as a mathematician, you need at least an honours degree. To teach at a higher education institution or carry out high-level research, you will need a master's or doctoral degree in mathematics, statistics, or actuarial science.

To become a fellow or an associate of the [Actuarial Society of South Africa](#), you must pass its examinations or be granted exemption from them, and attain a satisfactory level of work-based skills.

### Certificates and diplomas

- **Certificate:** Advanced Mathematics
- **National diploma:** Mathematical Technology
- **Diploma:** Mathematical Sciences
- **Postgraduate diploma:** Mathematical Sciences

## WHO WILL EMPLOY ME?

CSIR • Government departments • Mining and manufacturing industries • Eskom • Educational institutions • Statistics South Africa • Financial institutions • Insurance and investment companies • Schools, colleges and universities • Banking and financial sector • Healthcare sector • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Actuarial Society of South Africa](#)
- [African Institute for Mathematical Sciences](#)
- [South African Mathematical Society](#)
- [Statistics South Africa](#)





## MECHANICAL ENGINEER



*A mechanical engineer plans, designs, organises and oversees the assembly, operation and maintenance of mechanical and process plant and installations.*



Mechanical engineers are involved in almost every discipline of engineering. These engineers design and oversee the manufacture of many products ranging from medical devices to new batteries.

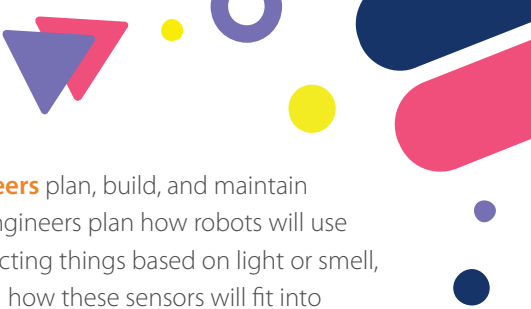
Their activities range from those leading to the production of a machine (research, design, development and manufacturing) to those ensuring the optimal performance of the equipment (manufacturing and production), including management and consultation.

Mechanical engineers develop and build engines that produce power from steam, petrol, nuclear fuels, and other energy sources.

Mechanical engineers work closely with other professionals and are assisted by mechanical engineering technologists and technicians.

Mechanical engineering technicians test mechanical systems, collect and analyse data, and assemble and





install mechanical assemblies. Mechanical engineering technologists analyse and modify mechanical engineering technologies and apply them in the testing and implementation of engineering projects.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Transportation engineers** design and develop equipment such as aircraft, helicopters, missiles, ships, motorcars, trains, as well as the steam and gas turbines and petrol and diesel engines needed for propulsion.
- **Power generation engineers** attempt to provide the energy required by consumers.
- **Agricultural engineers** provide equipment such as tractors, harvesters and milking machines for food producers. Engineers in this field assist in the economical production of food.
- **Mining engineers** develop pumping plants, ventilation fans, conveyor belts, drilling machines and underground railways.
- **Biomedical engineers** develop heart-lung machines, artificial kidney machines, heart valves, pacemakers and operation monitors.
- **Industrial engineers** play a major role in industrial and manufacturing processes such as production technology and quality control.
- **Automobile research engineers** seek to improve the performance of cars. These engineers work to improve the traditional features of vehicles such as suspension. They also work on aerodynamics and new fuelling possibilities.
- **Heating and cooling systems engineers** work to create and maintain environmental systems wherever temperatures and humidity must be kept within certain limits. They develop such systems for airplanes, trains, cars, schools, and even computer rooms.

- **Robotic engineers** plan, build, and maintain robots. These engineers plan how robots will use sensors for detecting things based on light or smell, and they design how these sensors will fit into robot designs.

Mechanical engineers, technologists, and technicians normally specialise in a particular field. Here are a few examples:

- Water – design and construct waterworks and waste and wastewater treatment plants
- Power generation – steam, water, gas, and nuclear turbines used for driving power generators
- Agriculture – tractors, threshing machines, harvesters and packing machines

Other areas of specialisation include transportation equipment, fluid mechanics, heating, ventilation and air-conditioning instrumentation, machines for specialised industries such as rubber, petroleum and plastics, and construction.

Developing technologies in this field include nanotechnology, biomechanics and acoustical engineering.

A wide variety of career opportunities are available in diverse areas such as transportation; nuclear, solar and fossil fuel energy development and utilisation; mining and earth moving equipment; heating and air-conditioning; air and water pollution control; metals and materials; or in the development of orthopaedic apparatus.

## WHAT DO MECHANICAL ENGINEERS DO?

- Design mechanical tools and equipment



- Develop and test prototypes and then oversee the manufacturing process
- Design machines, equipment or systems
- Design and supervise the operation of manufacturing process plants, including pumping stations, vehicle production plants, power stations, sewerage plants and water supplies
- Ensure that equipment, operation and maintenance comply with design specifications and safety standards
- Develop operating principles of mechanisms, devices and systems
- Establish control standards and procedures to ensure efficient functioning and safety of machines, tools, motors, engines, industrial plant, equipment, or systems
- Analyse test results and change the design or system as needed
- Oversee the manufacturing process for devices

### RELATED CAREERS

- Automotive engineer
- Mechatronics engineer
- Thermodynamics engineer
- Transportation systems engineer
- Fluid mechanics engineer

### HOW TO BECOME A MECHANICAL ENGINEER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Natural curiosity and a creative desire to make things that work
- Ability to think independently and to approach problems in a logical and confident manner
- Self-motivated
- Good communication skills





- Work well with others
- Enjoy detailed work and solving problems
- An analytical mind
- Meticulously accurate in calculations and drawings
- Mathematical and mechanical aptitude

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BEng:** Mechanical Engineering
- **BSc:** Engineering: Mechanical Engineering; Engineering (Aeronautical Engineering)
- **BTech:** Engineering: Mechanical
- **BScEng:** Mechanical Engineering; Aeronautical Engineering; Industrial Engineering
- **Bachelor:** Mechanical Engineering; Engineering Technology
- **MSc(Eng)**
- **MEng**

### Diplomas and certificates

- **National diploma:** Mechanical Engineering
- **Diploma:** Mechanical Engineering Diploma; Engineering Technology
- **Certificate:** Mechanical Engineering

After a three-year post-qualification employment period, candidates may apply for registration as professional engineering technicians or technologists with the [Engineering Council of South Africa \(ECSA\)](#). Only engineering technologists registered with the ECSA may use the title of professional engineering technologist.

## WHO WILL EMPLOY ME?

Transportation sector • Government departments • Energy companies • Air conditioning and refrigeration

companies • Automotive, aircraft and space industries • Consulting engineering firms • Biomechanical research and development companies • Sasol • Food and packaging industry • Manufacturing industries • Construction companies • Environmental industry • Eskom • Aircraft and navigation companies • Mining companies • Municipalities • Transnet • Car manufacturers • Consulting engineering firms • Universities • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Engineering Council of South Africa](#)
- [Energy and Water Sector Education Training Authority \(EWSETA\)](#)
- [Institute of Professional Engineering Technologists](#)
- [Institution of Certificated Mechanical and Electrical Engineers](#)
- [Manufacturing, Engineering and Related Services Education and Training Authority \(MERSETA\)](#)
- [The South African Institution of Mechanical Engineering \(SAIMEchE\)](#)







## MICROBIOLOGIST



*A microbiologist is a scientist who studies microscopic organisms, including bacteria, algae and fungi.*



Microbiologists investigate the basic anatomy, genetics and physiology of microorganisms, as well as the vital interaction between these organisms and the environment. They manipulate microorganisms, improve quality of life and diagnose and control microorganisms which have an impact on humans, animals and plants.

Even though they are very small and usually invisible to the naked eye, these tiny organisms play vital roles in biological activities in our environment.

Most microbiologists specialise in medical or industrial microbiology, virology, immunology, or bioinformatics. In the medical world, these scientists are involved in locating and identifying pathogenic microorganisms. They develop effective vaccines and methods of preventing epidemics of dangerous diseases.

Microbiologists are also involved, for example, in finding solutions for water pollution, the identification of



pathogenic microorganisms, the prevention of food decay and to produce antibiotics.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Bacteriologists** work in the field of bacteriology and study bacteria. They study microorganisms and their effects on animals.
- **Environmental microbiologists** study how microorganisms interact with the environment and each other. This discipline includes soil microbiology and water microbiology.
- **Food microbiologists** study pathogenic microorganisms that cause foodborne illness and spoilage. They investigate foodborne pathogens and work on disease prevention.
- **Industrial microbiologists** generally work in biotechnology and study microorganisms that produce useful products. They study and solve problems related to industrial production processes.
- **Medical microbiologists** support the prevention, diagnosis and treatment of illness caused by microorganisms (viruses, fungi and parasites).
- **Mycologists** study different types of fungi and how they interact with animals, plants and humans.
- **Virologists** work in the field of virology and study viruses. They oversee the diagnosis, management and prevention of infection.
- **Microbial epidemiologists** study the role of microorganisms in health and illness. They consider what causes disease outbreaks to treat diseases and prevent future outbreaks.
- **Immunologists** study how the human body defends itself against viruses. These medical professionals specialise in treating conditions relating to the immune system, such as allergies and asthma.
- **Agricultural microbiologists** deal with plant-associated microbes, plant and animal diseases and the microbiology of soil fertility.

## WHAT DO MICROBIOLOGISTS DO?

- Diagnose and control the microbes that infect humans, animals, plants and food
- Isolate organisms that cause disease and develop the means to prevent or treat it
- Develop environmental, medical, veterinary, industrial and other practical applications (such as the development of antibiotics)
- Observe, monitor, identify and track microorganisms
- Collect, monitor and assess samples from different types of environments
- Develop and register medicines, vaccines, diagnostic tests and pharmaceutical products
- Develop products, such as enzymes, vitamins, hormones, and antimicrobials and evaluate them in clinical trials
- Conduct quality control in manufacturing processes, such as checking for signs of contamination
- Develop techniques and best practices to use in research and routine sampling
- Analyse test results and prepare reports for a variety of stakeholders

## RELATED CAREERS

- |                      |                           |
|----------------------|---------------------------|
| • Biotechnologist    | • Entomologist            |
| • Geneticist         | • Zoologist*              |
| • Aquatic scientist* | • Public health scientist |
| • Pharmacist         | • Virologist              |
| • Botanist*          | • Microbiologist*         |
| • Biologist*         | • Bacteriologist          |
| • Medical researcher | • Immunologist            |
| • Ecologist*         | • Agricultural scientist* |
| • Horticulturist     |                           |



## HOW TO BECOME A MICROBIOLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Ability to solve complex problems
- Good communication skills
- An investigative mind
- Attention to detail
- Analytical and innovative thinking skills
- Keen interest in science and related fields
- Be imaginative and curious
- Patience and perseverance
- Precise and methodical
- Able to work independently and as part of a team



## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Microbiology; Biology Earth and Environment Science; Zoology and Biochemistry; Zoology and Entomology; Zoology and Genetics; Zoology and Microbiology; Chemistry, Biochemistry and Microbiology; Microbiology and Biotechnology
- **BTech:** Biotechnology'
- **BSc(Hons):** Microbiology and Biotechnology; Microbiology; Medical Microbiology
- **MSc:** Microbiology

### Certificates and diplomas

- **Diploma:** Biology
- **Certificate:** Biology

## WHO WILL EMPLOY ME?

Science councils (including the South African Medical Research Council) • Government departments • Waste treatment industries • Municipalities • Hospitals and healthcare facilities • Medical research companies • Food and beverage industries • Mining companies • Pharmaceutical industry • Pathology practices • Health care industry • Veterinary sciences • Biotechnology companies • Research agencies and education institutions

## WHERE CAN I FIND OUT MORE?

- [Agricultural Research Council](#)
- [Education, Training and Development Practices Sector Education and Training Authority \(ETDPSETA\)](#)
- [South African Council for the Natural Scientific Professions](#)
- [South African Society for Microbiology](#)





## NATURE CONSERVATIONIST

*A nature conservationist works in the interest of biological life and ecosystems.*



Nature conservationists have a nature-focused perspective that hinges on preserving the natural world. They ensure the well-being of the environment, contribute to conservation laws, provide farmers with advice, control natural resources and make the public aware of conservation-related matters. Their work is closely linked with natural resource management and sustainability practices.

### SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Wildlife conservation officers** monitor plant and animal communities to inform their management. They are involved with practical aspects of conservation such as game capture, infrastructure development, maintenance and tourism.
- **Extension officers** engage with and support landowners to promote sustainable land-use



practices in areas of conservation value, including water catchments.

- **Conservation law enforcement officers** ensure that nature conservation laws are enforced to protect rare and endangered plants and animals. They also ensure that industries and developments adhere to environmental protocols.
- **Scientific services** supply the necessary knowledge to improve decision-making in conservation and planning. They are usually specialists in their respective fields, including freshwater management.

## WHAT DO NATURE CONSERVATIONISTS DO?

- Apply theory to practical problems in the environment
- Monitor and fauna and flora
- Protect biodiversity and the ecosystems on which animals, plants and people depend
- Work towards sustainable agriculture, soil conservation and erosion control
- Evaluate impact assessments of proposed developments
- Develop habitat and wildlife management programmes
- Promote the concept of sustainability
- Enforce conservation laws
- Control the utilisation of natural resources
- Advise landowners, local authorities and the public on conservation matters
- Provide technical assistance to individuals who are drafting conservation plans
- Conduct research to identify sources of environmental problems
- Develop and coordinate the implementation of environmental management systems
- Identify or produce scientific information that is useful for conservation

## RELATED CAREERS

- Freshwater ecologist
- Zoologist\*
- Environmental scientist\*
- Hydrographer
- Environmental manager
- Environment engineer\*
- Environmental technologist
- Botanist\*
- Geologist\*
- Life scientist
- Marine biologist
- Natural resource manager
- Sustainability consultant
- Natural resource manager\*
- Ecologist\*
- Soil scientist\*
- Water resources manager
- Environmental health practitioner\*

## HOW TO BECOME A NATURE CONSERVATIONIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Keen interest in the natural environment
- The ability to work with groups of people
- Planning, time management and project management skills
- Good communication and observation skills
- The ability to gather, analyse and report on complex environmental data
- Scientific aptitude
- Patience and perseverance
- Love outdoor life and animals
- Be practical and self-sufficient
- Able to maintain good human relations



## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Biodiversity and Conservation Biology; Conservation Ecology; Biological Sciences; Botany and Zoology; Natural Sciences; Environmental and Water Science; Oceanography; Natural Sciences; Geography and Environmental Management; Environmental Science; Life and Environmental Science; Biodiversity; Marine Biology; Geography and Environmental Management; Applied Environmental Sciences; Ocean and Atmospheric Science; Biodiversity and Ecology; Zoology and Environmental Management; Plant Science
- **BTech:** Nature Conservation; Ecotourism Management
- **BScAgric:** Animal Science
- **BAgric:** Wildlife Management
- **BA:** Environmental Planning and Development; Development and Environment; Geography; Environment Studies; Environmental Health; Environmental Management; Environmental Science and Society; Environmental Studies; Environmental Health; Environmental Sciences; Geography; Environmental Education, Training and Development Practice
- **BEng(Hons):** Environmental Engineering
- **BA(Hons):** Geography: Environmental Studies
- **BSc(Hons):** Limnology and Ecology; Biodiversity and Conservation Ecology; Botany, Zoology
- **MSc:** Environmental Management; Conservation Ecology; Environmental Ecology

A degree in Veterinary Science (**BVSc**) can stand you in good stead if you want to pursue a career in wildlife management or conservation.

### Certificates and diplomas

- **Diploma:** Environmental Management; Marine Sciences; Hydrology and Water Resources Management; Ecotourism Management; Environmental Health; Nature Conservation
- **Advanced diploma:** Environmental Management; Nature Conservation
- **Postgraduate diploma:** Geographical Science; Environmental Management; Integrated Water Management; Nature Conservation; Sustainable Development

## WHO WILL EMPLOY ME?

Research institutions (including the South African National Biodiversity Institute) • Conservation authorities (including CapeNature and SANParks) • Science councils • Universities and research institutions • Government departments (including the Department of Forestry, Fisheries and Environment and the Department of Water and Sanitation) • Non-governmental organisations (including WWF-SA) • Municipalities • Game reserves • Water authorities • Tourism industry • Consulting firms • Self-employed (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Botanical Society of South Africa](#)
- [CapeNature](#)
- [Ezemvelo KZN Wildlife](#)
- [SANParks](#)
- [Society of South African Geographers](#)
- [Southern African Society of Aquatic Scientists](#)
- [Wildlife and Environment Society of South Africa](#)
- [WWF-SA](#)
- [Zoological Society of Southern Africa](#)





## PLUMBER



*A plumber maintains and repairs pipes, plumbing systems, and plumbing fixtures in houses, factories, plants and on construction sites.*



Some plumbers concentrate on residential plumbing, while others specialise in commercial plumbing. In some cases, plumbers also repair roof gutters. When doing repair or maintenance work, plumbers must locate the cause of problems and replace broken or worn-out valves and clear pipes and waste traps.

The actual setting depends on the type of work, the type of employer and the skill and experience of the plumber. Overtime and night emergency work are sometimes required.

### WHAT DO PLUMBERS DO?

- Install, maintain and repair pipes and fixtures associated with heating, cooling, water distribution, and sanitation systems
- Measure, cut, thread, bend, assemble, install, maintain and repair pipes, fittings and fixtures of drainage, heating, water supply and sewerage systems
- Install gas appliances, dishwashers and water



heaters, sinks and toilets using hand and power tools

- Find and replace broken valves
- Clear drains and pipes
- Install boilers, pumps, heating and cooling systems, geysers, and solar water heating systems
- Clear obstructions from sink drains and toilets
- Install fixtures such as wash-basins, baths, toilets, taps and industrial processing units
- Install heating and air-conditioning systems, including water heaters
- Test plumbing systems for leaks and other problems

## RELATED CAREERS

- Boilermaker\*
- Pipefitter
- Fitter and turner\*
- Welder\*

## HOW TO BECOME A PLUMBER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Alert, conscientious and accurate
- Efficient work habits and ability to perform tasks quickly
- Mechanical ability
- Enjoy working with your hands
- Practical
- Good health and stamina
- Reliability
- Stress- and time-management skills
- Excellent troubleshooting ability

### QUALIFICATIONS AND TRAINING

These include:

### Apprenticeship

Work under the supervision of a qualified plumber

### Learnerships

- **Competency-based modular training** at an accredited training centre
- **Practical training** needed as an apprentice
- **Trade qualification** (compulsory trade test) required to qualify as an artisan

Work experience in the form of a learnership or apprenticeship can only be undertaken by an accredited employer.

### Certificates and diplomas

- **National certificate:** Construction Engineering Studies (Plumbing)

To become a registered plumber with the Plumbing Industry Registration Board (PIRB), you must meet the stated requirements. [Visit the PIRB's website for more information.](#)

## WHO WILL EMPLOY ME?

Property developers • Public utilities • Building contractors • Municipalities • Construction industry • Water utilities • Shipbuilding or aircraft construction companies • Government departments • Plumbing and pipefitting contractors • Shipbuilding or aircraft construction companies • Plumbing contractors • Self-employment (as an entrepreneur)

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Institute of Plumbing South Africa](#)
- [Plumbing Industry Registration Board](#)





## POLITICAL SCIENTIST

*A political scientist studies the way people behave politically as individuals and groups and their relationship to society and the economy.*



A political scientist is part researcher, part analyst, and part forecaster. They use their expertise to understand how policies and laws affect government, business, and citizens.

Political scientists study the origin, development, functioning, and interactions of political institutions and movements such as governments, political parties and international laws. They develop theories, analyse

studies, and write reports that help others make decisions, determine policy and initiate change.

They also investigate the nature of states, governments' functions, voter behaviour, political parties, political culture, political economy, and public opinion.

Knowledge of political science can help people gain insight into foreign policy and diplomacy, the concepts



of good governance and accountable government, and sustainable development and better service delivery at the local government level.

Political scientists usually research one of the following areas: national politics, comparative politics, international relations, or political theory.

Political scientists specialising in **comparative politics** compare systems of government.

Political scientists who study **international relations** examine the ways that nations interact. are concerned with foreign policy, military questions, national security, trade policy and international finance.

**Political economy** is the study of how politics and economics affect each other. Political scientists working in this field investigate how a country is managed or governed, taking into account political and economic factors.

Political scientists also focus on the environment and **natural resource governance and management** within forests, water, renewable energy, minerals and mountain areas. Like most other scarce natural resources, water is a growing source of political debate and conflict.

Particularly pertinent to the water industry is **hydropolitics**, which is the politics around the availability of water and water resources. Political scientists working in this field deal with the positioning of dams and tunnels that affect more than one country, for example.

At the level of local government, service delivery and access to water are having a huge impact on local governance issues and local political and community dynamics.

## WHAT DO POLITICAL SCIENTISTS DO?

- Research in areas such as political philosophy, political party systems and international relations
- Present research and survey results for use by government, NGOs, political parties and international institutions
- Develop theories, models and methods to interpret and describe the nature of human experience and political events and behaviour
- Interpret and analyse policies, public issues, legislation, and the operations of governments, businesses and organisations
- Write drafts of legislative proposals, and prepare speeches, correspondence and policy papers
- Evaluate the effects of policies and laws on government, businesses and people
- Monitor current events, policy decisions and other related issues
- Forecast political, economic, and social trends

## RELATED CAREERS

- Diplomat
- Attorney\*
- Journalist
- Economist\*
- Social scientist\*

## HOW TO BECOME A POLITICAL SCIENTIST

You will need the following:

## SKILLS AND PERSONAL QUALITIES

- Be interested in politics and human behaviour
- Good communication skills
- Persistent nature



- Able to communicate ideas clearly, both in speech and in writing
- Be curious and have an inquiring mind
- Able to work independently and as part of a group
- Good judgement
- Critical-thinking skills

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BA:** Law; Politics
- **BCom:** Law
- **BLaw**
- **LLB**
- **Bachelor:** Political Science
- **BA(Hons):** Political Science; Politics; Philosophy; Politics, Governance and Economics; International Relations
- **BAdmin(Hons):** Political Science
- **MA:** Political Science; International Relations

For research positions, you will need a postgraduate qualification.

### Certificates and diplomas

- **Postgraduate diploma:** International Studies and Politics; Political Science; International Studies

## WHO WILL EMPLOY ME?

Universities and research organisations • Human Sciences Research Council (HSRC) • Social research companies • Media companies • Government departments (including the Department of International Relations and Cooperation) • Market research companies • International business sector • Institutes, think tanks and policy units • Development and aid work sector • Market research companies

## WHERE CAN I FIND OUT MORE?

- [Human Sciences Research Council \(HSRC\)](#)
- [Safety and Security Sector Education and Training Authority \(SASSETA\)](#)







## POLYMER SCIENTIST

*A polymer scientist is a chemist who manipulates the molecular structure and chemical or other processing of polymers to create useful materials that have unique properties.*



Polymer science is a specialised field of materials science that focuses on the study of polymers. Polymers are large complex molecules, made by combining smaller building blocks called monomers. Polymer scientists or plastics technologists perform highly skilled work in the plastics industry, which is linked to the chemical industry. They are involved in the design, production and understanding of synthetic materials.

A polymer scientist designs new materials. Many of these are used in the furniture, communication, packaging and transportation industries, in items ranging from tractors to detergents, fabrics or aircraft. The polymer may be the end product in itself, or it can be an ingredient that changes the properties of another mixture.

The field of polymer science includes researchers in multiple disciplines, including chemistry, physics, and engineering.



## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Polymer chemists** are concerned with the chemical synthesis and chemical properties of polymers. These scientists understand how the smaller building blocks combine to form polymers. They manipulate the molecular and chemical structure of polymers to develop specific functional characteristics in an end product.
- **Polymer nanotechnologists** manipulate polymer matter on an atomic and molecular scale. These scientists manipulate matter on the nanoscale (one billionth of a metre), developing new materials and equipment as well as drugs and diagnostic tools.
- **Nanotechnology** has endless potential applications from drinking water treatment to innovative ways of removing metals from wastewater. Nanotechnology includes fields of science as diverse as surface science, organic chemistry, molecular biology, semiconductor physics, and microfabrication.
- **Polymer technology** offers a diverse scope of opportunities, for example in production and production management of manufactured goods such as tyres, moulded plastic articles, and paints.
- **Plastics technologists** test the processes used to produce plastics and put the processes into operation. They oversee these processes and the production of plastics. These technologists are also involved in locating and correcting factory faults.

## WHAT DO POLYMER SCIENTISTS DO?

- Observe, research, analyse and interpret results
  - Develop innovative methods to improve existing products or procedures
  - Study large complex molecules or polymers
  - Develop new products or chemical processes in aerospace, biomedical, agricultural or manufacturing industries
- 
- ### RELATED CAREERS
- |                                    |   |
|------------------------------------|---|
| • Biomolecular engineer            | • Biochemist                                      |
| • New product development manager  | • Chemist*  |
| • Material scientist               | • Recycling specialist                            |
| • Research and development chemist | • Compliance and technical services manager       |
| • Laboratory director              | • Biofuels plant engineer                         |
| • Researcher*                      | • Materials development engineer                  |
| • Chemical engineer*               | • Self-employed (as a consultant or entrepreneur) |
| • Research and development analyst |   |
| • Quality assurance manager        |   |





## HOW TO BECOME A POLYMER SCIENTIST OR TECHNOLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Keen interest in chemistry
- Analytical skills and a logical approach to problem-solving
- Have an enquiring and logical mind
- Ability to work with other people
- Observant and inquisitive
- Good communication skills
- The capacity to deal with complex issues systematically and creatively
- Pay attention to detail
- Self-motivation and patience
- Have a flair for management, production and quality control

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Chemistry and Polymer Science; Materials Technology; Chemical Biology
- **BEng:** Chemical Engineering
- **BTech:** Biotechnology
- **Bachelor:** Engineering Technology in Materials Engineering in Polymer Technology
- **BSc(Hons):** Materials Science; Polymer Science
- **MTech:** Chemistry; Engineering (Chemical)

To become a polymer scientist or technologist, you need a bachelor's degree in polymer science, organic chemistry, or a related field. Many higher-level jobs require a master's degree or doctorate and several years of experience in the field.

The qualifications you need to become a polymer scientist include research and laboratory experience and a graduate degree. You can start on this career path by earning a master's degree or PhD in chemistry or chemical engineering. Some polymer scientists have advanced degrees in materials science, and some universities offer a specialised degree in polymer science.

#### Certificates and diplomas

- **National diploma:** Polymer Technology

### WHO WILL EMPLOY ME?

Universities • Research institutions • Science councils (such as the CSIR) • Government departments (including the Department of Water and Sanitation) • Water utilities • Manufacturing industry • South African Bureau of Standards (SABS) • Plants that process raw materials for plastic • Plastic, rubber manufacturers and companies that produce surface coatings • Laboratories • Self-employed (as a consultant or entrepreneur)

### WHERE CAN I FIND OUT MORE?

- [Chemical and Allied Industries Association](#)
- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Energy and Water Sector Education Training Authority \(EWSETA\)](#)
- [Institute of Waste Management Southern Africa](#)
- [Local Government Services Sector Education and Training Authority \(LGSETA\)](#)
- [Plastics Federation of South Africa](#)
- [Southern African Society of Aquatic Scientists](#)
- [Water Institute of Southern Africa](#)





## PUBLIC RELATIONS PRACTITIONER

*A public relations practitioner is a communication expert who employs all means of communication to achieve an effective two-way flow of information between the organisation and its target groups.*



At its core, it is about influencing, engaging, and building a relationship with key stakeholders across numerous platforms to shape and frame the public perception of an organisation. The function of public relations is to build bridges of understanding, goodwill and awareness between a company and the public that it wishes to influence.

Public relations practitioners generate positive publicity for their clients and enhance their reputation. A good public relations practitioner will analyse the organisation, find positive messages and translate those messages into positive stories.



The public relations practitioner may work in a variety of areas or in one specific field, such as consulting, community involvement, employee communication, industrial affairs and media liaison.

Some of the disciplines or functions within public relations include corporate communications, crisis communications, internal communications, integrated marketing, media relations, event management, brand building and content creation.

## WHAT DO PUBLIC RELATION PRACTITIONERS DO?

- Advise management on strategies and policies
- Write and distribute press releases and speeches
- Create and execute special events designed for public outreach and media relations
- Conduct market research on the organisation's messaging
- Crisis public relations strategies
- Anticipate, analyse and interpret public opinion, attitudes and issues that might have an impact, for good or ill, on the operations and plans of the organisation or company
- Protect the reputation of a department, organisation or company
- Oversee the creation of content to drive customer engagement
- Build and sustain good relationships between the employing organisation and its clients through planned publicity campaigns and activities

## RELATED CAREERS

- Journalist\*
- Marketing specialist
- Public relations manager\*
- Copywriter
- Product developer
- Purchase manager
- Creative director

- Media director
- Sales manager
- Content marketing specialist
- Digital brand manager
- Business development strategist

## HOW TO BECOME A PUBLIC RELATIONS PRACTITIONER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Excellent communication skills, both orally and in writing
- Excellent interpersonal skills
- Good information technology and presentation skills
- The ability to take initiative, prioritise and plan effectively
- Be outgoing and self-confident
- Be creative, imaginative and persuasive
- Be able to deal tactfully with all types of people
- Have organising and management skills
- Be able to work under pressure

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Creative Brand Communications; Marketing Communication; Creative Brand Communication; Strategic Brand Communication
- **BCom:** Marketing Management; Marketing; Digital Marketing; Strategic Brand Management; Marketing and Management Science
- **BBA:** Brand Building and Management
- **BCom:** Strategic Brand Management
- **BCom(Hons):** Strategic Brand Management



### Diplomas and certificates

- **Higher certificate:** Brand Building Practice; Marketing
- **Diploma:** Marketing Communication; Visual Communication; Marketing; Business Marketing; Marketing Research; Marketing and Public Relations; Marketing and Entrepreneurial Studies; Language Practice and Media Studies; Public Relations
- **Certificate:** Marketing and Sales; Marketing; Marketing Management
- **Postgraduate diploma:** Marketing; Marketing Supply; Marketing Management; Communication Management

### WHO WILL EMPLOY ME?

Government departments • Private sector • Municipalities • Business and industrial organisations • Food and beverage industry • Various sectors and industries • Self-employment as a consultant

### WHERE CAN I FIND OUT MORE?

- [Public Relations Institute of Southern Africa](#)
- [Media, Information and Communication Technologies Sector Education and Training Authority \(MICTSETA\)](#)

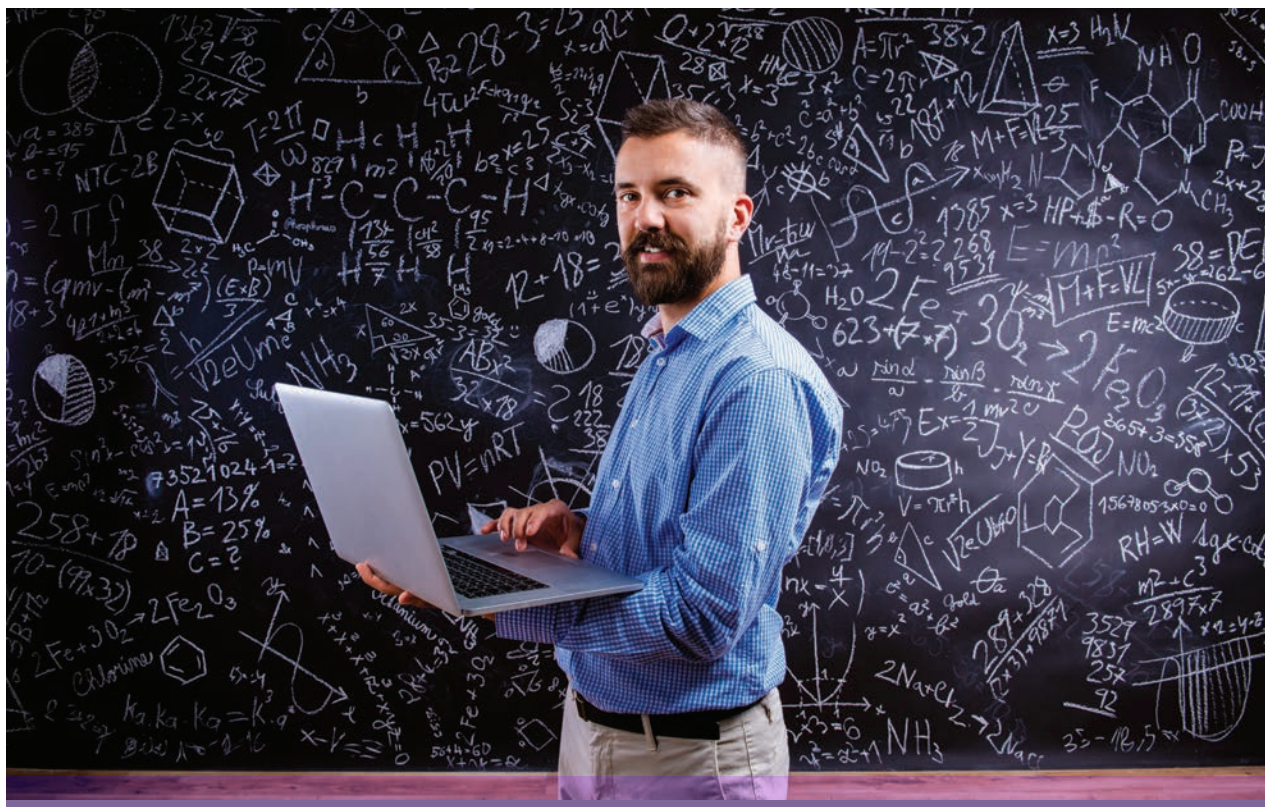






## RESEARCHER

*A researcher carries out academic or scientific research and adds to the knowledge in a particular field.*



Researchers work in almost every area of science imaginable. They plan and carry out experiments and investigations in many areas, including geoscience, ecology and meteorology.

Researchers collect information and organise it in ways that make us look at it in a new way. They may be trying to advance society's understanding and appreciation of a particular subject, develop products or practical applications based on their findings or advocate

changes in their organisation's policy.

Researchers involved in the natural sciences in basic or fundamental research, study and try to uncover underlying principles and laws that govern the biophysical world.

In scientific fields, researchers are often searching for solutions to problems that have eluded others for years. Although routine testing and experiments may be a



large part of their day-to-day jobs, scientists also rely heavily on innovation to achieve breakthroughs. If you are a researcher involved in applied research, you look for practical ways to apply basic research. Both kinds of research are necessary. The more we know and learn, the more applications are possible.

Put simply, research may be divided into three broad research types:

- **Pure basic research** – experimental and theoretical work, often called fundamental research, “knowledge for knowledge’s sake”
- **Strategic basic research** – experimental and theoretical, but often undertaken to acquire new knowledge
- **Applied research** – original work to perhaps determine new ways of achieving specific objectives or developing new techniques

Researchers in the many fields and disciplines connected with the water cycle gather and analyse data from rivers, oceans, aquifers and the atmosphere. These specialists have a key role in higher education and government projects. They keep improving water supply and water quality management practices. They also help the private sector to design better processes for cleaning water and reusing waste.

## WHAT DO RESEARCHERS DO?

- Plan and conduct experiments
- Develop experiments and conduct trials to test their theories
- Record and analyse data
- Carry out fieldwork and collect samples
- Review research findings
- Present results to management and other research staff

- Write research papers, reports, reviews and summaries
- Prepare research proposals and funding applications
- Ensure that quality standards are met
- Develop original solutions to problems
- Keep up to date with relevant scientific and technical developments

## RELATED CAREERS

- Research and development manager
- Product development manager
- Research assistant

## HOW TO BECOME A RESEARCHER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Excellent written and verbal communication skills
- Curiosity and intelligence
- Attention to detail
- Critical thinking skills
- Technical skills
- Ability to maintain quality, safety and control standards
- Ability to plan work and set achievable targets
- Ability to manage and interpret data

## QUALIFICATIONS AND TRAINING

Degree and post-graduate qualification(s)

Following the basic degree, it is necessary to continue to honours, master’s and PhD, in one’s field of interest. It is possible to continue one’s research career on the same subject as one’s PhD, or one may decide to branch out into something different.

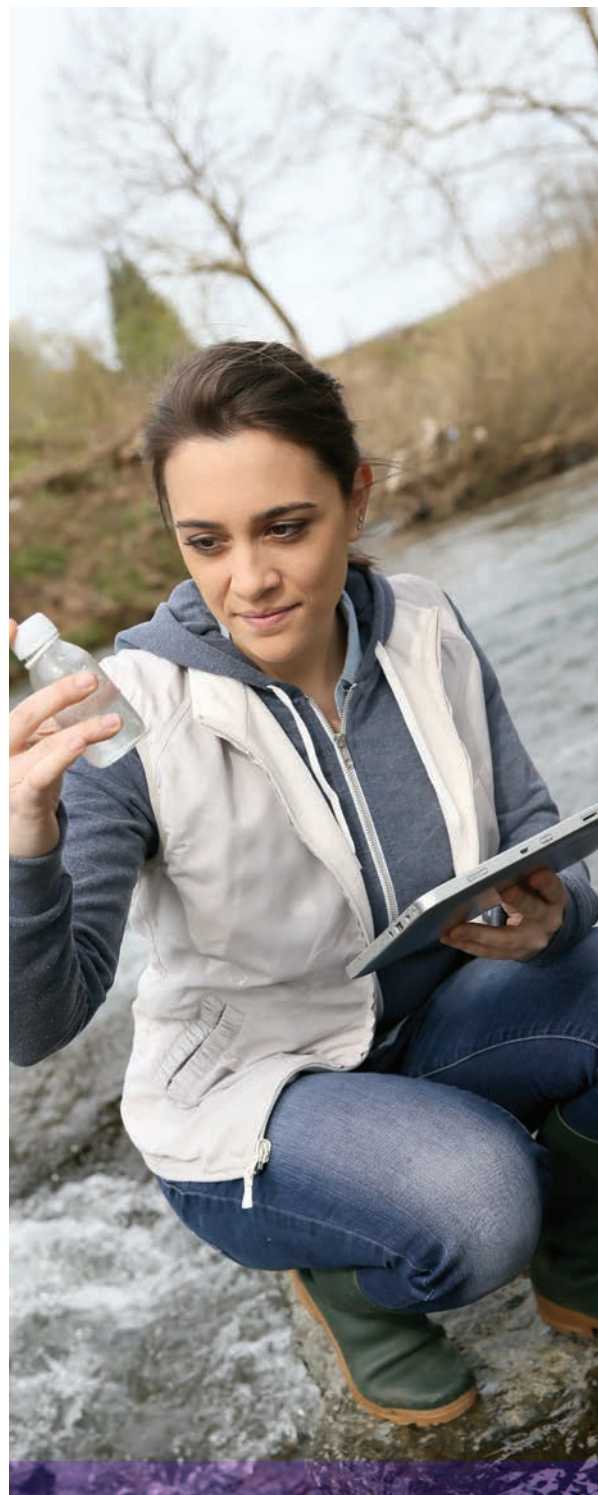


## WHO WILL EMPLOY ME?

Universities and education institutions • Science councils • Government departments (including the Department of Water and Sanitation) • Laboratories (private and government-owned) • Biotechnology companies • Agricultural, medical, veterinary, and industrial sector • Utility providers • Specialist consultancies • Environmental agencies • Consumer products companies • NGOs • Chemical companies • Pharmaceuticals producers • Research and development divisions and laboratories within large companies • Self-employment (as a consultant or entrepreneur)

## WHERE CAN I FIND OUT MORE?

- [Chemical Industries Education and Training Authority \(CHIETA\)](#)
- [Council for Scientific and Industrial Research](#)
- [Education, Training and Development Practices SETA \(ETDP SETA\)](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Higher education institutions \(departments associated with your research interests\)](#)
- [National Advisory Council on Innovation](#)
- [National Research Foundation](#)







## SOCIAL SCIENTIST

*A social scientist studies human behaviour and the mental, social and biological processes that influence and result from it.*



Social science is the branch of science devoted to studying societies and the relationships among individuals within those societies. It includes anthropology, economics, political science, psychology and sociology.

Social scientists are concerned with the origin and development of human society, and the institutions, relationships, and ideas in society. Scientists and

researchers in the social sciences can research different things, from how video games affect childhood development to how bank interest rates impact spending in developing nations. If it involves humans, there isn't much that social scientists won't study.

Sociologists are social scientists who study people's behaviours and interactions, whether they are personal interactions or interactions on a bigger scale. They study



societies, social processes, and the way citizens adhere to established social customs.

Sociology is the study of society in all its complexity, from both an empirical and a theoretical perspective. Sociologists limit their research focus to social interactions instead of areas such as politics or economics. They study how different groups, such as political organisations, religions, social structures, economic groups affect each other and how those relationships shape society at large.

A sociologist can work in a variety of fields, including social psychology, clinical sociology, political sociology, economic sociology, applied sociology and research.

## WHAT DO SOCIAL SCIENTISTS DO?

- Collect information and analyse and interpret data
- Conduct surveys and in-depth interviews
- Write reports and advise government departments and community organisations
- Interpret, use and evaluate data
- Develop and test theories
- Prepare, present and disseminate results in the form of reports, briefings, research papers and presentations
- Offer research-based briefings and advice, which may involve writing action plans
- Advise external bodies on social policy

## RELATED CAREERS

- |                        |                     |
|------------------------|---------------------|
| • Economist*           | • Historian*        |
| • Political scientist* | • Anthropologist    |
| • Market researcher    | • Criminologist     |
| • Psychologist         | • Researcher*       |
| • Social worker*       | • Marketing manager |

## HOW TO BECOME A SOCIAL SCIENTIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- An interest in human beings and their behaviour
- Excellent communication skills, both written and verbal
- Strong analytical and problem-solving skills
- Interpersonal skills to develop and maintain relationships
- Project management skills to oversee all aspects of a research project
- Accuracy and attention to detail for handling data and reporting research findings
- A flexible approach to work
- Organisation skills
- Excellent time management
- The ability to work under pressure and meet deadlines
- Analytical skills and objectivity

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BA:** Social Sciences; Humanities; Social Dynamics; Industrial and Organisational Psychology and Labour Relations Management; Sociology and Geography; Sociology and Labour Relations Management; Political Science; Development and the Environment; Socio-informatics
- **Bachelor:** Social Sciences; Psychology and Social Sciences; Social Anthropology; Sociology; Industrial Sociology and Labour Studies





- **BA(Hons):** Sociology; Social Anthropology; Development Sociology
- **MA:** Sociology

Sociology may be taken as a major or subsidiary subject to form part of the BA degree or diploma. Depending on their areas of specialisation, social scientists usually have master's or PhD degrees in psychology or sociology.

## WHO WILL EMPLOY ME?

Research institutions • Non-governmental organisations  
 • Municipalities • Market research companies • Community organisations • Universities • Government departments (including departments responsible for social services, housing and education) • Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [Human Sciences Research Council \(HSRC\)](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)





## SOCIAL WORKER

*A social worker resolves social and other problems, and furthers human well-being and human rights, social justice and social development.*



Social workers support individuals and their families through difficult times and ensure that vulnerable people, including children and adults, are safeguarded from harm.

In laymen's terms, social work is a profession that focuses on helping individuals, groups, and communities improve their well-being. Social workers

often interact with the most vulnerable members of society, working hard to improve their lives.

The field of social work is complex and varied, often focusing on a wide range of issues.

Depending on a person's area of interest and experience the role of a social worker and the field in which they focus can vary greatly from one position to another.



Generally, however, social workers practise in child and family welfare, marriage and divorce counselling, care of the elderly, medical social work, psychiatric social work, social work with the mentally or physically disabled, addictions focused, criminal offenders and in the workplace or schools.

A social auxiliary worker assists the work of social services professionals by providing services and counselling support to individuals, families and communities.

## WHAT DO SOCIAL WORKERS DO?

- Write reports about clients for welfare organisations, schools and courts of law
- Analyse the client's situation and present alternative approaches to resolving problems
- Undertake casework, organise group activities or facilities for people with similar problems, or work with communities
- Maintain contact with other social service agencies, educational institutions and healthcare providers involved with clients to provide information and obtain feedback on clients' overall situation and progress
- Provide counselling, therapy and mediation services and facilitating group sessions to assist clients in developing skills and insights needed to deal with and resolve their social and personal problems
- Train auxiliary social workers
- Liaise with, and make referrals to, other agencies
- Participate in multidisciplinary teams and meetings regarding, for example, child protection or mental health
- Maintain accurate records and preparing reports for legal action

## RELATED CAREERS

- Economist\*
- Political scientist\*
- Market researcher
- Psychologist
- Nurse
- Historian\*
- Anthropologist
- Criminologist
- Researcher\*
- Archaeologist
- Town and regional planner\*
- Human resources or personnel manager\*
- Social scientist
- Development practitioner
- Aid worker
- Community worker\*
- Sociologist\*

## HOW TO BECOME A SOCIAL WORKER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- A deep interest in human beings and their behaviour
- Excellent communication skills, both written and verbal
- Interpersonal skills to develop and maintain relationships
- Project management and organisational skills
- Reliable and resourceful
- Tolerant and even-tempered
- Resilient and empathetic
- Flexibility to adapt to new roles, tasks and situations
- Strong observation, analytical and listening skills

### QUALIFICATIONS AND TRAINING

*(See also social scientist above).*

These include:



## Degrees

- **Bachelor:** Social Work; Applied Social Science
- **BA:** Social Work; Social Sciences
- **BSocSc:** Social Work
- **BA(Hons):** Social Work
- **MA:** Social Work

A degree in social work allows a graduate to register with the South African Council of Social Service Professions (SACSSP) and practise as a social worker.

The SACSSP is a statutory body under which falls the Professional Board for Social Work and the Professional Board for Child and Youth Care Work. [Visit SACSSP's website for more information.](#)



## Certificates and diplomas

- **National certificate:** Vocational Safety in Society; Community Development; Child and Youth Care
- **Higher certificate:** Social Auxiliary Work
- **Diploma:** Community Work; Counselling and Communication Skills
- **Graduate development programmes**
- **Internship programmes** are available for unemployed graduates to obtain occupational or professional registration as a social worker, a professional or occupational body.

## Learnerships

People at all educational levels can build careers for themselves in health and social services.

Social workers also have to undergo intensive practical training, usually with various welfare organisations.

## WHO WILL EMPLOY ME?

Government departments • Child Welfare South Africa • National Council of and for Persons with Disabilities (NCPD) • South African National Council on Alcoholism and Drug Dependence • Family and Marriage Society of South Africa (FAMSA) • Provincial hospitals • Personnel departments of large commercial and industrial organisations • Self-employment

## WHERE CAN I FIND OUT MORE?

- [South African Council for Social Service Professions](#)
- [Health and Welfare Sector Education and Training Authority \(HWSETA\)](#)
- [Energy and Water Sector Education Training Authority \(EWSETA\)](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [Public Service Sector Education and Training Authority \(PSETA\)](#)





## SOIL SCIENTIST

*A soil scientist studies the upper few metres of the Earth's crust in terms of its physical and chemical properties, distribution, genesis and morphology and biological components.*



Soil science deals with the origins, characteristics and the use of soils for purposes of sustained biological production, maintain environmental quality, as well as promoting health in plants, animals and people.

Being a natural and renewable resource, soils are vital to sustaining food production, supporting plant and animal life and having a positive impact on environments globally.

Soils facilitate the lifecycle of growth, sustenance and decay. They influence the worldwide distribution of plants, animals, and people.

As a soil scientist, you will gather, interpret and evaluate information about the chemistry, biology and physics of soil. Using the information obtained from this analysis, you will inform and influence on diverse issues such as agricultural production, biodiversity management,



climate change responses, environmental quality, human health, land management and restoration.

## WHAT DO SOIL SCIENTISTS DO?

- Analyse soil for its chemical and mineral composition
- Supply information about soils, its potential and limitations to a wide range of existing or potential land users
- Investigate the effect of farming activities (such as tilling, fertilising and crop rotation) on different soil types
- Determine the effects of pollution and environmental factors on soils
- Work closely with other agricultural experts and farmers to improve soil management
- Provide technical advice used to help plan land management programmes
- Advise land managers of capabilities and limitations of soils (such as timber sales, watershed rehabilitation projects, soil productivity and recreation development)
- Conduct studies on soil stability, moisture retention or drainage, sustainability and environmental impact
- Assess environmental hazards, including hazardous waste sites that involve soil investigation techniques and remediation alternatives

## RELATED CAREERS

- Conservationist\*
- Agricultural scientist\*
- Wetland specialist
- Agricultural economist\*
- Environmental protection officer\*
- Agricultural extension officer
- Geotechnical engineer
- Agricultural engineer\*
- Hydrologist\*
- Environmental technician

- Crop production specialist
- Conservation planner

## HOW TO BECOME A SOIL SCIENTIST

You will need the following:

### SKILLS AND PERSONAL REQUIREMENTS

- A strong interest in soil
- Good communication skills
- Good observation skills
- Love of nature and the outdoors
- Able to work independently and as part of a team
- Concentration skills and attentiveness
- Self-motivated and dedicated
- Love of science

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BAgric:** Soil Science
- **BScAgric:** Soil Science
- **BSc(Hons):** Soil Science

## WHO WILL EMPLOY ME?

- CSIR
- Agricultural Research Council (ARC)
- Government departments (including the Department of Water and Sanitation and the Department of Agriculture, Land Reform and Rural Development)
- Universities and research institutions
- Agricultural sector
- Manufacturers of fertiliser and plant material
- Commercial banks
- Construction industry



- Landscape architects
- Self-employment (as a soil surveyor or analyst)

## WHERE CAN I FIND OUT MORE?

- [Agricultural Research Council \(ARC\)](#)
- [Agricultural Sector Education Training Authority \(AgriSETA\)](#)
- [ARC-Institute for Soil, Climate and Water \(ARC-ISCW\)](#)
- [Soil Science Society of South Africa](#)







## SURVEYOR



*A surveyor is someone who establishes official land, airspace and water boundaries.*



Land surveying deals with the field of geomatics, which is derived from the word “geo” (meaning the Earth) and “matics” (a derivative of informatics).

Geomatics or land surveyors carry out measurements and collect and interpret data about land areas, including information about boundaries, buildings, and natural and human-made features. They measure, map, assess, and collect and interpret information about specific pieces of land. These surveyors often work on land due to be redeveloped (built on).

Surveyors plan, direct and conduct survey work to determine, delineate and precisely position tracts of land, natural and constructed features, coastlines, marine floors and underground works, and manage related information systems.

They use elements of mathematics, physics and engineering to achieve their objectives. The recent introduction of geomatics is because of the digital revolution, which has revolutionised the traditional survey instruments and methods of presenting and transmitting that information.



**A land surveyor** surveys land and buildings to help create boundaries and rights to that land and property.

**Building surveyors** help create and supervise everything from towering skyscrapers to simple home extensions.

**Project management surveyors** run teams to deliver projects on time and budget.

**Quantity surveyors** assess the financial impact and profitability of construction projects.

**Building control surveyors** design and manage the use of buildings to make sure they comply with laws and regulations.

**Infrastructure surveyors** ensure the effective running and connecting of cities, including rail, road, broadband and electricity.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Hydrographical and oceanographic** surveying concerns mapping the marine environment or under-sea topography. These surveyors also do positioning at sea and update maps to show danger zones.
- **Geodetic surveying** is used to ascertain the size and shape of our planet. Geodetic surveyors are involved in determining the size and shape of the Earth, the variation in its gravitational field and the movement of its landmasses.
- **Topographic surveying** involves aerial photogrammetry (mapping by applying maths equations to photographs) and satellite remote sensing to ensure the correct position of structures.
- **Engineering surveys** are measurements for the design, setting out and monitoring of roads, freeways,

railways, bridges, tunnels and other large structures.

- **Mine surveying** help establish the boundaries of mines and measure mine workings. These measurements allow surveyors to make connections between underground passages and enable new mines to avoid older ones that might have flooded.
- **Remote sensing surveys** help monitor changes in the surface features of the Earth by using digital data from high-resolution satellites and other imagery systems in the sky.
- **Geographic information science (GIS)** is the management of information and decision support systems using geographically referenced data. Various types of data sets (such as rivers, roads, mapping, and land cover) contain information about a specific feature can all be tied together geographically.
- **Remote sensing** is the science of acquiring information about the Earth's surface without actually being in contact with it. This is done by sensing and recording images and processing, analysing and applying that information.
- **Cartography (mapmaking)** involves making maps and using 3D computer graphics to model and present different phenomena.
- **Cadastral surveying** involves the measuring of property, such as the planning of towns, cities, farms and sectional title properties and their subdivision. The cadastral surveyor determines the position of boundaries between properties.

Surveyors work closely with civil engineers, landscape architects, and regional and urban planners to develop comprehensive design documents.

## RELATED CAREERS

- Civil engineer\*
- Quantity surveyor
- Town and regional planner\*



- Cartographer\*
- Cartographic technician
- Geometric engineer
- Architect
- Surveying and mapping specialist

## WHAT DO SURVEYORS DO?

- Measure distances, directions, and angles between points on, above, and below the Earth's surface
- Survey, measure and describe land surfaces, mines, underground surfaces, sea, river and lake beds
- Analyse data using plans, maps, charts and software
- Record the results of surveying and verify the accuracy of data
- Note the exact position of various features and record survey data in digital form
- Plan and conduct aerial photographic surveys
- Present findings to clients, government agencies and others
- Design, compile and revise maps and charts using aerial and other photographs, satellite imagery, survey documents and data, existing maps and records, reports and statistics
- Undertake research and development of surveying and photogrammetric measurement systems, cadastral systems and land information systems

## HOW TO BECOME A SURVEYOR

You will need the following:

### SKILLS AND PERSONAL REQUIREMENTS

- Enjoy working outdoors
- Able to work well and communicate with others
- Enjoy travelling
- Able to work independently
- Numeracy and the ability to make mathematical calculations
- Lateral and logical thinking
- Cutting-edge information technology skills and

confidence with new technology

- Problem-solving and analysis
- Attention to detail

## QUALIFICATIONS AND TRAINING

These include:

### Degrees

- **BSc:** Land Surveying; Land Surveying/Geomatics; Geomatics
- **BTech:** Surveying; Cartography
- **Bachelor of Science** in Land Surveying

### Certificates and diplomas

- **National diploma:** Surveying/Cartography; Town and Regional Planning; Hydrographic Surveying; Surveying
- **Certificate:** Cartography
- **National certificate:** Cartography

## WHO WILL EMPLOY ME?

Government departments (including the Department of Agriculture, Rural Development and Land Reform)

- Provincial administrations
- Local authorities
- Public utility companies (such as Eskom)
- Civil engineering and construction companies (contractors and consultants)
- Mining companies
- CSIR
- Eskom
- Specialist land surveying companies
- Aerial surveying and mapping companies
- Property developers
- Self-employment (as a consultant)

## WHERE CAN I FIND OUT MORE?

- [National Geo-spatial Information](#)
- [South African Geomatics Council](#)





## URBAN AND REGIONAL PLANNER



*An urban and regional planner (also known as a town and regional planner) develops and implements plans and policies for the controlled use of urban and rural land, and advises on economic, environmental and social needs of land areas.*



Planning as an activity is an effort to imagine or re-imagine an urban or regional environment and translate it into priorities for investment, conservation, new and upgraded settlement, strategic infrastructure investments, and land use regulation principles.

The discipline of planning has many facets: sustainable development, spatial planning, land use management, housing, urban regeneration, environmental management, local economic development, tourism planning, and urban environmental design. Many

planners are involved in urban renewal projects, the regeneration of inner cities, and township redevelopment.

You can specialise as a community town and regional planner; environmental planner (who investigates how human activities affect the natural environment); development planner (who plans for disadvantaged communities); urban planner; strategic planner; commercial and industrial planner; and residential planner.



## WHAT DO TOWN AND REGIONAL PLANNERS DO?

Estimate the future needs for housing, business and industrial sites, public facilities, open spaces, schools, cemeteries, traffic and transportation

- Survey and inspect sites
- Present information in the form of maps, graphs, diagrams, sketches and scale models
- Prepare and coordinate economic, social and environmental impact studies
- Plan layout and coordinate the development of towns and urban areas
- Confer with government authorities, communities and specialists in fields such as architecture, planning, social science, the environment and the law
- Devise and recommend the use and development of land
- Plan layout and coordinate the development of urban areas

## RELATED CAREERS

- Architect
- Surveyor\*
- Civil engineer\*
- Quantity surveyor
- Property developer
- Built environment analyst
- Development and corporate real estate
- Government planner
- Policy analyst

## HOW TO BECOME AN URBAN AND REGIONAL PLANNER

You will need the following:

### SKILLS AND PERSONAL REQUIREMENTS

- Good communication skills
- Project management, research and team-working skills

- The ability to work on several different problems at once
- Integrity, tact and sociability
- An original thinker that takes initiative
- A good planner and can visualise outcomes
- Critical, practical and research skills

## QUALIFICATIONS AND TRAINING

*(See also surveyor above)*

These include:

### Degrees

- **BA:** Environmental Planning and Development
- **BTech:** Town and Regional Planning
- **Bachelor** of Town and Regional Planning
- **BSc:** Urban and Regional Planning

All graduated town and regional planners may register at the South African Council for Planners (SACPLAN) after completion of at least three years of approved postgraduate practical experience. [Visit SACPLAN's website for more information.](#)

### Certificates and diplomas

National diploma: Town and Regional Planning

## WHO WILL EMPLOY ME?

Municipalities • Provincial planning departments  
• Property developers • Business consultancies • Construction and surveying companies • Environmental agencies • Large retail business

## WHERE CAN I FIND OUT MORE?

- [South African Council for Planners \(SACPLAN\)](#)
- [Construction Education and Training Authority \(CETA\)](#)





## WATER AND WASTEWATER PLANT OPERATOR

*A water and wastewater plant operator or process controller controls the supply and storage of water and runs the equipment, controls the processes and monitors the plants that treat the water.*



It takes a lot of work to get water from natural sources (reservoirs, streams and groundwater) into our taps. Similarly, it is a complicated process to convert the wastewater into a form that is safe to release into the environment.

Skilled operators control the processes, monitor operations, conduct maintenance and repair work and report results. They are trained in mechanics, hydraulics, computer science, biology, and chemistry, among others.

**Water process controllers** treat water coming from the environment and remove harmful household and industrial substances from liquid waste so that the water can be reused or discharged safely into the environment.

**Water treatment plant operators** work in water treatment plants. Water is pumped from wells, rivers, streams, and reservoirs to these plants. It is then treated and distributed to customers.



**Wastewater treatment plant** and system operators do similar work to remove pollutants from domestic and industrial waste. Used water, also known as wastewater, travels through sewage pipes to treatment plants where it is treated and either returned to streams, rivers, and oceans or used for irrigation.

Plant operators often work closely with **waste and wastewater treatment engineers** who plan and design water treatment plants processes. Process controllers are often assisted by water services works technicians and water care technologists.

There are also other careers for plant processors related to water. **Hydroelectric power plant process controllers** operate instruments and machinery used for generating electric power. Coal-fired or nuclear power plants also need process controllers.

## WHAT DO PROCESS CONTROLLERS DO?

- Operate equipment to purify and clarify water, or to process or dispose of sewage
- Add chemicals, such as ammonia, chlorine, or lime, to disinfect water or other liquids
- Monitor operating conditions, meters, and gauges
- Control and supervise plant operations
- Collect wastewater samples for chemical and biological analyses
- Adhere to safety procedures and guidelines
- Make sure that the machinery, control instruments, switchboards, and other systems are working properly
- Compile records and reports on equipment performance, switching operations and instrument readings

## RELATED CAREERS

- Sewage plant operator
- Microfiltration specialist
- Chemist\*
- Laboratory technician\*
- Mechanic
- Water researcher
- Chemical engineer\*
- Civil engineer\*
- Mechanical engineer\*
- Electrician or construction electrician
- Automotive electrician

## HOW TO BECOME A PROCESS CONTROLLER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Good communication skills
- Be persistent and practical
- Good problem-solving abilities
- Physically strong and healthy
- Conscientious and responsible

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BTech:** Civil (Water Engineering); Water Care
- **BSc:** Civil Engineering
- **BEng:** Civil Engineering; Chemical Engineering
- M(Eng)
- **MSc(Eng):** Water Quality Engineering

#### Certificates and diplomas

- **Diploma:** Hydro Power Plant Process Control
- **Certificate:** Water Care; Water and Wastewater Treatment; Water and Wastewater Process Control
- **National certificate:** Infrastructure Management



- **Advanced diploma:** Civil Engineering
- **Postgraduate diploma:** Water Management

### Learnerships

- In-service training and various short courses are available.

### WHO WILL EMPLOY ME?

Water, sewage and other systems utilities • Municipalities • Water boards • Government departments (including the Department of Water and Sanitation) • Chemical industries • Some food and beverage industries • Mining companies

### WHERE CAN I FIND OUT MORE?

- [Energy and Water Sector Education Training Authority \(EWSETA\)](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [Water Institute of Southern Africa](#)







## WELDER



*A welder fabricates and repairs metal products using various welding techniques.*



Welders play key roles in the manufacturing process. Their work varies from repair and maintenance welding to construction and fabrication.

Welders' skills are used to construct and maintain pipelines, boilers, nuclear reactors, pressure vessels, motor vehicles, oil rigs and turbine castings. They need to be competent in welding many different metal types (mild steel, stainless steel or aluminium) using various processes. Recognising welding defects and being able to correct them, is also part of the job.

You can choose to be a practical welder that joins materials together using various welding processes.

As a welder, you can progress your career by studying to become a welding supervisor or foreman.

You can also work as a welding inspector. In this career, you will be responsible for verifying that welders are doing their work according to approved and implemented procedures.





## WHAT DO WELDERS DO?

- Construct and maintain metal equipment and structures
- Decide on the method of welding, the welding rod materials, and the treatments and tests to use after welding
- Recognise welding defects and fix them
- Weld metal parts
- Operate resistance-welding machines
- Braze metal parts together
- Cut metal pieces using a gas flame or an electric arc
- Join metal parts by hand soldering
- Monitor the fitting, burning, and welding processes to avoid overheating of parts or warping, shrinking, distortion or expansion of the material
- Examine and measure workpieces to ensure conformance with specifications

## RELATED CAREERS

- Fitter and turner\*
- Sheet metal worker
- Boatbuilder
- Boilermaker\*
- Panel beater

## HOW TO BECOME A WELDER

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Be practical and hands-on
- Physical strength and stamina
- Able to concentrate in noisy working conditions
- Able to produce high-quality work
- Work accurately and carefully
- Have good eyesight



## QUALIFICATIONS AND TRAINING

These include:

### Apprenticeship

This consists of theoretical training at a training centre and workplace training under the supervision of a qualified artisan.

If you want to become a welder, you should be at least 16 years old and have a Grade 9 certificate.

### Learnership

- Theoretical training – at a college or through a correspondence course
- Practical training – apprenticeship with an employer offering in-service training under a qualified tradesperson or artisan
- Compulsory trade test – set by the Department of Employment and Labour, to qualify as an artisan. [Visit the department's website for more information.](#)

### Certificates and diplomas

- **National certificate:** Engineering Studies; Engineering and Related Design
- **National diploma:** Mechanical Engineering

The South African Institute of Welding (SAIW) offers training courses in welding and non-destructive testing technologies. [Visit SAIW's website for information.](#)

## WHO WILL EMPLOY ME?

Engineering companies • Eskom • Gate and fence industry • Construction companies • Iron and steel plants • Mines • Motor manufacturing industry • Railways and shipyards • Iron and steel plants • Electricity supply industry • Sasol • Metal industries • Power plants • Petroleum refineries • Water treatment plants • Self-employment (as an entrepreneur)

## WHERE CAN I FIND OUT MORE?

- [Construction Education and Training Authority \(CETA\)](#)
- [Manufacturing, Engineering and Related Service Education and Training Authority \(MERSETA\)](#)
- [South African Institute of Welding](#)
- [Steel and Engineering Industries Federation](#)







## ZOOLOGIST

*A zoologist studies the anatomy, physiology, characteristics, ecology, behaviour and environments of animals.*



The field of zoology has many different disciplines, such as cell biology, physiology, marine biology, behaviour, and ecology, to name but a few.

Zoologists study species and animal populations and work with animals out in the field, in captivity or in a laboratory. These scientists can also study animals at the level of the cell, organ systems, whole animals, animal communities or ecosystems.

Zoologists can also be divided based on the animal groups on which they work. For example, one person might specialise in fish (an ichthyologist) whereas another may specialise in mammals (a mammalogist).

Someone else might concentrate on the development of the early stages of life in both fish and mammals (an embryologist or developmental biologist).



As a zoologist, you can work in many areas, including conservation of endangered species and habitats, animal education and welfare, drug development and testing, improving livestock and crops in agriculture and teaching and research.

A zoologist has an important part to play in the world of water because of the distribution of aquatic animals as an indicator of the state of the environment.

## SOME AREAS OF SPECIALISATION IN THIS FIELD

- **Cell biologists:** Study animal cells and their functions
- **Ecologists:** Study animals and their interactions with their environments and humans
- **Conservation biologists:** Control and manage animal populations and their habitats
- **Physiologists:** Study how animals function and how they are adapted to live in their environments
- **Systematists:** Study evolutionary relationships between living and fossilised animals and categorise animals
- **Palaeontologists:** Study evolutionary relationships between fossil animals
- **Taxonomists:** Discover and describe new species or animal groups
- **Entomologists:** Study insects and the roles and control of insect pests
- **Herpetologists:** Study amphibians and reptiles
- **Ornithologists:** Study birds
- **Mammalogists:** Study mammals
- **Parasitologists:** Study parasites
- **Epidemiologists:** Study the spread of diseases
- **Ethologists:** Study animal behaviour
- **Ichthyologists (fisheries biologists\*):** Study fish, fish populations and ways of growing fish and other aquatic animals

- **Aquaculturists\*:** Study fish populations and how to promote their commercial use
- **Geneticists:** Study the genetics of animals
- **Developmental biologists:** Study the genetics of animals and how animals develop and grow

## WHAT DO ZOOLOGISTS DO?

- Identify species and collect data on growth, nutrition, reproduction, prey and predators
- Design methods of animal population control (for pests) and management in the wild and in captivity
- Supervise the work of technical officers and technicians
- Dissect and examine specimens under a microscope
- Design and conduct research projects
- Analyse data, and write and publish scientific reports
- Collect, store and prepare specimens for analysis
- Identify, record and monitor species of animals
- Use modelling software to predict future scenarios, such as changes in habitats or population numbers
- Identify, monitor and address prevalence of invasive species and other threats
- Ensure animal welfare, educate the public, promote conservation efforts and assist with captive breeding programmes

## RELATED CAREERS

- Nature conservationist\*
- Researcher\*
- Marine scientist
- Veterinarian
- Fish scientist\*
- Biologist\*
- Freshwater ecologist\*
- Entomologist
- Parasitologist
- Ornithologist
- Animal behaviourist
- Animal breeder
- Wildlife manager



## HOW TO BECOME A ZOOLOGIST

You will need the following:

### SKILLS AND PERSONAL QUALITIES

- Love nature and have a keen interest in biological science
- Able to work independently or as part of a team
- Imaginative and curious
- Problem-solving skills
- Keen observer
- Patience and perseverance
- Accurate and an aptitude for detail

### QUALIFICATIONS AND TRAINING

These include:

#### Degrees

- **BSc:** Zoology; Biological Sciences; Environmental Sciences; Botany and Zoology; Zoology and Biochemistry; Zoology and Chemistry; Zoology and Environmental Management; Zoology and

Geography; Zoology and Physiology; Biological and Agricultural Sciences; Biological Sciences (Biodiversity and Ecology); Conservation Ecology; Microbiology and Zoology; Zoology and Life Sciences

- **BTech:** Nature Conservation
- **BSc(Hons):** Zoology; Wildlife Management; Nature Conservation; Ecology/Biodiversity; Entomology; Freshwater Studies; Marine Biology; Fisheries Science

An honours degree or preferably an MSc or PhD degree is essential for a zoologist's professional development. Postgraduate studies involve a series of research projects chosen by the student in accordance with the relevant area of interest.

#### Certificates and diplomas

- **Advanced diploma:** Nature Conservation
- **Diploma:** Nature Conservation; Wildlife Management
- **Certificate:** Wildlife Management
- **National certificate:** Nature Conservation
- **Postgraduate diploma:** Nature Conservation





## WHO WILL EMPLOY ME?

- Zoos and aquariums
- Research institutes and organisations
- Government departments (including the Department of Forestry, Fisheries and Environment)
- Museums
- Science councils
- Conservation authorities (including SANParks and provincial nature conservation agencies)
- Non-governmental organisations
- Private game farms
- Medical and industrial laboratories
- ARC-Onderstepoort Veterinary Research Institute (ARC-OVI)
- Manufacturers of fertilisers, insecticides and livestock remedies
- South African Bureau of Standards (SABS)
- CSIR
- South African Medical Research Council (SAMRC)
- Pharmaceutical companies
- Environmental consultants

## WHERE CAN I FIND OUT MORE?

- [ARC-Onderstepoort Veterinary Research Institute \(ARC-OVI\)](#)
- [CapeNature](#)
- [Energy and Water Sector Education Training Authority \(EWSETA\)](#)
- [Ezemvelo KZN Wildlife](#)
- [Local Government Sector Education and Training Authority \(LGSETA\)](#)
- [South African National Parks \(SANParks\)](#)
- [Southern African Institute for Aquatic Biodiversity \(SAIAB\)](#)
- [Southern African Society of Aquatic Scientists](#)
- [Wildlife and Environmental Society of South Africa \(WESSA\)](#)
- [Zoological Society of Southern Africa](#)







SECTION

04



# USEFUL CONTACTS AND INFORMATION

**Note:** Details correct at time of going to press


For career advice, visit the South African Qualifications Authority's National Qualifications Framework and Career Advice helpline.

Tel: 086 999 0123 • Email: [help@nqf.org.za](mailto:help@nqf.org.za) • Web: [www.careerhelp.org.za](http://www.careerhelp.org.za)

## GOVERNMENT DEPARTMENTS

### DEPARTMENT OF EMPLOYMENT AND LABOUR

#### National office:

 Tel: 012 309 4000  
 Web: [www.labour.gov.za](http://www.labour.gov.za)

#### PROVINCIAL OFFICES:



##### Eastern Cape

 East London 043 701 3000  
 [ec.customercare@labour.gov.za](mailto:ec.customercare@labour.gov.za)



##### Free State

 Bloemfontein 051 505 6200  
 [fs.customercare@labour.gov.za](mailto:fs.customercare@labour.gov.za)



##### Gauteng

 Johannesburg 011 853 0300  
 [gp.customercare@labour.gov.za](mailto:gp.customercare@labour.gov.za)


##### KwaZulu-Natal

 Durban 031 366 2000  
 [kzn.customercare@labour.gov.za](mailto:kzn.customercare@labour.gov.za)

##### Limpopo

 Polokwane 015 290 1744  
 [lp.customercare@labour.gov.za](mailto:lp.customercare@labour.gov.za)



##### Mpumalanga

 Witbank 013 655 8700  
 [mp.customercare@labour.gov.za](mailto:mp.customercare@labour.gov.za)

##### North West

 Mmabatho 018 387 8100  
 [nw.customercare@labour.gov.za](mailto:nw.customercare@labour.gov.za)

##### Northern Cape

 Kimberley 053 838 1500  
 [nc.customercare@labour.gov.za](mailto:nc.customercare@labour.gov.za)

##### Western Cape

 Cape Town 021 441 8000  
 [wc.customercare@labour.gov.za](mailto:wc.customercare@labour.gov.za)



## LABOUR CENTRES

### EASTERN CAPE














	Aliwal North	051 633 2633
	Butterworth	047 491 0656
	Cradock	048 881 3010
	East London	043 702 7500
	Fort Beaufort	046 645 4686
	Graaff-Reinet	049 892 2142
	Makhanda ( <i>Grahamstown</i> )	046 622 2104
	King William's Town	043 643 4756/7
	Lusikisiki	039 253 1996/7
	Maclear	045 932 1424/6
	Mdantsane	043 761 3151
	Mount Ayliff	039 254 0282/89/91
	Mthatha	047 501 5620/17
	Port Elizabeth	041 506 5000/1
	Queenstown	045 807 5400
	Uitenhage	041 992 4627

### FREE STATE



	Bethlehem	058 303 5293
	Bloemfontein	051 411 6400
	Botshabelo	051 534 3789
	Ficksburg	051 933 2299
	Harrismith	058 623 2977
	Kroonstad	056 215 1812
	Petrusburg	053 574 0932
	Phuthaditjhaba	058 713 0373
	Sasolburg	016 970 3200
	Welkom	057 391 0200
	Zastron	051 673 1471

### GAUTENG

	Alberton	011 861 6130/1
	Atteridgeville	012 373 4434/5/8

	Benoni	011 747 9600/6
	Boksburg	011 898 3340/2/9
	Brakpan	011 744 9000
	Bronkhorstspuit	013 932 0197/8
	Carletonville	018 788 3281
	Ga-Rankuwa	012 700 0290/55
	Germiston	011 345 6300/2
	Kempton Park	011 975 9301/7
	Krugersdorp	011 955 4420/3
	Mamelodi	012 812 9502
	Nigel	011 814 7095/7
	Pretoria	012 309 5000
	Randburg	011 781 8144
	Randfontein	011 693 3618/9/3650/3731/2/3
	Roodepoort	011 766 2000
	Sandton	011 444 7631
	Soshanguve	012 730 0500
	Soweto	011 983 8700
	Springs	011 365 3700/03
	Temba	012 727 1364/7/9
	Vanderbijlpark	016 981 0280
	Vereeniging	016 430 0000

### KWAZULU-NATAL

	Dundee	034 212 3147/8
	Durban	031 401 9424
	Estcourt	036 342 9369/0
	Kokstad	039 727 2140/5643/4931/5361
	Ladysmith	036 638 1900/1/2/3
	Newcastle	034 312 3334
	Pietermaritzburg	033 341 5300/3
	Pinetown	031 701 7740
	Port Shepstone	039 682 2406/7
	Prospecton	031 913 9700
	Richards Bay	035 780 8700
	Richmond	033 212 2768
	Stanger	032 551 7300



☎	Ulundi	035 879 8800/02/42
☎	Verulam	032 541 5600/3
☎	Vryheid	034 980 8992/820

## LIMPOPO

☎	Burgerfort	013 231 8913/4/5
☎	Giyani	015 812 9030
☎	Groblersdal	013 262 3150/2983
☎	Lebowakgomo	015 633 9360
☎	Lephalale	014 763 2162/3
☎	Makhado	015 516 0207/1025
☎	Modimolle	014 717 1046/8
☎	Mokopane	015 491 5973
☎	Phalaborwa	015 781 5114
☎	Polokwane	015 299 5000/010
☎	Seshego	015 223 7020/220
☎	Thohoyandou	015 962 2771/2
☎	Tzaneen	015 306 2600

## MPUMALANGA

☎	Barberton	013 712 3066/353
☎	Bethal	017 647 2383/5212
☎	Carolina	017 843 1077/2111
☎	Eerstehoek	017 883 2414
☎	Emalahleni ( <i>Witbank</i> )	013 653 3800
☎	Ermelo	017 819 7632/3010
☎	KwaMhlanga	013 947 3173/2484/3378
☎	Malelane	013 790 1528/682/359
☎	Mashishing ( <i>Lydenburg</i> )	013 235 2368/9
☎	Mbombela ( <i>Nelspruit</i> )	013 753 2844/5/6
☎	Middelburg	013 283 3600
☎	PietRetief	017 826 1883/4
☎	Sabie	013 764 2105/6
☎	Secunda	017 631 2585/652
☎	Standerton	017 712 1351/4809

## NORTHERN CAPE

☎	Calvinia	027 341 1280
☎	DeAar	053 631 0455
☎	Kimberley	053 838 1500
☎	Kuruman	053 712 3870
☎	Postmasburg	053 313 0641
☎	Springbok	027 718 1058/9
☎	Upington	054 331 1098

## NORTH WEST

☎	Brits	012 252 3068
☎	Christiana	053 441 2120
☎	Klerksdorp	018 464 8700
☎	Lichtenburg	018 632 4323
☎	Mafikeng	018 381 1010/11
☎	Mogwase	014 555 5693
☎	Potchefstroom	018 297 5100
☎	Rustenburg	014 592 8214
☎	Taung	053 994 1679
☎	Vryburg	053 927 5221









## WESTERN CAPE

☎	Beaufort West	023 414 3427
☎	Bellville	021 941 7000
☎	CapeTown	021 468 5500/502/4
☎	George	044 801 1200
☎	Knysna	044 302 6800
☎	Mitchells Plain	021 391 0591
☎	MosselBay	044 691 1140/1
☎	Oudtshoorn	044 203 6100/2792386
☎	Paarl	021 872 2020/74
☎	Somerset West	021 852 2535
☎	Vredenburg	022 715 1627
☎	Worcester	023 347 0152












## UNIVERSITIES AND RESEARCH INSTITUTIONS

### NELSON MANDELA UNIVERSITY






-  PO Box 77000  
Port Elizabeth  
6031
-  University Way  
Summerstrand
-  041 504 1111
-  [info@mandela.ac.za](mailto:info@mandela.ac.za)
-  Nelson Mandela University
-  @MandelaUni
-  Nelson Mandela University
-  [www.mandela.ac.za](http://www.mandela.ac.za)

### NORTH-WEST UNIVERSITY






-  Private Bag X1290  
Potchefstroom  
2520
-  The Office of the Registrar  
Building F1  
11 Hoffman Street  
Potchefstroom  
2351
-  018 299 1111/0860 169 698
-  018 299 2222
-  [studies@mynwu.info](mailto:studies@mynwu.info)
-  NWU - North-West University
-  @theNWU
-  North-West University
-  [www.nwu.ac.za](http://www.nwu.ac.za)

### CAMPUSES:






#### MAHIKENG

-  Private Bag X2046  
Mmabatho  
2745
-  Corner of Albert Luthuli and University Drive  
Mmabatho  
2745
-  0860 169698
-  018 392 5775
-  NWU University (@NWUMahikeng)

#### POTCHEFSTROOM









-  Private Bag X6001  
Potchefstroom  
2520
-  11 Hoffman Street  
Potchefstroom  
2531
-  018 299 1111/2222/ 0860169698
-  018 299 2767
-  North West University (@NWU-Pukke)

#### VAALE TRIANGLE

-  PO Box 1174  
Vanderbijlpark  
1900
-  Hendrik Van Eck Boulevard  
Vanderbijlpark  
1900
-  0860 169698
-  016 910 3182
-  NWU Vaal (@NWUVaal)





## RHODES UNIVERSITY








-  PO Box 94  
Makhanda (Grahamstown)  
6140
-  046 603 8111
-  046 603 8300
-  communications@ru.ac.za, registrar@ru.ac.za
-  Rhodes University
-  @Rhodes\_Uni
-  Rhodes University
-  [www.ru.ac.za](http://www.ru.ac.za)

## STELLENBOSCH UNIVERSITY








-  Private Bag X1  
Matieland  
7602
-  Administration B building  
Victoria Street  
Stellenbosch
-  021 808 9111
-  021 808 3822
-  info@sun.ac.za
-  Stellenbosch University
-  @StellenboschUni
-  Stellenbosch University
-  [www.sun.ac.za](http://www.sun.ac.za)

## UNIVERSITY OF CAPE TOWN

-  Private Bag X3  
Rondebosch  
7701
-  Rondebosch  
Cape Town  
7700

-  021 650 9111
-  021 650 3726
-  admissions@uct.ac.za
-  University of Cape Town (@uct.ac.za)
-  @UCT\_news
-  University of Cape Town
-  [www.uct.ac.za](http://www.uct.ac.za)

## UNIVERSITY OF FORT HARE

-  PO Box 7426  
50 Church Street  
East London  
5200
-  040 602 2281/122 /016
-  Studentadmin@ufh.ac.za, webmaster@ufh.ac.za
-  University of Fort Hare
-  University of Fort Hare
-  @ufh1916 (University\_Fort Hare)
-  [www.ufh.ac.za](http://www.ufh.ac.za)

## CAMPUSES:

### ALICE




-  1 King Williamstown Rd  
Alice  
5700
-  040 602 2011
-  040 653 1554

### BISHO

-  50 Independence Avenue  
Bisho  
5605
-  040 608 3403
-  040 608 3408/5301











## EAST LONDON

 50 Church Street  
East London  
5201  
 043 704 7000  
 043 704 7095






---

## UNIVERSITY OF THE FREE STATE

 PO Box 339  
Bloemfontein  
9300  
 205 Nelson Mandela Drive  
Park West  
Bloemfontein  
 051 401 9666/ 3000/ 2525/ 9288  
 [info@ufs.ac.za](mailto:info@ufs.ac.za)  
 University of the Free State  
 University of the Free State  
 @UFSweb  
 [www.ufs.ac.za](http://www.ufs.ac.za)










---

## UNIVERSITY OF JOHANNESBURG

 PO Box 524  
Auckland Park  
2006  
 Corner of Kingsway Avenue and University Road  
Auckland Park  
Johannesburg  
 011 559 4555  
 [mylife@uj.ac.za](mailto:mylife@uj.ac.za)  
 University of Johannesburg  
 @go2uj  
 University of Johannesburg  
 [www.uj.ac.za](http://www.uj.ac.za)








---

## UNIVERSITY OF KWAZULU-NATAL

 University of KwaZulu-Natal  
Durban  
4041  
 Mazisi Kunene Road  
Glenwood  
 031 260 1111 (Durban)  
 033 260 5111 (Pietermaritzburg)  
 [enquiries@ukzn.ac.za](mailto:enquiries@ukzn.ac.za)  
 University of KwaZulu-Natal  
 University of KwaZulu-Natal  
 @UKZN  
 [www.ukzn.ac.za](http://www.ukzn.ac.za)

---










## UNIVERSITY OF LIMPOPO

 Private Bag X1106  
Turfloop  
Sovenga  
0727  
 Corner of R71 Tzaneen Road and University Street  
Mankweng Township  
Polokwane  
Turfloop Campus  
Old Admin Block  
Ground Floor  
Sovenga  
0727  
 015 268 9111/ 3332  
 [enrolment@ul.ac.za](mailto:enrolment@ul.ac.za)  
 University of Limpopo (@officialUL)  
 @ULvarsity  
 [www.ul.ac.za](http://www.ul.ac.za)










---



## UNIVERSITY OF PRETORIA



-  Private Bag X20  
Hatfield  
0028
-  Lynnwood Road  
Hatfield  
0002
-  012 420 3111
-  012 420 4555
-  [csc@up.ac.za](mailto:csc@up.ac.za)
-  University of Pretoria
-  @UPTuks
-  University of Pretoria
-  [www.up.ac.za](http://www.up.ac.za)

## UNIVERSITY OF SOUTH AFRICA



-  PO Box 392  
Unisa  
0003
-  Preller Street  
Muckleneuk Ridge  
Pretoria
-  080 000 1870
-  012 429 4150
-  [study-info@unisa.ac.za](mailto:study-info@unisa.ac.za)
-  University of South Africa
-  @unisa
-  University of South Africa
-  [www.unisa.ac.za](http://www.unisa.ac.za)

## CAMPUSES:









### MAIN CAMPUS

-  Preller Street  
Muckleneuk Ridge  
Pretoria
-  080 000 1870









## SUNNYSIDE

-  Corner of Justice Mahomed and Steve Biko Streets  
Pretoria
-  080 000 1870

## UNIVERSITY OF VENDA









-  Private Bag X5050  
Thohoyandou  
0950
-  University Road  
Thohoyandou  
0950
-  015 962 8000
-  [info@univen.ac.za](mailto:info@univen.ac.za)
-  University of Venda
-  University of Venda
-  @Univenofficial
-  [www.univen.ac.za](http://www.univen.ac.za)

## UNIVERSITY OF THE WESTERN CAPE

-  Private Bag X17  
Bellville  
7535
-  Robert Sobukwe Road  
Bellville
-  021 959 3900/01
-  [info@uwc.ac.za](mailto:info@uwc.ac.za)
-  University of the Western Cape (@UWOnline1)
-  University of the Western Cape
-  @UWOnline
-  [www.uwc.ac.za](http://www.uwc.ac.za)



## UNIVERSITY OF THE WITWATERSRAND






-  Private Bag 3  
University of Witwatersrand  
Johannesburg  
2050
  -  1 Jan Smuts Avenue  
Braamfontein  
2000
  -  011 717 1000/888
  -  [info.ccd@wits.ac.za](mailto:info.ccd@wits.ac.za)
  -  Wits University (@witsuniversity)
  -  @WitsUniversity
  -  University of the Witwatersrand  
(university-of-the-witwatersrand)
  -  [www.wits.ac.za](http://www.wits.ac.za)
- 

## UNIVERSITY OF ZULULAND









-  Private Bag X1001  
KwaDlangezwa  
3886
  -  035 902 6000
  -  [info@unizulu.co.za](mailto:info@unizulu.co.za)
  -  University of Zululand (@UNIZULU)
  -  University of Zululand
  -  @UNIZULUongoye
  -  [www.unizulu.ac.za](http://www.unizulu.ac.za)
- 

## UNIVERSITIES OF TECHNOLOGY

### CAPE PENINSULA UNIVERSITY OF TECHNOLOGY

-  PO Box 652  
Cape Town  
8000
  -  Corner of Keizersgracht and Tennant Street  
Zonnebloem  
Cape Town
  -  021 959 6767
  -  [info@cput.ac.za](mailto:info@cput.ac.za)
  -  Cape Peninsula University of Technology (@CPUT)
  -  @CPUT
  -  Cape Peninsula University of Technology
  -  [www.cput.ac.za](http://www.cput.ac.za)
- 

### CENTRAL UNIVERSITY OF TECHNOLOGY

-  Private Bag X20539  
Bloemfontein  
9300
-  20 President Brand Street  
Westdene  
Bloemfontein
-  051 507 3911/ 3021/ 3028
-  [smakola@cut.ac.za](mailto:smakola@cut.ac.za)
-  Central University of Technology (@CUTFreeState)
-  Central University of Technology (CUT)
-  @cutfsonline
-  [www.cut.ac.za](http://www.cut.ac.za)







## CAMPUSES:










### BLOEMFONTEIN

-  Private Bag X20539  
Bloemfontein  
9300
-  20 President Brand Street  
Westdene  
9300
-  051 507 3911
-  smakola@cut.ac.za, chadinae@cut.ac.za








### WELKOM

-  Private Bag X20539  
Bloemfontein  
9300
-  1 Mothusi Road  
Welkom  
9460
-  057 910 3500
-  [llekutu@cut.ac.za](mailto:llekutu@cut.ac.za)









## DURBAN UNIVERSITY OF TECHNOLOGY

-  PO Box 1334  
Durban  
4000
-  70 Mansfield Road  
Berea  
4001
-  031 373 2000 (Durban)
-  033 845 8800 (Pietermaritzburg)
-  info@dut.ac.za
-  Durban University of Technology
-  Durban University of Technology
-  @DUT\_Tweets
-  [www.dut.ac.za](http://www.dut.ac.za)

## MANGOSUTHU UNIVERSITY OF TECHNOLOGY



-  511 Mangosuthu Highway  
Umlazi  
KwaZulu-Natal  
4031
-  031 907 7111
-  info@mut.co.za
-  Mangosuthu University of Technology  
(@MUTUmlazi)
-  Mangosuthu University of Technology
-  @MUTCampus
-  [www.mut.ac.za](http://www.mut.ac.za)

## TSHWANE UNIVERSITY OF TECHNOLOGY

-  Private Bag X680  
Pretoria  
0001
-  Staatsartillerie Road  
Pretoria  
0183
-  086 110 2421
-  general@tut.ac.za
-  Tshwane University of Technology  
(@Tutcommunications)
-  Tshwane University of Technology
-  @Official\_Tut
-  [www.tut.ac.za](http://www.tut.ac.za)



## CAMPUSES:

### ARCADIA



-  175 Nelson Mandela Drive  
Pretoria
-  012 382 5911





## ARTS

 24 Du Toit Street  
Pretoria  
 086 110 2421



## GA-RANKUWA

 2827 Zone 2  
Botsi Street  
Ga-Rankuwa  
 086 110 2421



## EMALAHLENI

 Mandela Street  
Witbank  
eMalahleni  
 013 653 3107



## MBOMBELA

 Madiba Drive  
Mbombela  
Mpumalanga  
 086 110 2421



## POLOKWANE

 109 Market Street  
Polokwane  
 015 287 0700


## PRETORIA

 Staatsartillerie Road  
Pretoria West  
 086 110 2421

## SOSHANGUVE NORTH










 Campus Drive  
Soshanguve  
 086 110 2421

## SOSHANGUVE SOUTH

 2 Aubrey Matlala Road  
Block K  
Soshanguve  
 086 110 2421



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## VAAL UNIVERSITY OF TECHNOLOGY


 Private Bag X021  
Vanderbijlpark  
1900  
 Andries Potgieter Boulevard  
Vanderbijlpark  
 016 950 9000/356  
 016 950 9999  
 admissions@vut.ac.za  
 Vaal University of Technology (@MaVUTi)  
 Vaal University of Technology (Vut)  
 @VUT\_Online  
 [www.vut.ac.za](http://www.vut.ac.za)

## CAMPUSES:

### EKURHULENI

 Corner of R59 and Brazil Street  
Daveyton  
1501  
 011 929 7400

### SECUNDA



 8 Carl Bosch Street  
Secunda  
2302  
 017 631 1990



### UPINGTON










 Le Roux Street  
Upington  
8801  
 054 332 3304

### VANDERBIJLPARK

 Andries Potgieter Boulevard  
Vanderbijlpark  
 016 950 9000

---

### WALTER SISULU UNIVERSITY


 Private Bag X1  
UNITRA  
5117  
 Nelson Mandela Drive  
Mthatha  
 047 502 2844  
 047 502 2211  
 [enquiries@wsu.ac.za](mailto:enquiries@wsu.ac.za)  
 Walter Sisulu University (@OfficialWSU)  
 Walter Sisulu University  
 @WalterSisuluUni  
 [www.wsu.ac.za](http://www.wsu.ac.za)



### CAMPUSES:

#### MTHATHA

 Nelson Mandela Drive  
Mathatha  
 047 502 2843/4/8  
 047 502 2211

#### BUTTERWORTH




 Private Bag X3182  
Ibika N2  
Butterworth  
4960

 047 401 6254  
 047 401 6267

### BUFFALO CITY

 PO Box 1421  
Potsdam  
East London  
5200  
 043 708 5200  
 043 708 5331

### QUEENSTOWN



 PO Box 1421  
East London  
 Grey Street Site and Masibulele Site  
5200  
 040 842 6800/6

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## TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING COLLEGES (TVET COLLEGES)



### TVET COLLEGES

 Private Bag X174  
Pretoria  
0001  
 123 Francis Baard Street  
Pretoria

 080 087 2222  
 [www.tvetcolleges.co.za](http://www.tvetcolleges.co.za)



### EASTERN CAPE

#### BUFFALO CITY TVET COLLEGE (EAST LONDON)


 Corner of Lukin Road and King Street  
Selbourne  
East London  
5201  
 043 704 9200  
 [information@bccollege.co.za](mailto:information@bccollege.co.za)  
 Buffalo City TVET College  
 @CityTvet  
 [www.bccollege.co.za](http://www.bccollege.co.za)

#### CAMPUSES

##### EAST LONDON

 043 722 5453  
 [information@bccollege.co.za](mailto:information@bccollege.co.za)










##### JOHN KNOX BOKWE

 043 761 1792

#### ST MARKS

 043 743 6554

#### EASTCAPE MIDLANDS TVET COLLEGE (UITENHAGE)

 Private Bag X35  
Uitenhage  
6230  
 Corner of Cuyler and Durban Street  
Uitenhage Central  
Uitenhage  
6229  
 041 995 2000  
 041 995 2047  
 [info@emcol.co.za](mailto:info@emcol.co.za)  
 Eastcape Midlands College (@EastcapeMidlandsCollege)  
 Eastcape Midlands TVET College  
 @MidlandsColleg1  
 [www.emcol.co.za](http://www.emcol.co.za)





## CAMPUSES



### CHARLES GOODYEAR

 Edison Street  
Uitenhage  
 041 995 2000



### GRAAFF-REINET

 18 Middel Street  
Graaff-Reinet  
 049 891 0201



### GRAHAMSTOWN

 Saint Aidans Avenue  
Grahamstown  
 046 636 1575



### HEATH PARK

 Corner of Laurance Erasmus Drive and  
Stanford Road  
Bethelsdorp  
 041 995 2000



### HIGH STREET

 High Street  
Uitenhage  
 041 995 2000









### PARK AVENUE

 Corner of Park Avenue and Cannon Street  
Uitenhage  
 041 995 2000

### THANDUXOLO

 Bantom Street  
Kwanobuhle  
Uitenhage  
 041 995 2000

## IKHALA TVET COLLEGE (QUEENSTOWN)

 Private Bag X7110  
Queenstown  
5320  
 Zone D  
Gwadana Drive  
Ezibeleni  
5326  
 047 873 8800  
 047 873 8823  
 admissions@ikhala.edu.za  
 Ikhala TVET College  
 @ikhalaTVET2  
 [www.ikhala.edu.za](http://www.ikhala.edu.za)

## CAMPUSES


### ALIWAL NORTH

 Somerset Street  
Aliwal North  
9750  
 051 634 1035  
 051 633 3560  
 aliwal.campus@ikhala.edu.za




### EZIBELENI

 Zone D  
Gwadana Drive  
Ezibeleni  
5326  
 047 873 3567  
 047 873 3324  
 ezibeleni.campus@ikhala.edu.za

### QUEEN NONESI

 Gqebenya  
Lady Frere  
5410







 079 251 8897  
 086 544 3704  
 nonesi.campus@ikhala.edu.za

### QUEENSTOWN








 Corner of Robinson Road and Zeiler Street  
Komani  
5319  
 045 838 2593  
 045 838 1406  
 queenstown.campus@ikhala.edu.za

### STERKSPRUIT

 Emfundweni Street  
Zwelitsha  
Sterkspruit  
9762  
 051 611 0205  
 051 611 0298  
 sterkspruit.campus@ikhala.edu.za




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### INGWE TVET COLLEGE (MOUNT FRERE)




 PO Box 92491  
Mount Frere  
5090  
 Badibanise Village  
Mount Frere  
5090  
 039 940 2142  
 086 664 34423  
 info@ingwecollege.edu.za  
 Ingwe TVET College (@ingwecollege)  
 [www.ingwecollege.edu.za](http://www.ingwecollege.edu.za)

### CAMPUSES




#### MALUTI

 Mli Road  
Maluti  
Matatiele  
4730  
 039 256 0670  
 086 560 9144




#### MOUNT FLETCHER

 Mount Fletcher  
4770  
 039 257 0109  
 086 549 7112




#### MOUNT FRERE

 Cancele Road  
Mount Frere  
5090  
 039 255 1718  
 039 255 0532

#### NGQUNGQUSHE

 Magwa Road  
Lusikisiki  
4820  
 039 253 7268/9  
 039 253 1302




#### SITETO

 Mhlanga Village  
Bizana  
4800  
 071 684 1374  
 086 549 2057

---





## KING HINTSA TVET COLLEGE



-  218 Mthatha Road  
Next To WSU  
Ibika
-  047 401 6400
-  [info@kinghintsacollege.edu.za](mailto:info@kinghintsacollege.edu.za)

## CAMPUSES

### CENTANE

-  Private Bag X501  
Macibe Road  
Centane  
4980
-  082 852 9055
-  [nqwenelwak@kinghintsacollege.college.edu.za](mailto:nqwenelwak@kinghintsacollege.college.edu.za)




### DUTYWA

-  Private Bag X 215  
Dutywa  
5000
-  071 413 2273

### HB TSENGWA

-  Private Bag X505  
1042 Balne Street  
Willowvale  
5040
-  047 499 1318/082 852 9048
-  [lindelwak@kinghintsacollege.edu.za](mailto:lindelwak@kinghintsacollege.edu.za)

### MSOBOMVU

-  Private Bag X3018  
Mbabala Street  
Msobomvu Township  
Butterworth  
4960
-  047 491 9824
-  [npmakwezela@kinghintsacollege.edu.za](mailto:npmakwezela@kinghintsacollege.edu.za)

## KING SABATA DALINDYEBO TVET COLLEGE (UMTATA)

-  R61 Queenstown Road  
Cicira Village  
Mthatha  
5099
-  047 505 1000
-  [info@ksdcollege.edu.za](mailto:info@ksdcollege.edu.za) or  
[admissions@ksdvetcollege.edu.za](mailto:admissions@ksdvetcollege.edu.za)
-  King Sabata Dalindyebo TVET College
-  [www.ksdcollege.edu.za](http://www.ksdcollege.edu.za)

## CAMPUSES



### LIBODE

-  R61 Port Saint Johns Road  
Libode  
5160
-  047 555 7944



### MAPUZI

-  Coffee Bay Road  
Mqanduli  
5080
-  047 575 9044

### MNGAZI



-  Mgwenyana Avenue  
R61 Port Saint Johns Road  
Libode  
5160
-  047 555 7944

### MTHATHA


-  R61 Queenstown Road  
Cicira Village  
Mthatha  
5099
-  047 505 1000





## NGCOBO

 Idutywa Road  
Ngcobo  
5050  
 047 548 1467








## NTABOZUKO

 Corner of Madwaleni and Gusi Avenue  
Elliotdale  
5070

## ZIMBANE



 Zimbane Avenue  
Mthatha  
5099  
 047 537 4901/17

## LOVEDALE TVET COLLEGE (KING WILLIAM'S TOWN)



 PO Box 2156  
King William's Town  
5600  
 1 Amatola Road  
King William's Town  
5601  
 043 604 0700  
 043 642 1388  
 [headquarters@lovedale.org.za](mailto:headquarters@lovedale.org.za)  
 Lovedale TVET College  
 [www.lovedale.edu.za](http://www.lovedale.edu.za)

## CAMPUSES



### ALICE

 Private Bag X1303  
Alice  
5700  
 087 238 2223

## KING WILLIAM'S TOWN

 Private Bag X7409  
King William's Town  
5600  
 087 238 2223

## ZWELITSHA

 Private Bag X510  
Zwelitsha  
5608  
 087 238 2223




---

## PORT ELIZABETH TVET COLLEGE




 139 Russell Road  
Central  
Port Elizabeth  
 041 585 7771  
 [info@pecollege.edu.za](mailto:info@pecollege.edu.za)  
 Port Elizabeth FET College  
 @PE\_TVET\_College  
 [www.pecollege.edu.za](http://www.pecollege.edu.za)

## CAMPUSES

### DOWER



 Rensburg Street  
Westend  
Bethelsdorp  
 041 481 2171/ 509 6200  
 041 481 7111

### IQHAYIYA




 Struandale  
Struanway  
 041 401 3800/ 509 6450  
 041 401 3817



### RUSSELL ROAD







 39 Russell Road  
Richmond Hill  
 041 585 7771  
 041 585 5436




### VICTORIA

 Hirsh Drive  
Richmond Hill  
 041 373 6813/ 509 6150  
 041 374 5321



## FREE STATE

### FLAVIUS MAREKA TVET COLLEGE (SASOLBURG)

 Private Bag X2009  
Sasolburg  
1947  
 Corner of Hertzog Road and Fraser Street  
Sasolburg  
1947  
 016 976 0829/15  
 016 973 1618  
 Flavius Mareka TVET College (@fmtvet)  
 [www.flaviusmareka.net](http://www.flaviusmareka.net)





 056 214 1111/341  
 056 214 2691  
 roshuman@fmfet.net

### SASOLBURG


 Private Bag X2009  
 Corner of Hertzog Road and Fraser Street  
Sasolburg  
1947  
 016 976 0829/15  
 016 973 1618  
 adelicem@fmfet.net

### CAMPUSES








#### KROONSTAD

 Private Bag X22  
Corner of Bukes and Reitz Streets  
9500  
 056 212 5157/8  
 056 212 7815  
 roshuman@fmfet.net

#### MPHOHADI

 Private Bag X66  
Tang Street  
Mphohadi/Kroonstad  
9500



### GOLDFIELDS TVET COLLEGE (WELKOM)

 36 Buren Street  
Flamingo Park  
Welkom  
945  
 057 910 6000  
 admin@gfc.za.net  
 Goldfields TVET (@gfcot)  
 Goldfields TVET College  
 @GoldfieldsTVET  
 [www.goldfieldstvet.edu.za](http://www.goldfieldstvet.edu.za)





## CAMPUSES



### MELODING

 749 Khotso Street  
Meloding  
Virginia  
9430  
 079 454 5342



### SKILLS ACADEMY

 211 Street  
Voorspoed  
Welkom  
9460  
 057 439 0931

### TOSA




 14107 Ndaki Street  
Thabong  
9463  
 057 910 1600

### WELKOM

 Corner of Toronto Road and Petrus Bosch Street  
Welkom  
9459  
 057 910 1600

---



## MALUTI TVET COLLEGE (WITSIESHOEK)

 Private Bag X870  
Witsieshoek  
9870  
 Mampoi Road  
Phuthaditjhaba  
9866  
 058 713 6100




 Maluti TVET College (@MalutiTVET)  
 Maluti TVET College  
 @MalutiTvet  
 [www.malutivet.co.za](http://www.malutivet.co.za)

## CAMPUSES




### BETHLEHEM

 Private Bag X807  
Phuthaditsjaba  
9866  
 058 713 0612/ 087 941 3587



### BONAMELO

 Private Bag X08  
Phuthaditjaba  
9866  
 Stadium Road  
Phuthaditjaba  
9866  
 058 713 1391/ 087 941 6827

### HARRISMITH



 Private Bag X3009  
Extension 4751  
 Intabazwe Corridor  
Harrismith  
9880  
 058 622 2785/ 087 941 3549

### ITEMOHELENG



 Private Bag X07  
Mampoi Road  
Phuthaditjhaba  
9866  
 058 713 0296/ 087 941 6838










### LERE LA TSHEPE

 Private Bag X335  
Tseki Village  
Poelong  
9874  
 058 713 6611

### SEFIKENG

 Private Bag X827  
Witsieshoek  
9870  
 058 713 6064/ 087 941 6408

### MOTHEO TVET COLLEGE (BLOEMFONTEIN)



 Private Bag X20509  
Corner of St Georges and Aliwal Streets  
Bloemfontein  
9301  
 051 406 9300  
 051 406 9434  
 [marketing@motheotvet.co.za](mailto:marketing@motheotvet.co.za)  
 Motheo TVET College (@OfficialMotheoTVETCollege)  
 @MotheoCollege  
 [www.motheotvet.co.za](http://www.motheotvet.co.za)

### CAMPUSES

#### BLOEMFONTEIN

 051 411 2000


#### BOTSHABELO

 Section A  
Botshabelo  
Bloemfontein  
 051 813 9010



#### HILLSIDE VIEW

 051 409 3300

#### KOFFIEFONTEIN


 Xhariep ERC  
1 Du Preez Street  
 051 813 9011







#### THABA 'NCHU

 051 873 5200  
 [dutoitk@motheotvet.co.za](mailto:dutoitk@motheotvet.co.za)

## GAUTENG

### CENTRAL JOHANNESBURG TVET COLLEGE (PARKTOWN)




 5 Ubla Avenue  
Off Princess of Wales Terrace  
Parktown  
Johannesburg

 011 351 6000  
 011 484 2738  
 [Info@cjc.edu.co.za](mailto:Info@cjc.edu.co.za)  
 Central Johannesburg TVET College  
 @Centraltvet  
 [www.cjc.edu.za](http://www.cjc.edu.za)






## CAMPUSES




### ALEXANDRA

-  Corner of Canning and Ninth Road  
Alexandra  
Johannesburg
-  011 351 6063
-  011 882 3305




### CROWN MINES

-  Shaft 17 Road  
Crown Mines  
Johannesburg
-  011 247 0913
-  011 247 0916




### ELLIS PARK

-  25 Currey Street  
Doornfontein  
Johannesburg
-  011 402 2990
-  011 402 2991



### LANGLAAGTE

-  5 De Vos Street  
Langlaagte  
Johannesburg
-  011 839 2781
-  011 839 2781



### PARKTOWN

-  5 Ubla Avenue (off Princess Wales Terrace)  
Parktown  
Johannesburg
-  011 351 6000
-  011 643 1020




### RIVERLEA

-  39 Ashburton Street  
Riverlea  
Johannesburg
-  011 474 2080

### SMIT STREET










-  123 Juta Street  
Braamfontein  
Johannesburg
-  011 025 4809

### TROYEVILLE

-  46 Pretoria Street  
Troyeville  
Johannesburg
-  011 216 0300
-  011 216 0301

---





## EKURHULENI EAST TVET COLLEGE (SPRINGS)

-  Private Bag X79
-  Sam Ngema Road  
Kwa-Thema  
Springs  
1559
-  011 730 6600
-  011 736 6408
-  [info@eec.edu.za](mailto:info@eec.edu.za)
-  Ekurhuleni East TVET College (@EecTvetCollege)
-  Ekurhuleni East College
-  @EkurhuleniEa
-  [www.eec.edu.za](http://www.eec.edu.za)







## CAMPUSES





### ARTISAN DEVELOPMENT CENTRE

-  Private Bag X52  
Springs  
1560
-  10 Argon Street  
Fulcrum
-  011 730 6600
-  011 736 9909




### BRAKPAN

-  Private Bag X10  
Brakpan  
1540
-  98 Victoria Avenue  
Brakpan  
1540
-  011 730 6600
-  011 740 9188

### BENONI




-  Private Bag X004
-  50 O'Reilly Merry Street  
Northmead  
Benoni  
1500
-  011 730 6600
-  011 425 3439

### DAVEYTON




-  Private Bag X01  
Heald Street  
Daveyton  
1510
-  011 730 6600
-  011 426 4091

### KWA-THEMA

-  Private Bag X79










- Springs  
1560
-  Sam Ngema Road  
Kwa-Thema  
Springs
-  011 730 6600
-  011 736 6408

### SPRINGS

-  Private Bag X21  
Plantation Road  
Springs  
1560
-  011 730 6600
-  011 362 6182


---

### EKURHULENI WEST TVET COLLEGE (GERMISTON)




-  Private Bag X1030  
Germiston  
1400
-  Corner of Flag and Rose-Innes Roads  
Driehoek  
Germiston
-  011 323 1600
-  011 323 1601
-  [info@ewc.edu.za](mailto:info@ewc.edu.za)
-  Ekurhuleni West TVET College (@EWCTVET)
-  Ekurhuleni West College
-  @EWCTVET
-  [www.ewc.edu.za](http://www.ewc.edu.za)

## CAMPUSES





### ALBERTON

-  PO Box 166575  
Brackendowns  
1454






 25 Lake Arthur Street  
Brackendowns  
1448  
 011 900 1201/2  
 011 900 1712





### **BOKSBURG**

 Private Bag X08  
Boksburg  
1460  
 49 North Street  
Plantation  
Boksburg  
 011 917 9984  
 011 917 8770





### **GERMISTON**

 Private Bag X1030  
Corner of Driehoek and Sol Roads  
Germiston  
1400  
 011 876 6900  
 011 873 1769






### **KATHORUS**

 PO Box 11662  
Randhart  
1457  
 782 Palime Section  
Katlhong  
 011 905 3562/-31  
 011 905 3644

### **KEMPTON**

 Private Bag X07  
 Corner of Partridge Avenue and Pretoria Road  
Kempton Park  
1620  
 011 972 4247  
 011 391 1582

### **TEMBISA**

 Private Bag X012  
Kempton Park  
1620  
 9 Esiqongweni Section  
Tembisa  
 011 925 1005/6  
 071 389 4006/079 972 9534  
 011 925 1023



---

### **SEDIBENG TVET COLLEGE (VEREENIGING)**



 37 Voortrekker Street  
Vereeniging  
1930  
 016 420 2520/75  
 info@sedcol.co.za  
 Sedibeng TVET College (@marketingM2002)  
 @SedibengCollege  
 [www.sedcol.co.za](http://www.sedcol.co.za)

### **CAMPUSES**

#### **HEIDELBERG**



 1 Fraser Avenue  
Heidelberg  
1441  
 042 880 0020

#### **SEBOKENG**

 4 Samuel Street  
Sebokeng  
1900  
 016 100 8234



### VANDERBIJLPARK








 6 Frikkie Meyer Boulevard  
Vanderbijlpark  
1900  
 016 933 5644

### VEREENIGING

 33 Voortrekker Street  
Vereeniging  
1930  
 016 421 1150






---

### SOUTH WEST GAUTENG TVET COLLEGE (SOWETO)





 1822 A Molele Street  
Corner of Koma Road and Molele Street  
Soweto  
1860  
 086 176 8849/ 011 527 8300/ 010 140 7942  
 011 984 1262  
 [headoffice@swgc.co.za](mailto:headoffice@swgc.co.za)  
 South West Gauteng TVET College (@swgcollege)  
 @SWGCollege  
 South West Gauteng TVET College  
 [www.swgc.co.za](http://www.swgc.co.za)

### CAMPUSES





#### DOBSONVILLE

 Private Bag X33  
Tshiawelo  
1817  
 5604 Van Onselen Road  
Dobsonville  
1863  
 086 176 8849/ 011 527 8300/ 010 140 7942  
 011 988 9212  
 [dobson@swgc.co.za](mailto:dobson@swgc.co.za)





#### GEORGE TABOR

 Private Bag X33  
Tshiawelo  
1817  
 1440 Mncube Drive  
Dube Village  
1801  
 086 176 8849/ 011 527 8300/ 010 140 7942  
 011 982 5543  
 [gtabor@swgc.co.za](mailto:gtabor@swgc.co.za)



#### MOLAPO

 Private Bag X33  
Tshiawelo  
1817  
 1822 B Molele Street  
Corner of Koma Road and Molapo Street  
Soweto  
1801  
 086 176 8849/ 011 527 8300/ 010 140 7942  
 [molapo@swgc.co.za](mailto:molapo@swgc.co.za)



#### ROODEPOORT

 Private Bag X33  
Tshiawelo  
1817  
 No. 3 Webber Street  
Horizon View  
Roodepoort  
1724  
 086 176 8849/ 011 527 8300/ 010 140 7942  
 [rdp@swgc.co.za](mailto:rdp@swgc.co.za)

#### ROODEPOORT WEST

 Private Bag X33  
Tshiawelo  
1817  
 No.1 Hinda and Lawson Streets  
Roodepoort  
1724



 086 176 8849/ 011 527 8300/ 010 140 7942  
 rdpw@swgc.co.za

## TECHNISA

 Private Bag X07  
Pinegowrie  
2123  
 Corner of Huguenot Avenue and Main Street  
Bordeaux  
Randburg  
2194  
 082 579 7593/ 086 176 8849  
 011 527 8300/ 010 140 7942  
 tech@swgc.co.za

## TSHWANE NORTH TVET COLLEGE (PRETORIA)

 Corner of Kgosi Mampuru and Pretorius Streets  
Pretoria  
 012 401 1600  
 info@tnc.edu.za  
 Tshwane North TVET College (@OFFICIALTNCTVET)  
 Tshwane North TVET College  
(tshwane-north-tvet-college)  
 @OfficialTNCTVET  
 [www.tnc.edu.za](http://www.tnc.edu.za)

## CAMPUSES


### PRETORIA

 012 401 1601

### MAMELODI

 012 401 1800


### ROSSLYN

 012 401 1750

## SOSHANGUVE NORTH

 012 401 1900

## SOSHANGUVE SOUTH









 012 401 1999

## TEMBA

 012 401 1700






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## TSHWANE SOUTH TVET COLLEGE (CENTURION)

 PO Box 151  
Pretoria  
0001  
 85 Francis Baard (formally known as Schoeman Str)  
Pretoria  
 012 401 5000  
 info@tsc.edu.za  
 Tshwane South TVET College  
(@OfficialTshwaneSouthCollege)  
 @tsc\_tvet  
 Tshwane South TVET College  
 [www.tsc.edu.za](http://www.tsc.edu.za)






## CAMPUSES

### ATTERIDGEVILLE






 PO Box 97615  
Wespark  
0146  
 5 Khoza Street  
Atteridgeville  
 012 373 1200  
 012 373 8032  
 att.pa@tsc.edu.za



### CENTURION

-  Private Bag X1018  
Lyttelton  
0140
-  TEK Base  
College Avenue  
Lyttelton  
0140
-  012 660 8500
-  012 664 8358
-  centsec@tsc.edu.za

### ODI



-  Private Bag X564  
Mabopane  
0190
-  Molefe Makinta Highway  
(formerly known as Lucas Mangope Highway)  
Stand No. 5218 (opposite Morula Sun Casino)  
0190
-  012 725 1800
-  012 702 5752/3387
-  odi.pa@tsc.edu.za

### PRETORIA WEST

-  150 Industrial Street  
Pretoria West
-  012 380 5000
-  012 386 1245
-  bongi@tsc.edu.za

---



### WESTERN TVET COLLEGE (RANDFONTEIN)

-  Private Bag X17  
Randfontein  
1760
-  42 Johnstone Street  
Randfontein

-  011 692 4004/82
-  info@westcol.co.za
-  Westcol TVET
-  [www.westcol.co.za](http://www.westcol.co.za)

### CAMPUSES

#### CARLETONVILLE

-  20 South Street  
Carletonville
-  018 787 4102



#### KRUGERSDORP

-  2 Von Brandis Street  
Krugersdorp
-  011 953 1140
-  011 665 2724



#### KRUGERSDORP WEST

-  69 Flemming Avenue  
Krugersdorp West
-  011 660 1709

#### RANDFONTEIN

-  9 Kiewiet Street  
Helikonpark  
Randfontein
-  011 693 3608









#### WESTONARIA

-  109 Botha Street  
Westonaria
  -  011 784 1089
-







## KWAZULU-NATAL

### COASTAL KZN TVET COLLEGE





-  PO Box 1795  
Amanzimtoti  
4126
-  50051 Mfundu Mngadi Drive  
KwaMakhutha  
Amanzimtoti  
4126
-  031 905 1039
-  031 905 1399
-  [info.coastal@kzntvet.edu.za](mailto:info.coastal@kzntvet.edu.za)
-  Coastal KZN TVET College
-  @CoastalKzn
-  [www.coastalkzn.co.za](http://www.coastalkzn.co.za)

### CAMPUSES





#### APPELSBOSCH

-  Private Bag X202  
Ozwatini
-  32421621  
Appelsbosch Hospital Road  
Ozwatini
-  031 905 7000/1
-  032 294 8410





#### AS-SALAAM

-  PO Box 11811  
Braemer  
4202
-  Road D691 (off Ixopo Main Road)  
Braemer
-  031 003 3470
-  039 971 1712

### DURBAN

-  Private Bag X01  
Congella  
4013
-  1 Jameson Crescent  
Umbilo
-  031 206 0616/7/8
-  031 206 0945





### SWINTON

-  PO Box 32050  
Mobeni  
4065
-  20 Swinton Road  
Mobeni
-  031 462 2333
-  031 462 3230

### UMBUMBULU

-  PO Box 1795  
Amanzimtoti  
4126
-  50051 Mfundu Mngadi Drive  
KwaMakhutha
-  031 905 7200
-  031 905 1472

### UMLAZI-B

-  Private Bag X20003  
Amanzimtoti  
4126
-  BB1258 Nandi Road  
Umlazi
-  031 909 3800/11
-  031 909 4944



### UMLAZI-V

- Private Bag X04  
Isipingo  
4110
- 200 Prince Mcwayizeni Drive
- 031 907 2666
- 031 907 2679

### UBUHLE BOGU

- P77 Mkhunya Road  
KwaQiko
- 031 905 7000/1

### TOOLING CENTRE OF EXCELLENCE

- Private Bag X01  
Congella  
40131
- Jameson Crescent  
Umbilo
- 031 274 8441
- 031 206 1921
- [ndlelat.ckzdr@kzntvet.edu.za](mailto:ndlelat.ckzdr@kzntvet.edu.za)

### CKZN OCCUPATIONAL SKILLS TRAINING AND TESTING CENTRE

- G32 Buthelezi Road  
Mpumalanga Township  
Hammarisdale
- 031 771 1370
- [cliffcr@mweb.co.za](mailto:cliffcr@mweb.co.za)

### CAMPUSES

#### ENTERPRISE DEVELOPMENT UNIT

- 20 Swinton Road  
Mobeni
- 031 462 8772/6

- 031 462 9446
- [kweyamap.ckzswr@kzntvet.edu.za](mailto:kweyamap.ckzswr@kzntvet.edu.za)

### THE TRAINING ACADEMY

- 50051 Mfundi Mngadi Drive  
KwaMakhutha
- 031 905 7063
- [richardst.ckzcao@kzntvet.edu.za](mailto:richardst.ckzcao@kzntvet.edu.za)

### ELANGENI TVET COLLEGE (PINETOWN)

- Private Bag X9032  
Pinetown  
3610
- 15 Portsmouth Road  
Pinetown  
3610
- 031 716 6700
- 031 716 6777
- [info@elangeni.edu.za](mailto:info@elangeni.edu.za)
- Elangeni TVET College (@ElangeniCollege)
- Elangeni College
- [@elangenicollege](https://www.instagram.com/elangenicollege)
- [www.elangeni.edu.za](http://www.elangeni.edu.za)

### CAMPUSES

#### INANDA




- Durban
- 031 519 0933/4
- [busi.mcunu@elangeni.edu.za](mailto:busi.mcunu@elangeni.edu.za)

#### KWADABEKA




- 140 Khululeka Road  
Clermont  
Durban
- 031 711 0313
- [thabani.sibiya@elangeni.edu.za](mailto:thabani.sibiya@elangeni.edu.za)






### KWAMASHU

 F5 Mandela Road  
KwaMashu  
Durban  
 031 503 9708  
 faith.ngema@elangeni.edu.za

### MPUMALANGA

 280 Shezi Main Road  
Mpumalanga  
 031 771 0148  
 mhlumiseni.mbatha@elangeni.edu.za



### NDWEDWE

 P100 Main Road  
Ndwedwe  
 074 582 9178  
 wiseman.zulu@elangeni.edu.za




### NTUZUMA

 384 Ithende Drive  
Ntuzuma  
Durban  
 031 509 1924  
 jabulani.ngcobo@elangeni.edu.za






### PINETOWN

 38 Bamboo Lane  
Pinetown  
 031 702 3260  
 thilo.dookhi@elangeni.edu.za

### QADI




 Zulu Reserve Road  
Botha's Hill  
Durban  
 031 777 1742  
 thobeka.dlungwana@elangeni.edu.za

### ESAYIDI TVET COLLEGE (PORT SHEPSTONE)




 Private Bag X814  
Port Shepstone  
4240  
 039 685 5482/3  
 039 625 4135  
 Esayidi TVET College  
 [www.esayidifet.co.za](http://www.esayidifet.co.za)

### CAMPUSES




#### ENYENYEZI

 Private Bag X814  
Port Shepstone  
4240  
 039 685 5482/3  
 039 625 4135




#### GAMALAKHE

 Private Bag X814  
Port Shepstone  
4240  
 039 685 5482/3  
 039 625 4135

#### KOKSTAD

 Private Bag 814  
Port Shepstone  
4240  
 039 685 5482/3  
 039 625 4135

#### UMZIMKULU

 Private Bag 814  
Port Shepstone  
4240  
 039 685 5482/3  
 039 625 4135



## MAJUBA TVET COLLEGE (NEWCASTLE)

- 83 Allen Street  
Newcastle  
2940
- 034 326 4888
- @MajubaTVETCollege
- @Majuba\_Colleg
- [www.majuba.edu.za](http://www.majuba.edu.za)

## CAMPUSES

### CENTRE FOR PEOPLE DEVELOPMENT

- Dr Nelson Mandela Drive  
Section 2  
Madadeni
- 034 329 2004
- 034 329 2538

### DUNDEE

- 93 Karel Landman Street  
Dundee
- 034 212 5739

### MAJUBA TECHNOLOGY CENTRE

- Inkosi Albert Luthuli Road  
Section 5  
Madadeni
- 034 318 3041
- 034 318 3044

### NEWCASTLE TECHNOLOGY CENTRE

- FW Beyers Avenue  
Barry Hertzog Park  
Newcastle
- 034 318 3041
- 034 318 3044

## NEWCASTLE TRAINING CENTRE

- 2 HJ Van Eck Drive  
Barry Hertzog Park  
Newcastle
- 034 318 2021

## OCCUPATIONAL PROGRAMMES UNIT

- Dr Nelson Mandela Drive  
Section 2  
Madadeni  
2951
- 034 314 1045

## OPEN LEARNING UNIT

- Dr Nelson Mandela Drive  
Section 2  
Madadeni
- 034 314 1044
- 034 314 1016



## MNAMBITHI TVET COLLEGE (LADYSMITH)

- Private Bag X9903  
Ladysmith  
3370
- 77 Murchison Street  
Ladysmith  
3370
- 036 631 0380
- 036 631 4146
- [info.mnambithi@feta.gov.za](mailto:info.mnambithi@feta.gov.za)
- Mnambithi TVET College Higher Health SA
- @MnambithiFET
- [www.mnambithicollege.co.za](http://www.mnambithicollege.co.za)






## CAMPUSES




### ESTCOURT

-  10 Shepstone Road  
Estcourt  
3310
-  036 342 9800
-  036 342 9800




### EZAKHENI A-SECTION

-  Ezakheni  
3381
-  036 636 2733
-  036 636 2704

### EZAKHENI E-SECTION

-  Ezakheni  
3381
-  036 634 1020
-  036 634 7245

### EZAKHENI SKILLS CENTRE







-  Ezakheni B-section  
Ezakheni  
3381
-  036 636 1017
-  036 636 1017

### LADYSMITH

-  12 Walton Street  
Ladysmith  
3370
-  036 637 4782
-  036 631 0871






## MTHASHANA TVET COLLEGE (VRYHEID)

-  Private Bag X9424

- Vryheid  
3100
-  266 South Street  
Vryheid  
3100
-  034 980 1010
-  034 980 1012
-  Info.Mthashana@kzntvet.edu.za
-  Mthashana TVET College
-  [www.mthashanacollege.co.za](http://www.mthashanacollege.co.za)

## CAMPUSES



### BABANANGO SKILLS CENTRE

-  Private Bag X9424  
Vryheid  
3100
-  59 Justice Street  
Babanango  
3850
-  035 835 0200/ 072 153 0030
-  035 835 0011
-  Info.BabanangoCampus@kzntvet.edu.za


### EMAMANLENI

-  Private Bag X28  
Ulundi  
3838
-  Vulcam Farm  
Ulundi  
3838
-  035 879 1061
-  035 879 1652
-  Info.EmandleniCampus@kzntvet.edu.za






### MAPUTA

-  PO Box 895  
Kwangwanase  
3973
-  Thandizwe Area (next to Shayina High School)  
Kwangwanase








 035 813 0100  
 035 813 0101  
 Info.MaputaCampus@kzntvet.edu.za






### **NONGOMA**

 Private Bag X5060  
Nongoma  
3950  
 22A Nongoma Main Road  
Nongoma  
 035 831 6032/31/19  
 035 831 6017  
 Info.NongomaCampus@kzntvet.edu.za


### **NQUTHU**

 PO Box 584  
Nquthu  
3135  
 Lot 1557  
Mangosuthu Drive  
 034 271 1514  
 034 271 0050  
 Info.NquthuCampus@kzntvet.edu.za

### **VRYHEID (BUSINESS CAMPUS)**









 PO Box 725  
Vryheid  
3100  
 92 Hlobane Street  
Vryheid  
3100  
 034 981 5337  
 034 980 7918  
 Info.VryheidCampus@kzntvet.edu.za

### **VRYHEID (ENGINEERING CAMPUS)**

 PO Box 725  
Vryheid




3100  
 9 Landdrost Street  
Vryheid  
3100  
 034 980 1018  
 034 980 1047  
 Info.VryheidCampus@kzntvet.edu.za

### **UMFOLOZI TVET COLLEGE (RICHARDS BAY)**




 Private Bag X5023  
Richards Bay  
3900  
 Naboomnek Street  
Arboretum  
Richards Bay  
3900  
 035 902 9501  
 035 789 2585  
 info@umfolozi.edu.za  
 Umfolozi TVET College (@umfolozitvetcollege)  
 @UmfoloziCollege  
 [www.umfolozicollege.co.za](http://www.umfolozicollege.co.za)

### **CAMPUSES**

#### **CHIEF ALBERT LUTHULI**


 Corner of R102 and D270  
Groutville  
4450  
 032 5596 555  
 032 559 9468


#### **ESHOWE**

 King Dinizulu Road  
Eshowe  
 035 474 2304  
 035 474 2817



### ESIKHAWINI


 Private Bag X5023  
Richards Bay  
3900

 035 796 5568/76


 035 796 5530


### ISITHEBE


 Near Mandeni campus

 032 459 2954


### MANDENI

 End of Anderson Road  
Mandeni


 032 456 3626/8400

 032 456 5777


### RICHTEK


 Corner of Via Richardia and Naboomnek Street  
Arboretum  
Richards Bay

 035 902 9500


 035 789 7011

### NKANDLA

 Maree Road (next to Nkandla High School)  
Lot 5000  
Nkandla

 087 897 5027

### SUNDUMBILI

 032 454 1407

### SKILLS CENTRES


### JINININDOMNYAMA

 Eshowe

 035 474 4022

### NSELENI

 Near Richards Bay

 035 795 1482

### THUBELIHLE


 Esikhaleni

 035 796 0803

### ZCBF


 Alton


Richards Bay

 035 797 4313/9

---

### UMGUNGUNDLOVU TVET COLLEGE (PIETERMARITZBURG)

 PO Box X9060  
Pietermaritzburg  
3200

 44 Burger Street  
Pietermaritzburg  
3201

 033 341 2100/214


 marketing@ufetc.edu.za

 Umgungundlovu TVET College (@UTVETC)

 [www.utvet.co.za](http://www.utvet.co.za)

### CAMPUSES

#### EDENDALE

 Garden Road  
Georgetown  
Edendale

 033 816 8605



#### MIDLANDS

 Corner of Pine Street and Mayor's Walk



 033 341 2180





### PLESSISLAER

 FJ Sithole Road  
Imbali  
 033 816 8830

### MSUNDIZI









 114 Pietermaritz Street  
Pietermaritzburg  
 033 341 2208

### NORTHDALE

 Corner of Balhambra and Newholme Way  
Northdale  
 033 816 8866



## LIMPOPO

### CAPRICORN TVET COLLEGE (POLOKWANE)



 Private Bag X9674  
Polokwane  
0700  
 16 Market Street  
Polokwane  
0699  
 015 230 1800  
 015 291 2767  
 [enquiries@capricorncollege.edu.za](mailto:enquiries@capricorncollege.edu.za)  
 Capricorn College for TVET  
 @CapricornTVET  
 [www.capricorncollege.edu.za](http://www.capricorncollege.edu.za)

### CAMPUSES



#### POLOKWANE

 Die Meer Street  
Polokwane  
0699  
 015 283 3300



### RAMOKGOPA

 Next to Mokomene High School  
Ramokgopa  
0811  
 015 526 2750


### SENWABARWANA

 Senwabarwana Main Street  
Senwabarwana  
0790  
 015 505 3172








### SESHEGO

 1919 Freedom Drive  
Seshego  
0742  
 015 223 9600

### LEPHALALE TVET COLLEGE (LEPHALALE)

 Private Bag X210  
Lephalale  
0555











-  Corner of Nelson Mandela and  
Ngoako Ramatlhodi Drives  
Onverwacht  
Lephalale
-  014 763 2252
-  014 763 2252
-  [marketing@leptvetcol.edu.za](mailto:marketing@leptvetcol.edu.za)
-  Lephalale TVET College
-  @LephalaleTVET
-  [www.leptvetcol.edu.za](http://www.leptvetcol.edu.za)

## CAMPUSES

### MODIMOLLE






-  LeGrant Building  
Nelson Mandela Drive  
Modimolle  
0510
-  014 717 3807/086 510 5506
-  [info.modimolle@leptvetcol.edu.za](mailto:info.modimolle@leptvetcol.edu.za)

### LETABA TVET COLLEGE (TZANEEN)

-  Private Bag X4017  
Tzaneen  
0850
-  1 Claude Wheatley Street  
Tzaneen
-  015 3075440
-  015 307 2204
-  [centraloffice@letcol.co.za](mailto:centraloffice@letcol.co.za)
-  Letaba TVET College
-  @LetabaTvet
-  [www.letcol.co.za](http://www.letcol.co.za)

## CAMPUSES






### GIYANI

-  Private Bag X9570  
Giyani  
0826
-  Section C  
Industrial Main Road  
(opposite the Department of Traffic)  
Giyani
-  015 812 3221
-  015 812 1270
-  [giyanicampus@letcol.co.za](mailto:giyanicampus@letcol.co.za)


### MAAKE

-  Private Bag X4035  
Tzaneen  
0850
-  015 355 3429
-  015 355 4138
-  [maakecampus@letcol.co.za](mailto:maakecampus@letcol.co.za)

### TZANEEN

-  PO Box 192  
Tzaneen  
0850
-  1 Claude Wheatley Street  
Tzaneen  
0850
-  015 307 4438
-  015 307 4439
-  [tzaneencampus@letcol.co.za](mailto:tzaneencampus@letcol.co.za)

### MOPANI SOUTH EAST TVET COLLEGE (PHALABORWA)

-  Private Bag 01024  
Phalaborwa  
1390



- 📍 Corner of Combretum and Haarlem Street  
Phalaborwa  
1390
- ☎️ 015 781 5721/5
- 📠 015 781 5346
- ✉️ administration@mopanicollege.edu.za
- 📘 Mopani South East TVET College
- 🌐 [www.mopanicollege.edu.za](http://www.mopanicollege.edu.za)

## CAMPUSES

### PHALABORWA

- 📍 Corner of Combretum and Haarlem Street  
Phalaborwa  
1390
- ☎️ 015 781 1377/8
- 📠 015 781 1379
- ✉️ phbc@mopanicollege.edu.za

### MOSATE HOTEL SCHOOL

- 📍 Private Bag X01038  
Phalaborwa  
1390
- 📍 16 Saelene Street  
Phalaborwa  
1390
- ☎️ 015 781 1377/8
- 📠 015 781 1379
- ✉️ mosate@mopanicollege.edu.za

### SIR VAL DUNCAN

- 📍 PO Box X11001  
Namakgalae  
1391
- 📍 Corner of Calvin Ngobene and Tambo Street
- ☎️ 015 781 1513/4
- 📠 015 769 3746
- ✉️ svdc@mopanicollege.edu.za

## SEKHUKHUNE TVET COLLEGE (GROBLERSDAL)

- 📍 Private Bag X8660  
Groblersdal  
0470
- 📍 Central Office  
Stand No. 676  
Motetema  
Groblersdal
- ☎️ 013 269 0278
- ✉️ sekfet@sekfetcol.co.za
- 📘 Sekhukhune TVET College
- 🌐 [www.sekhukhunetvet.edu.za](http://www.sekhukhunetvet.edu.za)

## CAMPUSES

### APEL

- ☎️ 013 269 0278
- ✉️ apel@sefetcol.co.za

### CN PHATUDI

- ☎️ 013 216 8005
- ✉️ cnpathudi@sekfetcol.co.za

### CS BARLOW

- ☎️ 013 269 0020
- ✉️ csbarlow@sekfetcol.co.za

## VHEMBE TVET COLLEGE (MAKHADO)





- 📍 Private Bag X2136  
Sibasa  
0950
- 📍 203 Sibasa Unit A  
Sibasa  
0970
- ☎️ 015 963 7000






 info@vhembecollege.edu.za  
 Vhembe TVET College  
 @VhembeTVETCol  
 [www.vhembecollege.edu.za](http://www.vhembecollege.edu.za)

## CAMPUSES





### MAKWARELA EAST

 Private Bag X2201  
Sibasa  
0970  
 Portion 15 of 278 Mphaphuli  
Sibasa  
0970  
 015 963 3490/1  
 makwarela@vhembecollege.edu.za


### MASHAMBA




 Private Bag X878  
Mashamba  
0920  
 Stand 19  
Mashamba Village  
0920  
 015 873 7904/5/6

### MAVHOI CENTRAL





 Private Bag X3  
Limpopo  
0950  
 Plot 2769 Makongoza Biaba  
Dzanini  
0920  
 015 970 4166  
 mavhoi@vhembecollege.edu.za

### THENGWE







 PO Box 2  
Mutale  
0970

 Stand 1000  
Tshilamba Village  
0970  
 015 963 7000  
 thengwe@vhembecollege.edu.za

### TSHISIMANI




 Private Bag X5  
Tshakuma  
0950  
 Stand 016 Luvhalani  
Tshakhuma Village  
0958  
 015 581 6009/10  
 tshisimani@vhembecollege.edu.za

## WATERBERG TVET COLLEGE (MAKOPANE)




 Private Bag X2449  
Mokopane  
0600  
 Corner of Totius and Hooge Streets  
Mokopane  
 015 492 9000  
 marketing@waterbergcollege.co.za  
 Waterberg TVET College  
 [www.waterbergcollege.co.za](http://www.waterbergcollege.co.za)

## CAMPUSES

### ENGINEERING AND SKILLS TRAINING CENTRE




 015 633 6772/0  
 015 633 6589  
 lebowakgomo@waterbergcollege.co.za

### BUSINESS STUDIES CENTRE



 015 483 2441/5  
 015 483 1555  
 mahwelereng@waterbergcollege.co.za



## INFORMATION TECHNOLOGY AND COMPUTER SCIENCE CENTRE




 015 483 0090/1  
 015 483 0066  
 [mokopane@waterbergcollege.co.za](mailto:mokopane@waterbergcollege.co.za)

## THABAZIMBI

 073 4336 834  
 [thabdata@waterbergcollege.co.za](mailto:thabdata@waterbergcollege.co.za)





## MPUMALANGA

### EHLANZENI TVET COLLEGE (NELSPRUIT)





 Private Bag X11297  
Nelspruit  
1200  
 Corporate Centre  
29 Bell Street  
Nelspruit  
1200  
 013 752 7105  
 [info@ehlanzenicollege.co.za](mailto:info@ehlanzenicollege.co.za)  
 Ehlanzeni TVET College  
 @EhlanzeniTvet  
 [www.ehlanzenicollege.co.za](http://www.ehlanzenicollege.co.za)

### CAMPUSES





#### BARBERTON

 Private Bag X1644  
Barberton  
1300  
 3074 General Street  
Barberton  
1300  
 013 712 6640/7544  
 [dnkhoza@ehlanzenicollege.co.za](mailto:dnkhoza@ehlanzenicollege.co.za)





#### KANYAMAZANE

 Private Bag X1010  
KaNyamazane  
1214  
 Ligogote Road  
KaNyamazane  
1214  
 013 794 3767  
 [jmchiloane@ehlanzenicollege.co.za](mailto:jmchiloane@ehlanzenicollege.co.za)

#### MAPULANENG

 Private Bag X413  
Acornhoek  
1360  
 Manyeleti Road  
Acornhoek  
1360  
 013 590 0016  
 [jdibakoane@ehlanzenicollege.co.za](mailto:jdibakoane@ehlanzenicollege.co.za)

#### MASHISHING





 Private Bag X11297  
Nelspruit  
1200  
 1 Rossouw Street  
Lydenburg  
1120  
 013 590 0238  
 [bckwayiyo@ehlanzenicollege.co.za](mailto:bckwayiyo@ehlanzenicollege.co.za)







## MLUMATI

-  Private Bag X501  
Malelane  
1320
-  1 Tonga Road  
KaMhlushwa  
Malelane  
1320
-  013 590 0028
-  gmsibiya@ehlanzenicollege.co.za

## MTHIMBA

-  Private Bag X925  
Hazyview  
1242
-  Numbi Road  
Hazyview
-  013 590 0015
-  mcngirishi@ehlanzenicollege.co.za

## NELSPRUIT

-  Private Bag X11282  
Nelspruit  
1200
-  Corner of Koraalboom and Kaapschehoop Roads  
Nelspruit  
1200
-  013 741 3016
-  clcronje@ehlanzenicollege.co.za

## GERT SIBANDE TVET COLLEGE (STANDERTON)

-  PO Box 3475  
Standerton  
2430
-  18a Dr Beyers Naudé Drive  
Standerton  
2430

-  017 712 9040
-  017 712 9050
-  sithole.ss@gscollege.edu.za
-  Gert Sibande TVET College
-  @GSCollege017
-  [www.gscollege.edu.za](http://www.gscollege.edu.za)

## CAMPUSES





### BALFOUR

-  PO Box 3475  
110 Minnaar Street  
Balfour  
2410
-  017 200 0785
-  balfour.cm@gscollege.edu.za




### ERMELO

-  Private Bag X9048  
Mel Mentz Street  
Ermelo  
2350
-  017 811 5824
-  017 819 2570
-  ermelo.cm@gscollege.edu.za

### EVANDER




-  37 Rotterdam Road  
Evander  
2280
-  017 632 2388
-  017 632 1863
-  evander.cm@gscollege.edu.za

### PERDEKOP





-  Plot 40  
Koppie Alleen  
Perdekop
-  017 200 0787
-  perdekop.cm@gscollege.edu.za











### SIBANESETFU

 Community Road  
Stand E1368  
Glenmore  
Dundonald  
 017 887 9980  
 sibanesetfu.cm@gscollege.edu.za

### STANDERTON


 Private Bag X2042  
2 Kruger Street  
Standerton  
2430  
 017 712 2180  
 017 719 1417  
 standerton.cm@gscollege.edu.za

### NKANGALA TVET COLLEGE (WITBANK)

 PO Box X2282  
Witbank  
1035  
 Corner Haig and Northey Streets  
eMahlaleni  
1035  
 013 658 4700  
 013 690 1450  
 info@nkangalafet.edu.za  
 Nkangala TVET College (@NkangalaTVET)  
 @NkangalaTVETCol  
 [www.ntc.edu.za](http://www.ntc.edu.za)





### CAMPUSES

#### CN MAHLANGU






 PO Box X2282  
Witbank  
1035

 Corner of Haig and Northey Streets  
eMahlaleni  
1035  
 013 658 4700  
 013 690 1450  
 info@nkangalafet.edu.za






### MIDDELBURG

 Private Bag X251861  
Middelburg  
1050  
1 Brug Street  
Middelburg  
1050  
 013 243 2148  
 013 243 7441  
 info@ntc.edu.za

### MPONDOZANKOMO






 Private Bag X7259  
Witbank  
1035  
 Schonland Drive  
Ackerville  
Witbank  
 013 699 0302/1113  
 013 696 3175/2181  
 info@ntc.edu.za

### WITBANK






 Private Bag X7215  
Witbank  
1035  
 Corner of Arras and President Streets  
Witbank  
1035  
 013 656 2597/6818  
 013 656 1845/3665  
 info@ntc.edu.za



### WATERVAL BOVEN

 Private Bag X08  
Waterval Boven  
1195  
 President Road  
Waterval Boven  
1195  
 083 231 7819  
 013 257 0477  
 info@ntc.edu.za

### EXTENDED LEARNING UNIT

 Private Bag X7215  
Witbank  
1035  
 Corner of Arras and President Streets  
Witbank  
1035  
 013 690 1885  
 013 690 1878  
 info@ntc.edu.za

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## NORTHERN CAPE

### NORTHERN CAPE RURAL TVET COLLEGE (UPINGTON)



 PO Box 1834  
Upington  
8800  
 Steven Naude Street  
Upington  
8000  
 054 332 4711  
 054 332 4958  
 info@ncrtvet.co.za  
 Northern Cape Rural TVET College (@ncrtvet)  
 @NCRTVET  
 [www.ncrtvet.com](http://www.ncrtvet.com)

### CAMPUSES



#### DE AAR

 053 631 0594  
 053 631 0617



#### KATHU

 053 723 3281  
 053 723 3091



### KURUMAN

 053 712 1691  
 053 712 0980

### NAMAQUALAND






 027 744 1360  
 027 744 1603

### UPINGTON

 054 332 4711  
 054 332 4958

---

### NORTHERN CAPE URBAN TVET COLLEGE (KIMBERLEY)



 Private Bag X5031  
Kimberley  
8301  
 37-41 Long Street  
Kimberley  
8301  
 053 839 2063  
 053 839 2068  
 info@ncutvet.edu.za





 NCU TVET College  
 @NCRTVET  
 [www.ncutvet.edu.za](http://www.ncutvet.edu.za)





## CAMPUSES

### CITY CAMPUS

 Private Bag X5031  
Kimberley  
8300  
 Cullinan Crescent  
Kimberley  
8300









 053 839 2000  
 053 832 1713

### MOREMOGOLO

 Private Bag X5028  
Kimberley  
8345  
 777 Nobengula Road  
Kimberley  
8345  
 053 802 4700  
 053 802 4777




## NORTH WEST

### ORBIT TVET COLLEGE (RUSTENBURG)




 Private Bag X82096  
Rustenburg  
0300  
 Corner of Fatima Bhayat and Bosch Streets  
Rustenburg  
0299  
 014 592 7014/597 5500  
 014 592 7013  
 [info@orbitcollege.co.za](mailto:info@orbitcollege.co.za)  
 ORBIT TVET College  
 @ORBIT\_College  
 [www.orbitcollege.co.za](http://www.orbitcollege.co.za)

## CAMPUSES




### BRITS

 012 381 5700  
 012 381 5708  
 [info@britscampus.co.za](mailto:info@britscampus.co.za)





### MANKWE

 014 555 2900  
 014 555 2941  
 [info@mankwecampus.co.za](mailto:info@mankwecampus.co.za)

### RUSTENBURG

 014 597 5502  
 014 592 8473  
 [info@rustenburgcampus.co.za](mailto:info@rustenburgcampus.co.za)

### TALETSO TVET COLLEGE (MMABATHO)









 Private Bag X128  
Mmabatho  
2735  
 761-762 Setlogelo Drive  
Montshiwa Unit 2  
Mahikeng  
2790  
 018 384 2346/50  
 018 384 7511



 info@taletsocollege.co.za  
 Taletso TVET College (@tvetsector.tlt)  
 @taletso  
 [www.taletso.edu.za](http://www.taletso.edu.za)





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## VUSELELA TVET COLLEGE


 PO Box 571  
Stilfontein  
2550  
 8 Bram Fischer Street  
Klerksdorp  
2571  
 018 406 7800  
 018 406 7810  
 enquiries@vuselelacollege.co.za  
 Vuselela TVET College  
 Vuselela College  
 [www.vuselelacollege.co.za](http://www.vuselelacollege.co.za)




## CAMPUSES

### JOUBERTON





 Private Bag X7  
Freemanville  
2573  
 11900 5th Street  
Jouberton  
2574  
 018 465 6341/3133  
 018 465 2037

### KLERKSDORP





 Private Bag X5013  
Klerksdorp  
2570

 Corner of John Orr and Oliver Tambo Streets  
Klerksdorp  
2571  
 018 464 0300  
 018 462 9879





### MATLOSANA

 PO Box 571  
Stilfontein  
2550  
 Plot 120  
OR Tambo Street  
Klerksdorp  
 018 406 9801  
 018 484 8909

### POTCHEFSTROOM

 Private Bag X1252  
Potchefstroom  
2520  
 Corner of Retief and Auret Streets  
Potchefstroom  
2520  
 018 294 4811  
 018 294 7683

### TAUNG








 Private Bag X3  
Pudimoe  
8581  
 Main Road to Pudimoe Village  
Taung  
 053 995 1376/7  
 053 995 1354

---



## WESTERN CAPE

### BOLAND TVET COLLEGE





-  Private Bag X5068  
Stellenbosch  
7599
-  85 Bird Street  
Stellenbosch  
7599
-  021 886 7111/2
-  021 886 8260
-  [hq@bolandcollege.com](mailto:hq@bolandcollege.com)
-  Boland College (@BolCol)
-  @bolandcollege
-  Boland College
-  [www.bolandcollege.com](http://www.bolandcollege.com)

### CAMPUSES





#### CALEDON

-  PO Box 640  
Caledon  
7230
-  028 212 3270
-  021 886 8260
-  [cal@bolandcollege.com](mailto:cal@bolandcollege.com)





#### PAARL

-  Private Bag X3027  
Paarl  
7620
-  021 872 3323
-  021 872 5944
-  [paarl@bolandcollege.com](mailto:paarl@bolandcollege.com)





### STELLENBOSCH

-  Private Bag X5012  
Stellenbosch  
7599
-  021 887 3027
-  021 886 8260
-  [stel@bolandcollege.com](mailto:stel@bolandcollege.com)







### STRAND

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### COLLEGE OF CAPE TOWN TVET COLLEGE



-  334 Albert Road  
Salt River  
Cape Town  
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-  086 010 3682/ 021 404 6700
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-  [info@cct.edu.za](mailto:info@cct.edu.za)
-  College of Cape Town (@CCT.Home)
-  College of Cape Town





 @CCT\_Official  
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## CAMPUSES



### ATHLONE

 Corner of Protea and Eland Streets  
Athlone  
Cape Town  
7760  
 021 637 9183



### CAPE TOWN

 Corner of Longmarket and Buitenkant Streets  
Cape Town  
8001  
 021 462 2053



### CRAWFORD

 Kromboom Road  
Crawford  
Cape Town  
8001  
 021 696 5133


### GARDENS

 Breda Street  
Gardens  
Cape Town  
8001  
 021 461 9418



### GUGULETHU

 Corner of Steve Biko Drive and Ngambu Street  
Gugulethu  
Cape Town  
7750  
 021 637 9183

### PINELANDS









 Jan Smuts Drive  
Pinelands  
Cape Town  
7405  
 021 531 2105/6/7

### WYNBERG

 31 Broad Road  
Wynberg  
Cape Town  
7800  
 021 797 5540


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## FALSE BAY TVET COLLEGE

 Private Bag X25  
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7966  
 Main Road  
Muizenberg  
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 021 787 0800  
 [FBCDistanceLearning@falsebay.org.za](mailto:FBCDistanceLearning@falsebay.org.za)  
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## CAMPUSES

### KHAYELITSHA



 PO Box 376  
Mitchells Plain  
7785  
 Mew Way  
Khayelitsha  
 021 361 3430/ 360 5000






## MUIZENBERG

-  PO Box 34  
Muizenberg  
7950
-  York Rd  
Muizenberg
-  021 788 8373
-  021 788 2417




## FISH HOEK

-  PO Box 22488  
Fish Hoek  
7974
-  Corner of 7th Avenue and Kommetjie Road  
Fish Hoek
-  021 782 0144/4300


## MITCHELLS PLAIN

-  PO Box 376  
Mitchells Plain  
7789
-  Merrydale Road  
Mitchells Plain
-  021 391 0717

## WESTLAKE

-  Private Bag X17  
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7966
-  Westlake Drive  
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-  021 701 1340/ 700 6400

## NORTHLINK TVET COLLEGE

-  Private Bag X1  
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7506

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-  086 006 5465/ 021 970 9000
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-  [finance@northlink.co.za](mailto:finance@northlink.co.za)
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## CAMPUSES



### BELHAR

-  Proton Street  
Belhar  
7493
-  021 952 2113/9



### BELLVILLE

-  Sackson Street  
Bellville South
-  021 951 2231


### PAROW

-  Connaught Road  
Parow Valley  
7503
-  021 931 8238


### PROTEA

-  80 Voortrekker Road  
Bellville  
7530
-  021 946 2250



### TYGERBERG

-  Rothschild Boulevard  
Panorama  
7506





 021 524 2200

### WINGFIELD

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Goodwood  
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6620  
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## WEST COAST TVET COLLEGE



 PO Box 935  
Malmesbury  
7299





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 enquiries@westcoastcollege.co.za  
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### ATLANTIS

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Atlantis Industrial Area  
7349  
 021 577 1727

### CITRUSDAL

 101 Kerk Street  
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7340  
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### MALMESBURY

 6 Church Street  
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7299  
 022 487 2851/2/3

### VREDENBURG


 1 Akademie Street  
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7380  
 022 713 3167/18

### VREDENDAL

 1 Hoërskool Road  
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8160  
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## COUNCILS AND SECTOR EDUCATION TRAINING AUTHORITIES









### AGRICULTURE SECTOR EDUCATION AND TRAINING AUTHORITY (AgriSETA)

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## **BANKING SECTOR EDUCATION AND TRAINING AUTHORITY (BankSETA)**

-  PO Box 11678  
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1686
  -  Eco Origin Office Park  
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  -  BankSETA (@TheBankSeta)
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## **CONSTRUCTION EDUCATION AND TRAINING AUTHORITY (CETA)**









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## **COUNCIL ON HIGHER EDUCATION**




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## **COUNCIL FOR QUALITY ASSURANCE IN GENERAL AND FURTHER EDUCATION AND TRAINING (Umalusi)**

-  PO Box 151  
Persequor Technopark  
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## **CULTURE, ART, TOURISM, HOSPITALITY AND SPORT SECTOR EDUCATION AND TRAINING AUTHORITY (CATHSSETA)**

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### CHEMICAL INDUSTRIES EDUCATION AND TRAINING AUTHORITY (CHIETA)

 72 New Road  
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1685  
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 Chemical Industries Education and Training Authority (@chietasa)  
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### EDUCATION, TRAINING AND DEVELOPMENT PRACTICES SECTOR EDUCATION AND TRAINING AUTHORITY (ETDPSETA)

 ETDP SETA House  
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Gandhi Square  
South Marshalltown  
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### FINANCIAL AND ACCOUNTING SERVICES SECTOR EDUCATION AND TRAINING AUTHORITY (FASSET)

 PO Box 6801  
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### FIBRE PROCESSING AND MANUFACTURING SECTOR EDUCATION AND TRAINING AUTHORITY (FPM SETA)

-  PO Box 31276  
Braamfontein  
2017
  -  1 Newtown Road  
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Johannesburg  
2193
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  -  011 403 1718
  -  [info@fpmseta.org.za](mailto:info@fpmseta.org.za)
  -  FP&M SETA (@fpmseta)
  -  @FPMSETA
  -  [www.fpmseta.org.za](http://www.fpmseta.org.za)
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### FOOD AND BEVERAGES MANUFACTURING INDUSTRY SECTOR EDUCATION AND TRAINING AUTHORITY (FoodDBev SETA)

-  13 Autumn Street  
Rivonia  
2128
  -  011 253 7300
  -  011 253 7333
  -  [info@foodbev.co.za](mailto:info@foodbev.co.za)
  -  FoodBev SETA (@FoodBevSETAza)
  -  @FoodBevSETA
  -  [www.foodbev.co.za](http://www.foodbev.co.za)
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### HEALTH AND WELFARE SECTOR EDUCATIONAL TRAINING AUTHORITY (HWSETA)

-  Private Bag X15  
Bradford Corner  
Gardenvue  
2047
  -  17 Bradford Road  
Bedfordview  
Johannesburg  
204sp
  -  011 607 6900 / 0800 864 478
  -  [hwseta@hwseta.co.za](mailto:hwseta@hwseta.co.za)
  -  Health and Welfare Sector Education and  
Training Authority
  -  @HWSETA\_SA
  -  [www.hwseta.org.za](http://www.hwseta.org.za)
- 


### INSURANCE SECTOR EDUCATION AND TRAINING AUTHORITY (INSETA)


-  37 Empire Road  
Parktown  
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  -  011 381 8900
  -  [insetacallcentre@inseta.org.za](mailto:insetacallcentre@inseta.org.za)
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### LOCAL GOVERNMENT SECTOR EDUCATION AND TRAINING AUTHORITY (LGSETA)


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### MANUFACTURING, ENGINEERING AND RELATED SERVICES SECTOR EDUCATION AND TRAINING AUTHORITY (MERSETA)


 merSETA House  
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### MEDIA, INFORMATION AND COMMUNICATION TECHNOLOGIES SECTOR EDUCATION AND TRAINING AUTHORITY (MICT SETA)

 PO Box 5585  
Halfway House  
1685

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Gallagher Convention Centre  
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 MICT SETA


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### MINING QUALIFICATIONS AUTHORITY


 Private Bag X118  
Marshalltown  
2107


 7 Anerley Road  
Parktown


 011 630 3501/ 011 547 2602

 011 832 1044/ 011 646 3416

 info@mqa.org.za


 Mining Qualifications Authority


 @MQA\_SA


 [www.mqa.org.za](http://www.mqa.org.za)


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### PUBLIC SERVICE SECTOR EDUCATION AND TRAINING AUTHORITY (PSETA)

 Private Bag X916  
Pretoria  
0001

 353 Festival Street  
Sanlam Building  
Hatfield  
Pretoria  
0028

 012 423 5700









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 communications@pseta.org.za






-  Public Service Sector Education and Training Authority (@officialPSETA)
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## **SAFETY AND SECURITY SECTOR EDUCATION AND TRAINING AUTHORITY (SASSETA)**

-  PO Box 7612  
Halfway House  
1685
  -  Building 2  
Waterfall Corporate Campus  
74 Waterfall Drive  
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  -  011 087 5555/00
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## **SERVICES SECTOR EDUCATION AND TRAINING AUTHORITY (SERVICES SETA)**

-  PO Box 3322  
Houghton  
2041
  -  15 Sherborne Road  
Parktown  
Johannesburg
  -  011 276 9600
  -  [customercare@serviceseta.org.za](mailto:customercare@serviceseta.org.za)
  -  Services SETA
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  -  [www.servicesseta.org.za](http://www.servicesseta.org.za)
- 

## **TRANSPORT EDUCATION AND TRAINING AUTHORITY (TETA)**

-  Private Bag X10016  
Randburg  
2125
  -  344 Pretoria Avenue  
TETA House  
Randburg  
2194
  -  011 781 1280/ 011 577 7106
  -  011 781 0200/ 086 765 0519
  -  [coms@teta.org.za](mailto:coms@teta.org.za)
  -  Transport Education Training Authority
  -  [www.teta.org.za](http://www.teta.org.za)
- 

## **WHOLESALE AND RETAIL SECTOR EDUCATION AND TRAINING AUTHORITY (W&RSETA)**





-  Private Bag X106  
Centurion  
0046
  -  Riverside Office Park  
Hennops House  
1303 Heuwel Avenue  
Corner of Lenchen South and Heuwel Avenue  
Centurion  
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  -  012 622 9500
  -  012 633 9585
  -  [wrseta@wrseta.org.za](mailto:wrseta@wrseta.org.za)
  -  Wholesale and Retail SETA (@WRSETA)
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-










## DEPARTMENTS, INSTITUTIONS AND ORGANISATIONS

### NATIONAL







#### AAA SCHOOL OF ADVERTISING

-  AAA House  
The Braes Office Park  
Corner of William Nicol and Bryanston Drive  
Bryanston  
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-  011 781 2772/3/4
-  [info@aaaschool.ac.za](mailto:info@aaaschool.ac.za)
-  AAA School of Advertising
-  AAA School of Advertising
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-  087 073 8940
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-  Actuarial Society of South Africa - Student Liaison  
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#### AFRICAN INSTITUTE FOR MATHEMATICAL SCIENCES SOUTH AFRICA

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#### AGRICULTURAL RESEARCH COUNCIL (ARC)







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-  1134 Park Street  
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-  0012 427 9700
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-  Agricultural Research Council (@ARCSouthAfrica)
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## AQUACULTURE ASSOCIATION OF SOUTHERN AFRICA







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The Willows  
Pretoria  
0041
-  012 803 5208
-  086 232 9677
-  info@aasa-aqua.co.za
-  Aquaculture Association of Southern Africa  
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## ARC-INSTITUTE FOR AGRICULTURAL ENGINEERING (ARC-IAE)







-  Agricultural Engineering  
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Pretoria  
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Weavindpark
-  012 842 4017
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-  stoltze@arc.agric.za
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## ARC-ONDERSTEPSPOORT VETERINARY INSTITUTE (ARC-OVR)






-  ARC Onderstepoort Veterinary Research  
Private Bag X5  
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-  Soutpan Road (M35)  
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-  012 529 9111
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-  ovi-info@arc.agric.za
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-  @ARCSouthAfrica
-  [www.arc.agric.za/arc-ovi/Pages/ARC-OVI-Homepage.aspx](http://www.arc.agric.za/arc-ovi/Pages/ARC-OVI-Homepage.aspx)

## ASSOCIATION FOR COMMUNICATION AND ADVERTISING

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Johannesburg  
2196
-  010 880 3399
-  ceo@acasa.co.za
-  Association for Communication and Advertising  
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-  @ACA\_SA
-  [www.acasa.co.za](http://www.acasa.co.za)

## ASSOCIATION OF SOUTHERN AFRICAN TRAVEL AGENTS






-  PO Box 650539  
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2010
-  Suite 6  
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59 Woodlands Avenue (off Republic Road)  
Hurlingham Extension 5  
Johannesburg
-  011 293 0560/1
-  general@asata.co.za
-  ASATA (@SATravelAgents)



 @ASATA4ME  
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## BOREHOLE WATER ASSOCIATION OF SOUTHERN AFRICA

 PO Box 1155  
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2132  
 011 447 0853  
 011 447 0851  
 [info@bwa.co.za](mailto:info@bwa.co.za)  
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## BOTANICAL SOCIETY OF SOUTH AFRICA (BOTSOC)

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 The Botanical Society of South Africa (@BotSocSA)  
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## CENTRE FOR ENVIRONMENTAL RIGHTS (CER)

 Second Floor  
Springtime Studios  
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Observatory  
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 086 730 9098  
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 Centre for Environmental Rights  
 @CentreEnvRights  
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## CHARTERED GOVERNANCE INSTITUTE OF SOUTHERN AFRICA

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 Riviera Road Office Park  
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Killarney  
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 [info@chartsec.co.za](mailto:info@chartsec.co.za)  
 Chartered Governance Institute of Southern Africa  
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## CHEMICAL AND ALLIED INDUSTRIES ASSOCIATION (CAIA)

 PO Box 521310  
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2132  
 Rosebank Office Park  
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181 Jan Smuts Avenue  
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 [caiainfo@caia.co.za](mailto:caiainfo@caia.co.za)  
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## CONSULTING ENGINEERS SOUTH AFRICA

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  -  Balvenie Building  
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  -  011 463 7383
  -  [general@cesa.co.za](mailto:general@cesa.co.za)
  -  Consulting Engineers South Africa  
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## COUNCIL FOR GEOSCIENCE

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  -  @CGS\_RSA
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- 


## COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

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  -  [callcentre@csir.co.za](mailto:callcentre@csir.co.za)
  -  CSIR (@CSIRSouthAfrica)
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## DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT


-  Private Bag X250  
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  -  [info@daff.gov.za](mailto:info@daff.gov.za) or [info@DALRRD.gov.za](mailto:info@DALRRD.gov.za)
  -  Department of Agriculture, Land Reform and Rural  
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## DEPARTMENT OF FORESTRY, FISHERIES AND ENVIRONMENT


-  Private Bag X447  
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 Corner of Steve Biko and Soutpansberg Road  
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## DEPARTMENT OF SCIENCE AND INNOVATION

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## DEPARTMENT OF WATER AND SANITATION


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## ENVIRONMENTAL LAW ASSOCIATION OF SOUTH AFRICA

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## GREEN BUILDING COUNCIL

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## MARITIME BUSINESS INSTITUTE









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Corner of Victoria Embankment and Bay Terrace
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-  031 301 0812
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## MINERALS COUNCIL SOUTH AFRICA









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## PLASTICS FEDERATION OF SOUTH AFRICA








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-  [www.plasticsinfo.co.za](http://www.plasticsinfo.co.za)

## PUBLIC RELATIONS INSTITUTE OF SOUTHERN AFRICA (PRISA)








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## RED AND YELLOW CREATIVE SCHOOL OF BUSINESS


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-  [welcome@redandyellow.co.za](mailto:welcome@redandyellow.co.za)
-  Red & Yellow School (@RedAndYellowEd)
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-  Red & Yellow Creative School of Business
-  [www.redandyellow.co.za](http://www.redandyellow.co.za)


## SA MARITIME SCHOOL AND TRANSPORT COLLEGE


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## SOUTH AFRICAN ASSOCIATION FOR FOOD SCIENCE AND TECHNOLOGY


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## SOUTH AFRICAN COUNCIL FOR THE QUANTITY SURVEYING PROFESSION

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### **SOUTH AFRICAN ENVIRONMENTAL OBSERVATIONS NETWORK (SAEON)**

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### **SOUTH AFRICAN INSTITUTE OF AGRICULTURAL ENGINEERS**

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## SOUTH AFRICAN INSTITUTE OF WELDING

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## SOUTH AFRICAN INTERNATIONAL MARITIME INSTITUTE










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## SOUTH AFRICAN MARITIME SAFETY AUTHORITY







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-  [www.sanbi.org.za](http://www.sanbi.org.za)

## SOUTH AFRICAN NATIONAL PARKS SCIENTIFIC SERVICES (SANPARKS)







-  Scientific Services Skukuza  
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## SOUTH AFRICAN PHARMACY COUNCIL

-  Private Bag X40040  
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-  South African Pharmacy Council (@OfficialSAPC)
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-  [www.pharmcouncil.co.za](http://www.pharmcouncil.co.za)

## SOUTH AFRICAN TOURISM BOARD


-  Private Bag X10012  
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 @SATraveltrade  
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## **SOUTH AFRICAN WEATHER SERVICE**


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 South African Weather Service


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## **REGIONAL OFFICES**


### **BETHLEHEM**


 Private Bag X15  
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 Preekstoel Road  
Bethlehem Airfield  
Bethlehem

 058 303 5571


### **BLOEMFONTEIN**


 Private Bag X20562  
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 Maselspoort Road  
Bram Fischer International Airport

 051 433 3281


### **CAPE TOWN**


 PO Box 21  
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 Oval Office Park  
Freight Road  
Cape Town International Airport

 021 934 0794/831

### **KING SHAKA (DURBAN)**

 PO Box 57733  
King Shaka International Airport  
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 Ground Floor  
ATNS Building Control Tower  
King Shaka International Airport

 032 436 3820/12


### **JOHANNESBURG**


 PO Box 1194  
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 027 113 90 9329/30

### **PORT ELIZABETH**

 Private Bag X5991  
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## SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING (SANIRE)








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 Water Institute of Southern Africa (@WISAweb)  
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## WILDLANDS CONSERVATION TRUST

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Office Park 1  
Quarry Shopping Centre  
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 Albany Museum









 @MuseumAlbany

 [www.ru.ac.za/albanymuseum](http://www.ru.ac.za/albanymuseum)








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## CENTRE FOR AFRICAN CONSERVATION ECOLOGY

-  PO Box 77000  
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1 University Way  
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Department of Zoology  
Nelson Mandela University  
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  -  041 504 2316
  -  041 504 2946
  -  [ace@mandela.ac.za](mailto:ace@mandela.ac.za)
  -  Centre for African Conservation Ecology (@ACE)
  -  @MandelaUni
  -  [www.ace.mandela.ac.za](http://www.ace.mandela.ac.za)
- 









## CENTRE FOR BIOLOGICAL CONTROL DEPARTMENT OF ZOOLOGY AND ENTOMOLOGY RHODES UNIVERSITY

-  PO Box 94  
Makhanda (Grahamstown)  
6140
  -  Barrat Complex  
Life Science Building  
African Street  
Makhanda (Grahamstown)
  -  046 603 8763
  -  [cbcinfo@ru.ac.za](mailto:cbcinfo@ru.ac.za)
  -  Centre for Biological Control (@RhodesUniCBC)
  -  @RhodesUniCBC
  -  [www.ru.ac.za/centreforbiologicalcontrol](http://www.ru.ac.za/centreforbiologicalcontrol)
- 


## DEPARTMENT OF AGRICULTURE AND GAME RANCH MANAGEMENT

-  PO Box 77000  
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6031
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## DEPARTMENT OF BOTANY

-  PO Box 77000  
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  -  Summerstrand Campus (South)  
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- 

## DEPARTMENT OF ENVIRONMENTAL SCIENCE RHODES UNIVERSITY







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## DEPARTMENT OF GEOSCIENCES

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## DEPARTMENT OF ICHTHYOLOGY AND FISHERIES SCIENCE

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## INSTITUTE FOR WATER RESEARCH RHODES UNIVERSITY

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Agriculture Building  
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  -  [www.ufs.ac.za/natagri/departments-and-divisions/centre-for-environmental-management-home](http://www.ufs.ac.za/natagri/departments-and-divisions/centre-for-environmental-management-home)
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soil-and-crop-and-climate-sciences-home](http://www.ufs.ac.za/natagri/departments-and-divisions/soil-and-crop-and-climate-sciences-home)
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animal-wildlife-and-grassland-sciences-home](http://www.ufs.ac.za/natagri/departments-and-divisions/animal-wildlife-and-grassland-sciences-home)
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 UFS Faculty of Natural and Agricultural Sciences (@UFS.NatAgri)  
 @UFSweb  
 [www.ufs.ac.za/natagri/departments-and-divisions/disaster-management-training-and-education-centre-for-africa-home](http://www.ufs.ac.za/natagri/departments-and-divisions/disaster-management-training-and-education-centre-for-africa-home)

---

## INSTITUTE FOR GROUNDWATER STUDIES

 PO Box 339  
University of the Free State  
Bloemfontein  
9300








 IGS Building  
Dean Street  
Faculty of Natural and Agricultural Sciences  
205 Nelson Mandela Drive  
Park West  
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9301

 051 401 2175  
 gs-info@ufs.ac.za  
 Institute for Groundwater Studies  
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 [www.ufs.ac.za/natagri/departments-and-divisions/institute-for-groundwater-studies-\(igs\)-home](http://www.ufs.ac.za/natagri/departments-and-divisions/institute-for-groundwater-studies-(igs)-home)

---









## GAUTENG

### AFRICAN CENTRE FOR GENE TECHNOLOGIES

 Private Bag X20  
University of Pretoria  
Hatfield  
0028  
 ACGT House No. 10  
Faculty of Natural and Agricultural Sciences  
Experimental Farm  
University of Pretoria  
South Street  
0083  
 012 420 6000/10  
 itseng.malao@up.ac.za  
 University of Pretoria (@UnivofPretoria)  
 @UPTuks  
 [www.acgt.co.za](http://www.acgt.co.za)

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### CENTRE FOR APPLIED LEGAL STUDIES

 Private Bag X3  
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2050  
 DJ du Plessis Building  
West Campus  
University of the Witwatersrand  
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 011 515 8600  
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 Duduzile.Mlambo@wits.ac.za  
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 @CALS\_ZA  
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## CENTRE FOR ENVIRONMENTAL STUDIES

-  Private Bag X20  
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  -  University of Pretoria  
Groenkloof  
Hatfield
  -  012 420 3111/2073
  -  martha.tshoke@up.ac.za or  
communication.nas@up.ac.za
  -  Faculty of Natural and Agricultural Sciences  
(@upnatland)
  -  @CentrePretoria
  -  [www.up.ac.za/centre-for-environmental-studies](http://www.up.ac.za/centre-for-environmental-studies)
- 

## DEPARTMENT OF AGRICULTURAL ECONOMICS, EXTENSION AND RURAL DEVELOPMENT

-  Private Bag X20  
Faculty of Natural and Agricultural Sciences  
University of Pretoria  
Hatfield  
0028
  -  Agricultural Annex Building  
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Pretoria
  -  012 420 4084
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  -  melissa.vandermerwe@up.ac.za
  -  Faculty of Natural and Agricultural Sciences  
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  -  [www.up.ac.za/faculty-of-natural-agricultural-sciences/article/16166/departments-in-the-faculty-of-natural-and-agricultural-sciences](http://www.up.ac.za/faculty-of-natural-agricultural-sciences/article/16166/departments-in-the-faculty-of-natural-and-agricultural-sciences)
- 


## DEPARTMENT OF BIOCHEMISTRY, GENETICS AND MICROBIOLOGY

-  Private Bag X20  
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0028
  -  Agricultural Sciences Building  
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  -  [www.up.ac.za/biochemistry-genetics-and-microbiology](http://www.up.ac.za/biochemistry-genetics-and-microbiology)
- 

## DEPARTMENT OF CIVIL ENGINEERING

-  Private Bag X20  
Faculty of Engineering, Built Environment and  
Information Technology  
University of Pretoria  
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  -  University of Pretoria (@UnivofPretoria)
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  -  [www.up.ac.za/school-of-engineering](http://www.up.ac.za/school-of-engineering)
- 

## DEPARTMENT OF CONSUMER AND FOOD SCIENCES

-  Private Bag X20  
Faculty of Natural and Agricultural Sciences  
University of Pretoria  
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 consumer.food@up.ac.za


 Department of Consumer and Food Science


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## DEPARTMENT OF ENVIRONMENTAL HEALTH


 PO Box 524  
Faculty of Health Sciences  
University of Johannesburg  
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 web-healthscience@uj.ac.za

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## DEPARTMENT OF ENVIRONMENTAL, WATER AND EARTH SCIENCE

### TSHWANE UNIVERSITY OF TECHNOLOGY

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 gerberme@tut.ac.za


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## DEPARTMENT OF GEOGRAPHY, GEOINFORMATICS AND METEOROLOGY


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## DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL MANAGEMENT AND ENERGY STUDIES


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---










## DEPARTMENT OF HUMAN NUTRITION

-  Private Bag X323  
School of Health Care Sciences  
Pretoria  
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  -  HW Snyman building  
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Corner of Steve Biko and Dr Savage Roads  
University of Pretoria  
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  -  012 354 1228
  -  juna.botha@up.ac.za
  -  Faculty of Health Sciences  
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  -  [www.up.ac.za/human-nutrition](http://www.up.ac.za/human-nutrition)
- 









## DEPARTMENT OF PLANT AND SOIL SCIENCES

-  Private Bag X20  
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  -  012 420 3770
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  -  plant.science@up.ac.za
  -  Department of Plant and Soil Sciences  
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  -  [www.up.ac.za/plant-and-soil-sciences](http://www.up.ac.za/plant-and-soil-sciences)
- 

## DEPARTMENT OF ZOOLOGY

-  PO Box 524  
Faculty of Science  
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2006
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  -  zoologysecretary@uj.ac.za
  -  Zoology UJ (@ZoologyAtUJ)
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- 

## DEPARTMENT OF ZOOLOGY AND ENTOMOLOGY

-  Private Bag X20  
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  -  Faculty of Natural and Agricultural Sciences  
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  -  012 420 3233
  -  012 362 5242
  -  secretary@zoology.up.ac.za
  -  Department of Zoology and Entomology  
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  -  [www.up.ac.za/zoology-entomology](http://www.up.ac.za/zoology-entomology)
-




### DSI-NRF CENTRE OF EXCELLENCE FOR INTEGRATED MINERAL AND ENERGY RESOURCE ANALYSIS (CIMERA)







-  Department of Geology  
C1 Lab 305 (3rd Floor)  
University of Johannesburg  
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-  011 559 4728
-  [cimera@uj.ac.za](mailto:cimera@uj.ac.za)
-  [www.cimera.co.za](http://www.cimera.co.za)

### DSI-NRF CENTRE OF EXCELLENCE IN FOOD SECURITY






-  Private Bag X20  
Hatfield  
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Hatfield  
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-  021 959 3818/4050
-  [Daleen.Muller@up.ac.za](mailto:Daleen.Muller@up.ac.za)
-  Foodsecurity SA (@COEinFS)
-  @FoodSecurity\_za
-  [www.foodsecurity.ac.za](http://www.foodsecurity.ac.za)

### DSI-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND STATISTICAL SCIENCES (COE-MASS)



-  Private Bag 3  
Wits  
2050

-  CoE-MaSS  
Lower Ground Floor  
TW Kambule Mathematical Sciences Building  
University of the Witwatersrand  
Enoch Sontonga Avenue  
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Johannesburg
-  011 717 6161
-  [CoE-MaSS@wits.ac.za](mailto:CoE-MaSS@wits.ac.za)
-  DSI-NRF Centre of Excellence in Mathematics and  
Statistical Sciences (@coemass)
-  @CoEMaSS
-  [www.wits.ac.za/coe-mass](http://www.wits.ac.za/coe-mass)

### EKURHULENI WATER CARE COMPANY (ERWAT)

-  PO Box 13106  
Norkem Park  
1631
-  Hartebeestfontein Office Park  
R25 (Bronkhorstspuit/ Bapsfontein Road)  
Kempton Park
-  011 929 7000
-  [mail@erwat.co.za](mailto:mail@erwat.co.za)
-  ERWAT (@erwat.co.za)
-  @erwat\_sa
-  [www.erwat.co.za](http://www.erwat.co.za)

### FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY








-  Private Bag X20  
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-  University of Pretoria  
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 @UPTuks  
 [www.up.ac.za/faculty-of-engineering-built-environment-it](http://www.up.ac.za/faculty-of-engineering-built-environment-it)






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## **FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT**

 PO Box 524  
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 patriciak@uj.ac.za  
 Engineering@UJ (@UJEngineering)  
 @EngineeringUJ  
 [www.uj.ac.za/faculties/febe](http://www.uj.ac.za/faculties/febe)

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## **FACULTY OF SCIENCE**

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Johannesburg  
2092  
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 011 559 2307  
 agreyling@uj.ac.za or tinyikos@uj.ac.za  
 UJ Faculty of Science (@ujfacultyofscience)

 @ScienceUJ  
 [www.uj.ac.za/faculties/science](http://www.uj.ac.za/faculties/science)

## **CAMPUSES**

### **AUCKLAND PARK**








 011 559 3826/ 2459

### **DOORNFONTEIN**

 011 559 6349



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## **GLOBAL CHANGE INSTITUTE**

 Private Bag 3  
Wits  
2050  
 5th Floor  
University Corner  
East Campus  
University of Witwatersrand  
Corner of Jorissen and Bertha Streets  
Braamfontein  
Johannesburg  
 011 717 6080  
 info.gcsri@wits.ac.za  
 Global Change Institute (@WitsGCI)  
 @WitsGCI  
 [www.wits.ac.za/gci](http://www.wits.ac.za/gci)

---

## **IIIE MSA**







 Private Bag X60  
Roodepoort  
1725  
 144 Peter Road  
Ruimsig  
Johannesburg



 011 950 4000  
 enquiries@iiemsa.co.za  
 IIE MSA (@iiemsa.za)  
 @iiemsa\_za  
 [www.iiemsa.co.za](http://www.iiemsa.co.za)







---

## INSTITUTE FOR FOOD, NUTRITION AND WELL-BEING

 Private Bag X20  
Hatfield  
0028  
 Humanities Building  
14th Floor  
Faculty of Natural and Agricultural Sciences  
University of Pretoria  
Pretoria  
 012 420 6149  
 Institute for Food, Nutrition and Well-being  
 @UPTuks  
 [www.up.ac.za/institute-for-food-nutrition-and-well-being](http://www.up.ac.za/institute-for-food-nutrition-and-well-being)









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## JOHANNESBURG WATER

 PO Box 61542  
Johannesburg  
2107  
17 Harrison Street  
Marshalltown  
Johannesburg  
 011 688 1400  
 customer@jwater.co.za  
 Johannesburg Water (@jhbwater)  
 @JHBWater  
 [www.johannesburgwater.co.za](http://www.johannesburgwater.co.za)










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## MIDVAAL WATER COMPANY

 PO Box 31  
Stilfontein  
2550  
 Buffelsfontein Farm No. 443IP  
Klerksdorp  
 018 482 9500  
 086 532 2528  
 info@midvaalwater.co.za  
 Midvaal Water Company  
 @MidvaalC  
 [www.midvaalwater.co.za](http://www.midvaalwater.co.za)




---

## MINERALS COUNCIL OF SOUTH AFRICA





 PO Box 61809  
Marshalltown  
2107  
 5 Hollard Street  
Johannesburg  
 011 498 7100  
 011 834 1884  
 info@mineralscouncil.org.za  
 Mine (@Mine)  
 @Mine\_RSA  
 Minerals Council South Africa  
 [www.mineralscouncil.org.za](http://www.mineralscouncil.org.za)

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## RAND WATER








 PO Box 1127  
Johannesburg  
2000  
 522 Impala Road  
Glenvista  
2058  
 011 682 0911/ 086 0101 060



 customerservice@randwater.co.za  
 Rand Water  
 @Rand\_Water  
 [www.randwater.co.za](http://www.randwater.co.za)






---

## **SCHOOL OF ANIMAL, PLANT AND ENVIRONMENTAL SCIENCES**

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2050  
 1 Jan Smuts Ave  
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Braamfontein  
Johannesburg  
 011 717 6404  
 011 717 6494  
 Animal, Plant and Environmental Sciences  
(@apeswits)  
 @APESWits  
 [www.wits.ac.za/apes](http://www.wits.ac.za/apes)

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## **SCHOOL OF ENGINEERING FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY UNIVERSITY OF PRETORIA**

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 012 420 5166/2676  
 jvr2@up.ac.za or dorothy.tau@up.ac.za  
 Faculty of Engineering, Built Environment and  
Information Technology (@UPEBITFaculty)

 @EBITHouse  
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2050  
 Room 123B  
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University of the Witwatersrand  
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 011 717 6503  
 natanya.alexander@wits.ac.za  
 University of the Witwatersrand  
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## **SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING**

 Private Bag 3  
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 Hillman Building  
Jan Smuts Avenue  
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## SCHOOL OF GEOSCIENCES








-  Private Bag X3  
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-  Geosciences Building  
1 Jan Smuts Avenue  
Johannesburg
-  011 717 6547
-  011 717 6579
-  lungelwa.ndevu@wits.ac.za
-  Wits Geoscience Rocks (@WitsGeos)
-  @WitsGeos
-  [www.wits.ac.za/geosciences](http://www.wits.ac.za/geosciences)

## SCHOOL OF MINING ENGINEERING


-  Private Bag X3  
Wits  
2050
-  1 Jan Smuts Avenue  
Chamber of Mines Building  
2nd Floor  
University of the Witwatersrand  
Johannesburg  
2000
-  011 717 7415
-  Phila.Gamedza@wits.ac.za
-  Mining Education - Wits
-  @witsuniversity
-  [www.wits.ac.za/miningeng](http://www.wits.ac.za/miningeng)

## TRANS-CALEDON TUNNEL AUTHORITY





-  PO Box 10335  
Centurion  
0046

-  Tuinhof Building  
Ground Floor  
Stinkhout Building  
265 West Avenue  
Centurion
-  012 683 1200
-  012 683 1361
-  info@tcta.co.za
-  TCTA/Trans-Caledon Tunnel Authority (@tctapage)
-  @TCTA\_RSA
-  [www.tcta.co.za](http://www.tcta.co.za)

## SOUTH AFRICAN CHEMICAL INSTITUTE

-  Private Bag X3  
Wits  
2050
-  School of Chemistry  
University of the Witwatersrand
-  011 717 6705
-  086 766 9041
-  saci.chem@wits.co.za
-  [www.saci.co.za](http://www.saci.co.za)

## UNIVERSITY OF PRETORIA NATURAL HAZARD CENTRE


-  Private Bag X20  
University of Pretoria  
Hatfield  
0028
-  Department of Geology  
Faculty of Natural and Agricultural Sciences  
Corner of Lynnwood Road and Roper Street  
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---

### WATER RESEARCH COMMISSION (WRC)








 Private Bag X03  
Gezina  
0031

 Lynnwood Bridge Office Park  
Bloukrans Building  
4 Daventry Street  
Lynnwood Manor  
Pretoria  
0081  
 012 761 9300  
 info@wrc.org.za  
 Water Research Commission  
 @WaterResearchSA  
 Water Research Commission  
 [www.wrc.org.za](http://www.wrc.org.za)

---

## KWAZULU-NATAL

### CENTRE FOR WATER RESOURCES RESEARCH

 Private Bag X01  
Scottsville  
3209  
 School of Agricultural, Earth and Environmental  
Sciences  
Rabie Sanders building  
Agriculture Campus  
University of KwaZulu-Natal  
Carbis Road  
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 033 260 5427  
 mhlungun@ukzn.ac.za  
 Centre for Water Resources Research (@TheCWRR)  
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---

### DEPARTMENT OF BIOTECHNOLOGY AND FOOD TECHNOLOGY

 PO Box 1334  
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 @DUT\_Tweets  
 [www.dut.ac.za/faculty/applied\\_sciences/biotechnology\\_and\\_food\\_technology](http://www.dut.ac.za/faculty/applied_sciences/biotechnology_and_food_technology)

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### DEPARTMENT OF CHEMICAL ENGINEERING




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 @DUT\_Tweets  
 [www.dut.ac.za/faculty/engineering/chemical\\_engineering\\_and\\_pulp\\_paper](http://www.dut.ac.za/faculty/engineering/chemical_engineering_and_pulp_paper)


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## COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE




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 031 260 1111/5717  
 oppermanv@ukzn.ac.za

## CAMPUSES




### HOWARD COLLEGE

 Mazisi Kunene Road  
Glenwood  
Durban  
4041

### PIETERMARITZBURG








 King Edward Avenue  
Scottsville  
Pietermaritzburg  
3209  
 033 260 5515  
 033 260 6094

## WESTVILLE

 University Road  
Westville  
Durban  
4000  
 031 260 7322  
 031 260 7317



---

## POLLUTION RESEARCH GROUP

 Chemical Engineering  
University of KwaZulu-Natal  
Durban  
4041  
 King George V Avenue  
(Entrance No.3, off Rick Turner Road)  
Chemical Engineering Building  
University of KwaZulu-Natal  
Howard College Campus  
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 buckley@ukzn.ac.za, mercer@ukzn.ac.za  
 Pollution Research Group  
 @PRG\_SA  
 [www.prg.ukzn.ac.za](http://www.prg.ukzn.ac.za)

---

## SCHOOL OF AGRICULTURAL, EARTH AND ENVIRONMENTAL SCIENCES

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 3rd Floor Memorial Tower Building  
Howard College Campus  
University of KwaZulu-Natal  
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- 033 260 1391
- saees@ukzn.ac.za
- School of Agriculture, Earth and Environmental Sciences (@saeesukzn)
- @UKZN

## SCHOOL OF BIORESOURCES ENGINEERING

### BIORESOURCES ENGINEERING

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Scottsville  
Pietermaritzburg  
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Rabie Saunders Building  
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Pietermaritzburg
- 033 260 5490
- 033 260 5818
- BioEng@ukzn.ac.za
- University of KwaZulu-Natal (@ukzn1)
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- [www.bioeng.ukzn.ac.za](http://www.bioeng.ukzn.ac.za)

## SCHOOL OF BUILT ENVIRONMENT AND DEVELOPMENT STUDIES

- 8th Floor  
Shepstone Building  
University KwaZulu-Natal
- 031 260 1111
- msomia1@ukzn.ac.za; naickersu@ukzn.ac.za
- School of Built Environment and Development Studies (@UKZNSoBEDS)
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- [www.sobeds.ukzn.ac.za](http://www.sobeds.ukzn.ac.za)

## SCHOOL OF ENGINEERING

- University of KwaZulu-Natal  
Durban  
4041
- UNITE/School of Engineering Building  
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- [www.engineering.ukzn.ac.za](http://www.engineering.ukzn.ac.za)

## SCHOOL OF LIFE SCIENCES



- Private Bag X01  
University of KwaZulu-Natal  
Scottsville  
3209
- School of Life Sciences  
New Biology Building  
Room 03-004  
University Road  
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3629
- 031 260 1545/8234/5435
- sammuelss@ukzn.ac.za
- University of KwaZulu-Natal (@ukzn1)
- @UKZN
- [www.lifesciences.ukzn.ac.za](http://www.lifesciences.ukzn.ac.za)



## SCHOOL OF MANAGEMENT, IT AND GOVERNANCE









-  Private Bag X01  
University of KwaZulu-Natal  
Scottsville  
3209
-  031 260 2216/1500/5739
-  clms@ukzn.ac.za or allyn1@ukzn.ac.za
-  University of KwaZulu-Natal (@ukzn1)
-  @UKZN
-  [www.smitg.ukzn.ac.za](http://www.smitg.ukzn.ac.za)

## SOUTH AFRICAN SUGARCANE RESEARCH INSTITUTE

-  Private Bag X02  
Mount Edgecombe  
4300
-  170 Flanders Drive  
Mount Edgecombe  
4300

-  031 508 7400
-  031 508 7597
-  [sasri@sugar.org.za](mailto:sasri@sugar.org.za)
-  [www.sasri.org.za](http://www.sasri.org.za)

## UMGENI WATER

-  PO Box 9  
Umgeni Water  
Pietermaritzburg  
3200
-  310 Burger Street  
Pietermaritzburg  
3201
-  033 341 1111
-  033 341 1167
-  [info@umgeni.co.za](mailto:info@umgeni.co.za)
-  Umgeni Water-Amanzi (@umgeniwater)
-  @UmgeniWater
-  [www.umgeniwater.co.za](http://www.umgeniwater.co.za)

## LIMPOPO

### ASSOCIATION FOR WATER AND RURAL DEVELOPMENT








-  PO Box 1919  
Hoedspruit  
1380
-  Sunset View Office Park  
Corner of Buffel and Koedoe Streets  
Hoedspruit  
1380

-  015 793 0145
-  015 793 0503
-  [info@award.org.za](mailto:info@award.org.za)
-  AWARD (@awardSA)
-  @AWARD\_RSA
-  [www.award.org.za](http://www.award.org.za)











## NORTH WEST

### CENTRE FOR ENVIRONMENTAL MANAGEMENT

-  Private Bag X6001  
North-West University  
Potchefstroom  
2520
  -  Building D1  
Corner of Borchard and Hoffman Streets  
Potchefstroom  
2520
  -  018 299 2714/24
  -  018 299 2726
  -  Centre for Environmental Management  
(@cemnwu)
  -  @cem\_nwu
  -  [www.nwu.ac.za/cem](http://www.nwu.ac.za/cem)
- 








### FACULTY OF ENGINEERING

-  Private Bag X1290  
North-West University  
Potchefstroom  
2520
  -  The Office of the Registrar  
Building F1  
11 Hoffman Street  
Potchefstroom  
2351
  -  018 299 1111/2222
  -  018 299 4910
  -  judy.heyman@nnwu.ac.za
  -  NWU Faculty of Engineering (@Ingenieurswese)
  -  @PUKEngineering
  -  [www.engineering.nwu.ac.za](http://www.engineering.nwu.ac.za)
- 

### FACULTY OF NATURAL AND AGRICULTURAL SCIENCES

-  Private Bag X1290  
North-West University  
Potchefstroom  
2520
  -  The Office of the Registrar  
Building F1  
11 Hoffman Street  
Potchefstroom  
2351
  -  018 299 1111
  -  018 299 2222
  -  studies@mynwu.info
  -  NWU Faculty of Natural and Agricultural Sciences  
(@NWU.FNAS)
  -  @NWU\_FNAS
  -  [www.natural-sciences.nwu.ac.za/biological-sciences](http://www.natural-sciences.nwu.ac.za/biological-sciences)
- 

### SCHOOL OF GEO- AND SPATIAL SCIENCES

-  Private Bag X6001  
North-West University  
Potchefstroom  
2520
  -  Building E4  
Room G46  
Potchefstroom  
2531
  -  018 299 1505
  -  Erika.DuToit@nwu.ac.za
  -  North-West University (@NWUNorthWestUniversity)
  -  @theNWU
  -  [www.natural-sciences.nwu.ac.za/geo-spatial-sciences](http://www.natural-sciences.nwu.ac.za/geo-spatial-sciences)
-



## UNIT FOR ENVIRONMENTAL SCIENCES AND MANAGEMENT

- Private Bag X6001  
Potchefstroom  
2520
- Building E4  
North-West University  
Potchefstroom  
2531

- 018 299 1543
  - corene.VanDerMerwe@nwu.ac.za or  
Mada.Vosloo@nwu.ac.za
  - NWU Faculty of Natural and Agricultural Sciences  
(@NWU.FNAS)
  - @NWU\_FNAS
  - [www.natural-sciences.nwu.ac.za/unit-environmental-sciences-and-management](http://www.natural-sciences.nwu.ac.za/unit-environmental-sciences-and-management)
- 

## WESTERN CAPE

### AFRICAN CLIMATE AND DEVELOPMENT INITIATIVE (ACDI)

#### UNIVERSITY OF CAPE TOWN

- Upper Campus  
Rondebosch  
7700
  - Geological Sciences Building  
Level 6  
13 Library Road  
Rondebosch  
Cape Town
  - 021 650 5598
  - 021 650 3783
  - info.acdi@uct.ac.za
  - African Climate and Development Initiative  
(@AfricanClimateDevelopmentInitiative)
  - @ACDI\_UCT
  - [www.acdi.uct.ac.za](http://www.acdi.uct.ac.za)
- 

- PGWC Shared Services Centre  
Corner of Bosduif and Volstruis Streets  
Bridgetown
  - 087 087 9262
  - info@capenature.co.za
  - CapeNature (@CapeNature1)
  - @CapeNature1
  - [www.capenature.co.za](http://www.capenature.co.za)
- 




### BIOECONOMY RESEARCH CHAIR

- Private Bag X3  
Rondebosch  
7701
- Department of Environmental and Geographical  
Science  
South Lane  
Upper Campus  
University of Cape Town  
Rondebosch  
7701
- 021 650 2866
- 021 650 3791
- info@bio-economy.org.za










### CAPENATURE

- Private Bag X29  
Gatesville  
7766










-  UCT Bio-economy Research Chair  
(@uctbioeconomy)
  -  @UCT\_Bioeconomy
  -  [www.bio-economy.org.za](http://www.bio-economy.org.za)
- 

## CENTRE FOR GEOGRAPHICAL ANALYSIS









-  Private Bag X1  
Matieland  
7602
  -  Chamber of Mines (Geology) building  
Corner of Merriman Avenue and Ryneveld Street  
Stellenbosch
  -  021 808 3218
  -  021 808 3109
  -  [avn@sun.ac.za](mailto:avn@sun.ac.za)
  -  Centre for Geographical Analysis (@cga.sun)
  -  @StellenboschUni
  -  Centre for Geographical Analysis
  -  [www.sun.ac.za/cga/](http://www.sun.ac.za/cga/)
- 

## CENTRE OF EXCELLENCE FOR INVASION BIOLOGY (CIB)






-  Private Bag X1  
Department of Botany and Zoology  
Stellenbosch University  
Matieland  
7602
-  Natural Sciences building  
Office Suite 2039  
Merriman Avenue  
Stellenbosch
-  021 808 3236
-  [cib@sun.ac.za](mailto:cib@sun.ac.za)
-  Centre for Invasion Biology  
(@centreforinvasionbiology)

-  @InvasionScience
  -  [www.academic.sun.ac.za/cib](http://www.academic.sun.ac.za/cib)
- 


## CLIMATE SYSTEMS ANALYSIS GROUP (CSAG) UNIVERSITY OF CAPE TOWN

-  Private Bag X3  
Rondebosch  
7701
  -  Environmental and Geographical Science building  
University Avenue  
Rondebosch  
Cape Town
  -  021 650 2784
  -  021 650 5773
  -  [climate@csag.uct.ac.za](mailto:climate@csag.uct.ac.za)
  -  Climate System Analysis Group
  -  @CSAGUCT
  -  [www.csag.uct.ac.za](http://www.csag.uct.ac.za)
- 









## DEPARTMENT OF BIODIVERSITY AND CONSERVATION BIOLOGY

-  Private Bag X17  
Faculty of Natural Science  
Bellville  
7530
-  Robert Sobukwe Road  
New Life Sciences building  
5th Floor  
Core 2  
University of the Western Cape  
Modderdam Road  
Bellville  
7535
-  021 959 2301
-  021 959 2312
-  [lvheerden@uwc.ac.za](mailto:lvheerden@uwc.ac.za)










-  Biodiversity and Conservation Biology (@BCB.UWC)
  -  @UWCOnline
  -  [www.uwc.ac.za](http://www.uwc.ac.za)
- 









## DEPARTMENT OF BIOLOGICAL SCIENCES

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Rondebosch  
7701
  -  John Day building  
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Woolsack Drive  
Cape Town
  -  021 650 3604
  -  021 650 3301
  -  [claire.khai@uct.ac.za](mailto:claire.khai@uct.ac.za) or [cecile.reed@uct.ac.za](mailto:cecile.reed@uct.ac.za)
  -  Department of Biological Sciences  
(@biologicalsciences.uct)
  -  @BioSciUCT
  -  [www.biologicalsciences.uct.ac.za](http://www.biologicalsciences.uct.ac.za)
- 





## DEPARTMENT OF BOTANY AND ZOOLOGY

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7602
  -  Natural Sciences building  
Merriman Avenue  
Stellenbosch
  -  021 808 3236
  -  [botzoo@sun.ac.za](mailto:botzoo@sun.ac.za)
  -  Department of Botany and Zoology
  -  @StellenboschUni
  -  [www.sun.ac.za/english/faculty/science/botany-zoology](http://www.sun.ac.za/english/faculty/science/botany-zoology)
- 


## DEPARTMENT OF CHEMISTRY AND POLYMER SCIENCE

-  Private Bag X1  
Stellenbosch University  
Matieland  
7602
  -  Office Suite 2039  
De Beers Street  
Stellenbosch  
7600
  -  021 808 3172
  -  021 808 4967
  -  [ec@sun.ac.za](mailto:ec@sun.ac.za)
  -  Stellenbosch University
  -  @ScienceSun
  -  [www.sun.ac.za/chemistry](http://www.sun.ac.za/chemistry)
- 

## DEPARTMENT OF FOOD SCIENCE

-  Private Bag X1  
Matieland  
7602
  -  Corner of Hammanshand and Helshoogte Roads  
Stellenbosch University  
Stellenbosch
  -  021 808 3578
  -  [gkoopman@sun.ac.za](mailto:gkoopman@sun.ac.za)
  -  Department of Food Science
  -  @StellenboschUni
  -  [www.sun.ac.za/english/faculty/agri/food-science](http://www.sun.ac.za/english/faculty/agri/food-science)
- 

## DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES

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7600
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  - 📠 021 808 3109
  - ✉ catherine@sun.ac.za
  - 📘 Department of Geography and Environmental  
Studies (@SUGeography)
  - 🐦 @SUGeography
  - 🌐 [www.sun.ac.za/geography](http://www.sun.ac.za/geography)
- 

## DEPARTMENT OF GEOLOGICAL SCIENCES

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Department of Geological Sciences  
University of Cape Town  
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7701
  - 📍 Department of Geological Sciences  
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  - ☎ 021 650 2931
  - 📠 021 650 3783
  - ✉ sci-geology@uct.ac.za
  - 📘 Department of Geological Sciences (@uctgeology)
  - 🐦 @UCTGeology
  - 🌐 [www.geology.uct.ac.za](http://www.geology.uct.ac.za)
- 

## DEPARTMENT OF OCEANOGRAPHY

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7701

- 📍 Upper Campus  
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Cape Town
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  - 📠 021 650 3979
  - ✉ cashifa.karriem@uct.ac.za
  - 📘 University of Cape Town
  - 🐦 @UCTOnline
  - 🌐 [www.sea.uct.ac.za](http://www.sea.uct.ac.za)
- 





## FACULTY OF ENGINEERING

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  - 📍 Corner of Banhoek Road and Joubert Street  
Stellenbosch  
7600
  - ☎ 021 808 4203/835
  - ✉ portiaadonis@sun.ac.za or nicolepa@sun.ac.za
  - 📘 Faculty of Engineering (@StellenboschEngineering)
  - 🐦 @StellenboschUni
  - 🌐 [www.eng.sun.ac.za](http://www.eng.sun.ac.za)
- 







## FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

- 📍 Private Bag X3  
Rondebosch  
7701
- 📍 Fifth Level  
New Engineering building  
Madiba Circle  
Upper Campus  
University of Cape Town
- ☎ 021 650 2699
- ✉ ebe-faculty@uct.ac.za









-  Faculty of Engineering and the Built Environment (@UCTEBEFaculty)
  -  @UCTEBE
  -  Faculty of Engineering and the Built Environment (EBE UCT)
  -  [www.ebe.uct.ac.za](http://www.ebe.uct.ac.za)
- 

## FUTURE WATER INSTITUTE









-  Room 3.28  
Level 3  
New Engineering building  
1 Madiba Circle  
Upper Campus  
University of Cape Town  
7700
  -  021 650 5317/7020
  -  [FutureWater@uct.ac.za](mailto:FutureWater@uct.ac.za)
  -  Future Water UCT
  -  @FutureWaterUCT
  -  [www.futurewater.uct.ac.za](http://www.futurewater.uct.ac.za)
- 

## INSTITUTE FOR WATER AND ENVIRONMENTAL ENGINEERING








-  Private Bag X1  
Matieland  
7602
-  Corner of Banhoek Road and Joubert Street  
Department of Civil Engineering  
Faculty of Engineering  
Stellenbosch University  
Stellenbosch  
7600
-  021 808 4404
-  021 808 4947
-  [icm@sun.ac.za](mailto:icm@sun.ac.za)

-  Faculty of Engineering (@StellenboschEngineering)
  -  @StellenboschUni
  -  [www.civeng.sun.ac.za](http://www.civeng.sun.ac.za)
- 

## MARINE RESEARCH UNIT








-  Private Bag X3  
Rondebosch  
7701
  -  Oceanography Department  
RW James building  
Upper Campus  
University of Cape Town  
Rondebosch  
7701
  -  021 650 5312
  -  021 650 3979
  -  [ma-re@uct.ac.za](mailto:ma-re@uct.ac.za)
  -  MA-RE UCT (@mare.uct)
  -  @MARE\_UCT
  -  [www.ma-re.uct.ac.za](http://www.ma-re.uct.ac.za)
- 

## STELLENBOSCH UNIVERSITY WATER INSTITUTE









-  Private Bag X1  
Matieland  
7602
  -  Faculty of Natural Science  
Al Perold building (Room 2009)  
Stellenbosch University  
Stellenbosch
  -  021 808 9514
  -  [water@sun.ac.za](mailto:water@sun.ac.za)
  -  Stellenbosch University
  -  @StellenboschUni
  -  [www.sun.ac.za/english/entities/SUWI/Pages/default.aspx](http://www.sun.ac.za/english/entities/SUWI/Pages/default.aspx)
-











## SUSTAINABILITY INSTITUTE

-  PO Box 162  
Lynedoch  
7603
  -  Lynedoch Road (off R310 Baden Powell Drive)  
Lynedoch  
7603
  -  021 881 3500
  -  [info@sustainabilityinstitute.net](mailto:info@sustainabilityinstitute.net)
  -  Sustainability Institute (@sustainabilityinstitute)
  -  @Lynedoch\_SI
  -  [www.sustainabilityinstitute.net](http://www.sustainabilityinstitute.net)
- 

## THE UNESCO CHAIR IN HYDROGEOLOGY

-  Private Bag X17  
UNESCO Groundwater Chair  
University of the Western Cape  
7530
  -  New Life Sciences building  
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Modderdam Road  
Bellville  
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  -  021 959 2439
  -  021 959 3118
  -  University of the Western Cape (@uwconline1)
  -  @UWOnline
  -  [unescochair@uwc.ac.za](mailto:unescochair@uwc.ac.za)
  -  [www.uwc.ac.za/Faculties/NS/Hydrogeology](http://www.uwc.ac.za/Faculties/NS/Hydrogeology)
- 

## URBAN WATER MANAGEMENT GROUP

-  Private Bag X3  
Rondebosch  
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  -  Department of Civil Engineering  
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New Engineering Building  
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University of Cape Town  
Cape Town
  -  021 650 2584
  -  021 650 1455
  -  [civil@uct.ac.za](mailto:civil@uct.ac.za)
  -  UCTCivil
  -  @UCTNews
  -  [www.civil.uct.ac.za/urban-water-management](http://www.civil.uct.ac.za/urban-water-management)
-





SECTION

05



# BURSARIES AND SCHOLARSHIPS

Perhaps you are thinking about applying for a bursary or an internship but do not know where to begin. Here is some information on the various options available to help you make the best decision for your future.

## BURSARIES

A bursary is a financial award made by an institution to individuals who cannot afford full fees. Bursaries are usually renewed each year, on condition that the student is making satisfactory progress.

If you are interested in applying for one of the bursaries listed below, you should contact the government department, university, public entity or organisation concerned directly.

## BURSARIES, SCHOLARSHIPS AND STUDENT LOANS

### Financial support and student aid

#### National Student Financial Aid Scheme (NSFAS)

A National Student Financial Aid Scheme (NSFAS) loan is an amount of money you borrow from NSFAS to cover the costs associated with your tertiary studies.

The NSFAS is a statutory body, funded primarily by the Department of Higher Education and Training, providing study loans to academically able but

### *What's the difference between a student loan, a scholarship and a bursary?*

- **STUDENT LOAN:** A study loan refers to money borrowed to pay for academic tuition (in some instances accommodation too) that has to be paid back with interest. Different loans charge interest differently. It is important to know how the loan you intend to take charges interest.
- **BURSARY:** A bursary is an academic sponsorship that covers the full costs of study including study material, tuition, accommodation and sometimes pocket money for living expenses. It is granted on the basis of financial need and/or good academic results. Students do not have to pay back any amount of money, but some students have work for their bursary provider for a period of time.
- **SCHOLARSHIP:** A scholarship is an academic financial sponsorship awarded to an academically deserving student. It consists of conditions and criteria the candidate must meet. The sponsorship awarded covers at a minimum a portion of the student's tuition. In most cases the beneficiary of the scholarship has to maintain a certain average in terms of their marks and keep to the conditions set by the sponsor.






financially needy students who wish to study at one of South Africa's public higher education institutions.

 086 006 7327  
 info@nsfas.org.za  
 [www.nsfas.org.za](http://www.nsfas.org.za)

### Who qualifies to apply for the NSFAS?

The National Students Financial Aid Scheme (NSFAS) is available to university and TVET college students.

### Where can I go to for advice on financial aid if I do not have internet or computer access?

- You can contact an institution of your choice.
- You can also contact the **Department of Higher Education and Training's** call centre at  
 080 087 2222 or the  
**Career Advice Helpline** at  
 086 999 0123 for advice as well as the  
**NSFAS head office** on  
 021 763 3232.

### African Scholars Fund



The African Scholars Fund assist promising young schoolchildren from very poor homes to complete their secondary (grades 8 to 12) or TVET college education.

 021 689 9094  
 office@asf.org.za  
 [www.asf.org.za](http://www.asf.org.za)

### Ikusasa Student Financial Aid Programme (ISFAP)




 087 805 8500  
 info@isfap.co.za or students@isfap.co.za or partners@isfap.co.za  
 [www.isfap.co.za/frequently-asked-questions](http://www.isfap.co.za/frequently-asked-questions)

### Rural Education Access Programme (REAP)

 021 696 5500  
 reception@reap.org.za  
 [www.reap.org.za](http://www.reap.org.za)

### StudyTrust

StudyTrust is an educational trust and public benefit organisation. It connects learners with potential to their study opportunities.



 011 403 1632  
 apply@StudyTrust.org.za  
 [www.studytrust.org.za](http://www.studytrust.org.za)

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## STUDENT LOANS

Various banks offer student loan options. For more information, visit a local branch or banking websites.



### Absa Student Loan

 086 010 0372  
 [www.absa.co.za/personal/loans/for-my-studies/explore](http://www.absa.co.za/personal/loans/for-my-studies/explore)



### FNB Student Loan

 [www.fnb.co.za/loans/student-loans.html](http://www.fnb.co.za/loans/student-loans.html)

### Nedbank Student Loan

 086 055 5111  
 [www.nedbank.co.za/content/nedbank/desktop/gt/en/personal/loans/student-loan.html](http://www.nedbank.co.za/content/nedbank/desktop/gt/en/personal/loans/student-loan.html)

### Standard Bank Student Loan

 086 012 3000  
 <https://www.standardbank.co.za/southafrica/personal/products-and-services/borrow-for-your-needs/student-loans/student-loans>

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## BURSARIES AND SCHOLARSHIPS

**Please note:** This is by no means a comprehensive list of all bursaries available and should only be used as a starting point. Learners and students should also investigate other options including contacting companies and industries themselves and responding to advertisements.

For detailed information about bursaries and scholarships:

### Bursaries South Africa

 [www.zabursaries.co.za](http://www.zabursaries.co.za)

### Careerhelp

 [www.careerhelp.org.za](http://www.careerhelp.org.za)

### Careerwise

 [www.careerwise.co.za](http://www.careerwise.co.za)

### AfricaEducation.org

 [www.africaeducation.org](http://www.africaeducation.org)

### The Commonwealth

 [www.commonwealth.gostudy.net/bursaries](http://www.commonwealth.gostudy.net/bursaries)

### SAStudy

 [www.sastudy.co.za](http://www.sastudy.co.za)

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## UNIVERSITIES

Contact the universities listed below directly for more information about bursaries, scholarships and financial aid.

### EASTERN CAPE

#### University of Fort Hare

 [www.ufh.ac.za](http://www.ufh.ac.za)

#### Rhodes University

 [www.ru.ac.za/studentfeesandfinancialaid](http://www.ru.ac.za/studentfeesandfinancialaid)

#### Nelson Mandela Metropolitan University


 [www.finaid.mandela.ac.za](http://www.finaid.mandela.ac.za)

#### Walter Sisulu University

 [www.wsu.ac.za](http://www.wsu.ac.za)

### FREE STATE

#### University of the Free State

 [www.ufs.ac.za/kovsielife/unlisted-pages/bursaries/financial-aid](http://www.ufs.ac.za/kovsielife/unlisted-pages/bursaries/financial-aid)

#### Central University of Technology

 [www.cut.ac.za](http://www.cut.ac.za)

### GAUTENG


#### University of Johannesburg

 [www.uj.ac.za](http://www.uj.ac.za)

#### University of Pretoria

 [www.up.ac.za/student-funding](http://www.up.ac.za/student-funding)

#### University of the Witwatersrand

 [www.wits.ac.za/study-at-wits/fees-and-funding/financial-aid-and-scholarships-office](http://www.wits.ac.za/study-at-wits/fees-and-funding/financial-aid-and-scholarships-office)

#### Tshwane University of Technology

 [www.tut.ac.za/bursaries-and-loans/about](http://www.tut.ac.za/bursaries-and-loans/about)

#### Vaal University of Technology

 [www.vut.ac.za/fees-and-funding](http://www.vut.ac.za/fees-and-funding)

### KWAZULU-NATAL

#### Durban University of Technology

 [www.dut.ac.za/support\\_services/student\\_services\\_and\\_development/financial\\_aid](http://www.dut.ac.za/support_services/student_services_and_development/financial_aid)



### **Mangosuthu University of Technology**

 [www.mut.ac.za/mut-bursaries](http://www.mut.ac.za/mut-bursaries)

### **University of KwaZulu-Natal**

 [www.studentfunding.ukzn.ac.za](http://www.studentfunding.ukzn.ac.za)

### **University of Zululand**

 [www.unizulu.ac.za](http://www.unizulu.ac.za)

## **LIMPOPO**

### **University of Limpopo**

 [www.ul.ac.za](http://www.ul.ac.za)

### **University of Venda**

 [www.univen.ac.za](http://www.univen.ac.za)

## **MPUMALANGA**

### **University of Mpumalanga**

 [www.ump.ac.za](http://www.ump.ac.za)

## **NORTHERN CAPE**

### **Sol Plaatje University**

 [www.spu.ac.za](http://www.spu.ac.za)


## **NORTH WEST**

### **North-West University**


 [www.nwu.ac.za](http://www.nwu.ac.za)

## **WESTERN CAPE**


### **Cape Peninsula University of Technology**

 <http://www.cput.ac.za/study/funding/undergraduate/apply>


## **UNIVERSITY of CAPE TOWN**

 [www.students.uct.ac.za/students/fees-funding/undergraduate-funding](http://www.students.uct.ac.za/students/fees-funding/undergraduate-funding)

### **University of the Western Cape**

 [www.uwc.ac.za/admission-and-financial-aid/fees-and-financial-aid/bursaries-scholarships-and-funding-opportunities](http://www.uwc.ac.za/admission-and-financial-aid/fees-and-financial-aid/bursaries-scholarships-and-funding-opportunities)

### **Stellenbosch University**

 [www.sun.ac.za/english/learning-teaching/undergraduate-bursaries-loans/Pages/default.aspx](http://www.sun.ac.za/english/learning-teaching/undergraduate-bursaries-loans/Pages/default.aspx)

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## **GOVERNMENT BURSARIES**

For a list of government-funded bursaries, available nationally and in different provinces, contact the relevant department.

Visit [www.gov.za](http://www.gov.za) for a directory of all national and provincial government departments.





## BURSARIES (A-Z)






### ENGINEERING AND THE BUILT ENVIRONMENT

Architecture and planning • Civil and environmental engineering • Chemical and metallurgical engineering • Construction economics and management • Electrical and information engineering • Mechanical, industrial and aeronautical engineering • Mining engineering

#### Accenture Education Trust

 012 622 2441  
 SA.CorporateCitizenship@accenture.com  
 [www.accenture.com/za-en/careers/local/accenture-scholarships-south-africa](http://www.accenture.com/za-en/careers/local/accenture-scholarships-south-africa)



#### AECI Limited Bursary

 011 806 8700  
 bursaries@aeciworld.com  
 [www.aeciworld.com/talent-development](http://www.aeciworld.com/talent-development)

#### African Oxygen Limited (AFROX) Bursary

 010 140 3099  
 bursary.afrox@afrox.linde.com  
 [www.careers.afrox.co.za/?s=static&x=bursaries101](http://www.careers.afrox.co.za/?s=static&x=bursaries101)

#### Afrisam

 086 014 1141/ 011 670 5500  
 hrtraining@za.afrisam.com  
 [www.afrisam.co.za](http://www.afrisam.co.za)

#### Afrox

 010 140 3099  
 afroxsupport@pnet.co.za  
 [www.careers.afrox.co.za/?s=static&x=bursaries101](http://www.careers.afrox.co.za/?s=static&x=bursaries101)




#### Anglo American Platinum Bursary

 014 596 0190/84  
 bursaries@angloplat.com  
 [www.angloamericanplatinum.com/careers/graduates-and-bursaries](http://www.angloamericanplatinum.com/careers/graduates-and-bursaries)

#### Anglo Thermal Coal Bursary

 086 100 7787  
 info@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)




#### ArcelorMittal Bursary

 016 889 9111  
 recruitmentsa@arcelormittal.com  
 [www.arcelormittalsa.com/People& Careers/Bursaries/EngineeringBursaries.aspx](http://www.arcelormittalsa.com/People& Careers/Bursaries/EngineeringBursaries.aspx)

#### ARMSCOR

 Thembi Siphika  
 012 428 2421  
 Thembisp@armscor.co.za  
 [www.armscor.co.za](http://www.armscor.co.za)

#### Astron Energy Bursary





 086 100 8777  
 applications@careerwise.co.za  
 [www.astronenergy.co.za/careers](http://www.astronenergy.co.za/careers)

#### Construction Education and Training Authority (CETA) Thapelo Madibeng Bursary

 Rose Skosana  
 011 265 5934/00  
 roses@ceta.co.za  
 [www.ceta.org.za](http://www.ceta.org.za)



### **Council for Scientific and Industrial Research (CSIR) Bursary**

 Ncamisile Masuku  
 012 841 2665  
 Bursaryprogramme@csir.co.za  
 [www.csir.co.za/bursaries](http://www.csir.co.za/bursaries)

### **De Beers Bursary Scheme**

 086 100 7787  
 application@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)

### **Department of Water and Sanitation**

 Nobulali Mtikitiki (Bursary coordinator)  
 012 336 7149  
 MtikitikiN@dws.gov.za  
 [www.dws.gov.za/LearningA/DWABursary.aspx](http://www.dws.gov.za/LearningA/DWABursary.aspx)


### **Element Six Bursary**

 011 812 9000  
 Nokuthula.Shabalala@e6.com or support@e6.com  
 [www.e6.com/en/about/careers](http://www.e6.com/en/about/careers)





### **Ernest Oppenheimer Memorial Trust Bursary**

 086 100 8777  
 applications@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)



### **Eskom Bursary Contact Centre**

 011 800 6961  
 Mavumen@eskom.co.za  
 [www.web.eskom.co.za/student/index.html](http://www.web.eskom.co.za/student/index.html)




### **Exxaro Bursary**

 Prudence Rampa  
 012 307 4276  
 BursaryPretoria@exxaro.com  
 [www.exxaro.com/workplace/bursaries-skills-development](http://www.exxaro.com/workplace/bursaries-skills-development)

### **Gauteng Department of Roads and Transport Bursary**

 Solly Maphangule  
 011 355 7564  
 Solomon.Maphangule@gauteng.gov.za  
 [www.roadsandtransport.gpg.gov.za](http://www.roadsandtransport.gpg.gov.za)



### **General Electric South Africa**

 011 518 8122  
 GESA.Bursaries@ge.com  
 [www.ge.com](http://www.ge.com)




### **Group Five Bursary**

 010 060 1555  
 bursary@groupfive.co.za  
 [www.g5.co.za/careers\\_bursary\\_apply.php](http://www.g5.co.za/careers_bursary_apply.php)




### **Harmony Gold Bursary Scheme**

 bursaryscheme@harmony.co.za  
 [www.harmony.co.za/careers/bursaries](http://www.harmony.co.za/careers/bursaries)

### **Haw & Inglis**

 021 976 1110  
 emanuel@haw-inglis.co.za  
 [www.haw-inglis.co.za](http://www.haw-inglis.co.za)



### **Hillary Construction**

 015 293 1221  
 gerhard@hillary.co.za or admin@hillary.co.za  
 [www.hillary.co.za](http://www.hillary.co.za)

### **Industrial Development Corporation (IDC)**




 011 269 3374  
 bursary@idc.co.za  
 [www.idc.co.za/bursaries](http://www.idc.co.za/bursaries)

### **Illovo Sugar Limited Bursary**

 illovosugar@fundi.co.za  
 [www.illovocareers.co.za](http://www.illovocareers.co.za)



### **Institute for Landscape Architecture in South Africa**

 Nadia Funke  
 nadia@citygreenla.co.za  
 [www.ilasa.co.za/study-opportunities](http://www.ilasa.co.za/study-opportunities)




### **Johannesburg Water Bursary Scheme**

 086 100 7787  
 info@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)





### **Kantey & Templer**

 021 405 9600  
 info@ct.kanteys.co.za  
 [www.kanteys.co.za/bursaries](http://www.kanteys.co.za/bursaries)





### **Magalies Water**

 014 597 4636  
 bursaries@magalieswater.co.za  
 [www.magielswater.co.za/bursaries](http://www.magielswater.co.za/bursaries)




### **Masakh'iSizwe Bursary Programme**

 Lazola Mtongana or Natasha Jood  
 021 483 0964/9545  
 Lazola.Mtongana@westerncape.gov.za or Natasha.Jood@westerncape.gov.za  
 [www.westerncape.gov.za/dept/tpw/services/683/17907](http://www.westerncape.gov.za/dept/tpw/services/683/17907)

### **Mbuyi Ngwenda Bursary Fund**

 Gezile Gumede (The Bursary Office)  
 011 783 3578  
 ggumede@numsa.co.za  
 [www.numsa.org.za](http://www.numsa.org.za)


### **Mercedes-Benz Bursary**

 Mmalekoba Nkadimeng  
 amanda.nkadimeng@daimler.com  
 [www.corporate.mercedes-benz.co.za/careers/bursary-programme](http://www.corporate.mercedes-benz.co.za/careers/bursary-programme)




### **Multichoice Bursary Programme**

 talentmanagement@multichoice.co.za  
 [www.multichoice.com/careers/bursary-program](http://www.multichoice.com/careers/bursary-program)

### **Murray & Roberts Bursary**

 011 456 1144  
 clientservice@murrob.com  
 [www.murrob.com/careers-bursaries.asp](http://www.murrob.com/careers-bursaries.asp)

### **Nanoteq**

 012 672 7000  
 info@nanoteq.com  
 [www.nanoteq.com](http://www.nanoteq.com)




### **Nestlé's Future Talent Bursary Scheme**

 086 100 7787  
 info@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)

### **NRF iThemba LABS Bursary**

 021 843 1000  
 bursaries@tlabs.ac.za  
 [www.tlabs.ac.za/bursaries](http://www.tlabs.ac.za/bursaries)

### **National Metrology Institute of South Africa**

 012 841 4704  
 hr@nmisa.org  
 [www.nmisa.org/Pages/Internships-and-Bursaries.aspx](http://www.nmisa.org/Pages/Internships-and-Bursaries.aspx)

### **Old Mutual Investment Group Imfundo Trust**


 [www.studytrust.org.za/old-mutual](http://www.studytrust.org.za/old-mutual)

### **Omnia Bursary**

 011 709 8888  
 [www.omnia.co.za](http://www.omnia.co.za)





### Petra Diamonds Bursary Scheme

 086 100 7787  
 applications@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za) or [www.petradiamonds.com/careers/bursaries](http://www.petradiamonds.com/careers/bursaries)

### PPC Bursary Scheme

 086 100 7787  
 applications@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)

### PPS Foundation Bursary Programme

 infoppsfoundation@pps.co.za  
 [www.pps.co.za/foundation/pps-bursary-programme](http://www.pps.co.za/foundation/pps-bursary-programme)




### PSG Bursary

 0800 551 552  
 info@psg.co.za  
 [www.psg.co.za/careers](http://www.psg.co.za/careers)

### Rand Water

 011 682 0911  
 admin@konesolutions.co.za  
 [www.randwater.co.za](http://www.randwater.co.za)





### Sasol Bursaries

 086 010 6235  
 Berlyne.Rasool@adcorpgroup.com  
 [www.sasol.com/careers/careers/students](http://www.sasol.com/careers/careers/students)




### SIOC Community Development Trust

 Innocent Makoti  
 053 723 1479  
 bursary@sioc-cdt.co.za  
 [www.sioc-cdt.co.za](http://www.sioc-cdt.co.za)



### South African Forestry Company Limited (SAFCOL)

 Portia Monoge (Bursary Administrator)  
 013 754 2700  
 bursary@safcol.co.za  
 [www.safcol.co.za/opportunities/graduate](http://www.safcol.co.za/opportunities/graduate)

### South African Institute of Electrical Engineers (SAIEE)

 dudum@saiee.org.za or reception@saiee.org.za  
 011 487 9045  
 [www.saiee.org.za](http://www.saiee.org.za)

### Telkom Graduate Development Schemes

 086 077 6655  
 [www.telkom.co.za/about\\_us/humancapital/caeers/telkom-graduates.html](http://www.telkom.co.za/about_us/humancapital/caeers/telkom-graduates.html)

### The Motsepe Foundation

 011 324 1500  
 [www.motsepefoundation.org](http://www.motsepefoundation.org)

### Saab Grintek Defence Bursary

 021 786 8460  
 [www.saab.com/career/students](http://www.saab.com/career/students)




### South African National Space Agency (SANSA) Bursary

 012 844 0500  
 grants@sansa.or.za  
 [www.sansa.org.za/bursaries](http://www.sansa.org.za/bursaries)

### Sasol Bursaries

 [www.sasolbursaries.com](http://www.sasolbursaries.com)

### Steel and Engineering Industries Federation of Southern Africa (SEIFSA)

 011 298 9400  
 bursaryapplications@seifsa.co.za or info@seifsa.co.za  
 [www.seifsa.co.za](http://www.seifsa.co.za)



### Schauenburg Education Trust

☎ 011 974 0006  
✉ sales@schauenburg.co.za  
🌐 [www.schauenburg.co.za](http://www.schauenburg.co.za)

### Siemens AG Bursary

☎ 011 652 2000  
✉ info.za@siemens.com  
🌐 [www.new.siemens.com/za/en/company/jobs.html](http://www.new.siemens.com/za/en/company/jobs.html)

### South32 Pipeline Bursary Scheme

☎ 086 100 7787  
✉ applications@careerwise.co.za  
🌐 [www.careerwise.co.za](http://www.careerwise.co.za)

### Standard Bank Group Bursary Fund

✉ apply@studietrust.org.za or Susan.Dube@standard-bank.co.za  
🌐 [www.studytrust.org.za/standardbank](http://www.studytrust.org.za/standardbank)

### The Public Investment Corporation SOC Ltd (PIC)

☎ 012 742 3400  
✉ bursaryapplications@pic.gov.za  
🌐 [www.pic.gov.za/pic/employment/bursaries](http://www.pic.gov.za/pic/employment/bursaries)

### Trans-Caledon Tunnel Authority (TCTA) Bursary

👤 Nomvula Mhlambi  
☎ 012 683 1258  
✉ bursaries@tcta.co.za  
🌐 [www.tcta.co.za](http://www.tcta.co.za)

### Transnet Bursary Scheme

👤 The Bursary Office  
☎ 011 584 1192  
✉ bursaries@transnet.net  
🌐 [www.transnet.net/Career/Pages/Bursary.aspx](http://www.transnet.net/Career/Pages/Bursary.aspx)

### Toyota South Africa Motors Bursary Fund

👤 Mthusi Morebodi  
☎ 011 403 1632 (ext 1130)  
✉ m.morebodi@StudyTrust.org.za or apply@Study-Trust.org.za  
🌐 [www.studytrust.org.za/contact-us](http://www.studytrust.org.za/contact-us)

### Umgeni Water Bursary Scheme

☎ 033 341 1346/093  
✉ mxolisi.ngcobo@umgeni.co.za  
🌐 [www.umgeni.co.za/training-education](http://www.umgeni.co.za/training-education)

### Unilever Bursary

☎ 031 571 9600  
✉ Bursary.SA@unilever.com  
🌐 [www.unilever.com/careers/students-and-graduates](http://www.unilever.com/careers/students-and-graduates)

### Upstream Training Trust Bursary

☎ 021 938 3500  
✉ utt2@petroleumagency.co.za  
🌐 [www.upstreamtrainingtrust.org.za](http://www.upstreamtrainingtrust.org.za)

### WBHO

☎ 011 321 7200  
✉ bursaryapplications@wbho.co.za  
🌐 [www.wbho.co.za/careers-and-students](http://www.wbho.co.za/careers-and-students)

### Western Cape Government's Masakh'iSizwe Bursary Programme

👤 Lazola Mtongana  
☎ 021 483 9545/0964  
🌐 <https://www.westerncape.gov.za/service/masakhisizwe-bursary-programme>

### Zutari Bursaries

☎ 012 427 2000  
✉ tshwane@zurecongroup.com  
🌐 [www.zutari.com/join-us/emerging-talent](http://www.zutari.com/join-us/emerging-talent)








## HEALTH SCIENCES

Anatomical sciences • Clinical medicine • Oral health sciences • Pathology • Physiology • Public health • Therapeutic sciences

### Department of Water and Sanitation Bursary

 Ms Nobulali Mtikitiki  
 012 336 7149  
 MtikitikiN@dws.gov.za or bursaries@dws.gov.za  
 [www.dws.gov.za/Learning/DWABursary.aspx](http://www.dws.gov.za/Learning/DWABursary.aspx)

### Western Cape Government

 Monray Strydom or Angelo Briesies  
 021 483 6610/3465  
 [Health.bursary@westerncape.gov.za](mailto:Health.bursary@westerncape.gov.za)

### Gauteng Department of Health Bursary




 011 355 3847/3514  
 [Aubrey.ditshego@gauteng.gov.za](mailto:Aubrey.ditshego@gauteng.gov.za) or [Ronald.Peete@gauteng.gov.za](mailto:Ronald.Peete@gauteng.gov.za)  
 [www.provincialgovernment.co.za/units/view/34/gauteng/health](http://www.provincialgovernment.co.za/units/view/34/gauteng/health)




## HUMANITIES AND SOCIAL SCIENCES

Arts • Education • Human and community development • Literature, language and media • Social sciences




### Allan Gray Orbis Foundation Scholarship Programme

 086 123 9235  
 [fellowship@allangrayorbis.org](mailto:fellowship@allangrayorbis.org)  
 [www.allangrayorbis.org/entrepreneurship-development-programmes/scholarship](http://www.allangrayorbis.org/entrepreneurship-development-programmes/scholarship)

### Canon Collins Sol Plaatje Scholarship

 +44 020 3770 0395  
 [scholarships@canoncollins.org.uk](mailto:scholarships@canoncollins.org.uk) or [info@canoncollins.org.uk](mailto:info@canoncollins.org.uk)  
 [www.canoncollins.org.uk/apply/scholarship/sol-plaatje-scholarship](http://www.canoncollins.org.uk/apply/scholarship/sol-plaatje-scholarship)

### Dentsu Aegis Network Bursary

 021 442 5750  
 [Bursaries.ZA@dentsuaegis.com](mailto:Bursaries.ZA@dentsuaegis.com)  
 [www.dentsu.com/za/en](http://www.dentsu.com/za/en)

### Environmental Resources Management





 021 681 5400  
 [www.erm.com/careers](http://www.erm.com/careers)

### Gallagher Foundation Scholarship




 [www.gallagherfoundation.org/faq](http://www.gallagherfoundation.org/faq)





### Dr Xolani Mkhwanazi South32 Bursary

 Liyanda Mkhobo  
 086 100 7787  
 liyandam@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)



### General Electric South Africa

 011 518 8122  
 GESA.Bursaries@ge.com  
 [www.ge.com](http://www.ge.com)




### Institute of Race Relations

 011 482 7221  
 info@irr.org.za  
 [www.irr.org.za/bursaries](http://www.irr.org.za/bursaries)

### Multichoice Bursary Programme

 talentmanagement@multichoice.co.za  
 [www.multichoice.com/careers/bursary-program](http://www.multichoice.com/careers/bursary-program)

### PPS Foundation

 086 012 3777  
 infoppsfoundation@pps.co.za  
 [www.pps.co.za/foundation/pps-bursary-programme](http://www.pps.co.za/foundation/pps-bursary-programme)

### WK Kellogg Foundation




 086 100 7787  
 info@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)



## SCIENCES

Animal, plant and environmental sciences • Chemistry • Geography, archaeology and environmental sciences • Geosciences • Mathematics • Molecular and cell biology • Physics • Statistics and Actuarial Science




### AECI Limited Bursary

 011 806 8700  
 bursaries@aeciworld.com  
 [www.aeciworld.com/talent-development](http://www.aeciworld.com/talent-development)



### Agribusiness Centenary Bursary

 Liezl Esterhuizen  
 012 807 6686  
 admin@agbiz.co.za  
 [www.agbiz.co.za/bursary](http://www.agbiz.co.za/bursary)





### AMSOL Bursary

 021 507 5777  
 careers@amsol.co.za  
 [www.amsol.co.za](http://www.amsol.co.za)



### AstraZeneca Bursary

 astrazeneca@fundi.co.za  
 [www.bsp.fundi.co.za](http://www.bsp.fundi.co.za)

### Citrus Academy Bursary Fund





 Londiwe Ngcobo  
 031 765 3410  
 learnmore@citrusacademy.org.za  
 [www.citrusacademy.org.za/bursary-fund](http://www.citrusacademy.org.za/bursary-fund)

### Clover Pinnacle Bursary Programme

 011 471 1400  
 [www.clover.com](http://www.clover.com)



### **Council for Scientific and Industrial Research (CSIR) Bursary**

 Ncamisile Masuku  
 012 841 2665  
 Bursaryprogramme@csir.co.za  
 [www.csir.co.za/bursaries](http://www.csir.co.za/bursaries)





### **Department of Agriculture, Land Reform and Rural Development Bursary South Africa**

 Vusimuzi Mngomezulu  
 012 319 7923  
 [www.drdlr.gov.za](http://www.drdlr.gov.za)

### **Department of Forestry, Fisheries and Environment**

 [www.environment.gov.za/careers/bursaries](http://www.environment.gov.za/careers/bursaries)



### **Department of Water and Sanitation**

 Nobulali Mtikitiki  
 012 336 7149  
 MtikitikiN@dws.gov.za  
 [www.dws.gov.za/LearningA/DWABursary.aspx](http://www.dws.gov.za/LearningA/DWABursary.aspx)




### **DSI-NRF Centre of Excellence for Invasion Biology**

 021 808 2832  
 cib@sun.ac.za  
 [www.academic.sun.ac.za/cib](http://www.academic.sun.ac.za/cib)

### **Environmental Resources Management (ERM)**

 021 681 5400  
 [www.erm.com/careers](http://www.erm.com/careers)



### **East Rand Water Care Company (ERWAT)**

 011 929 7000  
 hr@erwat.co.za  
 [www.erwat.co.za](http://www.erwat.co.za)

### **Hortgro Bursaries**

 021 807 2900  
 recruitment@hortgro.co.za  
 [www.hortgro.co.za](http://www.hortgro.co.za)

### **Harmony Gold Bursary Scheme**

 bursaryscheme@harmony.co.za  
 [www.harmony.co.za/careers/bursaries](http://www.harmony.co.za/careers/bursaries)

### **Illovo Sugar Limited Bursary**

 illovosugar@fundi.co.za  
 [www.illovocareers.co.za](http://www.illovocareers.co.za)

### **Industrial Development Corporation (IDC)**

 011 269 3374  
 bursary@idc.co.za  
 [www.idc.co.za/bursaries](http://www.idc.co.za/bursaries)


### **Land and Agricultural Development Bank of South Africa**

 012 686 0500  
 bursaries@landbank.co.za  
 [www.landbank.co.za](http://www.landbank.co.za)

### **Mondi Scholarship**

 [www.mondigroup.com/en/career](http://www.mondigroup.com/en/career)

### **National Research Foundation (NRF) Scholarship**

 012 481 4000  
 supportdesk@nrf.ac.za  
 [www.nrf.ac.za](http://www.nrf.ac.za)

### **Nestlé Future Talent Bursary South Africa**

 John Legoete  
 086 100 7787  
 johnl@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)



### Old Mutual Investment Group Imfundo Trust


 [www.studytrust.org.za/old-mutual](http://www.studytrust.org.za/old-mutual)


### Omnia Bursary

 011 709 8888

 [www.omnia.co.za](http://www.omnia.co.za)

### Pioneer Foods, Education Community Trust


 086 100 7787

 [info@careerwise.co.za](mailto:info@careerwise.co.za)

 [www.careerwise.co.za](http://www.careerwise.co.za)

### Potato Industry Development Trust Bursaries


 012 349 1906

 [bursaries1@potatoes.co.za](mailto:bursaries1@potatoes.co.za)

 [www.potatoes.co.za](http://www.potatoes.co.za)

### PPS Foundation Bursary Programme

 [infoppsfoundation@pps.co.za](mailto:infoppsfoundation@pps.co.za)


 [www.pps.co.za/foundation/pps-bursary-programme](http://www.pps.co.za/foundation/pps-bursary-programme)


### Sasol Bursaries

 [www.sasolbursaries.com](http://www.sasolbursaries.com)

### SIOC Community Development Trust

 Innocent Makoti

 053 723 1479


 [bursary@sioc-cdt.co.za](mailto:bursary@sioc-cdt.co.za)

 [www.sioc-cdt.co.za](http://www.sioc-cdt.co.za)

### South African Forestry Company Limited (SAFCOL)


 Portia Monoge

 013 754 2700

 [bursary@safcol.co.za](mailto:bursary@safcol.co.za)

 [www.safcol.co.za/opportunities/graduate](http://www.safcol.co.za/opportunities/graduate)

### South African Geomatics Council Bursary


 011 626 1040/ 80

 [admin@sagc.org.za](mailto:admin@sagc.org.za)

 [www.sagc.org.za/5studybursary.php](http://www.sagc.org.za/5studybursary.php)

### South African Table Grape Industry (SATI) Bursary


 021 863 0366

 [info@satgi.co.za](mailto:info@satgi.co.za)

 [www.satgi.co.za/support/bursaries](http://www.satgi.co.za/support/bursaries)

### South African Weather Service Bursary


 Gugu Maphisa

 012 367 6085

 [gugu.maphisa@weathersa.co.za](mailto:gugu.maphisa@weathersa.co.za)


 [www.weathersa.co.za/home/bursaries](http://www.weathersa.co.za/home/bursaries)

### Standard Bank Group Bursary Fund

 [apply@studietrust.org.za](mailto:apply@studietrust.org.za) or [Susan.Dube@standardbank.co.za](mailto:Susan.Dube@standardbank.co.za)

 [www.studytrust.org.za/standardbank](http://www.studytrust.org.za/standardbank)


### Starke Ayres Bursary

 0860 782 753


 [hr@starkeyres.co.za](mailto:hr@starkeyres.co.za)

 [www.starkeyres.com/careers](http://www.starkeyres.com/careers)

### Upstream Training Trust Bursary

 021 938 3500

 [utt2@petroleumagency.co.za](mailto:utt2@petroleumagency.co.za)

 [www.upstreamtrainingtrust.org.za](http://www.upstreamtrainingtrust.org.za)

### WK Kellogg Foundation

 086 100 7787

 [info@careerwise.co.za](mailto:info@careerwise.co.za)

 [www.careerwise.co.za](http://www.careerwise.co.za)









## COMMERCE AND MANAGEMENT SCIENCES

Accountancy • Business sciences • Economics and finance • Law • Governance


### ABSA Bank Bursary

 011 350 4000  
 [www.absa.africa/absaafrica/careers](http://www.absa.africa/absaafrica/careers)



### Alexander Forbes

 011 269 0000  
 [info@forbes.co.za](mailto:info@forbes.co.za)  
 [www.alexanderforbes.co.za/careers/training-development](http://www.alexanderforbes.co.za/careers/training-development)

### Auditor-General Bursary Programme

 012 426 8000  
 [www.agsa.co.za/Careers/GraduateRecruitmentProgramme/Bursaries.aspx](http://www.agsa.co.za/Careers/GraduateRecruitmentProgramme/Bursaries.aspx)



### Capitec Bank Bursary Programme

 086 010 2043  
 [www.leap.ly/opportunities/294](http://www.leap.ly/opportunities/294)

### City of Johannesburg Bursary

 Billy Baloyi  
 011 407 6979  
 [billyb@joburg.org.za](mailto:billyb@joburg.org.za)  
 [www.joburg.org.za](http://www.joburg.org.za)

### Deloitte

 Galiema Petersen (Personal Relationship Officer)  
 021 427 5631  
 [gpetersen@deloitte.co.za](mailto:gpetersen@deloitte.co.za)  
 [www2.deloitte.com/za/en/careers/students.html](http://www2.deloitte.com/za/en/careers/students.html)

### Gauteng Department of Roads and Transport

 Solly Maphangule  
 011 355 7564  
 [Solomon.Maphangule@gauteng.gov.za](mailto:Solomon.Maphangule@gauteng.gov.za)  
 [www.roadsandtransport.gpg.gov.za](http://www.roadsandtransport.gpg.gov.za)

### Industrial Development Corporation (IDC)

 011 269 3374  
 [bursary@idc.co.za](mailto:bursary@idc.co.za)  
 [www.idc.co.za/bursaries](http://www.idc.co.za/bursaries)

### Investec Bursary Programme

 Sanisha Naidoo  
 011 286 7000  
 [Sanisha.Naidoo@investec.co.za](mailto:Sanisha.Naidoo@investec.co.za)  
 [www.investec.co.za](http://www.investec.co.za)




### JP Morgan Bursaries

 [www.jpmorgan.com/ZA/en/about-us\\_or](http://www.jpmorgan.com/ZA/en/about-us_or)  
[www.leap.ly/opportunities/309](http://www.leap.ly/opportunities/309)

### JSE Empowerment Fund Bursary

 011 520 7000  
 [info@jse.co.za](mailto:info@jse.co.za)  
 [www.jse.co.za/our-business/jef-bursary](http://www.jse.co.za/our-business/jef-bursary)

### KPMG South Africa

 011 647 7111  
 [jhbbursaryapplications@kpmg.co.za](mailto:jhbbursaryapplications@kpmg.co.za)  
 [www.home.kpmg/za/en/home/careers/bursaries.html](http://www.home.kpmg/za/en/home/careers/bursaries.html)



### Land and Agricultural Development Bank of South Africa

☎ 012 686 0500  
✉ [bursaries@landbank.co.za](mailto:bursaries@landbank.co.za)  
🌐 [www.landbank.co.za](http://www.landbank.co.za)

### MANCOSA Bursary

👤 Sumayah Noorgat  
☎ 031 300 7200  
✉ [bursary@mancosa.co.za](mailto:bursary@mancosa.co.za)  
🌐 [www.mancosa.co.za](http://www.mancosa.co.za)

### Multichoice Bursary Programme

✉ [talentmanagement@multichoice.co.za](mailto:talentmanagement@multichoice.co.za)  
🌐 [www.multichoice.com/careers/bursary-program](http://www.multichoice.com/careers/bursary-program)

### Old Mutual Investment Group Imfundo Trust

🌐 [www.studytrust.org.za/old-mutual/](http://www.studytrust.org.za/old-mutual/)  
[www.oldmutual.co.za/careers/bursaries](http://www.oldmutual.co.za/careers/bursaries)

### PricewaterhouseCoopers (PwC) Bursary

☎ 011 797 4000  
🌐 [www.pwc.co.za/en/careers/learners/learners-bursaries.html](http://www.pwc.co.za/en/careers/learners/learners-bursaries.html)

### SAICA Thuthuka Bursary Fund

☎ 011 621 6600  
✉ [tbf@saica.co.za](mailto:tbf@saica.co.za)  
🌐 [www.thuthukabursaryfund.co.za](http://www.thuthukabursaryfund.co.za)

### SAICE Patrons' Engineering Bursary Scheme

👤 Fridah Mahlangu  
☎ 011 805 5947  
✉ [fridah@saice.org.za](mailto:fridah@saice.org.za)  
🌐 [www.saice.org.za/spebs](http://www.saice.org.za/spebs)

### Santam Bursary

🌐 [www.studytrust.org.za/santam](http://www.studytrust.org.za/santam)

### Sasol Bursaries

☎ 086 010 6235  
🌐 [www.sasolbursaries.com](http://www.sasolbursaries.com)

### Sasria Bursary South Africa

☎ 011 214 0800  
✉ [csi@sasria.co.za](mailto:csi@sasria.co.za)  
🌐 [www.sasria.co.za](http://www.sasria.co.za)

### Services Sector Education and Training Authority (Services SETA)

☎ 011 051 5026  
✉ [bursaries2018@serviceseta.org.za](mailto:bursaries2018@serviceseta.org.za)  
🌐 [www.servicesseta.org.za](http://www.servicesseta.org.za)

### Schauenburg Education Trust

☎ 011 974 0006  
✉ [sales@schauenburg.co.za](mailto:sales@schauenburg.co.za)  
🌐 [www.schauenburg.co.za](http://www.schauenburg.co.za)

### Shoprite Group Bursaries

☎ 021 980 4000  
✉ [Bursary@shoprite.co.za](mailto:Bursary@shoprite.co.za)  
🌐 [www.shopriteholdings.co.za/careers/Shoprite-Bursaries.html](http://www.shopriteholdings.co.za/careers/Shoprite-Bursaries.html)

### SNG Grant Thornton Bursary

☎ 011 231 06001  
✉ [humanresources@sng.za.com](mailto:humanresources@sng.za.com) or [info@sng.za.com](mailto:info@sng.za.com)  
🌐 [www.grantthornton.co.za/snggrantthornton-eswatini](http://www.grantthornton.co.za/snggrantthornton-eswatini)

### South African Reserve Bank Bursary Scheme

☎ 086 100 7787  
✉ [applications@careerwise.co.za](mailto:applications@careerwise.co.za)  
🌐 [www.careerwise.co.za](http://www.careerwise.co.za)  
🌐 [www.resbank.co.za](http://www.resbank.co.za)



### Standard Bank Group Bursary Fund

✉ [apply@studietrust.org.za](mailto:apply@studietrust.org.za) or  
[Susan.Dube@standardbank.co.za](mailto:Susan.Dube@standardbank.co.za)  
🌐 [www.studytrust.org.za/standardbank](http://www.studytrust.org.za/standardbank)

### The Nedbank Bursary Fund

☎ 086 055 5111  
✉ [bursaries@nedbank.co.za](mailto:bursaries@nedbank.co.za)  
🌐 [www.nedbank.co.za](http://www.nedbank.co.za)

### Toyota South Africa Motors Bursary Fund

👤 Mthusi Morebodi  
☎ 011 403 1632 (ext 1130)  
✉ [m.morebodi@StudyTrust.org.za](mailto:m.morebodi@StudyTrust.org.za) or  
[apply@StudyTrust.org.za](mailto:apply@StudyTrust.org.za)  
🌐 [www.studytrust.org.za/contact-us](http://www.studytrust.org.za/contact-us)

### Western Cape Government Bursaries

👤 Ezra Josephs or Brandon Damons  
☎ 021 483 4823/6127  
✉ [Ezra.Josephs@westerncape.gov.za](mailto:Ezra.Josephs@westerncape.gov.za) or  
[Brandon.Damons@westerncape.gov.za](mailto:Brandon.Damons@westerncape.gov.za)



## DATA SCIENCE & COMPUTATIONAL THINKING

Computer science and applied mathematics

### ABSA Bank Bursary

☎ 011 350 4000  
🌐 [www.absa.africa/absaafrica/careers](http://www.absa.africa/absaafrica/careers)

### Accenture SA Education Trust

☎ 012 622 2441 / 011 208 4205  
✉ [SA.CorporateCitizenship@accenture.com](mailto:SA.CorporateCitizenship@accenture.com)  
🌐 [www.accenture.com/za-en/careers/local/accenture-scholarships-south-africa](http://www.accenture.com/za-en/careers/local/accenture-scholarships-south-africa)

### Alexander Forbes

☎ 011 269 0000  
✉ [info@aforbes.co.za](mailto:info@aforbes.co.za)  
🌐 [www.alexanderforbes.co.za/careers/training-development](http://www.alexanderforbes.co.za/careers/training-development)

### Altech Bursary

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🌐 [www.altech.co.za](http://www.altech.co.za)

### Amazon Recruitment Bursary

🌐 [www.studytrust.org.za/amazon](http://www.studytrust.org.za/amazon)

### Capitec Bank Bursary Programme

☎ 086 010 2043  
🌐 [www.leap.ly/opportunities/294](http://www.leap.ly/opportunities/294)

### Eskom Bursary Contact Centre

☎ 011 800 6961  
✉ [Mavumen@eskom.co.za](mailto:Mavumen@eskom.co.za)  
🌐 [www.web.eskom.co.za/student/index.html](http://www.web.eskom.co.za/student/index.html)



### **HENSOLDT South Africa Bursary**

 012 421 6200  
 recruitment@hensoldt.net  
 [www.hensoldt.net/career/career-hubs/south-africa](http://www.hensoldt.net/career/career-hubs/south-africa)




### **Industrial Development Corporation (IDC)**

 011 269 3374  
 bursary@idc.co.za  
 [www.idc.co.za/bursaries](http://www.idc.co.za/bursaries)



### **JSE Empowerment Fund Bursary**

 011 520 7000  
 info@jse.co.za  
 [www.jse.co.za/our-business/jef-bursary](http://www.jse.co.za/our-business/jef-bursary)

### **Mercedes-Benz Bursary**

 Mmalekoba Nkadimeng  
 amanda.nkadimeng@daimler.com  
 [www.corporate.mercedes-benz.co.za/careers/bursary-programme](http://www.corporate.mercedes-benz.co.za/careers/bursary-programme)

### **MTN Bursary**

 MTNBursaries@mtn.co.za  
 [www.mtn.co.za](http://www.mtn.co.za)



### **NRF iThemba LABS Bursary**

 021 843 1000  
 bursaries@tlabs.ac.za  
 [www.tlabs.ac.za/bursaries](http://www.tlabs.ac.za/bursaries)


### **PSG Bursary**

 080 055 1552  
 info@psg.co.za  
 [www.psg.co.za/careers](http://www.psg.co.za/careers)


### **Saab Grintek Defence Bursary**

 021 786 8460/ 709 9160  
 [www.saab.com/career/students](http://www.saab.com/career/students)




### **South African National Space Agency (SANSA) Bursary**

 012 844 0500  
 grants@sansa.or.za  
 [www.sansa.org.za/bursaries](http://www.sansa.org.za/bursaries)

### **Sasria Bursary South Africa**

 011 214 0800  
 csi@sasria.co.za  
 [www.sasria.co.za](http://www.sasria.co.za)



### **Shoprite Group Bursaries**

 021 980 4000  
 Bursary@shoprite.co.za  
 [www.shopriteholdings.co.za/careers/Shoprite-Bursaries.html](http://www.shopriteholdings.co.za/careers/Shoprite-Bursaries.html)

### **Trudon Bursary**

 011 677 6000  
 marketing@yellowpages.co.za  
 [www.trudondigital.co.za/education](http://www.trudondigital.co.za/education)

### **WeThinkCode**

 info@wethinkcode.co.za  
 [www.wethinkcode.co.za](http://www.wethinkcode.co.za)





### Adams & Adams Bursary Scheme

012 432 6000  
 mail@adamsadams.com  
 [www.adams.africa](http://www.adams.africa)

### Allan Gray Orbis Fellowship Bursary

086 123 9235  
 fellowship@allangrayorbis.org  
 [www.allangrayorbis.org/entrepreneurship-development-programmes/fellowship](http://www.allangrayorbis.org/entrepreneurship-development-programmes/fellowship)

### Legal Practitioners Fidelity Fund Bursary

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 021 424 4608  
 shawn@fidfund.co.za  
 [www.fidfund.co.za/bursaries](http://www.fidfund.co.za/bursaries)

### Bowmans Bursary

021 480 7800  
 graduates@bowmanslaw.com  
 [www.bowmanslaw.com/careers/graduate-opportunities](http://www.bowmanslaw.com/careers/graduate-opportunities)

### Cliffe Dekker Hofmeyr Bursary

011 562 1000  
 apply4lawJHB@cdhlegal.com  
 [www.apply4law.co.za](http://www.apply4law.co.za)

### Department of Forestry, Fisheries and Environment Bursary

Joshua Moepya  
 012 399 86/85  
 [www.environment.gov.za/careers/bursaries](http://www.environment.gov.za/careers/bursaries)

### Dr Xolani Mkhwanazi South32 Bursary

Liyanda Mkhabo  
 086 100 7787  
 liyandam@careerwise.co.za  
 [www.careerwise.co.za](http://www.careerwise.co.za)

### Fasken Bursary

011 586 6000  
 [www.fasken.erecruit.co/candidateapp/Content/Bursaries](http://www.fasken.erecruit.co/candidateapp/Content/Bursaries)

### Gallagher Foundation Scholarship

[www.gallagherfoundation.org/contact](http://www.gallagherfoundation.org/contact)  
 [www.gallagherfoundation.org/countries/south-africa](http://www.gallagherfoundation.org/countries/south-africa)

### HKA Global Bursary

011 731 7000  
 BursariesZA@hka.com  
 [www.hka.com/location-map/johannesburg-south-africa/?mapid=29](http://www.hka.com/location-map/johannesburg-south-africa/?mapid=29) or  
[www.careersportal.co.za/company/hka-global/bursaries-2020/hka-bursary-2021](http://www.careersportal.co.za/company/hka-global/bursaries-2020/hka-bursary-2021)

### Industrial Development Corporation (IDC) Bursary

011 269 3374  
 bursary@idc.co.za  
 [www.idc.co.za/bursaries](http://www.idc.co.za/bursaries)

### Investec CSI Bursary




011 286 7000  
 [www.investec.com/en\\_za/welcome-to-investec/corporate-responsibility/our-community/bursaries/tertiary-bursary-programme.html](http://www.investec.com/en_za/welcome-to-investec/corporate-responsibility/our-community/bursaries/tertiary-bursary-programme.html)





### LegalWise Bursary

 Helen Frerk  
 helenf@legalwise.co.za  
 011 670 4500  
 [www.legalwise.co.za/about/member-bursary-programme](http://www.legalwise.co.za/about/member-bursary-programme)

### Mercedes-Benz Bursary

 Mmalekoba Nkadimeng  
 amanda.nkadimeng@daimler.com  
 [www.corporate.mercedes-benz.co.za/careers/bursary-programme](http://www.corporate.mercedes-benz.co.za/careers/bursary-programme)

### Motsepe Foundation Bursary

 011 324 1500  
 [www.motsepefoundation.org/education-and-leadership](http://www.motsepefoundation.org/education-and-leadership)

### MultiChoice Bursary Programme

 talentmanagement@multichoice.co.za  
 [www.multichoice.com/careers/bursary-program](http://www.multichoice.com/careers/bursary-program)

### Santam Bursary

 [www.studytrust.org.za/santam](http://www.studytrust.org.za/santam) or <https://www.santam.co.za/about-us/corporate-social-investment>

### Webber Wentzel Scholarship

 011 530 5000  
 articles@webberwentzel.com  
 [www.webberwentzel.com](http://www.webberwentzel.com)





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## NOTES

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