Faculty of AgriSciences

UNIVERSITEIT•STELLENBOSCH•UNIVERSITY
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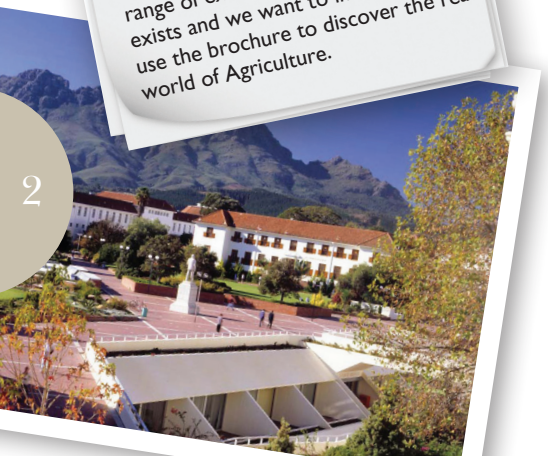
2017

Did you know?

A degree in agriculture does not necessarily mean that you have to become a farmer!

By pursuing a career in agriculture you will become part of a team of scientists that are highly qualified and sought after in South Africa, Africa and the rest of the world. A wide range of exciting career opportunities exists and we want to invite you to use the brochure to discover the real world of Agriculture.



The Importance of Agriculture

According to estimates, almost seven billion people populate the world today, of which about 47 million live in South Africa. By the year 2050 this number will have increased to more than nine billion. Each one of these people must eat and breathe every day – without food and oxygen Mother Earth would not be able to sustain humanity.

This, in a nutshell, demonstrates the significance of agriculture and forestry – which is critically underlined by a constantly and rapidly growing world population.

Within the next 40 years, agricultural output will probably have to double; in fact, yields per hectare will have to triple, and this will have to be achieved on less surface area with less water, given challenges such as climate change, fluctuating economies, job creation and the provision of high-quality food by financially competitive means.

The demand for wood products is consistently increasing and exceeds supply from the building, furniture, paper and packaging industries. Timber harvests must therefore increase and also be carefully regulated in order not to exhaust supply.

The Faculty of AgriSciences

The Faculty of AgriSciences at Stellenbosch University (SU) is probably one of the most important environments where these challenges are adressed and solved in the various study and research fields. It strives to deliver excellent research and education and service of the highest international standard to the agricultural sector. The Faculty also seeks to disseminate its knowledge and skills base to serve the broad community, using natural resources in a sustainable manner.

But if you thought agriculture means only farming or owning land; that you will only do manual labour and never earn a decent salary, then we would invite you to use our brochure to explore the exciting world of agriculture. A wide variety of challenging careers are on offer – from the most practical to the highly technological and extremely sophisticated, from laboratory work to opportunities that lead you to the wonders of nature. You would become part of a team of experts that are highly qualified, sought after and in demand in South Africa, Africa and the rest of the world.

Become a part of the world of science!

How does it work? At university, you choose a programme (sometimes also called a course) which interests you. Each programme consists of various subjects (at university they are referred to as modules) which complement each other. These modules reside in different departments (representing different fields of study).

Below is a list of all the programmes we offer. If you read further, you will also find more information on every department. However, at university level, the vocabulary often consists of different (strange) words, words which you might not have encountered before. Therefore we've tried to clarify these as far as possible and we invite you to explore the world which lies behind these strange words.

What can you study?

- Conservation Ecology
- Forestry and Wood Sciences
  - Forestry and Natural Resource Sciences
  - Wood and Wood Products Sciences
- Animal Production Systems
  - Animal Science
  - Animal Science with Agronomy
  - Animal Science with Aquaculture
  - Animal Science with Conservation Ecology
  - Agricultural Economics with Animal Science
- Plant and Soil Sciences
  - Crop Productions
  - Crop Protection and Breeding
  - Soil and Water Management
- Agricultural Economics and Management
  - Agribusiness Management (BAgricAdmin)
  - Agricultural Economic Analysis
  - Agricultural Economic Analysis and Management
  - Agricultural Economic Analysis and Management with Food Science
  - Agricultural Economics and Food Science
- Food Production Systems
  - Food Science
- Wine Production Systems
  - Viticulture and Oenology (General)
  - Oenology (Specialised)
- Agricultural Production and Management (Elsenburg)
  - Several courses offered by the Cape Institute of Agricultural Training (Elsenburg). Tel 021 808 5451

Admission requirements

Remember!

These are only the **minimum** admission requirements. **The University reserves the right to revise and adjust these requirements at any time**. Please note that all our programmes are **selection programmes** and we can only accept a limited number of students. Therefore, even though you meet the minimum admission requirements of a programme, you are not guaranteed admission to the programme of your choice.

It is therefore advisable to work hard to attain the best possible mark.

General requirements

- A National Senior Certificate (NSC) as certified by Umalusi, with admission to bachelor's degree studies.
- A level of at least 4 in each of four subjects designated for university admission (one of them has to be Afrikaans or English).
- For the NSC an aggregate of at least 60% (excluding Life Orientation)
- Write the National Benchmark Tests (NBTs) according to your chosen programme. All candidates write the Academic and quantitative literacy test (AQL). Students studying towards a programme requiring Mathematics also write the Mathematics (MAT) test.

Requirements for AgriScience programmes

- Afrikaans or English (Home Language or First Additional Language) 4 (50%)
- Mathematics 5 (60%)
- Physical Sciences (Physics and Chemistry) 4 (50%) OR

For BScAgric with Soil Science and Chemistry as major subjects

Afrikaans or English (Home Language or First Additional Language) 4 (50%)

- Mathematics 6 (70%)
- Physical Sciences (Physics and Chemistry) 4 (50%)

For the programme Wood and Wood Products Science

- Afrikaans or English (Home Language or First Additional Language) 4 (50%)
- Mathematics 6 (70%)
- Physical Sciences 5 (60%)

For the BAgric programme in Agricultural Production and Management (offered by Elsenburg)

- Afrikaans or English (Home Language or First Additional Language) 4 (50%)
- Mathematics 4 (50%) or Mathematical Literacy 5 (60%)
- Physical Sciences (Physics and Chemistry) 4 (50%) OR
- Life Sciences 4 (50%) OR
- Agricultural Sciences 4 (50%)

REMEMBER: ALL OUR PROGRAMMES ARE SELECTION PROGRAMMES AND ONLY A LIMITED NUMBER OF STUDENTS CAN BE ACCEPTED.

Other important information

How do I apply?

1. Electronic
   Go to www.maties.com and follow the links under "Apply Online".
   Important: You must have a valid e-mail address to apply electronically.
2. Printed form
   Request an application form at: Client Service Centre.
   Address: Admissions, Stellenbosch University, Private Bag X1, MATIELAND 7602
   Tel 021 808 9111 • E-mail: info@sun.ac.za

Closing date for Applications

30th of June (of the year preceeding the year of study).

Late applications will be accepted until 30 September provided that the University reserve the right to close late applications at any time prior to 30 September.

Bursaries and Loans

Apply in good time for as many bursaries and/or loans as possible. You must first apply for study (and receive a student number) before you can apply for bursaries. You can request bursary information at tel 021 808 4627. **Closing date for bursary applications can be as early as 30 July (of the year preceeding the year of study).**

Who do I contact if I need more information?

Monika Basson
Tel. 021 808 2978
Fax 021 808 2001
E-mail mh@sun.ac.za
www.sun.ac.za/agric

Agricultural Economics

Did you know?

Agricultural Economics combines the technical aspects of agriculture with business aspects such as management, marketing and finance. Agricultural economists are revolutionary when it comes to the implementation of any new development in economic theory and econometrics, and apply it to various aspects of agricultural economy.

The Department of Agricultural Economics develops expertise within the ranks of future analysts and management experts in government, agriculture, and the agri-business sector, with relation to the utilisation and application of agricultural economy and management techniques.

What we do

Agricultural Economists are trained to better understand interactions, both as economists and managers, while firmly keeping in mind the fact that agriculture is the largest industry in rural South Africa.

The agricultural economy consists of thousands of interactions. Between those who fabricate the means of production, supply producers and the producers themselves, all must ensure that the basic commodity is eventually in the right place at the right time, in the correct shape and at the correct price for the consumer. This applies regardless of whether it is food or fibre – whether it's a Big Mac or a Levi jean.

Students are trained to survive in this competitive environment and how enterprises can implement profitable production, distribution and retail systems. As a result of globalisation, clients are at times far from the production location. A myriad of logistic operational activities are utilised to overcome this challenge. The business and policy environment within which this trade takes place, is one of the major fields of study.

Career opportunities

With a degree in Agricultural Economics the whole economic field is open to you. You can work as agricultural economist, manager in agricultural and related business enterprises, marketer, market analyst, entrepreneur, advisor in the public or private sector, consultant, banker, credit manager (bank and agricultural enterprises), grain trader (SAFEX), importer/ exporter, researcher or development economist.

Programme information

To obtain a qualification in Agricultural Economics, you can follow the programmes BAgricAdmin, BScAgric in Agricultural Economic Analysis or BScAgric in Agricultural Economic Analysis and Management. You can also do Agricultural Economic Analysis and Management with Food Science; Agricultural Economics and Food Science or you can do a BScAgric in Animal Production Systems, combining Agricultural Economics and Animal Sciences.

Tel 021 808 4758 • www.sun.ac.za/agric_econ

Agronomy

Did you know?

The word 'agronomy' comes from the Greek words 'agros' (field) and 'nomos' (to manage). Agronomy entails the improvement of crops (wheat, protein and oil seed crops) through scientific study and proper management, to ensure sufficient food supply to an ever increasing world population.

The Department of Agronomy, which is engaged in the science of plants and plant matter, is one of the most important links in meeting the growing demand for food, fuel, feed and fibre.

What we do

Emphasis is placed on increasing production levels through optimal use of natural resources, the implementation of sustainable production systems and the manipulation of production environments by means of greenhouses and conservation farming practices.

Focus points are the production and management of annual wheat crops (corn, canola, lupins, barley), planted field pastures and vegetables under protection and weed management programmes, with emphasis on managing herbicide resistance.

Environmental degradation is the result of unsustainable farming practices and threatens the ecological balance and productivity of ecosystems and therefore also food security. Changing from traditional conventional production practices to conservation agriculture practices is not negotiable and this aspect enjoys a high priority in all Agronomic disciplines that are presented.

Another issue relevant to the field of Agronomy, is climate change. Some predictions will have it that, by the year 2070, surface water in the Western Cape will have decreased by 60%. One of the challenges the field therefore faces is the development of production systems that have the ability to perform better in dryer and warmer conditions.

Career opportunities

There is a serious shortage of agronomists and with rising challenges the demand will undoubtedly increase. A degree in Agronomy offers several career opportunities in various fields: agricultural consultant, crop advisor, entrepreneur, manager (farm or production), researcher, extension officer, technician, plant breeder, field representative, plant fertiliser manager, harvest yield expert, agricultural marketing officer and seed analyser, to name a few.

Programme information

If you are interested in Agronomy, you can follow a BScAgric in Plant and Soil Science and choose either the programme Crop Production or Soil and Water Management. You can also follow the BScAgric programme in Animal Production Systems (Animal Sciences with Agronomy).

Tel 021 808 4803 • www.sun.ac.za/agron

Animal Sciences

Did you know?

Livestock farming is the largest agricultural sector in South Africa. The Khoi-khoi's large flocks of sheep on the Cape Peninsula were admired by European settlers as far back as the 17th century. The Europeans brought new sheep and cattle breeds to South Africa and cross-breeding with indigenous races led to the dynamic commercial livestock sector in the country.

Animal Sciences is the scientific study of the nutrition, breeding, physiology and production of animals. This includes not only aspects of farming with cattle, sheep, pigs and goats, but is an encompassing field studying a wide range of species, such as milk and beef cattle, wool and mutton sheep, game, poultry and ostrich. This also includes the study of aquaculture, or fish and shellfish species, for example trout, tilapia, salmon and prawns.

South African natural resources are extremely diverse and range from semi arid to extremely high production potential areas. Animal Sciences is applicable to these semi-extensive small stock enterprises as much as to the highly intensive milk producing areas, as well as in the pig and poultry industry of the country.

What we do

As the largest agricultural sector in South Africa, a healthy livestock industry is incredibly important to the South African economy. Trained animal scientists with specialized knowledge of nutrition, breeding and physiology are necessary for the development and support of the industry.

Some of the most important focus areas are:

- Animal breeding and genetics – specialising in the breeding of livestock with the aim to improve and conserve the genetics of an animal population.
- Animal physiology – specialising in the digestive processes, the reproduction, growth and development of production, water and wild animals.
- Animal nutrition – the study to understand the intake, digestion, absorption and utilisation of feed and food ingredients.
- Animal products science – the study of meat, fish, dairy, egg and wool products to ensure quality products are delivered to Industry.

Career opportunities

As animal scientist you have a wide choice of careers. You can work as animal nutrition expert, technical advisor, technical manager, production manager, meat scientist, reproductive physiologist, poultry manager, dairy expert, dairy manager, animal breed expert, aquaculturist, consultant, manager, technician, extension officer, production development manager or livestock and game farmer. You can also do research, or be employed at a tertiary institution, pharmaceutical enterprise, nature conservation organisation or state department.

Programme information

If you are interested in Animal Science you follow a BScAgric degree in Animal Production Systems. There are various specialisations: you can focus solely on Animal Science or combine it with Agronomy, Aquaculture or Conservation Ecology. You can also do Agricultural Economics with Animal Science.

Tel 021 808 4916 • www.sun.ac.za/animal

Conservation Ecology and Entomology

Did you know?

The dodo was a bird that lived on the island of Mauritius. It couldn't fly, and nested on the ground, living on fruit. Do you know that its extinction, in the second half of the 17th century, is directly linked to human activity? If such activities continue and nothing is done to save them, half of all living plant and animal species on earth could be extinct within 100 years.

The Department of Conservation Ecology and Entomology strives to seek solutions to prevent something similar from ever happening again. The survival of threatened species such as the Basking malachite damselfly (see picture below), white rhino and the marsh rose must be ensured for future generations.

What we do

One of the biggest challenges is the conservation of biodiversity, especially in nature reserves, farmland, cities, mining and forestry areas. The increasing population growth in developed countries is another challenge. It causes overuse of plant resources and the exploitation of wild animals, as well as change and loss of habitat. A healthy biological network – which includes all existing species – ensures the prosperity of the entire ecosystem. The development of novel environmentally friendly methods to manage insects that are pests also forms part of our mission.

In the Department of Conservation Ecology and Entomology you will learn to develop management plans and strategies to address these burning issues. If you enjoy the practical application of theoretical knowledge and are passionate about the conservation of the environment, this is undoubtedly the field for you.

Career opportunities

After graduating you can realise your love for nature and its conservation by working in nature parks and reserves, with conservation initiatives such as the WWF and the Endangered Wildlife Trust, in the national Department of Agriculture, mining companies where rehabilitation projects have to be undertaken, in export companies or in information services. You could also focus on research and work at a University or at the CSIR.

Programme information

If you are interested in this field of study, you would follow the BSc programme in Conservation Ecology. You can also take Conservation Ecology as major with Animal Sciences in the BScAgric programme Animal Production Systems (Animal Sciences with Conservation Ecology).

Conservation Ecology 021 808 3304 • Entomology 021 808 4775 • www.sun.ac.za/consent

Food Science

Did you know?

The food industry is the largest in the world and is worth billions of rands. Consequently this industry employs thousands of new food scientists every year. Internationally, food industries work closely with research institutes and universities to overcome problems and challenges.

The Department of Food Science at Stellenbosch University is viewed as one of the leading training institutions in South Africa. The Department has a strong focus on research and is internationally recognised in this field.

Programme information

If you are interested in Food Science, you follow the programme BSc in Food Production Systems.

What we do

Food science is a multi-disciplinary field of study where the basic sciences of Chemistry, Biochemistry and Microbiology are applied to develop new products and processes to ensure food quality and safety.

The unique degree programme, BSc in BSc Food Science, trains students to transform raw materials into innovative, safe and nourishing food products which are eventually made available in supermarkets. During undergraduate training, students become thoroughly acquainted with the food industry through many visits to factories, and industry training.

Research covers a broad area and focuses on various themes: In food microbiology the diversity of microbial populations are researched by means of conventional and molecular techniques. The environmental theme focuses on the impact food processing has on water use, properties of wastewater and treatment possibilities. The food safety theme is based on the occurrence, identification, survival and control of potential pathogens in food processing. The spectroscopy theme uses near-infrared (NIR) spectroscopy and NIR hyper-spectral image analysis for qualitative, quantitative and authenticity studies of agricultural and food products. In the cereal quality theme the first focus is on the underlying factors influencing cereal quality, such as endosperm texture, and secondly methods for early identification of feasible cultivation lines are developed, in co-operation with South African cereal research institutions. Multi-disciplinary fields are involved in the sensometric theme: chemical, physical and sensory properties of food products are correlated by using statistical techniques to determine the drivers of consumer choices.

Career opportunities

Food scientists are employed to do quality assurance, product development, product management, and to provide technical support and ensure food safety. There are also many opportunities for entrepreneurs in the food industry, and many research opportunities.

Tel 021 808 3578 • www.sun.ac.za/foodsci

Forest and Wood Science

Did you know?

Trees are spectacular organisms and one of Earth's most important natural resources. Their contribution to the effective regulation of our environment and the atmosphere is of immeasurable value – photosynthesis, for instance, provides 98% of the oxygen on Earth. And did you know that Stellenbosch University is the only university in South Africa which offers programmes in forest and wood science?

The Department of Forest and Wood Science plays a pivotal role in the success of the country's growing forestry and forest products industry, through study of the management, exploitation and conservation of plantations, forests and woods, and the fabrication of products from trees.

What we do

The Department offers two programmes: Forestry and Natural Resource Sciences consists of natural ecological and management sciences which supplement the core modules in Forest Science, and Wood and Wood Products Sciences, which is a unique combination of wood processing, engineering and management sciences.

Forest Science students will learn about the complete value chain in forestry, from genetic tree improvement and the cultivation and planting of forests, to the management of existing plantations and woods to deliver high and sustainable yields.

Wood Products Science students focus on production engineering, wood as a material and processing of trees into final products. Students also develop essential transferable skills such as problem solving, communication, leadership and teamwork. About half of the programme consists of engineering subjects in combination with Wood Products Science subjects.

Career opportunities

Over the last five years a large number of the Department's undergraduate students were awarded bursaries, which is an indication of the shortage of BScForestry students in the labour market. After obtaining your BSc degree you could also be appointed to a middle management position in a multinational company. Careers you could follow are: forestry manager, production manager (wood products), wood cultivator for the carpentry industry, environmental planner, forester, sawmill manager, furniture production manager, wood products research and development officer, plantation manager, logistical manager, tree cultivator, rural development advisor, forestry scientist, wood scientist, extension officer, consultant and entrepreneur.

Programme information

If you are interested in forestry, you can choose between the programmes BScFor (Forestry and Natural Resource Sciences) and BScFor (Wood And Wood Products Sciences).

Tel (mornings only) 021 808 3303 • www.sun.ac.za/forestry

Genetics and the Institute of Plant Biotechnology

Did you know?

When James Watson and Francis Crick first wrote about the structure of the DNA helix in the authoritative scientific journal Nature in 1953, few scientists realised its true significance. They described the molecule which conveys genetic information from one generation to the next – it was a groundbreaking discovery which would prove to be of enormous significance for the human race, and which earned them the Nobel Prize for Physiology or Medicine in 1962.

The Department of Genetics and the Institute for Plant Biotechnology are a part of this exciting scientific 'journey of discovery' where researchers are gaining more and more insight into molecular genetics and still regularly discover 'secrets' of biology.

What we do

Focus areas in plant, animal and human genetics include research in the fields of quantitative (breeding and biometry), molecular (biotechnological) and population genetics.

In Plant Genetics and Biotechnology, research includes, among others, molecular characterisation of grapevine virus diseases and development of virus resistance, rye and triticale breeding, cereal genomics and plant-insect interactions as well as fruit breeding and germplasm characterisation.

In Animal Genetics research is conducted on various aquatic and other live-stock animals and involves determining genetic diversity and population dynamics for better management and conservation of these species.

Human Genetics research focuses on analyses of the genes responsible for schizophrenia, iron regulation and cancer, as well as pharmaco-genetic application in diseases which occur in the SA population.

Career opportunities

If you have a degree in Genetics, work opportunities are plenty. You could work as researcher, geneticist, forensic analyst, genetic consultant, diagnostic analyst, plant breeder and animal breeder, laboratory consultant, scientific analyst, bio-informatician, plant biotechnologist, molecular geneticist or forensic geneticist.

Programme information

If you are interested in a career in genetics, you can choose from a variety of programmes. Plant Genetics is done in the programme BScAgric Plant and Soil Sciences (Crop Production and Crop Protection and Breeding). Animal Genetics (Genetics is only offered until the third year) is done in the programme BScAgric Animal Production Systems (Animal Science, Animal Science with Agronomy, Animal Science with Aquaculture and Animal Science with Conservation Ecology). If your focus is on Human Genetics, you do a BSc in Molecular Biology and Biotechnology or a BSc in Human Life Sciences (these programmes are offered in the Faculty of Science).

Horticultural Science

Did you know?

The established export driven deciduous fruit, citrus and fynbos industries play an important role in the economy of the Western Cape, as well as in the rest of South Africa. To stay in the lead these industries require horticulturists with cutting edge technologies to provide them with expert advice to ensure that they can retain their competitive edge and expand their market share.

The Department of Horticultural Science is proud of its' involvement in the training of horticulturists who have the expertise to get involved in all aspects of the fruit- (apples, pears, stone fruit such as plums and peaches, citrus, as well as olives, pomegranates, figs, nuts and berries), and cut flower industries.

What we do

We aim to train horticulturists of high standing that will be sought after by industry because of their in depth knowledge of all production aspects, as well as the physiological processes involved in the production of fruit and cut flowers. Moreover, students are equipped with the ability to conduct cutting edge research and successfully implement technological innovation.

As a SU Horticultural Science student you will study how to ensure the production of top quality fruit and cut flowers scientifically, as well as how to maintain this quality throughout the marketing chain using the correct application of post-harvest technology. In this way waste is minimised,consumers are satisfied and the market share and profitability of our own local fruit and cut flower industries expand.

During your studies you will be exposed to all aspects of the industry, from production to the supermarket shelf in Europe, the USA or Far- and Middle East. You will also learn how the climate affects fruit and cut flower production – the ability to adapt to changing climate conditions is ever more important. You don't acquire only theoretical knowledge, but also get to manage your own orchard, go on excursions to commercial farms, packing stores and processing plants, among others, while experts offer lectures on the consultation industry, farming challenges and the establishing of a new industry.

Career opportunities

As horticulturist you can be employed as consultant, entrepreneur, greenhouse manager, technical manager, production manager, packing store manager, exporter of fruit and cut flowers, quality controller, agro-chemical horticulturist, fresh cut line manager, logistical product manager, agricultural economics advisor, academic/ lecturer, extension officer, technician or researcher. At the completion of your studies you will be a professional held in high esteem by the industry, to such an extent that your employability can almost be assured both locally and globally in jobs that are financial very competitive.

Programme information

If you are interested in Horicultural Science as a career you can do a BScAgric Plant and Soil Sciences and you can choose between the study fields: Crop Production, Crop Protection and Breeding or Soil and Water Management.

Tel 021 808 4900 / 021 808 2112 • www.sun.ac.za/horticulture

Plant Pathology

Did you know?

About 40% of all food that is produced, is lost due to plant disease, pests and weeds. If so much food is already lost, how will we be able to feed the world population, which will reach an estimated 9 billion by the year 2050?

The Department of Plant Pathology is at the forefront of research to decrease the impact of pathogens (infectious diseases) on crops and to increase crop resistance, thereby adding momentum to food production.

Programme information

To become a plant pathologist, you follow the programme BScAgric Plant and Soil Sciences (Crop Production, Crop Protection and Breeding or Soil and Water Management).

What we do

A plant pathologist specialises in plant health – just as a medical doctor specialises in people's health and a veterinarian in animals' health. As plant pathologist you study diseases caused by pathogens (fungi, bacteria and viruses) and environmental conditions (physiological factors) and you find sustainable and affordable solutions to control these diseases, which threaten local crops and export markets.

Traditionally, chemical compounds were used to protect crops. Today we endeavour to find environmentally friendly solutions which don't damage the environment. The plant pathologist develops these integrated disease control strategies to prevent plant disease and address new diseases and changes in existing plant diseases, which pose a constant threat to your woods, food, and fibre crops.

Research is focused particularly on the protection of fruit, citrus, vegetable and wheat crops by means of integrated management and plant improvement. The Department is considered a world leader because of its programmes on pathogens of grapevine and deciduous fruit, and graduates play a leading role in the field, not only in South Africa, but also internationally.

Career opportunities

As plant pathologist you work in close liaison with plant breeders, horticulturists, entomologists and weed scientists to develop integrated approaches for the management of crops, plant pathogens and pests. You can follow a career as researcher, academic, consultant, technician, plant breeder and manager, as well as a career in agricultural enterprises or in agricultural chemical companies.

Tel 021 808 4799 • www.sun.ac.za/plantpath

Soil Science

Did you know?

Soil and water are probably humanity's most important natural resources. Together they are responsible for food and fibre – the basis of all plant life on earth. Soil science is a key factor in food production, given the rapidly growing population, probable future water shortages, increasing pollution, soil degradation and ever-increasing food needs.

The Department of Soil Science considers the management and improvement of Southern Africa's soil to be of crucial importance, and a huge responsibility rests on the shoulders of researchers in this field to utilise the soil sensibly and sustainably.

What we do

Soil Science consists of the specialised fields of pedology, soil physics, soil chemistry and soil biology. Pedology includes the study of the origin, formation, classification and mapping of soil. In Soil physics, physical properties such as water retention and movement, water management and irrigation are studied. Soil chemistry studies the chemical properties of soil, which includes plant nutrition, fertilisation and rehabilitation. Soil biology studies the interaction between soil organisms and the abovementioned specialised fields.

The Department's research includes, among others, the influence of agricultural activity on the salinisation of the Berg river, the water balance of sprayed fruit crops, the modelling of water movement, recycling of soil acidified by industrial waste products, treatment of soil with charcoal (biochar), soil fertility in small-scale farming, ecosystems and biodiversity, forestry and the protection of natural resources against pollution.

Africa initiatives include research on soil constraints to small-scale agriculture in Zambia and on plantation cultivation of teak in the Sudan. Ecological soil investigations include factors such as soil infiltrability, determinants of savanna grassland boundaries, restoration of degraded subtropical thicket, dieback of trees in the Ngorongoro crater and black rhino conservation.

Career opportunities

There is a tremendous shortage of soil scientists in South Africa and there are many career opportunities for students interested in this field of study. As soil expert you will be able to work as soil scientist, soil mapper, soil physicist, soil chemist, consultant, fertilisation expert, entrepreneur, manager, extension officer, technician, researcher or environmental impact assessor.

Programme information

If you are interested in Soil Science as a career you would follow the programme BScAgric in Plant and Soil Sciences (Soil and Water Management).

Tel 021 808 4794 • www.sun.ac.za/soil

Viticulture and Oenology and the Institute for Wine Biotechnology

Did you know?

The SA wine industry is a diverse, dynamic and progressive community consisting of several enterprises of varying size – from small-scale wineries ('garagistes') to enormous multinational companies. Wine and grape production is one of South Africa's largest agricultural sectors, especially in the Western Cape. The wine industry is established firmly as the leading agricultural exporter and contributes over R22 billion to the country's economy every year.

The Department of Viticulture and Oenology and Institute for Wine Biotechnology is seen as one of the world leading institutions in training and research being unique in combining all disciplines of wine sciences.

What we do

Our academic and research programmes are of international quality and all our staff members are internationally recognised experts in their fields. Students not only become thoroughly acquainted with the science of wine in the classroom, but also discover how knowledge is applied in the workplace, with great emphasis being placed on practical application and exposure to the industry as a whole (for instance theory and practice with regards to the establishment, growth and maintenance of a vineyard up to the stage where quality grapes are produced, as well as all the technical expertise required to make wine in a cellar). Students who distinguish themselves academically have many opportunities for research, from plant physiology to microbiology and analytical wine chemistry and biotechnology. Great emphasis is placed on improvisation and problem solving skills.

Career opportunities

There are various careers for our graduates to follow, from technical positions at wine cellars and wine companies to consultants for general viticulture and oenology practices, or in specialised fields such as irrigation or legislation. Typical careers include viticulturist, grape producer, winemaker, researcher, production manager, technician, wine consultant, entrepreneur, marketer, biotechnologist or microbiologist. Many students spend a year or two in other wine-producing countries to gain experience of other approaches to the industry.

Programme information

If you are interested in Viticulture and Oenology you follow the programme BScAgric in Wine Production Systems, and you can choose between Viticulture and Oenology General and Oenology Specialised.





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Design: Grafixit

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