



CAREER GUIDE



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FOREWORD BY THE CHIEF EXECUTIVE OFFICER



The AgriSETA in South Africa is home to over 40 000 commercial farmers, 5 000 Agri Business enterprises and a million small scale farmers. Over and above, the Agricultural sector is among one of the major employer contributing sectors.

The Agricultural Sector Education and Training Authority (AgriSETA) was established as a public entity responsible for the provision of skills in the Agricultural Sector. Additionally, to provide opportunities for Commercial Farmers to provide food security for the country. Opportunities are also being provided for emerging farmers and land reform recipients by providing them with skills to farm and to develop from emerging and subsistence farmers to commercial farmers. The AgriSETA does this through distribution of funds (Mandatory and Discretionary funds) to employers and service providers (both private and public) for the implementation of programmes which unlock opportunities for all.

The programmes funded, range from Skills Programmes (accredited short courses), Learnerships to Artisan programmes based on National Qualification Framework (NQF) registered qualifications. The AgriSETA further provides bursaries for learners, internship opportunities to provide job experience and experiential learning (from Universities of Technology, Technical Vocational Education and Training (TVET) and Agricultural Colleges) to learners who need to complete their qualifications.

Skills shortage is one of the biggest challenges in the agricultural sector. Coupled with this is that young people do not find agricultural careers being attractive and, therefore, those practicing farming are old. According to the Sector Skills Plans of the AgriSETA, there are shortages of Agricultural economists, Agricultural engineers, Veterinary Doctors and high level skills of management. Also the type of Extension Officers in the system is not at all relevant and responsive to the needs of the farming community. The AgriSETA has implemented programmes to address these shortages and it is still doing much more together with other stakeholders sharing the same purpose. One of the ways to do this is to encourage learners by provision of bursaries to create an enabling environment. Other interventions attached to this is by proving workplace experience for learners from TVET Colleges, Colleges of Agriculture and universities by placing them with relevant entities/ agricultural commodities and providing a monthly stipend.

The purpose of the stipends is two-fold, namely allowing the learners to gain requisite practical skills needed to gain meaningful experience and employment. Placement of learners with the employers and commodities serve as an encouragement to employers to employ these graduates.

Numerous post-school education and training options are available for learners who would want to study



further in agriculture and the purpose of this booklet is to encourage learners to look for opportunities in the agricultural sector by using this booklet.

Firstly the AgriSETA has many Skills Programmes that can assist anyone in starting a career in agriculture (animal, plant and mixed farming). This is complimented by Learnerships from NQF I-5 that are offered by accredited service providers. At the entry level of NQF I, there are Learnerships in Animal Husbandry, Agronomy, Horticulture and Mixed Farming. NQF 2-5 Learnerships proceed also according to different commodities such as poultry, sugar, tobacco, etc.

Other than Learnerships and Skills Programmes, learners can study at TVET Colleges offering agricultural programmes found nationally. There are also 12 Agricultural Colleges distributed in provinces offering Diplomas in Agriculture where learners attend two years of theoretical training and one additional year for experiential training to qualify for a certificate. Lastly, Universities of Technology and Universities with faculties or schools of agriculture offer Bachelor degrees to doctorates in different fields of agriculture. This publication will provide a list of these universities and their contact details for those who are interested in agriculture as field of study. It will also provide contact details for learners regarding funding for studies at these institutions. It is my sincere wish to see large numbers of youth entering for agricultural studies as I believe an opportunity exists to transform agricultural farming with so much energy that the young people have. I therefore present this booklet with the hope that you will be encouraged and motivated to study agriculture.

INTRODUCTION

The Agriculture Sector Education and Training Authority (AgriSETA) is one of the 21 Sector Education and Training Authorities established through the Skills Development Act 1998 as amended, to increase the skills of people in each economic sector. All Sector Education Training Authorities (SETAs) report directly to the Department of Higher Education and Training (DHET). AgriSETA is responsible for skills development in the agriculture sector, with stakeholders ranging from commodity organisations, commercial farmers both organized and unorganized, workers in the sector and all levels of upcoming farmers (subsistence, emerging and small scale).

AgriSETA is responsible for ensuring that skills delivery take place. It will therefore, within the limits of its discretionary fund, mainly fund learnerships, skills programmes, artisan development, bursaries, internship, AET (Adult Education and Training), and graduate placements.

The image of agriculture is negative among the youth as they see it as an activity for the elderly. While this is a general view, there are career and business opportunities for youth in agriculture, as a result of emerging global trends.

There is a need to expose the youth to these alternatives. One objective of the National Skills Develop Strategy (NSDS) III is to address the shortage of skills among youth, and hence the focus is largely biased to young people.



Mr Jerry Madiba CEO: AgriSETA

LIST OF ACRONYMS

ACRONYM	
AET	Adult Education and Training
AgriSETA	Agriculture Sector and Education Training Authority
AIDS	Acquired Immuno Deficiency Syndrome
AP	Admission Point
ARC	Agricultural Research Council
B Agric	Bachelor of Agriculture in Administration
B Sc	Bachelor of Science
B Sc Agric	Bachelor of Science specialisation in Agri Business
B Sc (FOR)	Bachelor of Science - specialisation in Forestry
B Sc (FST)	Bachelor of Science - specialisation in Food Science and Technology
B Sc Eng	Bachelor of Science Engineering
B Tech	Bachelor of Technology
BV Sc	Bachelor of Science (Veterinary Science)
CEO	Chief Executive Officer
DAEA	Department of Agriculture and Environmental Affairs
DAFF	Department of Agriculture Forestry and Fisheries
DHET	Department of Higher Education and Training
DRDLR	Department of Rural Development and Land Reform
DSD	Department of Social Development
EE	Employment Equity
FICA	Financial Intelligence Centre Act
GDP	Gross Domestic Product
HET	Higher Education and Training
ICT	Information and Communications Technology
IEB	Independent Examinations Board
IT	Information Technology
LO	Life Orientation
MATD	Mathematics Tests
M Sc	Master of Science
NBT	National Benchmark Test
NQF	National Qualifications Framework
NSC	National Senior Certificate
NSDS	National Skills Development Strategy
RPL	Recognition of Prior Learning
SAQA	South African Qualifications of Authority
SASA	South African Sugar Association
SDF(s)	Skill Development Facilitators
SDL	Skill Development Levy
SETAs	Sector Education and Training Authorities
TVET	Technical Vocational Education and Training
UKZN	University of KwaZulu-Natal

VISION

The Agricultural Sector Education and Training Authority (AgriSETA) will be a legitimate and meaningful partner to the stakeholders that represent the agricultural sector. AgriSETA will be recognised as a highly valued vehicle to accelerate training and development in order to establish sustainable and prosperous farming practices, a competent workforce, and thriving rural communities.

Through trustworthy and honest efforts, AgriSETA will gain the credibility needed to enhance communication and create understanding among all stakeholders. AgriSETA will stand tall as an authority that has successfully improved productivity and the viability of farming, while having conquered the scourge of both illiteracy and unemployment.

Our success will benefit everyone. Workers will be proud of their widely recognised abilities and will enjoy a well-deserved higher standard of living. Employees and employers countrywide, keen to participate in training, will approach our offices with requests for learnerships and skills programmes.

AgriSETA will, in particular, be recognised for its efforts to develop its learners in a holistic manner in order to maximise their potential. An array of unique, market-related skills across the total value chain will be developed to help establish prosperous and stable farming enterprises. These critical skills will be carefully nurtured and protected by a specialised industry.

AgriSETA will serve as a model of excellence and perform like a well-oiled machine – quietly yet powerfully – setting new standards, acclaimed both locally and internationally. Loyalty to one another will be our trademark. We pledge our commitment to securing the necessary funds for achieving our objectives, while remaining passionately dedicated to quality service delivery. AgriSETA will strive to counteract the inherent risks of agriculture in Africa with resourcefulness and enthusiasm in order to meet the changing demands of the business world.

MISSION

AgriSETA creates and promotes opportunities for social, economic and employment growth for agri-enterprises through relevant, quality and accessible education, training and development in both primary and secondary agriculture, in conjunction with other stakeholders in agriculture.

AGRISETA CAREER GUIDANCE

SOURCE OF REVENUE

SETAs are funded through the 1% skills levy collected by the South African Revenue Service from employers in the respective economic sectors as mandated by the Skills Development Levies Act 2001 as amended. The collected revenue is transferred to SETAs to administer and facilitate skills development.

Only certain employers qualify to pay the skills levy (those with an annual payroll exceeding R500 000). In the Agriculture Sector, only 3500 employers are levy payers. The AgriSETA's responsibility is however not only towards the levy payers but also all the stakeholders in the sector, including upcoming farmers and rural development initiatives as well as co-operatives.

The demand for AgriSETA support in the sector is huge and it therefore should be clear that the levy received from the 3500 employers need to be utilized very carefully if the SETA is to make an impact in the sector with regard to skills development. It therefore is apparent that much emphasis/focus should be placed on what is identified as scarce and critical skills.

SETA STAKEHOLDER

Who are our stakeholders?

Stakeholders in the Agri sector are plentiful and diverse. Foremost are employers who pay the skills levy. They are a key stakeholder in AgriSETA and receive the highest priority in terms of delivery. Employers come from various sub-sectors within agriculture. AgriSETA's demarcation includes the following economic sectors:



FOCUS ON SCARCE AND CRITICAL SKILLS

WHAT ARE SCARCE AND CRITICAL SKILLS?

Scarce and critical skills are formally defined as follows:

"Scarce and critical skills refer to an absolute or relative demand, current or future, for skilled, qualified and experienced people to fill particular roles/professions/ occupations or specializations in the labour market."

Let us look at certain of the above concepts in more detail:

Scarce Skills, as a concept, refers to an absolute or relative demand for skilled people to fill a particular role, profession or occupation. Absolute demand simply means that suitable skilled people are not available, for example: A new or emerging occupation – there are few, if any people in the country with the requisite skills. The sector cannot implement planned growth strategies and are experiencing productivity, service delivery and quality problems directly attributable to a lack of skilled people.

A good example was the introduction of Europe's requirements for the export of agricultural products – initially there were no skilled people available to farmers and downstream enterprises to implement systems in order to meet those European export requirements. An absolute demand can also be the result of a replacement demand. There are no people enrolled at learning institutions to acquire the skills which will be needed to, over time, replace those who are currently filling posts.

Artisans are a good example of the replacement demand. As less and less young people qualify as artisans, eventually there will be no new artisans to replace the older artisans as they were nearing retirement age. As a result there is a dire shortage today of artisans in South Africa.

The second category of scarce skills is that of a relative demand. This simply means that there are suitable skilled people available, but they do not meet other employment criteria – whilst they are available, vacant posts still cannot be filled, for example: Geographical location i.e. skilled people are available but not in certain geographic regions.

For example: it is frequently difficult to attract qualified people to some outlying farming areas. Especially as young people prefer to live and work in urban areas.

Equity considerations: There are very few people from designated population and/or gender groups available to fill certain posts. For instance: we know that there are very few black game farmers. We also know that in certain technical posts there are very few females. The disabled are also not well represented in our sector.

Replacement demand: There are people in education and training but it will still take a long time for them before they are available to the labour market. Actuaries, accountants, engineers (especially of colour), etc. are an example of a relative demand.

Critical Skills as a concept, refer to the demand for an element of practical or fundamental competence which allows for specialization – in essence it refers to "top-up" skills. This is frequently experienced on farms – whilst there are machine operators available, the sophistication of modern tractors implies that the operator's skill needs to be topped up. The same implies for production processes which requires the operator to become computer literate and to work with specific computer applications.



What are scarce and critical skills in the Agri Sector?

It is not possible, within the limitations of an information guide of this nature, to list each and every scarce and critical skill identified for the Agri sector. The reader is advised to visit our website: www.agriseta.co.za and under the heading "Skills Planning" and open the Sector Skills Plan. Whilst the document contains a good overview of and information on the Agri sector, it is specifically Chapter 3, Skills Development Priorities, which is important. This chapter contains a detailed list of all scarce and critical skills identified for each of the sub-sections in the Agri sector.

The scarce and critical skills appear in the table on the next page. An attempt was also made to guide the reader towards the appropriate learning programme which will assist the potential learner to develop the required scarce or critical skill. The following definitions will assist:

HET-Higher Education and Training relevant to learning institutions such as Universities, Universities of Technology and Agricultural Colleges. The successful learner will most likely earn a degree or diploma.

Further Education and Training relevant to Technical Vocational Education and Training (TVET) Colleges and some similar private Colleges. The successful learner will receive a diploma or become an artisan.

CAREERS IN THE SECTOR SCARCE AND CRITICAL SKILLS

Occupation MANAGERS	Managers are the leaders in an organisation; they are responsible to ensure that the organisation performs well and makes a profit. Normally one cannot study and directly become a manager. It requires experience and in most cases a young person who studied in any of the fields below will commence his/her career at the lower position and, based on performance, will over a number of years progress into a managerial post.					
Jobs classified as scarce and critical	Relevant economic sector and overview	Intervention	NQF level			
General Managers	Opportunities in all sub-sectors in agriculture. A general manager is well skilled and can direct most of the functions in an organisation. A general manager will usually have a number of specialist managers reporting to him/her.	HET	6,7,8			
Farm Managers	· · · · · · · · · · · · · · · · · · ·					
Advertising, marketing and sales	arketing and pesticide industries.					
Business Administration Managers	Corporate business and administration, finance managers, human resources managers, research and development. Mostly needed in the secondary sector.	HET/TVET	4,5,6			
Distribution, production and operations managers	Importers and exporters, wholesalers, production processing and supply distribution. Mainly required in the secondary sector such as silos, industries that export, such as fruit packing companies. Highest need is in distribution skills. Abattoir Manager, Abattoir Veterinarian, Feedmill Manager, Sugar Mill Manager, Pet Food Mill Manager, Seed Processing Plant Manager, Acquisitions, Depot, Freight Forwarding Customs Clearing, Freight, Goods Clearance, Parts, Procurement, Purchase, Supply Chain Executive, Supply Chain, Supply Lead Manager, Product Development Manager, Research Managers	HET/TVET Learnership	4,5,6			
Quality Management	The main focus is on research and quality assurance and food safety. These skills are required across most sectors with specific reference to those involved in final food production and the export thereof (e.g. meeting international requirements). This requirement is prevalent in the meat industry, fruit, sugar, milling and some primary farms (those involved in value adding).	HET/TVET Learnership	6 - 8			

AGRISETA CAREER GUIDANCE

Occupation PROFESSIONALS	Professionals are people with very specific skills of specialization. They do not fill management posts but provide very important (frequently technical) information to the enterprise in order to maintain/improve quality, productivity and production. Professionals are normally highly qualified individuals.				
Jobs classified as scarce and critical	Relevant economic sector and overview	Intervention	NQF level		
Business, human resources, and marketing professionals	Accountants (management and financial), commodity traders, human resource professionals and IT trainers. Training and development professionals and SDFs are all in short supply or are in need of "top-up" in all subsectors. Also agricultural economists in the Department of Agriculture Forestry and Fisheries and technical and sales staff in those sectors which engage indirect marketing of products such as tobacco, milling and sugar.	HET Learnership Skills Programme	4 - 8		
Design, engineering, science and transport professionals	A wide range of engineering professionals are included such as chemical, electrical, electronics, industrial, production/plant and agricultural. These skills are needed in the total sector with chemical, electric and electronic being paramount in sugar, whilst agricultural engineers are needed in Government. Control Engineer, Electric Power Generation Engineer, Electrical Design Engineer, Electromechanical Engineer, Illumination Engineer, Power Distribution Engineer	HET	5 - 8		
Natural and physical science professionals	Agricultural consultants and veterinarians are needed by mainly Department of Agriculture Forestry and Fisheries. Agricultural scientists, food technologists, chemists, wine makers, meteorologists, natural and physical scientists needed by various sub-sectors. Animal Doctor, Veterinary Epidemiologist, Veterinary Parasitologist, Veterinary Pathologist and Veterinary Surgeon, Plant Breeders, Plant Pathologists, Animal Scientists, Plant Scientist, Soil, and Pasture Scientists, Agricultural Product Processing Engineering Technologist, Agricultural Structures and Facilities Engineering, Aqua Culture, Engineering Technologist, Crop Production Mechanisation, Engineering Technologist, Irrigation Engineering Technologist, Natural Resources Engineering Technologist, Agriculture Advisor, Agriculture Economic Advisor, Agriculture Extension Officer, Agriculture Field Officer, Agriculture Mentor, Animal Husbandry Consultant / Advisor, Farm Consultant / Advisor, Farm Economic Techniques Advisor, Field Husbandry Consultant / Advisor, Landcare Officer	HET Learnership	4 - 8		
Education, health, ICT and social welfare professionals	This category of professionals (with the exclusion of ICT) has to do with employee wellness and health. Specific skills are needed to educate in English, occupational health and safety, drug and AIDS councillors. In ICT the focus is on Programmers and Developers. Skills are needed throughout the sector.	HET/TVET Learnership Skills Programme	4 - 7		

Occupation SALES, CLERICAL AND ADMIN WORKERS	Clerical and administrative workers are responsible for ensuring that the necessary paper work is in place within the organization. This is a very important function as it provides record of actions taken, ensures that firms have good audit reports and is key to providing management information.				
Jobs classified as scarce and critical	Relevant economic sector and overview	Intervention	NQF level		
Office Managers	Needed in all sectors. To become an office manager, experience is required and office managers have to be up to date with government, legal and auditing requirements such as FICA, EE, SDL etc.	TVET	5		
Clerks, secretaries and bookkeepers	Less of a requirement, but required in all sectors of the economy. These are frequently entry level posts for young people who wish to follow a career in administration.	TVET Learnership	3 - 5		
Logistics clerks	Purchasing and supply logistics clerks, transport and dispatch clerks. Required mainly in sectors with high transport and storage/warehousing requirements such as milling, poultry processing firms and fruit packers. Also included in this category are stock clerks, sales clerks, purchasing clerks and import/export clerks.	TVET Learnership Skills Programme	3 - 5		
Sales workers	This category refers to sales representatives those who support sales teams and are required in industries where wholesale and retail trade takes place in high volumes such as sugar, milling, grain handling and Agri trade.	TVET Skills Programme	2 - 5		
Occupation MACHINERY OPERATORS AND DRIVERS	Workers in this category operate industrial machines, agricultu logistical requirements as drivers of tractors, forklifts, other ag small trucks. These are highly qualified specialist workers.				
Jobs classified as scarce and critical	as scarce and		NQF level		
Machine and stationary plant operators	Range from packing machine operators other stationary plant operators such as boiler operators, engine operators, bulk materials handling plant operators. Normally employed in a factory environment such as sugar, milling, fruit packing grain handling and poultry processing plants. The main requirement is to "top-up" the skills of existing employees.	Learnership Skills Programme	2 - 5		
Mobile plant operators	This category includes agricultural and horticultural mobile plant operators, fork lift drivers and truck drivers. These skills are needed extensively in primary agriculture (on farms) but also in a factory, store, warehouse environment where goods are stored such as most secondary operators and pack houses.	Learnership Skills Programme	2 - 4		

AGRISETA CAREER GUIDANCE

Occupation LABOURERS	Lower level skilled workers are most important in industry, they are the people who execute the day to day tasks on a farm and in the factory. Lower level workers also comprise of the largest numbers of workers in industry. It is however true that whilst labourers are generally available their education is low. Their contextual understanding of their task is limited and as a result their ability to adapt is hampered. In South Africa there is a dire need to upgrade the skills at worker level most interventions listed below will focus on "topping- up" the skills of existing workers.				
Jobs classified as scarce and critical	Relevant economic sector and overview	Intervention	NQF level		
Factory process workers	Most important skill deficiencies identified are that of grain mill workers, slaughterers and meat process workers.	Skills Programme	2,3		
Packers and product assemblers	These include fruit and vegetable packers, elementary quality controllers and examiners, product testers and graders. Mostly found in pack houses and processing plants such as grain handling and milling.	Learnership Skills Programme	I - 4		
Farm, forestry and garden workers	This category covers the vast majority of the 900 000 workers on farms ranging from live stock, agronomy, horticulture and ornamental horticulture. More than 30% of agricultural workers are illiterate or have a very poor educational basis. If the sector wishes to use such workers in more advanced jobs or even have them to better understand the context of their work, AET life skills and agricultural orientation will form a critical part to their development.	Learnership Skills Programme AET	I - 3		
General labourers	These include two categories namely handyman and artisans. There is a dire need for multi-skilled persons who can fulfill general maintenance tasks on (mainly) farms. Mixed crop and livestock farm worker, Crop production/farmworker/assistant	Learnership Skills Programme	I - 4		

Occupation TECHNICIANS AND TRADESMEN	This category of occupations can most likely be regarded as the These occupations can be regarded as the "engine room" of the category of occupations are in very high demand and there is a workers. In many cases it implies completing an apprenticeship artisan.	ne industry. The jobs in extreme shortage	listed in of these
Jobs classified as scarce and critical	Relevant economic sector and overview	Intervention	NQF level
Engineering ICT and science technicians	The following are the most important: agricultural and earth science technicians (Government), meat and primary inspectors (meat industry and other sectors working with food) chemistry technicians (foremost sugar and grain industry).	HET/TVET Learnership Skills Programme	3 - 6
Manufacturing and process technicians	Chemical, biochemical manufacturing and production technicians are needed in all sectors with production plants such as sugar, meat processing and large pack houses, fruit liquefying and manufacture of agricultural machinery.	HET/TVET	5,6
Automotive, electricians and mechanics	Diesel motor mechanic, small engine machinery important on larger farms, agriculture machinery firms. There is a dire need for technicians who can repair and maintain agricultural machinery.	TVET Learnership	3 - 5
Fabrication and mechanical engineering technicians	Needed in the sectors with production plants. These include specific skills such as welders (first class), metal fabricators, pressure welders, fitter welders and millwrights. Air-conditioning, Automotive, Diesel, Fluid Mechanics, Heating and Ventilation, Machine Design and Development, Maintenance Management, Mechatronics, Piping, Pressurised Vessels, Rotational Plant, Structural Steel, Thermodynamics, Agricultural Machinery Mechanic, Farm Machinery Repairer	TVET Learnership	3 - 5
Electrical and related	Electricians, air conditioning and refrigeration mechanics are needed especially in sectors where the cooling and preservation of agricultural products are important such as sugar, meat and fruit.	TVET Learnership	4,5
Skilled animal attendance and horticultural workers	Animal attendance, those who work in plant nurseries and sheep shearers are all in need, in the case of shearing there is dire need for shearers who are willing to operate in very rural areas and attend to shearing of sheep belonging to communal farmers. Horticultural workers are in need specifically at nurseries growing seedlings and commercial enterprises selling plants to the public. Seed Research Technician, Seed Production Technician, Irrigation Technician, Meat Inspector, Fruit and Vegetable Inspector, Produce Inspector, and Quality Controller	Learnership Skills Programme	I - 3

THE NATIONAL QUALIFICATIONS FRAMEWORK (NQF) AND POST-SCHOOL OPTIONS

In South Africa, the National Qualifications Framework (NQF) is a comprehensive system for the classification, registration, publication and articulation of quality-assured national qualifications. (The NQF equates workplace learning to academic qualifications. Therefore NQF1 – Grade 9; NQF2 – Grade 10; NQF3 – Grade 11; NQF4 – Grade 12.)

The qualifications are arranged in three coordinated qualifications sub-frameworks:

- General and Further Education and Training (Level I to 4)
- Higher Education and Training (Level 5 to 10)
- Trades and Occupations (Level 5 to 10)

Apparently there are various types of qualifications that one can choose from to continue their learning after schooling and these are offered from different institutions:

- **I. Skills Programme:** A skills programme generally contains selected elements of a qualification and is shorter in duration than a learnership. It focuses on a specific skill needed in the workplace. The successful learner is issued with a certificate of competence. Over time, the successful combination of skills programmes can also lead to a qualification.
- 2. Learnerships: This is a learning programme which is practical in nature (normally 70% practical and 30% theory) and is closely aligned to the requirements of the workplace. Most popular learnerships carry 120 credits and are concluded over a period of one year and leads to a nationally recognized qualification.

- **3. Bursaries:** People who want to enroll at institutions of higher learning, can apply for bursaries with the SETA.
- **4. Internships:** for those who need up to a maximum of 12 months structured programme for practical exposure to complete their HET or TVET studies.

Internships are programmes for learners who require practical experience in order to complete a qualification. The duration of the programme is usually twelve months.

- **5.** Workplace experience (Graduate Placement): (normally for one year) for those who completed their studies in scarce and critical skills areas, but still cannot find employment because they have no experience.
- **6. Artisan development:** Artisan development is a non unit standard based registered qualification. Artisan development comprises the integration of workplace and institutional learning and culminates in a national qualification.
- **7. Certificates:** Certificates are usually offered at post-school institution such as colleges. They are a minimum of one-year programme which can be very practical and skill oriented. They are at NQF level 5.
- **8. Diplomas:** A diploma can be obtained after two or three years of study with an accredited provider such as an TVET college or College of Agriculture, university, or a university of technology. Often at NQF level 6.
- **9. Degrees:** A degree can be a three or four years of study with an accredited training institutions such as universities or university of technologies.

The funding application window period for Bursaries, Internships, Workplace experience, Apprenticeships Learnerships and New Venture Creation is from 1 September until 31 October of each year.

The funding application window period for Adult Education and Training, Land Reform and Mentoring, Skills Programmes and Graduate Placement is from 1 November until 31 January of each year.

INSTITUTIONS OFFERING INTERNSHIPS

CAREERS IN THE SECTOR

Institutions offering Internships in Agriculture

List of Employers providing Internships in agriculture	Functional Unit	Qualification	Major Subjects required	Contact Details of Employers/ Departments providing internships in agriculture
Department of Agriculture, Forestry and Fisheries	International Trade	Bachelors Degree	Agricultural Economics Economics	National Department of Agriculture, Forestry and Fisheries Directorate: Sector Education and Training Private Bag X 250 Pretoria 0001 Tel: (012) 319 7259/7198/7136 Website: www.daff.gov.za
	Plant Production	Bachelor of Science (BSc) B.Agric	Horticulture Agronomy Plant Production Crop Production Biology Botany	Mpumalanga: Department of Agriculture, Rural Development and Environmental Affairs No. 7 Government Boulevard Building No. 6, 1 & 2nd Floor Riverside Park Extension 2 Nelspruit/Mbombela 1200 Tel: (013) 766 6067/8 Email: infodardlea@mpg.gov.za Website: www.mpumalanga.gov.za
	Water use and Irrigation Development	Bachelors Degree/ National Diploma	Soil Science Plant Production Irrigation Management	Western Cape Department of Agriculture PO Box I Elsenburg 7607 Tel: (021) 808 5111 Email: info@elsenburg.com Website: www.elsenburg.com
	Inspection Services	Bachelors Degree	Pest Control Entomology Animal Health Plant Pathology Horticulture	North-West Department of Agriculture Conservation and Environment Private Bag X2039 Mmabatho 2735 Tel: (018) 389 5026 Fax: (018) 384 2679 Email: bsebogodi@nwpg.gov.za Website: www.nwpg.gov.za/agriculture

CAREERS IN THE SECTOR (CONTINUED) Institutions offering Internships in Agriculture

List of Employers providing Internships in agriculture	Functional Unit	Qualification	Major Subjects required	Contact Details of Employers/ Departments providing internships in agriculture
	Plant Health	Bachelors Degree	Pest Control Entomology Animal Health Plant Pathology Horticulture	Northern Cape Department of Agriculture Private Bag X5018 Kimberley 8300 Tel: (053) 838 9100 Fax: (053) 831 3635 E-mail: tperkins@grand.ncape.gov.za
Department of Agriculture,	Plant Health	Bachelors Degree/ National Diploma	Horticulture Agronomy Plant Production Crop Production Botany	KwaZulu-Natal Department of Agriculture and Rural Development Private Bag X 9059 Pietermaritzburg 3200
Forestry and Fisheries	Food Import Export Standards	Bachelors/ Degree National Diploma	Animal Health Plant Pathology Entomology	Limpopo Province Department of Agriculture and Rural Development Private Bag X9487 0700 Tel: (015) 294 3000 Fax:(015) 295 7046 Website: www.lda.gov.za
	Agro Processing Support	Bachelors Degree/ National Diploma	Agricultural Economics Business Management	
South African Sugar Association (SASA)	Research and Extension	Agricultural- related Bachelors Degree/ Diploma	Soil/Crop Science Plant Pathology Agronomy Crop Physiology Microbiology Entomology	South African Sugar Association KWA SHUKELA 170 Flanders Drive Mount Edgecombe 4300 Tel: (031)508 7000 Website: www.sasa.org.za
Agricultural Research Council (ARC)	Research	Tertiary Qualification in Agriculture	Agricultural courses	ARC PO Box 8783 Pretoria 0001 Enquiries: Tel: (012) 427 9700 Fax: (012) 342 3948 Website: www.arc.agric.za

QUALIFICATIONS

Institutions offering Qualifications in the Field of Agriculture

	List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
	Name of Institution	University of KwaZulu-Natal			
מכמו	Contact Details	Private Bag X 01; Scottsville; 3209 Tel: (033) 260 5111; Email: enquirie	es@ukzn.ac.z	a; Website: www.uk	zn.ac.za
אמלמומ-ואמנמו	B.Sc. Eng: Agricultural	NSC with Mathematics, Physical Science, English, LO and three other subjects (35 points)	4 years	Government (DAEA/DAFF), Universities and Colleges, private sector	Agricultural engineer, Artisan, lecturer
	Bachelor of Science in Agriculture in: Agribusiness (Animal Science Stream) Agribusiness (Crop Science Stream) Agribusiness (Horticultural Science Stream) Agribusiness (Wildlife Management Science Stream) Agricultural Economics Agricultural Plant Science Stream) Agricultural Plant Science Stream) Agricultural Plant Science Stream) Agricultural Plant Science (Horticultural Science Stream) Agricultural Plant Science Stream) Agricultural Plant Science (Horticultural Science Stream) Agricultural Plant Science Stream) Agricultural Plant Science (Plant Breeding Stream) Animal and Poultry Science Plant Pathology	NSC degree pass with Maths, English, Life Orientation and Agricultural Science/Physical Science/Life Sciences at level 4 or above; Admission points required: 28-48 (highest scoring students taken first)	4 years	Government (DAEA/ DAFF), Universities and Colleges	Agricultural Scientist, Veterinaries, Lecturer, Food Technologists, Agronomist, Researcher, Soil scientist
	Soil Science				

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Bachelor of Science: Agribusiness (Crop Science)	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	Government (DAEA/ DAFF), Universities and Colleges	Agricultural Scientist, Veterinaries, Lecturer, Food Technologists, Agronomist, Researcher, Soil scientist
Bachelor of Science: Agribusiness (Horticultural Science)	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	Government (DAEA/ DAFF), Universities and Colleges	Landscaper; Horticulturist
Bachelor of Science: Agricultural Economics	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	Agricultural Cooperatives, NGO's, Research & Policy Institutions and Consultation Services	Agricultural Economist
Bachelor of Science: Agricultural Plant Sciences (Horticultural Science Stream)	NSC with Mathematics, English and LO 4 and Agric Science or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Physical Science OR Life Science or Agric Science 'E'	4 years	ARC; DAFF; Agricultural Cooperatives, Seed companies	Agronomist, Soil scientist
Bachelor of Science: Agricultural Sciences (Plant Breeding Scheme)	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	Seed Companies, Farms, Nurseries	Agronomist (Scientist), Agronomist (Technician)
Bachelor of Science: Animal and Poultry Science	NSC with Mathematics, English and LO 4 and Agric Science or Life Science or Physical Science 4 or Matric Exemption with Math- ematics and Physical Science or Life Science or Agric Science 'E'	4 years	ARC; DAFF; Agricultural Cooperatives	Livestock Scientist; Farm Manager; Animal Scientist

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Bachelor of Science: Plant Pathology	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	Agri Chemical Companies; Seed Companies; Farms; Nurseries	Plant Pathologist, Agronomist
Bachelor of Science: Soil Science	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	ARC, DAFF, Universities and Colleges; Agricultural Cooperatives	Agronomist Soil scientist
B. Agricultural Management	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics & Econ or Physical Science or Bio or Agric Science 'E' (34 points)	3 years	Govt (DAEA/ DAFF), Universities and Colleges, private sector	Agricultural economics Soil scientist
Bachelor of Agriculture in Agricultural Extension	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics & Econ or Physical Science or Bio or Agric Science 'E' (34 points)	3 years	ARC, Govt (DAEA/DAFF), Agricultural Cooperatives	Agricultural Extension Technician, Agricultural Research Technician
Bachelor of Science: Soil Science	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics and Econ or Physical Science or Bio or Agric Science E (34 points)	4 years	ARC, Govt (DAEA/DAFF), Universities Agricultural Cooperatives	Agronomist Soil scientist
B. Agricultural Management	NSC with Mathematics, English and LO 4 and Agric Science or Econ or Life Science or Physical Science 4 or Matric Exemption with Mathematics & Econ or Physical Science or Bio or Agric Science 'E' (34 points)	3 years	Govt (DAEA/ DAFF), Universities and Colleges, private sector	Agricultural economics Soil scientist
Senior Certificate in Sugarcane Agriculture	Undergraduate degree or Diploma in Agriculture or Sciences, or Matric with Junior Certificate with a Merit pass of 65%, or Grade 12 can also be considered	6 weeks	Govt Research Institutions, Agricultural organisations	

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. Marine Science and Oceanography B.Sc. Marine Biology National Diploma Marine Science	National Senior Certificate Mathematics: 6 (70% - 79%) Physical Science: 5 (50% - 59)	4 years	Marine aquaculture farms Marine and coastal management Institute of Marine Technology Council for Scientific Research(CSIR)	Marine Biologist Oceonagrapher
B. Sc in Biological and Environmental Aquaculture / Aquatic Science	NSC with at least 35 points (APS) Mathematics Literacy: 6 (70 - 79%) OR Mathematics: 5 (60 - 69%) Physical Science: 5 (60 - 69%) English and additional language: 4 (50 - 59%)	3 years (full time) or I year post graduate degree	Fish Farms	Aquaculture Aquatic Scientist
Name of Institution University of Zululand				
Contact Details	Private Bag X1001; Kwadlangezwa Tel: (035) 902 6000; Website: www		a	
B.Sc. Agriculture (Animal Science)	NSC with 30 points. A 40% pass in Mathematics	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
B.Sc. Agri (Agri Business)	NSC with 30 points. A 40% pass in Mathematic	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and	Extension Services; Agronomist; Agricultural Economist; Farm Manager

others); Private Sector

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Diploma in Agriculture	Senior Certificate	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager

	Name of Institution	Linitamita of Evan State			
ע	Contact Details	P O Box 339, Bloemfontein, 9300 Tel: (051) 401 9111/3000; Email: info@ufs.ac.za; Website: www.ufs.ac.za			
DIC DELL	B Agric Extended Curriculum Programme	NSC and an AP of 25 and higher. • Language of instruction on level 4 (50%). • Mathematics on level 2 (30%) OR Mathematical Literacy at least at level 5 (60%) if the AP-score is 26 or higher.	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane	Extension Services; Agronomist; Agricultural Economist; Farm Manager
	BSc Agric Extended Curriculum Programme	NSC and an AP of 25 and higher. • Language of instruction on level 4 (50%). • Mathematics on level 3 (40%) for MATD I 554. For MATD I 534, Mathematics on level 4 (50%). • Life Sciences OR Agricultural Science on level 4 (50%) OR Physical Sciences on level 3 (40%)	5 years	Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B Agric degrees Irrigation Management Animal Production Management Mixed-Farming Management Crop Production Management Agricultural NBT Management Agricultural Economics	NSC and an AP of 30 • Language of instruction on level 4 (50%). • Mathematics on level 3 (40%) or Mathematical Literacy at level 7 (80%) if the AP is 32 or higher. Participation in the Agricultural NBT	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
BSc Agric degrees Options: • Agronomy, Soil Sciences, • Agricultural Economics, • Agricultural Engineering, • Grassland Sciences or • Plant Pathology	NSC and an AP of 30. • Language of instruction on level 4 (50%). • Mathematics on level 5 (60%) to level 7 (80%) depending on the modules. • Life Sciences or Agricultural Sciences on level 5 (60%) or Physical Sciences on level 4 (50%). • Participation in the NBT for Language and for Mathematics.	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
BSc Agricultural Economics	NSC and an AP of 30. • Language of instruction on level 4 (50%). • Mathematics on level 5 (60%). • Life Sciences or Agricultural Sciences on level 5 (60%) or Physical Sciences on Level 4 (50%). • Participation in the NBT for Language and for Mathematics.	3 years	NGO's, Agricultural Cooperatives, Research & Policy Institutions, Consultant Services	Agricultural Economist

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Bachelor of Agricultural Sciences	Mathematics at performance level 3 (40%) or Mathematical Literacy at least at level 7 (80%) if the AP is 32 or above Senior certificate with matriculation endorsement. • Performance level 4 (50%) for Physical Science (matriculation exemption) or an equivalent qualification.	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and Others)	Animal and wildlife Scientist, Commercial farming, Animal Scientist, Researcher, Animal nutrition or breeding, Game managers and policymakers Lecturers, researchers, farmers
Bachelor of Science in Agriculture- Animal, Grassland and Wildlife Science	Sciences, Agricultural Sciences or Physical Science. • Performance level 5 (60%) for Life Sciences or Agricultural Sciences and Performance level 4 (50%) for Physical Science	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others);	Game Farming Soil and Environmental Conservation Animal Scientist
Bachelor of Science in Agriculture- Soil, Crop and Climate Sciences	Either Life Sciences, Agricultural Sciences or Physical Science. • Performance level 5 (60%) for Life Sciences or Agricultural Sciences and Performance level 4 (50%) for Physical Science 3 years	3 years	Government (e.g DAFF, ARC, CSIR), Nature Conservation, Municipalities, Fertilizer companies, Farm Management	Soil Scientist Researcher Agricultural advisor Farmers Agricultural Marketers
Advanced Diploma in Sustainable Agriculture in Rural Development	An appropriate three-year B.degree plus appropriate practical experience and/or appropriate preparatory studies; • An appropriate four-year B.degree plus appropriate practical experience and/or appropriate preparatory studies; • An appropriate honours degree or an honours degree plus appropriate preparatory studies and/or practical experience	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others);	Extension Officers Farm Managers Marketers Crop Cultivars Horticulturist Livestock production

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job		
Name of Institution	University of Fort Hare					
Contact Details	Ring Road, Alice, 5700 Tel: (040) 602 2011; Website: www	Ring Road, Alice, 5700 Tel: (040) 602 2011; Website: www.ufh.ac.za				
Bachelor of Science in Agriculture	National Certificate, University Pass (32 points)	4 years	Govt (DAEA/ DAFF), Universities and Colleges, private sector	Animal and Poultry Scientist, Researcher, Lecturer, Extension Services		
Bachelor of Agriculture	National Certificate, University pass (22 points)	3 years	Govt (DAEA/ DAFF) Universities and Colleges, private sector Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Animal and Poultry Scientist, Researcher, Lecturer, Extension Services; Agronomist; Agricultural Economist; Farm Manager		
PAED in Agriculture	National Certificate with University pass	4 years	Govt (DAEA/ DAFF) Universities and Colleges, private sector	Animal and Poultry Scientist, Researcher, Lecturer, Extension Services		
Name of Institution	Walter Sisulu University					
Contact Details	Private Bag x 2, Unitra 5117 Tel: 047 502 2314/8; Website: ww	w wsu ac 7a				
B.Sc. Botany BSC Pest Control Management Diploma: Pest Control Management	NSC with Mathematics and Science	Degrees 3 - 4 years Diploma 3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager		

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Nelson Mandela Metropolitan Univ	ersity		
Contact Details	PO Box 77000, Port Elizabeth, 603 Tel: 041 504 1111; Website: www.		Email: info@nmmu.	ac.za
Diploma (Agricultural Management)	Pass National Senior Certificate with a rating of 3 (40-49) or better for four subjects	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
B.TECH (Agricultural Management)	3 year agriculture tertiary qualification	I year	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager

Name of Institution	Rhodes University				
Contact Details	PO Box 94 Grahams Town 6140 Tel: 046 603 8276 Fax: 046 603 8300; Email: registrar@ru.ac.za; Website: www.ru.ac.za				
B.Sc. Ichthyology or Fisheries Science (Hons)	B.Sc. Zoology (majoring in Ichthyology) with 60% pass	I year	Fisheries scientist Ichthyologist	Researcher University and school teaching and research Museum Curatoreship and / or / Collection management Conservation biologist Fish and Shellfish farmer	

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. Zoology (majoring in Ichthyology)	Afrikaans or English: 4 (50% - 59%) An additional language: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) APS - 30	3 years	Nature reserves Environmental consultancies Conservation planning agencies Biochemical and biotechnology industries Medical and veterinary research Pest management Educational and research institutions The corporate sector DAFF	Zoologist
B.Sc. Marine Botany (Hons)	B.Sc. Zoology (majoring in Ichthyology) OR B.Sc. Marine Biology OR B.Sc. Botany A 60% pass	I year	Marine Laboratories Universities Government agencies and fisheries Oil and gas prospectors Research organisations Consultancies Engineering companies Coastal management organisations	Marine botanist
B.Sc. Ichthyology (specialising)	Senior Certificate Physical Science:5 (60% - 69%) Mathematics: 5 (60% - 69%)	3 years	The DAFF, universities, provincial agriculture and environmental departments, aquatic product manufacturers and aquatic research organizations (not fully established)	Aquaculture specialist

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. (majoring in Mathematics)	English: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 4 (50% - 59%) Life Orientation: 4 (50% - 59%) Life Science/Agricultural Science/ Geography: 4 (50% - 59%)	3 years	Mathematicians are in demand not only for the mathematical knowledge that they possess, but also for the logical approach which they have been trained to bring to diverse scientific and technical problems. They find employment in commerce and industry, research institutes and various government departments. Careers in, for example, the physical sciences, engineering, actuarial science, computer science and statistics are impossible without a sound preparation in mathematics. The biological, social and economic sciences depend increasingly on mathematical model building, and those subjects will have an everincreasing need of mathematical knowledge. Since there is a great shortage of trained mathematics teachers in South Africa, the prospects for teachers of mathematics at all levels are excellent.	Mathematician

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. (majoring in Statistics)	English: 4 (50% - 59%) An additional language: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) Life Orientation: 4 (50% - 59%) Life Science: 4 (50% - 59%) APS 30	3 years	Statisticians apply their knowledge to production, research, finance, medicine, the built and natural environments, insurance and government. They are often employed to support managerial decisions or to supervise quality control in manufacturing.	Statistician
B.Sc. Marine Science and Oceanography B.Sc. Marine Biology National Diploma Marine Science	National Senior Certificate Mathematics: 6 (70% - 79%) Physical Science: 5 (50% - 59)	4 years	Marine aquaculture farms Marine and coastal management Institute of Marine Technology Council for Scientific Research(CSIR)	Marine Biologist Oceonagrapher
B. Sc in Biological and Environmental Aquaculture / Aquatic Science	NSC with at least 35 points (APS) Mathematics Literacy: 6 (70% - 79%) OR Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) English and additional language: 4 (50% - 59%)	3 years (full time) or I year post graduate degree	Government Fish Farms Research Universities	Aquaculture Aquatic Scientist

Name of Institution	University of South Africa				
Contact Details	PO Box 392, UNISA, 0003; Websi	te: www.unisa	a.ac.za; Email: study-	info@unisa.ac.za	
Diploma Agric Management	NSC with University admission	3 years	Government (e.g. DAFF, DSD, DRDLR,	Extension Services; Agronomist;	
Diploma Animal Health		3 years	ARC); Academic Institutions; Commodity	Agricultural Economist; Farm Manager	
Diploma Horticulture		3 years	organisations (e.g. SASA, Cane	J	
B Tech - Agricultural Management		4 years	Growers, Illovo, Hulett, Citrus Growers and		
B Tech - Animal Health		4 years	others); Private Sector		
B Tech - Horticulture		4 years			
B.Sc. Agric		4 years			

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	University of Pretoria			
Contact Details	Private Bag X 20, Hatfield, Pretoria, 0028 Tel: 012 420 3111; Website: www.up.ac.za			
B.Sc. Agric (Plant and Soil Science), B.Sc. Agric (Agric Economics) Agribusiness Management, B.Sc. Agric (Animal Science), B.Sc. Agric (Animal Science, Pasture Science) BCom (Agribusiness Management) B.Sc Veterinary Biology BVSc degree	NSC with University admission	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager Veterinarians in private practice, research, academia or state veterinary services. Veterinarians can also work in the following fields: diagnostic laboratories, veterinary public health (milk and meat hygiene, control of transfer of disease), technical services, research and product development in pharmaceutical and food industries, consultancy, laboratory animal management, wildlife management, poultry and pig production and animal welfare.

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	University of Pretoria			
Contact Details	PRETORIA (ONDERSTEPOORT tor Veterinary Science) Faculty of Veterinary Science Private Bag X04 Onderstepoort 0110 Tel: 012 529 8201; Fax: 012 529 8313 Website: http://www.up.ac.za/en/faculty-of-veterinary-science/article/16379/contact-veterinary-science			
B.Sc. Zoology (majoring in Ichthyology)	Afrikaans or English: 4 (50% - 59%) An additional language: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) APS - 30	3 years	Nature reserves Environmental consultancies Conservation planning agencies Biochemical and biotechnology industries Medical and veterinary research Pest management Educational and research institutions The corporate sector DAFF	Zoologist
B.Sc. (majoring in Mathematics)	English: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 4 (50% - 59%) Life Orientation: 4 (50% - 59%) Life Science/Agricultural Science/ Geography: 4 (50% - 59%)	3 years	Mathematicians are in demand not only for the mathematical knowledge that they possess, but also for the logical approach which they have been trained to bring to diverse scientific and technical problems. They find employment in commerce and industry, research institutes and various government departments. Careers in, for example, the physical sciences, engineering, actuarial science, computer science and statistics are impossible without a sound preparation in mathematics.	Mathematician

AGRISETA CAREER GUIDANCE

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. (majoring in Mathematics)	English: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 4 (50% - 59%) Life Orientation: 4 (50% - 59%) Life Science/Agricultural Science/ Geography: 4 (50% - 59%)	3 years	The biological, social and economic sciences depend increasingly on mathematical model building, and those subjects will have an ever-increasing need of mathematical knowledge. Since there is a great shortage of trained mathematics teachers in South Africa, the prospects for teachers of mathematics at all levels are excellent.	Mathematician
B.Sc. (majoring in Statistics)	English: 4 (50% - 59%) An additional language: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) Life Orientation: 4 (50% - 59%) Life Science: 4 (50% - 59%) APS 30	3 years	Statisticians apply their knowledge to production, research, finance, medicine, the built and natural environments, insurance and government. They are often employed to support managerial decisions or to supervise quality control in manufacturing.	Statistician

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	University of Venda			
Contact Details	University Road, Thohoyandou, Limpopo, 0950 Tel: (015) 962 8000; Fax: (015) 962 4749; Website: www.univen.ac.za; Email: infor@univen.ac.za			
Bsc (Agric) Economics Agricultural	 To be admitted to any programme of study, an NSC applicant must have a minimum Admission Point Score (APS) of at least 26 (excluding Life Orientation) and an achievement rating of at least 3 (40%) in English. To be admitted to a Degree Programme, the applicant must have an NSC, with minimum achievement rating of at least 4 (50% or above) in four recognized NSC 20 credit subjects, with school and programme specific requirements. To be admitted to a Diploma Programme, an NSC, with a minimum achievement rating of at least (3) 40% in four recognized NSC 20 credit subjects, with school or programme specific requirements. To be admitted to the Higher Certificate, the applicant must have an NSC, with institutional subject requirements. 	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
Bachelor of Science in Agriculture (Agricultural and Rural Engineering Specialization) in Irrigation, Soil and Water Conservation and Management, Agricultural Structures, Farm Mechanization and Rural Industries, Crop Processing and Renewable Energy Technologies.	Matric with E in Mathematics, Physical Science and a pass in either Life Science or Agricultural Science while student registering for B.AGRIC degrees should have at least an F in Mathematics and a pass in either Life Science or Agricultural Science	4 years		Extension Services; Agronomist; Agricultural Economist; Farm Manager

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Bachelor of Science in Agriculture (Horticultural Specialization in Floriculture; Greenhouse management; Floriculture or Vegetable Crops: Ornamental Horticulture Nursery and Management and Fruit and Nut tree culture; Specialty crops such as herbs, spices and medicinal plants)	 To be admitted to any programme of study, an NSC applicant must have a minimum Admission Point Score (APS) of at least 26 (excluding Life Orientation) and an achievement rating of at least 3 (40%) in English. To be admitted to a Degree Programme, the applicant must have an NSC, with minimum achievement rating of at least 4 (50% or above) in four recognized NSC 20 credit subjects, with school and programme specific requirements. To be admitted to a Diploma Programme, an NSC, with a minimum achievement rating of at least (3) 40% in four recognized NSC 20 credit subjects, with school or programme specific requirements. To be admitted to the Higher Certificate, the applicant must have an NSC, with institutional subject requirements. 	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Horticultural crop production (fruits, vegetables, herbs, spices, ornamentals and flowers) Floristry – floral design and retail floristry operation Nursery Production – tree, shrubs and the vine culture and production Landscape Horticulture – exterior and interior design, construction and maintenance of landscapes including turf (grasses for lawns, landscapes and sport facilities) Maintenance and service industries – installation of landscape, postharvest handling, storage and public gardens Horticulture graduates are also needed as field supervisors, sales representatives, technical advisers in industries related to grower cooperatives, manufacture and distributors of agricultural chemicals

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
BSc Plant Production which covers all aspects of crop production including the agronomy of crops, physiology of crop plants, plant genetics and crop protection.	 To be admitted to any programme of study, an NSC applicant must have a minimum Admission Point Score (APS) of at least 26 (excluding Life Orientation) and an achievement rating of at least 3 (40%) in English. To be admitted to a Degree Programme, the applicant must have an NSC, with minimum achievement rating of at least 4 (50% or above) in four recognized NSC 20 credit subjects, with school and programme specific requirements. To be admitted to a Diploma Programme, an NSC, with a minimum achievement rating of at least (3) 40% in four recognized NSC 20 credit subjects, with school or programme specific requirements. To be admitted to the Higher Certificate, the applicant must have an NSC, with institutional subject requirements. 	4 years	ARC, DAFF, Universities, Agricultural Cooperatives, Seed Companies	Horticulturist
Bachelor of Science in Agriculture (Soil Science).			ARC, DAFF, Universities, Agricultural Cooperatives, Fertilizer Companies	Career opportunities such as research and training in private and public sector
B. AGRIC; B.Sc. (Agr); B.Sc. (FOR); and B.Sc. (FST)	Matric with E in Mathematics, Physical Science and a pass in either Life Science or Agricultural Science while student registering for B. AGRIC degrees should have at least an F in Mathematics and a pass in either Life Science or Agricultural Science	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	University of Limpopo			
Contact Details	Private Bag X1106, Sovenga, 0727 Tel: (015) 268 3332; Fax: (015) 268	3 2893; Webs	ite: www.ul.ac.za	
Bachelor of Science in Agriculture, with the following specialisation fields: Agricultural Economics, Animal Production, Agronomy, Pasture Science, Horticulture or Soil Science	Grade 12- University entrance with Mathematics; Physical Science; Life Sciences; and RPL	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Officer; Agricultural Economists; Agronomists; Soil Scientist; Farm Manager
B.Sc. Agriculture	Grade 12- University entrance with Mathematics; Physical Science; Life Sciences; and RPL	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Officer; Agricultural Economists; Agronomists; Soil Scientist; Farm Manager
B.Sc. Zoology (majoring in Ichthyology)	Afrikaans or English: 4 (50% - 59%) An additional language: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) APS - 30	3 years	Nature reserves Environmental consultancies Conservation planning agencies Biochemical and biotechnology industries Medical and veterinary research Pest management Educational and research institutions The corporate sector DAFF	Zoologist

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Hons in Aquaculture	B.Sc in any of the Biodiversity field	2 years	The DAFF, universities, provincial agriculture and environmental departments, aquatic product manufacturers and aquatic research organizations (not fully established)	Aquaculture specialist
B.Sc. (majoring in Mathematics)	English: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 4 (50% - 59%) Life Orientation: 4 (50% - 59%) Life Science/Agricultural Science/ Geography: 4 (50% - 59%)	3 years	Mathematicians are in demand not only for the mathematical knowledge that they possess, but also for the logical approach which they have been trained to bring to diverse scientific and technical problems. They find employment in commerce and industry, research institutes and various government departments. Careers in, for example, the physical sciences, engineering, actuarial science, computer science and statistics are impossible without a sound preparation in mathematics.	Mathematician

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. (majoring in Mathematics)	English: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 4 (50% - 59%) Life Orientation: 4 (50% - 59%) Life Science/Agricultural Science/ Geography: 4 (50% - 59%)	3 years	The biological, social and economic sciences depend increasingly on mathematical model building, and those subjects will have an ever-increasing need of mathematical knowledge. Since there is a great shortage of trained mathematics teachers in South Africa, the prospects for teachers of mathematics at all levels are excellent.	Mathematician
B.Sc.(majoring in Statistics)	English: 4 (50% - 59%) An additional language: 4 (50% - 59%) Mathematics: 5 (60% - 69%) Physical Science: 5 (60% - 69%) Life Orientation: 4 (50% - 59%) Life Science: 4 (50% - 59%) APS 30	3 years	Statisticians apply their knowledge to production, research, finance, medicine, the built and natural environments, insurance and government. They are often employed to support managerial decisions or to supervise quality control in manufacturing.	Statistician
Name of Institution	North West University			
Contact Details	Private Bag X 1290, Potchefstroom Tel: 018 229 4897; Website: www.			
Diploma (Agric Crop Science), Diploma (Animal Health) Diploma (Animal Science)	NSC with University admission	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Farm Manager

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. Agric (Animal Science) BSc. Agric (Agric Economics), B.Sc. Agric (Crop Science), B.Sc. (Land Management)	NSC with University admission	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager

Name of Institution	University of Mpumalanga			
Contact Details	Cnr R40 and D725 Roads, Mbombela 1200 Private Bag X 11289 Nelspruit 1200 Tel: 013 002 0001; Email: info@ump.ac.za www.ump.ac.za			
Bachelor of Science In Agriculture	National Senior Certificate (NSC) or IEB school leaving certificate as certified by Umalusi, or if Grade 12 was completed before 2008, a Grade 12 Certificate with University exemption, or a National Certificate (Vocational) level 4 (NCV level 4) issued by the Council for General and Further Education and Training.	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector; Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; self-employment	Extension Officer; Research Technician; Agriculture Product Inspector; Agriculture School Teacher; Farm Manager; Veterinarian
Bachelor of Agriculture in Agricultural Extension and Rural Resource Development	National Senior Certificate (NSC) or IEB school leaving certificate as certified by Umalusi, or if Grade 12 was completed before 2008, a Grade 12 Certificate with University exemption, or a National Certificate (Vocational) level 4 (NCV level 4) issued by the Council for General and Further Education and Training.	3 years	ARC, Govt (DAFF), Agricultural Cooperatives	Agricultural Extension Technician, Agricultural Research Technician

QUALIFICATIONS

Career Guide Information About Qualifications Offered by Universities of Technology Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
ND: Nature Conservation	Senior Certificate English: 4 (50% - 59%) Mathematics: 3 (40% - 49%) or Mathematics Literacy: 5 (60% - 69%) Life Science 4 (50% - 59%) Agricultural Science: 3 (40% - 49%)	3 years	Management of natural resources, Research, Environmental education, Ecotourism, Law enforcement and Alien plant control.	Nature conservationist
Advanced Diploma in Agriculture in Agricultural Extension	National Senior Certificate (NSC) or IEB school leaving certificate as certified by Umalusi, or if Grade 12 was completed before 2008, a Grade 12 Certificate with University exemption, or a National Certificate (Vocational) level 4 (NCV level 4) issued by the Council for General and Further Education and Training.	I year (Full-time) 2 year (Part-time)	ARC, Govt (DAFF), Agricultural Cooperatives	Agricultural Extension Technician, Agricultural Research Technician
Diploma in Agriculture in Plant Production	National Senior Certificate (NSC) or IEB school leaving certificate as certified by Umalusi, or if Grade 12 was completed before 2008, a Grade 12 Certificate with University exemption, or a National Certificate (Vocational) level 4 (NCV level 4) issued by the Council for General and Further Education and Training.	3 years	Seed Companies, Farms, Nurseries	Plant Pathology, Horticulturist
Name of Institution	University of Stellenbosch			
Contact Details	Private Bag XI, Matieland, 7602 Tel: 021 808 4792; Fax: 021 808 20	001; Website:	www.sun.ac.za/eng	lish
B.Sc. Agric	NSC with a pass of 4 subjects, 50% for Afrikaans or English 50% for Mathematics, 50% for Physical Science or 40% for Physical Science AND 50% for Life Sciences OR 70% for Agricultural Science	4 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager

QUALIFICATIONS

Career Guide Information About Qualifications Offered by Universities of Technology Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B. Agric Admin	NSC with a pass of 4 subjects, 50% for Afrikaans or English 50% for Mathematics, 50% for Physical Science or 40% for Physical Science AND 50% for Life Sciences OR 70% for Agricultural Science	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
Hons in Aquaculture	B.Sc in any of the Biodiversity field	2 years	• The DAFF, universities, provincial agriculture and environmental departments, aquatic product manufacturers and aquatic research organizations (not fully established)	Aquaculture specialist
B. Sc in Biological and Environmental Aquaculture / Aquatic Science	NSC with at least 35 points (APS) Mathematics Literacy: 6 (70 - 79%) OR Mathematics: 5 (60 - 69%) Physical Science: 5 (60 - 69%) English and additional language: 4 (50 - 59%)	3 years (full time) or I year post graduate degree	Fish Farms	Aquaculture Aquatic Scientist
Name of Institution	University of Cape Town			
Contact Details	University of Cape Town, Private E Tel: 021 650 9111 Website: www.uct.ac.za/contact/	Bag X3, Ronde	ebosch 7701, South /	Africa
B.Sc. Marine Science and Oceanography B.Sc. Marine Biology	National Senior Certificate Mathematics: 6 (70% - 79%) Physical Science: 5 (50% - 59)	4 years	Marine aquaculture farms Marine and coastal management Institute of Marine Technology Council for Scientific Research(CSIR)	Marine Biologist Oceonagrapher

QUALIFICATIONS

Career Guide Information About Qualifications Offered by Universities of Technology Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
B.Sc. Marine Botany (Hons)	B.Sc. Zoology (majoring in Ichthyology) OR B.Sc. Marine Biology OR B.Sc. Botany A 60% pass	I year	Marine Laboratories Universities Government agencies and fisheries Oil and gas prospectors Research organisations Consultancies Engineering companies Coastal management organisations	Marine botanist Specialisation: Zoology, Marine Biologist, Marine Scientist and Botany
Name of Institution	University of Western Cape			
Contact Details	Private Bag X17 Bellville 7535 Tel: 021 959 3901; Fax: 021 959 1 Website: www.uwc.ac.za	369; Email: a	dmissions@uwc.ac.za	1
B.Sc. Marine Science and Oceanography B.Sc. Marine Biology National Diploma Marine Science	National Senior Certificate Mathematics: 6 (70% - 79%) Physical Science: 5 (50% - 59)	4 years	Marine aquaculture farms Marine and coastal management Institute of Marine Technology Council for Scientific & Industrial Research(CSIR)	Marine Biologist Oceonagrapher

QUALIFICATIONS OFFERED AT UNIVERSITIES OF TECHNOLOGY

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Mangosuthu University of Technology	ogy		
Contact Details	Tel: (031) 819 9299; Website: www	w.mut.ac.za		
National Diploma: Agriculture and National Diploma: Agriculture (ECP)	Animal Production, an applicant must have senior certificate with passes in Agricultural Science or Life Science (4), English HG D; LG D, (Higher Grade/Lower Grade), Mathematics (3) or Mathematical Literacy (4) and Physical Science (3). A rating lower by one in any of these four key subjects above will make the applicant to be considered for the National Diploma: Agriculture (ECP) or Diploma: Agriculture: Animal Production (ECP).	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
National Diploma: Agriculture: Animal Production and Diploma: Agriculture: Animal Production (ECP)		4 years	ARC, Govt (DAFF), Agricultural Cooperatives	Extension Services; Farm Manager
National Diploma: Agriculture and National Diploma: Agriculture (ECP)	Animal Production, an applicant must have senior certificate with passes in Agricultural Science or Life Science (4), English HG D; LG D, (Higher Grade/Lower Grade), Mathematics (3) or Mathematical Literacy (4) and Physical Science (3). A rating lower by one in any of these four key subjects above will make the applicant to be considered for the National Diploma: Agriculture (ECP) or Diploma: Agriculture: Animal Production (ECP).	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager
National Diploma: Agriculture: Animal Production and Diploma: Agriculture: Animal Production (ECP)		4 years		

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Durban University of Technology			
Contact Details	PO Box 1334, Durban 4000 Tel: 031 373 5124; Website: www	.cao.ac.za / w	ww.dut.ac.za	
National Diploma: Horticulture	English Maths Or Maths Literacy Life Sciences Or Physical Science NSC rating 4 Senior Certificate or Equivalent Qualification	Diploma 3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Green Houses, Nurseries; Garden Centres; Golf Courses; Municipal Parks Departments; Government Departments; Orchards; Floral Design Shops Grounds; maintenance; operations; Vegetable and Fruit growers or Self Employment; Researcher; Grounds Superintendent or Green Keeper

	Name of Institution	Tshwane University of Technology				
eng	Contact Details	Private Bag X680, Pretoria, 0001 Tel (012) 382 5911; Fax: (012) 382 5114 Website: www.tut.ac.za; Email: general@tut.ac.za				
Gauteng	National Diploma: Agriculture: Animal Production	A Senior Certificate or an equivalent qualification, with at least E symbols at the Higher Grade or D symbols at the Standard Grade for English and Mathematics OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy.	3 years	ARC, Govt (DAFF), Agricultural Cooperatives	Extension Services; Farm Manager	

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
National Diploma: Agriculture: Animal Production (Extended curriculum programme with foundation provision)	A Senior Certificate or an equivalent qualification, with at least E symbols at the Higher Grade or C symbols at the Standard Grade for English, Mathematics and Physical Science or Biology or Physiology OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics and 3 for Physical Sciences.	4 years	ARC, Govt (DAFF), Agricultural Cooperatives	Farm Manager; Extension Services
National Diploma: Equine Science	A Senior Certificate or an equivalent qualification, with at least E symbols at the Higher Grade or D symbols at the Standard Grade for English and Mathematics OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy.	3 years	Equine Services; SA; ARC, Government	Extension Services; Veterinarian; Animal Breeder; Farm Manager
National Diploma: Agriculture: Commercial Mixed Farming	A Senior Certificate or an equivalent qualification with E symbols at the Higher Grade or D Symbols at the Standard Grade for English and Mathematics OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy.	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Farm Manager

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
National Diploma: Agriculture: Crop Production	A Senior Certificate or an equivalent qualification with E symbols at the Higher Grade or D Symbols at the Standard Grade for English and Mathematics OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy.	3 years	SASRI, ARC, Govt (DAFF), Cane Growers	Crop Modeller; Agronomist; Plant Breeder; Soil Scientist
National Diploma: Agriculture: Development And Extension	A Senior Certificate or an equivalent qualification with E symbols at the Higher Grade or D Symbols at the Standard Grade for English and Mathematics OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement Level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy.	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Extension Services; Agronomist; Agricultural Economist; Farm Manager

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
National Diploma: Horticulture	A Senior Certificate or an equivalent qualification with E symbols at the Higher Grade or D symbols at the Standard Grade for English, Mathematics, Physical Science or Biology OR A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy and 3 for Life Sciences or 3 for Physical Sciences.	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Opportunities exist as horticulturists at municipalities (local government), industrial plant growers, garden centres, retail nurseries and wholesale nurseries. Horticulturists could also work at landscape companies as maintenance managers, site managers or as grounds superintendents. Opportunities also exist in the research field as researchers (developing new cultivars or solving problems) and in the academic world of teaching, learning and education.

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
National Diploma: Landscape Technology	A Senior Certificate or an equivalent qualification with E symbols at the Higher Grade or D symbols at the Standard Grade for English, Mathematics, Physical Science or Biology OR a National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language) and 3 for Mathematics or 4 for Mathematical Literacy and 3 for Life Sciences or 3 for Physical Sciences.	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector	Those who obtain a qualification in landscape technology could find themselves working as consultants, designers and/ or contractors. Qualified students could also find a career as site managers or landscape maintenance managers. Opportunities also exist in the research field as researchers as well as in the academic world of teaching, learning and education.
ND: Nature Conservation	Senior Certificate English: 4 (50% - 59%) Mathematics: 3 (40% - 49%) or Mathematics Literacy: 5 (60% - 69%) Life Science 4 (50% - 59%) Agricultural Science: 3 (40% - 49%)	3 years	Management of natural resources, Research, Environmental education, Ecotourism, Law enforcement and Alien plant control.	Nature conservationist

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Cape Peninsula University of Tech	nology		
Contact Details	Tel: 021 959 6767; Email: info@cp	ut.ac.za / mes	ssiaht@cput.ac.za	
BTech: Marine Science	Senior Certificate Life Science: 4 (50% - 59%) Mathematics: 4 (50% - 59%) OR Mathematics Literacy: 5 (60% - 69%) Additional two subjects 4 (50% - 59%)	4 years	 National and local agencies, such as Marine and Coastal Management, South African National Parks and the Water Research Commission (WRC), employ ichthyologists in research and administrative positions. The responsibilities of these agencies include the management and development of commercial and sport fishing regulations, regulating the use of coastal and wetland areas for recreation, the identification of commercial adult and larval fish populations, and the protection of endangered or threatened species. University and school teaching and research Museum curatorship and/or collection management Public aquaria and the aquarium hobby Conservation biology Fish and shellfish farms 	Fisheries Resource Management

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
ND: Nature Conservation	Senior Certificate English: 4 (50% - 59%) Mathematics: 3 (40% - 49%) or Mathematics Literacy: 5 (60% - 69%) Life Science 4 (50% - 59%) Agricultural Science: 3 (40% - 49%)	3 years	Management of natural resources, Research, Environmental education, Ecotourism, Law enforcement and Alien plant control.	Nature conservationist
B.Sc. Marine Science and Oceanography B.Sc. Marine Biology National Diploma Marine Science	National Senior Certificate Mathematics: 6 (70% - 79%) Physical Science: 5 (50% - 59)	4 years	Marine aquaculture farms Marine and coastal management Institute of Marine Technology Council for Scientific Research(CSIR)	Marine Biologist Oceonagrapher



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QUALIFICATIONS OFFERED AT TVET COLLEGES & COLLEGES OF AGRIC

QUALIFICATIONS (CONTINUED)

Career Guide Information About Qualifications Offered by Agricultural Colleges Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Tompi Seleka College of Agricultur	^e		
Contact Details	Private Bag X9619, Marble Hall, 04 Tel: 013 268 9300; Fax: 013 268 9			
Diploma Agriculture: Animal Production & Plant Production Learnership: Mixed Production I-2; Animal Production I-2; Plant Production I-2	Senior Certificate	3 years including 6 month experiential learning	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self employment	Extension Officer; Research Technician; Agriculture Product Inspector; Agriculture School Teacher; Farm Manager; Veterinarian
Name of Institution	Madzivhandila College of Agricultu	ro		
Contact Details	Private Bag X 524, Thohoyandou, Tel: 015 962 7200; Fax: 015 962 1	0950		
Diploma Agriculture: Animal Production & Plant Production; Learnership: Mixed Production I-2; Animal Production I-2; Plant Production I-2	Senior Certificate	3 years including 6 month experiential learning	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations Institutions; Technician; Vegetable and Fruit growers	Extension Officer; Research Technician; Agriculture Product Inspector; Agriculture School Teacher;

QUALIFICATIONS

Career Guide Information About Qualifications Offered by Agricultural Colleges Nationally

	List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job		
	Name of Institution	Cedara College of Agriculture	Cedara College of Agriculture				
latal	Contact Details	ls Private Bag X 6008, Hilton, 3245, Pietermaritzburg Tel: 033 355 9304; Fax: 033 355 9303					
KwaZulu-Natal	B Agriculture (Agricultural Extension and Rural Resources Management); Learnerships on Plant Production I - 4; Animal Production I - 4; Diploma: Agriculture; Higher Certificate in Agriculture	Senior Certificate	3 years for Degree & Diploma 8 months for Learner- ships I year for Certificate	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer; Research Technician Agriculture Product Inspector; Agriculture School Teacher; Farm Manager; Veterinarian		

Name of Institution	Owen Sithole Agricultural College			
Contact Details	Private Bag X20013, Empangeni 3880 Tel: 035 195 1345; Fax: 035 795 1379			
Learnerships on Plant Production 1-4; Animal Production 1-4; Diploma: Agriculture; Higher Certificate in Agriculture	Senior Certificate	3 years for diploma; 8 months for Learner- ships; I year for Certificate	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer; Research Technician; Agriculture Product Inspector; Technician; Agriculture School Teacher; Farm Manager; Veterinarian

QUALIFICATIONS (CONTINUED)

Career Guide Information About Qualifications Offered by Agricultural Colleges Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job	
Name of Institution	Tsolo College of Agriculture				
Contact Details		Tsolo Campus College Drive, Tsolo, 5170 Tel: 047 5420107/9; Fax: 0475420225; Website: www.tardi.ac.za			
Animal Production Diploma in Agric Crop Production and Agricultural Education	Senior Certificate	3 years	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self employment	Extension Officer; Research Technician; Agriculture Product Inspector; Irrigation Technician; Agriculture School Teacher; Farm Manager; Veterinarian	
Diploma in Animal Health	Maths HG Level 4 English HG Level 4 Physics or Agriculture HG Level 3	3 years	Government (e.g. DAFF, ARC); Academic Institutions;	Animal Health Technician; Agricultural Inspector	
Name of Institution	Fort Cox College of Agriculture an	d Forestry			
Contact Details	PO Box 2187, King Williams Town Tel: 040 653 8033; Fax: 040 653 80 Email:admissions@fortcox.ac.za	, 5600	www.fortcox.ac.za;		
Learnership: Animal Production I	Grade 9	8 months for learner- ships	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer; Research Technician; Agriculture Product Inspector; Irrigation Technician; Agriculture School Teacher; Farm Manager; Veterinarian	

QUALIFICATIONS (CONTINUED)
Career Guide Information About Qualifications Offered by Agricultural Colleges Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Grootfontein Agricultural Develop			
Contact Details	Private Bag X529, Middleburg, Eastern Cape, 5900 Tel: (049) 802 6600 / 842 1113; Fax: (049) 842 4352; Website: www.gadi.agric.za			v.gadi.agric.za
Higher Certificate: Agriculture; Small Stock; Animal Breeding; Animal nutrition & Animal Health; Veld Management; Soil Science; Agricultural Technical Services	National Senior Certificate or equivalent with a 50% marks in English or Afrikaans	3 year prog- ramme leading into a Diploma	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer; Research Technician; Agriculture Product Inspector; Irrigation Technician; Agriculture School Teacher; Farm Manager; Veterinarian

	Name of Institution	Cape Institute for Agricultural Training (Elsenburg)			
Contact Details PO Box 54, Elsenburg, 7607 Tel: 021 808 5450; Fax: 021 8844313; Website: www.elsen			www.elsenburg.com		
Western C	Learnerships: Animal production I-4; Plant Production I-4; Agricultural Machinery Technician 2; Farmer Support and Development; Agricultural Economics; Veterinary services	National Senior Certificate for Diploma	8 months for Learner- ships 3 years for Diploma	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer Research Technician; Agriculture Product Inspector, Irrigation Technician; Agriculture School Teacher; Farm Manager; Veterinarian

QUALIFICATIONS (CONTINUED)

Career Guide Information About Qualifications Offered by Agricultural Colleges Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job	
Name of Institution	Glen College of Agriculture				
Contact Details	Private Bag X 01, Glen, 9360 Tel: 051 861 1012; Fax: 051 861 1	122			Ŧ
Learnership: Animal Production I-4; Mixed Farming I-2; Plant Production I-4; Poultry processing 2-3; Land Care Facilitation 5; Fruit Packaging 3; Farming 4	National Senior Certificate; RPL	8 months for Learner- ships 3 years for Diploma	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer; Research Technician; Agriculture Product Inspector; Irrigation Technician; Agriculture School Teacher; Farm Manager; Veterinarian	Free State
Name of Institution	Potchefstroom College of Agricultu	ıre			
Contact Details	Private Bag X 804, Potchefstroom, Tel: 018 299 6556; Fax: 018 297 00 Email: Ithovhakale@nwpg.gov.za		www.potchagricolle	ege.co.za;	North
National Diploma in Agriculture: Mixed Farming NQF 6	Grade 12, Pass in Afrikaans and English	3 years for Diploma	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, and others); Private Sector	Extension Officer; Research Technician; Agriculture Product Inspector; Irrigation Technician; Agriculture School Teacher; Farm Manager;	n West
Specialized Short Courses (Greenhouse Management, Livestock Judging and Selection, Irrigation) Skills Programmes (Fruit Production,	NSC or Senior Certificate			Irrigation Technician	
Vegetable Production, Artificial Insemination, Poultry Production, Cattle Processing, Pig Production,)					

QUALIFICATIONS (CONTINUED)
Career Guide Information About Qualifications Offered by Agricultural Colleges Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Taung Agricultural College			
Contact Details	Private Bag X 532, Taung, 8594 Tel: 053 994 9800; Fax: 053 994 I	l 30; Website:	www.taungagricolle	ege.co.za
Qualifications in Agriculture. E.g. Veld Management; Agricultural Economics; Soil Science, and others	Grade 12 with Mathematics (E), English (E), Life Science (E) and /or Agricultural Science (E) and Physical Science (E) or an equivalent qualification to Grade 12 certificate. RPL	Minimum 3 years studying towards a diploma	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, Illovo, Hulett, Citrus Growers and others); Private Sector; Green House; Nurseries; Garden Centres; Vegetable and Fruit growers; Self-employment	Extension Officer Research Technician; Agriculture Product Inspector, Irrigation Technician; Agriculture School Teacher; Farm Manager; Agricultural Economist
Diploma in Agriculture in Irrigation		3 years		Irrigation Technician



QUALIFICATIONS (CONTINUED)

Career Guide Information About Qualifications Offered by Tertiary Institutions Nationally

List of Qualifications Offered	Minimum Requirements	Duration	Potential Employer(s)	Type of Job
Name of Institution	Central University of Technology			
Contact Details	Private Bag X20539, BLOEMFON + 27 (0)51 507 3911; www.cut.ac.z			
Advanced Diploma in Agricultural Extension	A National Diploma in Agricultural Management or an applicable three-year national diploma (classified by SAQA as an M+3 qualification) in Agriculture.	I year	Government (e.g. DAFF, DSD, DRDLR, ARC); Academic Institutions; Commodity organisations (e.g. SASA, Cane Growers, and others); Private Sector	Agricultural Advisors, Consultants, growers, Farm Managers, Researchers, Technicians.
National Diploma: Agricultural Management	National Senior Certificate or 3 year equivalent qualification. A pass mark in Agricultural Science is recommended. NSC: a minimum mark of 40% in either Agricultural Sciences or Life Sciences, as well as a minimum mark of 50% in Mathematics, Mathematical Literacy, Economics, Accounting, Geography or Physical Science.	3 years		Farming as owner or manager; agricultural agents in stock-feed, machinery and agrochemical companies; or agricultural insurance, financing and other related fields, agricultural research institutes, as well as active engagement with consultation and advisory services with the government, international companies and private agencies; urban development and resource management; land and resource management; and business opportunities in other commercial fields.

ARTISAN DEVELOPMENT

Artisan Development within the Agricultural Sector

7 Step Programme to becoming a qualified artisan in South Africa

- 1. Career Guidance
- 2. Knowledge Component & Learner Agreement
- 3. Learner Agreement
- 4. Practical Component
- 5. Workplace Component
- 6. Trade Testing Development
- 7. Quality Assurance and Certification

Artisan Phase I	Artisan Phase 2	Artisan Section 13	Maintenance Worker Hand Skills B2	Maintenance Worker Certified B5
 Fitter and Turner Electrician Millwright Boilermaker Instrument Vehicle Mechanic 	 Fitter and Turner Electrician Millwright Boilermaker Instrument Vehicle Mechanic 	 Fitter and Turner Electrician Millwright Boilermaker Instrument Vehicle Mechanic Artisan Hand Tool Identification B I Fitter and Turner Electrician Millwright Boilermaker Instrument Vehicle Mechanic 	 Fitter and Turner Electrician Millwright Boilermaker Instrument Vehicle Mechanic 	 Fitter and Turner Electrician Millwright Boilermaker Instrument Vehicle Mechanic

LIST OF COMMODITY ORGANISATIONS

Agronomy

Cotton SA

PO Box 912232 Silverton

0127

Tel: (012) 804 1462

Dry Bean Producers' Organisation (DPO)

PO Box 26269

Arcadia

0007

Tel: (012) 325 1850

Forestry South Africa (FSA)

PO Box 32

Melmoth

3835

Tel: (035) 450 2942

Grain SA (GSA)

PO Box 88

Bothaville

9660

Tel: (056) 515 2145

South African Cotton Producers' Organisation (SACPO)

PO Box 505

Musina

0900

Tel: (015) 533 3016/7

South African Sugar Association (SASA)

PO Box 700

Mount Edgecombe

4300

Tel: (031) 508 7003

South African Cane Growers' Association (CANEGROWERS)

PO Box 700

Mount Edgecombe

4300

Tel: (031) 508 7200

Animal Husbandry

Careers within the Milk Industry

Milk Industry

- · Dairy farm assistant
- Dairy farm supervisor
- · Dairy herd manager
- Dairy farm manager
- · Artificial insemination technician
- Milk harvesting technician
- Animal nutritionist
- Animal geneticist
- Veterinarian
- Animal health technician
- Dairy scientist
- · Breeding adjudicator
- Milking machine operator

Milk Producers' Organisation (MPO)

PO Box 1284

Pretoria

0001

Tel: (012) 843 5600

National Emergent Red Meat Producers' Organisation (Nerpo)

PO Box 36461

Menlo Park

0102

Tel: (012) 361 9127

National Wool Growers' Association

PO Box 34291 Newton Park Port Elizabeth

6055

Tel: 041 365 5030

Red Meat Producers' Organisation (RPO)

PO Box 35400 Menlo Park 0102

Tel: (012) 348 1933

South African Meat Industry Company (SAMIC)

PO Box 36802 Menlo Park 0102

Tel: (012) 361 4545

South African Mohair Growers' Association

PO Box 50 Jansenville 6265

Tel: 049 836 0140

South African Ostrich Business Chamber

PO Box 952 Oudtshoorn 6620

Tel: (044) 272 3336

South African Pork Producers' Organisation (SAPPO)

PO Box 36207 Menlo Park 0102

Tel: (012) 361 3920

South African Poultry Association (SAPA)

PO Box 1202 Honeydew 2040

Tel: (012) 795 2051

Wildliferanching SA

PO Box 23073 Gezina 003 I

Tel: (012) 335 6994

Horticulture

Career	Opportunities
Horticulture	Biological and technical aspects of plant and fruit production, with specific emphasis on deciduous fruit and indigenous flora.
	Technical Advisor for fruit producers; fruit and agrichemical firms; packing house organisations; Researcher with research or training institutes and universities.
Entomology	The study of insects and Nematodes Morphology, Physiology, Taxonomy, Ecology, Pest management Nematologists offer an important service as pest management in the cultivation of crops such as fruit, vines, grains, vegetables and plantation trees.
Research and Technical	Agricultural development: promotion to managerial positions.
Plant	The study of plant diseases, especially those caused by fungi, bacteria and viruses.
Pathology	Plant pathologists is the doctor of the plant world, diagnosing diseases and developing solutions.
	MYCOLOGY AND PHOTO BACTERIOLOGY: Morphology, Molecular characterization, identification and biology of plant pathogens.
	PLANT PATHOLGOCIAL ECOLOGY: The life pattern and interaction of various organisms on plant surfaces.
	INTERGRATED DISEASE CONTROL: Genetic manipulation of organisms, use of biological, chemicals and cultural methods to manage plant disease.
	PHYSIOLOGICAL PLANT PATHOLOGY: The infection process where the actions of plant pathogens and the reaction of the host are covered.
	EXPERIMENTAL PLANT PATHOLOGY: Practical and field experience in various areas of plant pathology.
Micro Biology	Micro-organisms - omnipresent and invisible, but indispensable for life on earth. Regulation of gene expressions, yeasts biotechnology, microbial eco- biotechnology, food microbiology.
Soil / Water Science	PEDOLOGY: Identification an study of environmental and soil-forming factors characterization of soil features and ecosystems, development and qualifications of soil suitability, and
	SOIL PHYSICS: Protection and improvement of the structure and water retention of soil, water requirements of plants and irrigation management, prevention of salinisation and pollution of soil and water resources.
	SOIL CHEMISTRY AND PLANT NUTRITION: Necessity and functions of plant nutrients. Optimum plant nutrition, improvement and sustainability of fertilization practices. Soil biological balances and organic material.

Career	Opportunities
Agricultural Economics	The study of natural resources, agribusiness, the processing and marketing of agricultural products as well as analyzing international agricultural markets.
	PRODUCT ECONOMICS: How most economic combination of resources fit in with the objectives and budget of the manager.
	PRODUCTION MANAGEMENT: What must be produced, how much and by what means, where, how and when should it be marketed, income tax legislation, agriculture financing and credit, labour use and organisation, economic features of specific farming systems, interest groups in the agricultural sector.
	AGRICULTURAL MARKETING, PRICE ANALYSIS AND MARKETING MANAGEMENT: Consumer principles, supply and demand, agricultural prices, marketing problems such as surpluses, shortages, input costs, unstable prices, institutions involved in agricultural marketing.
	Control boards, co-operatives, agents and speculators, marketing management and marketing strategies in agriculture.
	AGRICULTURE POLICIES: Values and objectives of role players.
Biochemistry	Within the agricultural sector, the impact of policy on agriculture, the use of tools such as deregulation, trade and policy, land reform, etc.
	RESOURCE ECONOMICS: The demand for the use of resources, the role of technology, resources conservation, resource use over space and time, resource use policies, land and water issues, cost benefit analysis, environmental impact analysis.
Genetics	Can be studied at all levels of vilogy including organisms and molecular level
	PLANT GENETICS: Aim to improve economically important plants and food security. A combination of breeding and bio-technology are used to increase disease resistance in crops and grapevines, DNA cloning and manipulation cloning and characterization of genes, which code for commercially important products.

Career	Opportunities	Field Of Study
Marine Biology and Oceanography	This is the study of the ocean and life within it. The field of marine biology is often referred to as oceanography. Oceanography is an interdisciplinary science that uses insights from biology, chemistry, geology, meteorology, and physics to analyse ocean currents, marine ecosystems, ocean storms, waves, ocean plate tectonics, and features of the ocean floor, including exotic biomes such as cold seeps and hydrothermal vents. When describing their work, marine scientists talk about three different fields of study, namely physical, chemical and biological oceanography. Physical oceanography is the study of the physical properties of seawater and the forces that move it. Ship-based measurements, satellite imagery and automatic monitoring instruments are all used to measure ocean and coastal currents, waves, tides, temperature and salt content (salinity). Marine scientists who specialise in the field of physical oceanography also study the interaction between the sea and the atmosphere in an effort to demonstrate how the ocean influences weather and climate. Chemical oceanography is concerned with the composition of seawater and the effect of chemicals on the marine environment. Marine scientists who specialise in this field measure, among other things, trace elements, oxygen, major nutrients such as nitrates and phosphates and dissolved organic and inorganic carbon. Marine pollution poses a challenge for marine scientists who may be involved with monitoring the effect that pollution has on the marine environment. Biological oceanography is a field of study that seeks to understand what controls the distribution and abundance of different types of marine life, and how living organisms influence and interact with processes in the oceans. Biological oceanographers examine all forms of life in the oceans, from microscopic plants and animals to fish and whales. In addition, biological oceanographers examine all forms of oceanic processes that involve living organisms. These include processes that occur at molecular	
	marine productivity.	
Ichthyology and Fisheries Science	An ichthyologist or a fisheries scientist is a person who devotes a career to studying and managing the fishery resources, which may involve shellfish or aquatic mammals as well as fish. Ichthyologists are involved in work all over the world.	

Career	Opportunities	Field Of Study
Zoology	In its broadest sense, zoology is the study of animals, and a zoologist is a scientist who studies animals and their environment or habitats. Animals, in this context, are any living organisms that are not plants, fungi, viruses or bacteria (the study of these organisms is the realm of botanists and microbiologists). Animals include creatures like the marine sponges (which don't look much like animals), jellyfish, worms, rock lobsters, snails, insects, fishes, frogs, birds and mammals.	The field of zoology has many different disciplines such as cell biology, physiology, marine biology, behaviour, and ecology, to name but a few. Zoologists can also study animals at the level of the cell, organ systems, whole animals, animal communities or whole ecosystems.

Career	Opportunities	Field Of Study
Marine Botany	As an expert in the field of marine botany (the study of plants that live the sea), your major role is to provide your team with the botanical information they need to compete the task. You will be called upon to document your research in your in a journal and present your findings as part of the team's oral presentation.	It is a specialisation course that consists of zoology, marine biology, marine science and botany.
Aquaculture	Aquaculture is the farming of aquatic (freshwater and marine) organisms including fish, molluscs, crustaceans and plants in a controlled or selected aquatic environments, with some form of interventions such as regular stocking, feeding and protection from predators in the rearing process to enhance production, such as regular stocking, feeding, protection from predators etc.	
Nature Conservation	Conservation is an ethic of resource use, allocation and protection. Its primary focus is upon maintaining the health of the natural world: its fisheries, habitats, and biological diversity.	Graduates are equipped with a comprehensive range of technical, managerial, research, communication and life skills for employment in the field of nature conservation
Statistics	A statistician is someone who works with theoretical or applied statistics. The profession exists in both the private and public sectors. The core of that work is to measure, interpret, and describe the world and human activity patterns within it. The field shares much common history with positivist social science, but often with a greater emphasis on advanced mathematical methods.	
Mathematics	This is the science that is concerned with structure and relationships. In "structure" and "relationship" we do not think only of geometric structures and relationships, but also of logical (deductive) structures and relationships between abstract concepts. The mathematician solves problems by means of logical deductions made from abstract models of concrete cases. In most scientific disciplines, knowledge of mathematics is essential, since the scientist translates a practical problem into mathematics and solves it according to mathematical rules and systems.	Pure mathematics concerns abstractions and their methods in order to achieve better insight, while applied mathematics involves the use of these methods for solving specific problems.
Analytical Chemistry	The structure and behaviour of atoms (elements) The composition and properties of compounds The reactions between substances with their accompanying energy exchange The laws that unite these phenomena into a comprehensive system	

Banana Growers' Association of South Africa

Private Bag X11208

Nelspruit 1200

Tel: (013) 755 2714

Canned Fruit Producers' Association

PO Box 426

Paarl 7620

Tel: (021) 872 1501

Citrus Growers' Association of South Africa (CGA)

PO Box 461

Hillcrest

Tel: (031) 765 2514

Citrus Research International (Pty) Ltd (CRI)

PO Box 28

Nelspruit

1200

Tel: (013) 759 8000

Cooperative Wine Cellars' Association

(Vinpro)

Posbus 1411

Suider-Paarl

7624

Tel: (021) 807 3324

Deciduous Fruit Producers' Trust (DFPT)

PO Box 163

Paarl

7620

Tel: (021) 870 2900

Dried Fruit Technical Services

PO Box 163

Paarl

7620

Tel: (02 I 870 2925

Hluhluwe Pineapple Marketing Association

PO Box 332

Hluhluwe

3060

Tel: (035) 792 8425

Onion Producers' Organisation

PO Box 341

Murraysburg

7310

Tel: (049) 844 9622

South African Nurserymen's Association (SANA)

PO Box 514

Halfway House

1685

Tel: (011) 464 1098

South African Subtropical Fruit

Growers' Association

PO Box 866

Tzaneen

0850

Tel: (015) 307 3676

Tomato Producers' Organisation (TPO)

PO Box 19

Mooketsi

0825

Tel: (015) 395 8212

Potatoes South Africa (PSA)

Private Bag X135

Pretoria

0001

Tel: (012) 349 1906

LIST OF TVET'S & COLLEGES OF AGRICULTURE

KWAZULU-NATAL

Cedara College of Agriculture

Private Bag X6008

Hilton 3245

Tel: (033) 355 9304 Fax: (033) 355 9303

Email: college@dae.kzntl.gov.za Website: www.agriculture.kzntl.

gov.za

Owen Sithole Agricultural College

Private Bag X 20013

Empangeni 3880

Tel: (035) 795 1345 Fax: (035) 795 2379

Website: www.agriculture.kzntl.

gov.za

NORTH-WEST

Taung Agricultural College

Private Bag X532

Taung 8594

Tel: (053) 994 9800 Fax: (053) 994 1130

Email:pchabeli@nwpg.gov.za Website: www.taungagricollege.

co.za

Potchefstroom College of Agricultural

Private Bag X804 Potchefstroom 2520 Tel: (018) 299 6556

Fax: (018) 297 0023 / 018 - 293

3925

Email: oplpwn@potch1.agric.za Website: www.potchagricollege.

co.za

FREE STATE

Glen Agricultural College

Private Bag X01

Glen

Tel: (051) 861 1012 Fax: (051) 861 1122 Email:taole@fs.agric.za

WESTERN CAPE

Cape Institute for Agricultural Training

Private Bag x54 Elsenburg

7607

Tel: (021) 808 5450 Fax: (021) 884 4313 / 19 Website: www.elsenburg.com

EASTERN CAPE

Fort Cox College of Agriculture

PO Box 2187

King Williams Town

5600

Tel: (040) 653 8033 /34/35/ 55

Tel: (040) 653 8036 /38 Website: www.fortcox.ac.za

Tsolo Agricultural College

Private Bag X 1008

Tsolo 4771

Tell: (047) 542 0220/I Fax: (047) 542 6285 Website: www.tardi.ac.za

Grootfontein Agricultural Development Institute

Private Bag X529 Middleburg

5900

Tel: (049) 842 1113 Fax: (049) 842 2769 Email:DGADI@daff.gov.za Website: www.gardi.agric.za

LIMPOPO

Madzivhandila College of Agriculture

Private Bag X5024 Thohoyandou

0950

Tel: (015) 962 7200 Fax: (015) 962 1320

Tompi Seleka College of Agriculture

Private Bag X9619 Marble Hall

0450

Tel: (013) 268 9300/01

Fax: (013) 268 935

Email:mudauks@gmail.com

LIST OF SECTOR EDUCATION AND TRAINING AUTHORITIES (SETA's)

Name of Institution	Postal Address	Contact Details
AGRISETA Agriculture Sector Education and Training Authority	PO Box 26024 ARCADIA 0007	Tel: (012) 301 5600 Fax: (012) 325 1677 info@agriseta.co.za www.agriseta.co.za
BANKSETA Banking Sector Education and Training Authority	PO Box 11678 VORNA VALLEY 1686	Tel: (011) 805 9661 Fax: (011) 805 8348 www.bankseta.org.za
CATHSSETA Culture, Arts, Tourism, Hospitality and Sports Sector Education and Training	PO Box 1329 RIVONIA 2128	Tel: (011) 217 0600 Fax: (011) 783 7745 Call Centre: 086 010 0221 info@cathsseta.org.za www.cathsseta.org.za
CETA Construction Education and Training Authority	PO Box 1955 HALFWAY HOUSE 1685	Tel: (011) 265 5900 Fax: (011) 265 5924 eFax: 086 575 2496 www.ceta.org.za
CHIETA Chemical Industries Education and Training Authority	PO Box 961 AUCKLAND PARK 2006	Tel: (011) 628 7000 Fax: (011) 726 777 headoffice@chieta.org.za frichard@chieta.org.za www.chieta.org.za
EWSETA Energy and Water Sector Education and Training Authority	PO Box 5983 JOHANNESBURG 2000	Tel: (011) 274 4700 Fax: (011) 484 1078 086 657 8006 info@eseta.org.za www.eseta.org.za
ETDP Education, Training and Development Practices Sector Education and Training Authority	Private Bag X105 MELVILLE 2109	Tel: (011) 372 3300 Fax: (011) 453 5379 info@wetdpseta.org.za enquiries@etdpseta.org.za www.etdpseta.org.za
FASSET Financial and Accounting Services Sector Education and Training Authority	PO Box 6801 CRESTA 2118	Tel: (011) 476 8570 Fax: (011) 476 5756 Call Centre: 086 101 0001 fasset@fasset.org.za www.fasset.org.za

Name of Institution	Postal Address	Contact Details
FP&MSETA Fibre Processing Manufacturing Sector Education and Training Authority	PO Box 31276 BRAAMFONTEIN 2017	Tel: (011) 403 1700 Fax: (011) 403 1718 www.fpmseta.org.za
FOODBEV Food and Beverages Manufacturing Industry Sector Education and Training Authority	PO Box 245 GALLO MANOR 2052	Tel: (011) 253 7300 Fax: (011) 253 7333 eFax: 086 618 6926 info@foodbev.co.za www.foodbev.co.za
HWSETA Health and Welfare Sector Education and Training Authority	Private Bag X15 Bradford Corner GARDEN VIEW 2047	Tel: (011) 607 6900 Fax: (011) 616 8939 FAX: 086 618 6926 Call Centre: 080 086 4478 hwseta@hwseta.org.za www.hwseta.org.za
INSETA Insurance Sector Education and Training Authority	PO Box 32035 BRAAMFONTEIN 2017	Tel: (011) 544 2000/3 Fax: (011) 484 0862 Call Centre: 086 113 0013 insetacallcallcentre@inseta.org.za www.inseta.org.za
LGSETA Local Government Sector Education and Training Authority	PO Box 1964 BEDFORDVIEW 2008	Tel: (011) 456 8579 Fax: (011) 450 4948 www.lgseta.co.za
MERSETA Manufacturing, Engineering and Related Services Sector Education and Training Authority	PO Box 61826 MARSHALTOWN 2107	Tel: (010) 219 3000 Fax: (011) 484 5499 info@merseta.org.za www.merseta.org.za
MICT Media, Information and Communication Technologies Sector Education and Training Authority	PO Box 5585 HALFWAY HOUSE 1685	Tel: (011) 207 2600 Fax: (011) 805 6833 www.mict.org.za
MQA Mining Qualifications Authority	Private Bag X118 MARSHALLTOWN 2107	Tel: (011) 630 3500 Fax: (011) 832 1044 www.mqa.org.za
PSETA Public Service Sector Education and Training Authority	PO Box 11303 HATFIELD 0028	Tel: (012) 423 5700/ 5736 Fax: 086 767 5670 eFax: 086 660 6044 Tel: 012 423 5717 www.pseta.gov.za
SASSETA Safety and Security Sector Education & Training Authority	PO Box 7612 HALFWAY HOUSE 1685	Tel: (011) 347 0200 Fax: (011) 205 0046 Call Centre: 086 110 2477 callcentre@sasset.org.za www.sasseta.org.za
SERVICES SETA Services Sector Education and Training Authority	PO Box 3322 HOUGHTON 2041	Tel: (011) 276 9600 Fax: (011) 276 9623 customercare@serviceseta.org.za www.serviceseta.org.za

Name of Institution	Postal Address	Contact Details
TETA Transport Education and Training Authority	Private Bag X10016 RANDBURG 2125	Help desk:(011) 038 9155 Tel: (011) 781 1280 Fax: (011) 886 2502 coms@teta.org.za www.teta.org.za
W&RSETA Wholesale and Retail Sector Education and Training Authority	PO Box 9809 CENTURION 0046	Tel: (012) 622 9500 eFax: 086 506 7014 Call Centre: 0860 270 027 wrseta@wrseta.org.za www.wrseta.org.za

PROFESSIONAL BODIES

Name of Institution	Postal Address	Contact Details
CHE Council on Higher Education	I Quintin Brand Street Persequor TechnoPark 0020 PO Box 94 PERSEQUOR PARK 0020	Tel: (012) 349 3840 Fax: (012) 349 3942 Tel: (012) 349 3840 Fax: (012) 349 3942 admin@che.ac.za www.che.ac.za
CHE - Higher Education Quality Committee (HEQC)	PO Box 94 PERSEQUOR PARK 0020	Tel: (012) 349 3850 Fax: (012) 349 3927 Tel: (012) 349 3925 Fax: 086 524 7274 Tel: (012) 349 3934 Fax: (012) 349 3922 heqcis@che.ac.za www.che.ac.za
UMALUSI Council for Quality Assurance in General and Further Education and Training	Postnet Suite 102 Private Bag X I QUEENSWOOD 0121	Tel: (012) 349 1510 Fax: (012) 349 1511 Tel: (012) 349 1510 ext. 244 Fax: (012) 349 2187 info@umalusi.org.za www.umalusi.org.za
Department of Higher Education and Training SETA Support	Sol Plaatjie Building Francis Baard Street PRETORIA 000 I	Tel: (012) 312 5432 Tel: (012) 312 6193 Tel: (012) 312 5304 Tel: (012) 312 6198 www.dhet.gov.za
Department of Labour	Laboria House Francis Baard Street PRETORIA Postal Address: Private Bag X117 PRETORIA 0001	Tel: (012) 309 4000 Fax: (012) 320 2059 www.labour.gov.za
Department of Agriculture, Forestry and Fisheries	Private Bag X250 PRETORIA 000 I	Tel: (012) 319 6000 Fax: (012) 319 0000 www.daff.gov.za
Department of Rural Development and Land Reform	Private Bag X833 PRETORIA 000 I	Call Centre: 080 000 7095 Tel: (012) 312 8911 www.dla.gov.za www.ruraldevelopment.gov.za

OTHER IMPORTANT EDUCATIONAL ORGANISATIONS

Bureau of Labour Statistics

Occupational Outlook Handbook (OOH) (2010-11 Edition) This is one of the sources used in compiling the Careers in Our Sector chapter. http://www.bls.gov

German Development Cooperation (GTZ)

Tel: (012) 423 5900 Fax (012) 341 0185 www.gtz.de/en giz-sueafrika@giz.de National Skills Authority (NSA) Tel: (012) 309 4350

Pace Careers Centre

http://www.pacecareers.com/careercentre/

Quality Council for Trades & Occupations (QCTO) –

Tel: 012 003 1800 Email: info@qtco.org.za

South African Council for Educators (SACE)

Tel: 086 1007 223 or (012) 663 9517 http://www.sace.org.za

Umalusi

General and Further Education & Training Council
Tel: (012) 349 1510
http://www.umalusi.org.za

South African Qualifications Authority (SAQA)

Tel: 086 0111 673 (Helpdesk)
Tel: (012) 431 5000
http://www.nqf.org.za http://www.saqa.org.za

http://www.careerhelp.org.za – this is an excellent website for career related help.

South African Graduates Development Agency (SAGDA)

13th Floor, Marble Towers Cnr Pritchard & Van Weiligh Street Johannesburg

Tel: (011) 333 0761/ 0759 Fax: 086 560 0162

FINANCIAL AID

There are number of funding opportunities (such as bursaries, scholarships etc) available to South African students to study or participate in the above-mentioned programmes. The first preference is given to those applicants whose fields of study fall within a scarce / critical skills category.

National Student Financial Aid Scheme of South Africa

Tel: (021) 763 3232 Share call: 086 067 327/08600 NSFAS Email: info@nsfas.org.za Postal Address: Private Bag XI, Plumstead 780 I http://www.nsfas.org.za

National Youth Development Agency (NYDA)

Call Centre: 0800 52 52 52 Tel: (011) 651 7000 Fax: 086 606 6563 Email: info@nyda.gov.za Physical Address:

II Broadwalk Avenue off Church

Street Halfway House

1683

1683

Postal Address: PO Box 982

Halfway House

1685

http://www.nyda.gov.za

National Career Advice Portal (NCAP)

www.ncapcareerhelp.org.za

FREQUENTLY ASKED QUESTIONS (FAQ'S)

	Questions	Answers
1.	What are the prerequisite for Bursaries?	You must have been accepted and registered at a Public Tertiary Institution to study Agricultural Science and related qualifications.
2.	What is a Learnership?	A Learnership is a vocational education and training programme. It combines theory and practice (normally 70% practical and 30% theory), culminating in a qualification that is registered with SAQA. A person who successfully completes a learnership will have a qualification that signifies occupational competence and is recognised throughout the country.
3.	What is Artisan Development?	Artisan Development is a non-unit standard based registered qualification with National Artisan Moderation Body (NAMB). Artisan Development comprises the integration of workplace and institutional learning and culminates in a national qualification.
4.	How does Learnerships work in practice?	An agreement is entered into between the learner, the employer and the training provider. The duration of the training is not less than 8 months which is practical (70%) and theory (30%).
5.	Can universities and schools offer Learnerships?	An accredited provider which can be both public (TVET Colleges/ Agricultural Colleges and Universities) or private institutions can provide Learnerships.
6.	What is the duration of a Learnership?	The minimum duration of a Learnership is 8 - 12 months.
7.	What shall a learner obtain at the end of the Learnership?	If the Learnership is successfully completed the learner shall obtain a qualification that is recognised throughout the country and a certificate as proof of competence.
8.	Will the learner be offered a job after completing the Learnership?	There is no guarantee of a job on successful completion of the Learnership. The employer who offers the learner workplace training does not have an obligation to offer employment. It is however proper and fitting that the responsible provider / employer ensures and makes arrangements that unemployed learners who have been declared competent find placements: • At the workplace or practice or with any other employer • At their own farms (beneficiaries of land reform rural development programmes) or • At their own respective areas of land.
9.	How do unemployed people apply for a Learnership?	 They can apply for a Learnership directly through the AgriSETA accredited training providers normal application window periods. Unemployed people shall register with the Department of Labour as a work seeker by completing the required registration form indicating their interests. The forms are available at the Labour Centres. They shall keep their contact details up to date. The Labour Centres shall contact these people if they meet the minimum criteria for the Learnerships with a specific employer Employers shall be responsible for the final selection of learners.

	Questions	Answers
10.	How do the employed apply for a Learnership?	 Employed people can contact their employers through their Human Resources Department. They can also speak to their Supervisors responsible for their appraisal process in the company/organisation. They can contact their trade union official (if available) for more information.
11.	How shall a learner benefit from a Learnership?	If the Learnership is successfully completed the learner shall obtain a qualification that is recognised throughout the country and a certificate as proof of competence. Learners shall receive quality and relevant education and training. Learners acquire competence required in the workplace. Learnerships improve access to opportunities for employment Learners shall have access to further learning opportunities Learners shall receive a certificate of service confirming their working experience Learnerships offer an opportunity to affordable education, training and development.
12.	What is a Skills Programme?	A skills programme generally contains selected elements of a qualification and is shorter in duration than a learnership. It focuses on a specific skill needed in the workplace. Over time, the successful combination of a skills programmes can also lead to a qualification.
13.	What is the Quality Council for Trade and Occupations (QCTO)?	The QCTO is established to manage and coordinate the qualifications in the occupational qualifications framework in terms of their development, provision, assessment and impact. Its scope will be the development and quality assurance of fit-for-purpose occupational qualifications and unit standards as required by the labour market for work and employment purposes.
14.	What are scarce and critical skills?	Scarce and critical skills refer to an absolute or relative demand, current or future, for skilled, qualified and experienced people to fill particular roles/ professions/ occupations or socialization in the labour market.
15.	What subjects are required for you to be accepted in a Learnership and Skills Programme?	General understanding of numeracy and literacy
16.	What subjects are required for you to be accepted for agricultural related studies in higher-learning institutions?	Mathematics and Science subjects
17.	At what age can you register for a Learnership or Skills Programme?	18 - 35 years according to the Skills Development Act
18.	Which grades can one possess in order to qualify for the Learnership and Skills Programme?	From grade 4-12





PHYSICAL

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