Kovsies
2017

FACULTY OF
Natural and Agricultural Sciences

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UNIVERSITY OF THE
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Faculty of **Natural And Agricultural Sciences**

Welcome to the Faculty of Natural and Agricultural Sciences, where our motto 'no substitute for excellence' drives our academic endeavours. The faculty provides opportunities for further study, research and scholarly community engagement in diverse disciplines spanning the natural, agricultural and building sciences.

The faculty is divided into the following broad areas of training and research:

- Natural Sciences
- Agricultural Sciences
- Building Sciences

Natural science degrees are offered in disciplines such as Biology, Mathematics, Chemical and Physical Sciences, Geosciences, Computer Science, as well as Consumer Sciences. The choice of Agricultural Science degrees comprises disciplines such as Animal Science, Agrometeorology, Agronomy, Grassland Sciences, Soil Science, Agricultural Economics, Plant Breeding and Sustainable Agriculture, while in the Building Sciences you can do Quantity Surveying, Construction Management, Architecture and Urban and Regional Planning.

Our faculty is a vibrant place to which students, both nationally and internationally, flock because of its stimulating curriculum and to which scholars are attracted because of our exciting research agenda. We are an engaged faculty, whose interactions with its community is integrated with research and teaching.

Visit the webpages of our departments and centres to see which study opportunities are available in the Natural, Agricultural and Building Sciences.

Welcome to our Faculty
PROF DANIE VERMEULEN
ACTING DEAN

Publication design - KarooRepublic

GENERAL REGULATIONS

- This information should be used in addition to the Calendar of the Faculty of Natural and Agricultural Sciences.
- Only the curriculum of the first academic year is shown.
- During the orientation week at the beginning of the academic year, the programme directors will discuss curriculum compositions with students and clear up any uncertainties. It is VERY important that first-year students attend this orientation.

WHY THIS FACULTY IS THE RIGHT CHOICE

Market-orientated programmes designed for a number of job opportunities.

- Quality control to ensure that your degree is in demand.
- A unique faculty with a large variety of disciplines.
- Postgraduate programmes designed for easy access to advanced degrees.
- Research of high quality, which is a prerequisite for quality teaching.
- Contact teaching in the language of your choice (Afrikaans or English).
- Our students are our important clients.

For prospective students who completed Grade 12 up to 2007, the following applies (for prospective students who completed Grade 12 after 2007, the requirements are listed next to the learning programme):

- Senior certificate with matriculation endorsement (matriculation exemption) or an equivalent qualification.
- A minimum AP score of 30.
- Language of instruction on level 4 (50%).
- Mathematics HG = D or SG = B. Alternatively, at least a pass mark of 60% in MATM1564 or MATD1534 or MATM1584. If STSM1614 or MATM1614 is included in the learning programme, at least level 6 (70%) and level 7 (80%) respectively, is required for Mathematics.
- Both Biology and Physical Science will be required.
- Please note: Not all BSc programmes require both Life and Physical Sciences. Please consult the Faculty Rulebook for more information.
- Biology HG = D or SG = B and Physical Science HG = E or SG = C.
- Participation in the NBT tests for Language.
- Participation in the NBT tests for Mathematics.

The admission requirements are a broad indication for entrance into the Faculty of Natural and Agricultural Sciences. Consult the specific programme of study with regard to specific programme admission requirements or contact the faculty manager.

Abbreviations:

NSC: National Senior Certificate
AP: Admission point
NBT: National Benchmark Tests
Bfn: Bloemfontein Campus
QQ: Qwaqwa Campus
South: South Campus

Enquiries:

Webpage:	www.ufs.ac.za/natagri
Email:	natagri@ufs.ac.za
Faculty address:	Dean of the Faculty of Natural and Agricultural Sciences University of the Free State | PO Box 339 | Bloemfontein | 9300
Faculty manager:	+27 51 401 3199
Dean:	+27 51 401 2322
Marketing manager:	+27 51 401 2531

"Isn't it amazing how working with the smallest elements in the universe, we at the Faculty of Natural and Agricultural Sciences can make you understand the bigger picture in the Natural, Agricultural and Building Sciences."

AGRICULTURAL SCIENCES

In this programme, we offer the following qualifications: an 18-month Advanced Diploma in Sustainable Agriculture and Rural Development, a three-year Baccalaureus degree (BAgric), a three-year Baccalaureus Scientiae degree in Agricultural Economics, and a four-year Baccalaureus Scientiae degree in Agriculture (BScAgric).

Apart from this, we also offer University Preparation and Access (UPP) Programmes for BAgric/BScAgric on the South Campus. If the admission requirements for the BAgric or BScAgric programmes on the Bloemfontein Campus are not met, students can also enrol for these programmes on the South Campus; if students pass all the subjects offered, they can continue on the Bloemfontein Campus. [Please check the admission requirements for these programmes.] For more information regarding this, please contact the programme director on 051 401 2934.

All programmes mentioned hereafter are offered at the Bloemfontein Campus. An indication will be given if they are also, or only offered on the South or Qwaqwa Campuses.

AGRICULTURAL SCIENCES: UNIVERSITY ACCESS PROGRAMMES – SOUTH CAMPUS

Ms. Elzmarie Oosthuizen: +27 51 401 2934

Students who are not successful in gaining admission to the university, may take one of the following Agricultural Programmes to obtain access:

1. UPP Programmes (for BAgric)
2. BAgric Extended Curriculum Programme (4 years)
3. BScAgric Extended Curriculum Programme (5 years)

This programme extends over one year and gives the successful student a chance to enter into the BAgric/BScAgric programmes on the Bloemfontein Campus. The programme provides students with an opportunity to enjoy generally formative and vocationally directed studies at various further and higher education institutions after successful completion of a bridging year.

1. UPP Agricultural Sciences for BAgric – South Campus

YEAR	ACADEMIC MODULES	DEVELOPMENTAL MODULES	MINIMUM ADMISSION REQUIREMENTS
1	Agricultural Economics Biological principles in Agriculture Introduction to Animal, Wildlife and Grassland Sciences	Academic language skills course, English or Afrikaans Basic Computer Literacy Lifelong Learning Mathematical Literacy in Agriculture	• NSC and an AP of 20 and higher. • Language of instruction on level 3 (40%). • Mathematical Literacy on level 5 (60%) OR Mathematics on level 2 (30%).
	After successful completion of ALL THE MODULES in the first year of the BAgric extended curriculum programme or the UPP Agricultural Sciences Programme with an average of 55% for the academic modules, the student changes to the first-year main fields of interest modules in the learning programme of his/her choice on the Bloemfontein Campus, as set out in the faculty's Rulebook. Students must take note of the following requirements: • Students who do not complete the first two years of study in three years, will not be allowed to re-register with the Faculty of Natural and Agricultural Sciences.		
2	Follow the main fields of interest in the first-year BAgric Learning Programme of choice as set forth in the faculty's Rulebook. • The modules AGEC1514 and AGRI1514 must be passed to get recognition for it in mainstream programmes. • CSIL1551must be passed to get recognition for CSIL1511 in the mainstream programmes.		

Admission requirements are subject to change.

2. BAgric Extended Curriculum Programme – South Campus (4 years)

YEAR	ACADEMIC MODULES	DEVELOPMENTAL MODULES	MINIMUM ADMISSION REQUIREMENTS
1	Agricultural Economics Biological principles in Agriculture Introduction to Animal, Wildlife and Grassland Sciences	Mathematics Mathematical Literacy in Agriculture Lifelong Learning Academic language skills course English Basic Computer Literacy	• 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.
	After successful completion of ALL THE MODULES in the first year of the BAgric extended curriculum programme or the UPP Agricultural Sciences Programme with an average of 55% for the academic modules, the student changes to the first-year main fields of interest modules in the learning programme of his/her choice on the Bloemfontein Campus as set out in the faculty's Rulebook. Students must take note of the following requirements: • Students who do not complete the first two years of study in three years will not be allowed to re-register with the Faculty of Natural and Agricultural Sciences.		
2	Follow the main fields of interest in the first-year BAgric Learning Programme of choice as set forth in the faculty Rulebook. • The modules AGEC1514 and AGRI1514 must be passed to get recognition for it in mainstream programmes. • CSIL1551must be passed to get recognition for CSIL1511 in the mainstream programmes.		

Admission requirements are subject to change.

3. BScAgric Extended Curriculum Programme – South Campus (5 years)

YEAR	ACADEMIC MODULES	DEVELOPMENTAL MODULES	MINIMUM ADMISSION REQUIREMENTS
1	Mathematics Chemistry Agricultural Economics Biology	Mathematics Academic language skills course English Lifelong Learning – Natural Sciences Basic Computer Literacy	• NSC and an AP of 25 and higher. • Language of instruction on level 4 (50%). • Mathematics on level 3 (40%) for MATD1554. For MATD1534, Mathematics on level 4 (50%). • Life Sciences OR Agricultural Science on level 4 (50%) OR Physical Sciences on level 3 (40%)
	After successful completion of ALL THE MODULES in the first year of the BSc Extended Curriculum Programme with an average of 60% for academic modules, the student changes to the first-year main fields of interest modules in the learning programme of his/her choice on the Bloemfontein Campus, as set out in the faculty's Rulebook. Students must take note of the following requirements: • Students must pass at least two academic modules in the June examination to continue their studies in the second semester. • To register for CHEM1622 students must have passed CHEM1552 and CHEM1532. • To register for CHEM1642 students must have passed CHEM1552 and MATD1554 or level 4 for NSC Mathematics. • To register for MATD1564 students must have passed MATD1554 • To register for MATD1534 students must have a level 4 for NSC Mathematics. • To register for MATD1544 students must have passed MATD1534. • Students who do not complete the first two years of study in three years will not be allowed to re-register with the Faculty of Natural and Agricultural Sciences.		
2	In their second year of study students have to register for CHEM1551, CHEM1561, and CSIL1521, as well as all the first-year main fields of interest modules in the learning programme of choice as set out in the faculty's Rulebook. Students must take note of the following requirements: • To register for CHEM1551 students must have passed CHEM1622 and CHEM1642, as well as MATD1564. • To register for CHEM1561, students must have passed CHEM1551. • The modules CHEM1552, CHEM1622, CHEM1532, CHEM1642, CHEM1551, and CHEM1561 must be passed to get recognition for CHEM1514 and CHEM1624/CHEM1644. • BLGY1513, AGEC1514, and CSIL1551 must be passed to get recognition for BLGY1513, AGEC1514 and CSIL1511 in mainstream programmes.		

Admission requirements are subject to change.

Enquiries: Elzmarie Oosthuizen: +27 51 401 2934

Diplomas

Die Universiteit van die Vrystaat bied slegs die Gevorderde Diploma in Volhoubare Landbou en Landelike Ontwikkeling [nagraadse diploma] aan en nie meer voorgraadse diplomas in Landbouwetenskappe nie. Navrae: Dr Johan van Niekerk, +27 51 401 3765

BAgric degrees (three years):

The objective of the degree is the training of students who will be able to apply agricultural knowledge practically at farm level, as well as in agriculturally related organisations. The BAgric qualification will allow individuals to apply their knowledge in the fields of resource utilisation, agricultural production, processing, management and communication.

Contact details: Prof JB van Wyk: +27 51 401 2677 or Dr Antonie Geyer: +27 51 401 9053 (Agricultural Economics and Agricultural Management)

Careers/fields of study:

- Agricultural advisor, extension and training officer.
- Managerial positions in a wide range of agri-businesses and farmer enterprises.
- Representatives in agrochemical (pharmaceuticals, fertilizers, pesticides, etc.) and animal feed companies.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR		MINIMUM ADMISSION REQUIREMENTS
	SEMESTER 1	SEMESTER 2	
Irrigation Management Animal Production Management Mixed-Farming Management Crop Production Management Wildlife Management	Computer Literacy Biological principles in Agriculture Chemical principles in Agriculture Physical and mechanical principles in Agriculture Economic Management of Resources	Mathematical and Biometrical principles in Agriculture Micro-biological principles in Agriculture Advanced Computer Literacy Introduction to Soil, Crop and Climate Sciences Introduction to Animal, Wildlife and Grassland Sciences	• 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 NBT
Agricultural Management Agricultural Economics	Economic Management of Resources Core Business Activity Commercial Law Agricultural Economics	Biometry General Management Accounting Agricultural Finance Marketing	

Admission requirements are subject to change.

Changing from BAgric to BScAgric

In consultation with the programme director for Agricultural Sciences, a student who has registered for the BAgric degree can change to a suitable learning programme in the BScAgric degree. This can only be done if the student has passed the compulsory first academic year of the BAgric degree with an average mark of at least 75%, and additional first-year BScAgric modules enrolled for. This should be done in consultation with the programme director in order to comply with the minimum prerequisites for professional registration (SACNASP). The majority of the basic first-year BSc modules will be required in this case. In changing to a BScAgric learning programme, compliance with the prerequisites is essential. Credit will be given for modules that have been passed in the second and/or third academic year.

BScAgric

This degree must be considered if you are interested in qualifying as an agricultural scientist who, through research and practically-orientated development, wants to expand your knowledge. There are different learning programmes for the BScAgric degree with combinations between the following fields of specialisation: Agricultural Economics, Agronomy, Agrometeorology, Animal Science, Food Science, Grassland Science, Irrigation Sciences, Plant Breeding, Plant Pathology, Soil Science, etc. These study fields will enable you to qualify for one of the following careers:

Careers/fields of study:

Entomologist · Soil Scientist · Agricultural Economist (through BSc Agricultural Economics only) · Agricultural Manager · Plant Breeder · Agro-meteorologist · Animal Physiologist Plant Pathologist · Animal Nutritionist · Animal Breeder · Grassland Scientist · Food Scientist Agronomist or Plant Production Specialist · Irrigation Scientist

BScAgric degrees (four years unless indicated otherwise):

The following combinations will be available:

- Learning programmes in the AGROMETEOROLOGY field of interest offer SIX options with a combination of Agrometeorology as a major for specialisation in the fourth year and a minor from one of the following: Agronomy, Soil Sciences, Agricultural Economics, Agricultural Engineering, Grassland Sciences or Plant Pathology.
- Learning programmes in the AGRONOMY field of interest offer EIGHT options with a combination of Agronomy as a major for specialisation in the fourth year and a minor from: Agrometeorology, Soil Sciences, Agricultural Economics, Animal Sciences, Entomology, Food Sciences, Plant Breeding or Plant Pathology.

- Learning programmes in the SOIL SCIENCE field of interest offer SIX options with a combination of Soil Science as a major for specialisation in the fourth year and a minor from: Agronomy, Soil Sciences, Agricultural Economics, Agricultural Engineering, Grassland Sciences or Plant Pathology.
- Learning programmes in the ANIMAL, WILDLIFE AND GRASSLAND SCIENCES field of interest offers FOUR options with a combination of either Animal or Wildlife and Grassland Sciences as a major for specialisation in the fourth year and a minor from one of them or from Agricultural Economics and Soil Science until third-year level.
- Learning programmes in the FOOD SCIENCES field of interest offer FIVE options with a combination of Food Sciences as a major for specialisation in the fourth year and a minor from: Agronomy, Animal Sciences, Chemistry, Biochemistry, or Microbiology.
- Learning programmes in PLANT BREEDING AND PLANT PATHOLOGY field of interest offers FOUR options with a combination of either Plant Breeding or Plant Pathology as a major for specialisation in the fourth year and a minor from either Plant Breeding or one of the two fields of interest or from Grassland and Agronomy until third-year level.

Contact details:

Prof JB van Wyk +27 51 401 2677 (Agricultural (General) | Dr F O'Neil +27 51 401 7553 (Biological Sciences: Biochemistry) | Dr B Visser +27 51 401 3278 (Biological Sciences) I Dr Antonie Geyer +27 51 401 9053 (Agricultural Economics, Agricultural Management, Agricultural Engineering)

BSc Agricultural Economics (3 years)

The learning programme in Agricultural Economics offers only ONE option. It focuses mainly on Agricultural Economics and Statistics as majors. In the first year Mathematics, Statistics, Biology and Agricultural Economics are compulsory, with a choice between 3 electives: Soil Science, Animal, Wildlife and Grassland Sciences and Biology. In the second year Agricultural Economics, Economics, Statistics and Computer Literacy are compulsory, with a choice between the electives: Agronomy, Soil Science, Animal Science and Grassland Science. In the third and final year Agricultural Economics and Statistics are compulsory. The electives to choose from are: Agronomy, Animal Science, Soil Science and Grassland Science.

Contact person:

Dr Antonie Geyer +27 51 401 9053 (Agricultural Economics/Management)

Careers/fields of study:

- Animal, Wildlife and Grassland Sciences: animal breeder, animal physiologist, animal nutritionist, grassland scientist, agricultural advisor, private consultant, farmer, academic, teacher, extension officer and researcher.
- Soil, Crop and Climate Sciences: agronomist, soil scientist, horticulturist, agro-meteorologist, researcher, agricultural advisor and consultant.
- Plant Sciences: plant pathologist or plant breeder at private or public institutions involved in crop research and development in the agricultural, horticultural and forestry industries.

PROGRAMME DESCRIPTION	MINIMUM ADMISSION REQUIREMENTS
Agrometeorology and Agronomy Agrometeorology and Agricultural Economics Agrometeorology and Agricultural Engineering Agrometeorology and Grassland Science Agrometeorology and Plant Pathology Agrometeorology and Soil Science Agronomy and Agricultural Economics Agronomy and Agrometeorology Agronomy and Animal Sciences Agronomy and Entomology Agronomy and Food Science Agronomy and Plant Breeding Agronomy and Plant Pathology Agronomy and Soil Sciences Animal Sciences and Agricultural Economics Animal Sciences and Grassland Sciences Food Science and Agronomy Food Science and Animal Sciences Food Science and Biochemistry Food Science and Chemistry Food Science and Microbiology Grassland and Animal Science Grassland and Soil Science Plant Breeding and Agronomy Plant Breeding and Grassland Sciences Plant Breeding and Plant Pathology Plant Pathology and Agronomy Plant Pathology and Plant Breeding Soil Science and Agricultural Economics Soil Science and Agricultural Engineering Soil Science and Agrometeorology Soil Science and Agronomy Soil Science and Grassland Sciences Soil Science and 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.

MODULES IN FIRST YEAR	
SEMESTER 1	SEMESTER 2
Introduction to Biology Computer Literacy Chemistry Calculus Physics	Introduction to Genetics Introduction to Plant Sciences Chemistry Introduction to Soil, Crop and Climate Sciences Introduction to Animal, Wildlife and Grassland Sciences Advanced Computer Literacy

Admission requirements are subject to change.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR		MINIMUM ADMISSION REQUIREMENTS
	SEMESTER 1	SEMESTER 2	
Agricultural Economics (three years)	Introduction to Biology Statistics Computer Literacy Agricultural Economics Calculus	Introduction to Plant Sciences Statistics Calculus Agricultural Economics Advanced Computer Literacy Introduction to Soil, Crop and Climate Sciences Introduction to Animal, Wildlife and Grassland Sciences	· 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.

Admission requirements are subject to change.

NATURAL SCIENCES

- This information should be used in addition to the Rulebook of the Faculty of Natural and Agricultural Sciences.
- Only the curriculum for the first academic year is shown.
- During the orientation week at the start of the academic year, the programme directors will discuss curriculum compositions with students and clear up any uncertainties.

In this programme we offer the following undergraduate qualifications:

Bachelor degrees in: Bachelor of Architecture; Bachelor of Agriculture; Bachelor of Consumer Sciences (General and Food); Bachelor of Computer Information Systems.

Bachelor of Science in: Actuarial Sciences, Agrometeorology, Astrophysics, Genetics, Behavioural Genetics, Human Molecular Biology, Biochemistry, Botany, Chemistry, Consumer Science, Construction Management (residential and distance learning), Entomology, Environmental Rehabilitation, Food Science, Forensic Science, Geography, Geology, Information Technology, Mathematics and Applied Mathematics, Mathematical Statistics, Microbiology, Physics, Plant Breeding, Plant Health Ecology, Plant Pathology, Statistics, Quantity Surveying (residential and distance learning), Zoology.

Candidates who do not comply with the Faculty of Natural and Agricultural Sciences' entry requirements for mainstream BSc studies, can gain admission to the university through the University Preparation Programme (UPP) or the BSc Extended Curriculum Programme. The programmes provide students an opportunity to improve their skills and competencies with the aim of gaining access to mainstream studies after successful completion of the first year. These programmes also address, through courses in Skills and Competencies in Lifelong Learning, the student's wider needs with regards to quality of personal life, study and reading skills, self-assertiveness, problem solving, and other generic competencies. These students also attend an academic language course in English to improve their reading and writing skills for higher education purposes. [Please check the admission requirements for these programmes.] For more information regarding this, please contact the programme director on +27 51 401 2783.

All programmes mentioned hereafter are offered at the Bloemfontein Campus. An indication will be given if they are only or also offered on the South or Qwaqwa Campuses.

The following University Access Programme and University Preparation Programmes are offered:

1. University Preparation Programme (Chemistry and Mathematics) – South and Qwaqwa Campuses

YEAR	ACADEMIC MODULES	DEVELOPMENTAL MODULES	MINIMUM ADMISSION REQUIREMENTS
1	Mathematics Chemistry Biology	Academic language course Basic Computer Literacy Lifelong Learning	• NSC and an AP of 20 and higher. • Language of instruction on level 3 (40%). • Mathematics on level 3 (40%) for MATD1554. Mathematics on level 4 (50%) for MATD1534. • Life Sciences on level 3 (40%) OR Physical Sciences on level 3 (40%).

	After successful completion of ALL THE MODULES in the first year of the BSc Extended Curriculum Programme with an average of 60% for academic modules, the student changes to the first-year main field of interest modules in the learning programme of his/her choice on the Bloemfontein campus as set out in the faculty's Rulebook (please note that certain programmes are selection programmes). Students must take note of the following requirements: · Students must pass all academic modules in the June examination to continue their studies in the second semester. · To register for CHEM1622 students must have passed CHEM1552 and CHEM1532. · To register for CHEM1642 students must have passed CHEM1552 and MATD1554 or level 4 for NSC Mathematics. · To register for MATD1564 students must have passed MATD1554 · To register for MATD1534 students must have a level 4 for NSC Mathematics. · To register for MATD1544 students must have passed MATD1534 Students who do not complete the first two years of study in three years, will not be allowed to re-register with the Faculty of Natural and Agricultural Sciences.
2	In their second year of study students have to register for CHEM1551, CHEM1561, and CSIL1521 as well as all the first-year modules of the mainstream learning programme of choice as set out in the faculty Rulebook. Students must take note of the following requirements: · To register for CHEM1551 students must have passed CHEM1622 and CHEM1642, as well as MATD1564. · To register for CHEM1561, students must have passed CHEM1551. · The modules CHEM1552, CHEM1622, CHEM1532, CHEM1642, CHEM1551, and CHEM1561 must be passed to get recognition for CHEM1514 and CHEM1624/CHEM1644. · BLGY1513, BLGY1643, and CSIL1551 must be passed to get recognition for BLGY1513, BLGY1643 (mainstream), and CSIL1511. (See BSc main fields of interest learning programmes.)

Admission requirements are subject to change.

Contact: Pieter Bothma +27 51 505 1381 – Bfn; Mpho Leripa · +27 58 718 5312 – Qwaqwa, Lea Koenig, +27 58 718 5207 – Qwaqwa

2. BSc Extended Curriculum Programme (Chemistry and Mathematics) (4 years)- South and Qwaqwa Campuses

YEAR	ACADEMIC MODULES	DEVELOPMENTAL MODULES	MINIMUM ADMISSION REQUIREMENTS
1	Mathematics Chemistry Biology	Academic language course Lifelong Learning Basic Computer Literacy	· NSC and an AP of 25. · Language of instruction on level 4 (50%). · Mathematics on level 3 (40%) for MATD1554. For MATD1534 Mathematics on level 4 (50%). · Life Sciences on level 4 (50%) OR Physical Sciences on level 3 (40%).

	After successful completion of ALL THE MODULES in the first year of the BSc Extended Curriculum Programme with an average of 60% for academic modules, the student changes to the first-year main field of interest modules in the learning programme of his/her choice on the Bloemfontein Campus, as set out in the faculty's Rulebook (please note that certain programmes are selection programmes). Students must take note of the following requirements: · Students must pass all academic modules in the June examination to continue their studies in the second semester. · To register for CHEM1622 students must have passed CHEM1552 and CHEM1532. · To register for CHEM1642 students must have passed CHEM1552 and MATD1554 or level 4 for NSC Mathematics. · To register for MATD1564 students must have passed MATD1554. · To register for MATD1534 students must have a level 4 for NSC Mathematics. · To register for MATD1544 students must have passed MATD1534. Students who do not complete the first two years of study in three years, will not be allowed to re-register with the Faculty of Natural and Agricultural Sciences.
2	In their second year of study students have to register for CHEM1551, CHEM1561, and CSIL1521 as well as all the first-year modules of the mainstream learning programme of choice as set out in the faculty's Rulebook. Students must take note of the following requirements: · To register for CHEM1551 students must have passed CHEM1622 and CHEM1642 as well as MATD1564. · To register for CHEM1561, students must have passed CHEM1551. · The modules CHEM1552, CHEM1622, CHEM1532, CHEM1642, CHEM1551, and CHEM1561 must be passed to get recognition for CHEM1514 and CHEM1624/CHEM1644. · BLGY1513, BLGY1643 and CSIL1551 must be passed to get recognition for BLGY1513, BLGY1643 (mainstream) and CSIL1511. (See BSc main fields of interest learning programmes.)

Admission requirements are subject to change.

Contact: Pieter Bothma +27 51 505 1381 – Bloemfontein; Mpho Leripa • +27 58 718 5312 – Qwaqwa, Lea Koenig, +27 58 718 5207 - Qwaqwa

3. BSc Extended Curriculum Programme (Mathematics and Finances) (4 years) - South Campus

YEAR	ACADEMIC MODULES	DEVELOPMENTAL MODULES	MINIMUM ADMISSION REQUIREMENTS
1	Mathematics Accounting or Business Functions/ General Management or Introduction to Human Resource Management/ Introduction to Individual Differences or Economics	Academic language course Lifelong Learning Basic Computer Literacy	• NSC and an AP of 25 and higher. • Language of instruction on level 4 (50%). • Mathematics on level 3 (40%) for MATD1554. For MATD1534 Mathematics on level 4 (50%).

	After successful completion of ALL THE MODULES in the first year of the BSc Extended Curriculum Programme with an average of 60% for academic modules, the student changes to the first-year mainstream modules in the learning programme of his/her choice on the Bloemfontein Campus, as set out in the faculty's Rulebook (please note that certain programmes are selection programmes). Students must take note of the following requirements: · To register for MATD1564 students must have passed MATD1554. · To register for MATD1534 students must have a level 4 for NSC Mathematics. · To register for MATD1544 students must have passed MATD1534. Students who do not complete the first two years of study in three years, will not be allowed to re-register with the Faculty of Natural and Agricultural Sciences.
2	EACC1614 and EACC1624 must be passed to get recognition for EACC1614 and EACC1624 (mainstream), EFBM2515 must be passed to get recognition for EBUS1514, EFBM2625 must be passed to get recognition for EBUS1624, EFHR1515 must be passed to get recognition for EHRM1514, EFIO1525 must be passed to get recognition for EIOP1524, EFEC2614 must be passed to get recognition for EECF1614, EFEC2624 must be passed to get recognition for EECF1624, CSIL1551 must be passed to get recognition for CSIL1511.

Admission requirements are subject to change.

Contact: Pieter Bothma +27 51 505 1381

Bachelor of Science (BSc) degrees in the following programmes: Biological Sciences (three years)

Enquiries:

Biochemistry	Dr Frans O'Neill	+27 51 401 7553
Botany Plant Breeding Plant Pathology Plant Health Ecology Environmental Rehabilitation	Dr Botma Visser	+27 51 401 3278
Genetics Behavioural Genetics Human Molecular Biology Forensic Sciences	Zurika Odendaal	+27 51 401 2776
Microbiology	Prof Koos Albertyn	+27 51 401 2223
Zoology Entomology	Dr Candice Jansen van Rensburg	+27 51 401 9357
Qwaqwa Campus	Mpho Leripa (Faculty Officer) or Dr Emile Bredenhand (Biological Sciences)	+27 58 718 5312 +27 58 718 5322

The following programmes are offered:

Learning programmes in the BIOLOGICAL FIELD OF INTEREST 1 offers SIXTEEN options with a combination of any two majors, e.g. Biochemistry and Microbiology, Biochemistry and Genetics, Biochemistry and Botany, Biochemistry and Entomology, Biochemistry and Zoology, Microbiology and Genetics, Microbiology and Botany, Microbiology and Entomology, Microbiology and Zoology or Microbiology and Food Science.

Learning programmes in the BIOLOGICAL SCIENCES FIELD OF INTEREST 2 offers SEVEN options with Biochemistry and Food Science, Biochemistry and Statistics, Biochemistry and Physiology, Behavioural Genetics (Genetics and Psychology), Genetics and Physiology, Human Molecular Biology or Forensic Sciences.

Learning programmes in the BIOLOGICAL SCIENCES FIELD OF INTEREST 3 offers FOUR options: Plant Health Ecology, Botany and Plant Pathology, Botany and Plant Breeding, and Environmental Rehabilitation with Botany as a major in combination with other modules.

Learning programmes in the BIOLOGICAL SCIENCES FIELD OF INTEREST 4 offers THREE options: Biochemistry and Food Science, Biochemistry and Statistics, Biochemistry and Physiology

Duration of program: three years

Careers / fields of study:

Genetics: Technicians in agricultural, forestry, seed, pest control, and medical research institutes, as well as forensic institutions (e.g. police services).

Plant Sciences: Careers in the educational, agricultural, environmental, and biotechnological sectors as botanist, plant breeder, plant pathologist, researcher, teacher, environmental consultant, conservationist, laboratory or research assistant, and entrepreneur.

Microbial, Biochemical and Food Biotechnology: Analysts, technicians , researchers, academics, and entrepreneurs in research and development for the production and analysis of vaccines and drugs, as well as diagnostic tests for use in human, animal and plant health, whether in industry, academia or research institutes. Laboratory and production assistants and managers working in product development, production, quality and pollution control in the food, medical and chemical sectors (eg. breweries, meat, dairy and grain industries, vaccine, drug, chemicals and paper manufacturing, as well as water purification).

Zoology and Entomology: Laboratory or research assistant, teacher, environmental consultant, conservationist in environmental or agricultural sectors; education and medical institutes or as an entrepreneur.

PROGRAMME DESCRIPTION	MINIMUM ADMISSION REQUIREMENTS
Biochemistry and Botany Biochemistry and Entomology Biochemistry and Food Science Biochemistry and Genetics Biochemistry and Microbiology Biochemistry and Physiology Biochemistry and Statistics Biochemistry and Zoology Botany and Entomology Botany and Genetics Botany and Microbiology Botany and Zoology Entomology and Genetics Entomology and Microbiology Entomology and Zoology Genetics and Microbiology Genetics and Physiology Genetics and Zoology Microbiology and Zoology Microbiology and Food Science Human Molecular Biology Botany and Plant Breeding Botany and Plant Pathology Environmental Rehabilitation Plant Health Ecology (Bfn) Botany and Life Sciences (QQ) Entomology and Life Sciences (QQ) Geography and Life Sciences (QQ) Zoology and Life Sciences (QQ)	· NSC and an AP of 30. · Language of instruction on level 4 (50%). · Mathematics on level 5 (60%). Alternatively at least 60% is required in MATD1564 or MATD1534 or MATM1584. If STSM1614 or MATM1614 is included in the learning programme, a level 6 (70%) and level 7 (80%) respectively for Mathematics is required. · Life Sciences on level 5 (60%) · Physical Sciences on level 4 (50%) · Students intending to offer Chemistry as a major, must take note that in the second year a maximum of 80 and in the third year a maximum number of 60 students will be admitted due to laboratory constraints. These students will be admitted based on academic excellence. · Participation in the NBT for Language and for Mathematics.
COMPULSORY MODULES IN FIRST YEAR	
SEMESTER 1 AND 2	
Biology Chemistry Biometry Mathematics Physics Computer Literacy Advanced Computer Literacy	

Admission requirements are subject to change.

The following Behavioural Genetics learning programme differs from the above Biology programmes:

Duration of study: three years

Careers/fields of study: Technicians in medical research and diagnostic institutes.
A postgraduate qualification is highly recommended.

Enquiries: Zurika Odendaal +27 51 401 2776

Behavioural Genetics: Behavioural Genetics is a combination of Psychology and Genetics. The main purpose of this subject area is to study the interaction between the environment and hereditary behavioural patterns. After completion of this study, the student will have a thorough basic knowledge of Behavioural Genetics. The student will be capable of specialising on postgraduate level (up to PhD) in Behavioural Genetics, Genetics or Psychology. Postgraduate training is essential in order to work as a behavioural geneticist.

COMPULSORY MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Biology Biometry Chemistry Psychology Mathematics Computer Literacy and Advanced Computer Literacy	· 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. · Both Life Sciences and Physical Sciences must be offered. Life Sciences on level 5 (60%) and Physical Sciences on level 4 (50%). · Participation in the NBT tests for Language and for Mathematics.

Admission requirements are subject to change.

A selection course is offered in the following learning programme:

Forensic Sciences: Focuses on how science can be used to analyse and interpret different crime scenes. This includes Chemistry, Physics, Genetics and Entomology. After completion of this study, the student will have a thorough basic knowledge of the physical and biological science aspects of Forensic Sciences. The student will be able to specialise on postgraduate level (up to PhD) in Forensic Sciences, Forensic Genetics, Forensic Chemistry, Forensic Entomology, Forensic Physics, Genetics, and Chemistry (depending on final-year majors).

Duration of study: three years

Enquiries: Zurika Odendaal +27 51 401 2776

Careers/fields of study: Technicians and analysts in forensic laboratories. A postgraduate qualification is highly recommended.

COMPULSORY MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Biology Chemistry Physics Mathematics Computer Literacy and Advanced Computer Literacy	· NSC and AP of 34 and higher · Cumulative AP of 17 and higher for Mathematics, Life Science, and Physical Science. · Language of instruction on level 4 (50%) · Admission is subject to selection. · Only 80 students will be admitted. · Participation in the NBT tests for Language and for Mathematics. NBT test results will also be used for selection purposes. · No person with a criminal record will be allowed into this programme. · **Closing date: 30 September 2016**

Admission requirements are subject to change.

Learning programmes in Mathematical Sciences

The following learning programmes are available:

Learning programmes in MATHEMATICAL STATISTICS offer FOUR main options with a combination of disciplines:
Mathematical Statistics and Agrometeorology (Climate Sciences)
Mathematical Statistics and Economics (Econometrics)
Mathematical Statistics and Investment Sciences (Investment Science)
Mathematical Statistics and Psychology (Psychometrics)

Duration of study: Three years

Careers/fields of study: Statistical analysis for government institutions, research councils, financial institutions, psychological research centres and industries or a career as lecturer. Investment analyst, investment manager, risk manager, financial reporter, financial planner.

Enquiries: Michael von Maltitz +27 51 401 2609.

This learning programme focuses on stochastic models with various applications for Mathematical Statistics. It is evident from the numerous options in the third year that there is a vast field for statistical applications in practice. The programme also enables students to proceed with postgraduate study in Mathematical Statistics and Risk Analysis.

The Investment Science degree is specifically designed for students with a passion for Mathematics and the workings of finance in any investment type, in particular for students who eventually wish to qualify as a Chartered Financial Analyst. The degree will provide students with a thorough grounding in Mathematics (including, most important, Financial or Investment Mathematics), Mathematical Statistics, Investment Strategies and Practices, and Economics, together with an understanding of Computers, Computer Programming, and Financial Accounting. This basis allows students to follow postgraduate degrees in Investment Science, Mathematical Statistics, or Investment Management.

Learning programmes in STATISTICS offer THREE main options with a combination of disciplines:
Applied Statistics and Accounting
Applied Statistics and Economics
Applied Statistics and Psychology

Careers/fields of study: economist, econometrician, statistician, research psychologist, financial economist or financial advisor.

Duration of study: three years

Enquiries: Michael von Maltitz +27 51 401 2609

The learning programme focuses on the application of statistical methods in practice, and enables students to proceed with postgraduate study in Statistics.

Learning programmes in MATHEMATICS offer FIVE main options with a combination of disciplines:
Mathematics and Applied Mathematics
Mathematics and Chemistry
Mathematics and Mathematical Statistics
Mathematics and Physics
Mathematics and Finances

Duration of study: three years

Careers/fields of study: scientist, mathematical analyst, researcher, lecturer or teacher. Mathematical analysis of financial problems for financial institutions such as banks, insurance and investment institutions.

Enquiries: Christiaan Venter: +27 51 401 2320

These learning programmes are recommended for students who wish to develop a sound mathematical base for a career as a scientist, mathematical analyst, financial mathematician, lecturer or teacher. Students can broaden their scientific background by combining their mathematical subjects with Physics or Chemistry. For a career in Applied Mathematics, the student must first develop a solid mathematical foundation.

The Mathematics and Finances interdisciplinary learning programme is aimed at students who are interested in Mathematics in the financial world. Financial institutions such as banks, insurance and investment companies need well-trained mathematicians with a sound base in the economic sciences. This combination of skills offers excellent career opportunities for graduates who can do mathematical analyses of financial problems. Students can decide how big an emphasis they want to put on the various disciplines. Postgraduate study will enable a person to handle more complex financial models.

Learning programme in Actuarial Sciences:

Careers/fields of study: Actuary, actuarial assistant, risk analyst, financial reporter, manager, investment manager, statistician, teacher.

Duration of study: three years

Enquiries: Michael von Maltitz: +27 51 401 2609

This learning programme is specifically designed for students who eventually plan to qualify as actuaries, i.e. as fellows of a professional body. The Actuarial Society of South Africa (ASSA) uses the curriculum of the Joint Board of the Institute/Faculty of Actuaries, UK. Certain South African universities, of which the UFS is one, has an exemption agreement with the Institute/Faculty of Actuaries to recommend students who perform at a certain standard to obtain exemptions for the Core Technical (CT) series subjects. Prospective students can be recommended for exemptions in CT1, CT2, CT3, CT4, CT6, and CT7 after obtaining the degree, as well as for CT5 and CT8 after completing the honours degree. After a candidate has obtained the relevant degrees, such a candidate must also pass the prescribed examinations of the Joint Board of the Institute of Actuaries (London) and the Faculty of Actuaries (Edinburgh) to qualify as a fully-fledged actuary. For more information on this programme, visit www.ufs.ac.za/actuarial.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR		MINIMUM ADMISSION REQUIREMENTS
	SEMESTER 1	SEMESTER 2	
Mathematical Statistics and: Climate Sciences Econometrics Investment Sciences Psychometrics	Mathematical Statistics Calculus Computer Information Systems Economics Financial Management and Reporting Accounting or Financial Accounting Computer Literacy	Mathematical Statistics Mathematics Introduction to Soil, Crop and Climate Sciences Computer Information Systems Economics Financial Management and Reporting Accounting or Financial Accounting Psychology Investment Science Advanced Computer Literacy	• NSC and an AP of 30. • Language of instruction on level 4 (50%). • Mathematics on level 5 (60%). If STSM1614 or MATM1614 is included in the learning programme, a level 6 (70%) and level 7 (80%) respectively for Mathematics is required. • If Agrometeorology or Chemistry or Physics is the second major, Physical Science on performance level 4 (50%) is required. • Mathematics on level 5 (60%) for Applied Statistics. • Participation in the NBT tests for Language and for Mathematics.
Applied Statistics and: Accounting Economics Psychology	Calculus Computer Information Systems Economics Agricultural Economics Accounting Computer Literacy Psychology Introduction to Human Resource Management	Mathematics Computer Information Systems Economics Agricultural Economics Accounting Advanced Computer Literacy Psychology Introduction to Individual Differences	
Mathematics and: Applied Mathematics Chemistry Mathematical Statistics Physics Finances	Calculus Mathematical Statistics Chemistry Physics Financial Accounting Computer Literacy Introduction to Human Resource Management Astrophysics	Calculus Mathematical Statistics Computer Information Systems Financial Accounting Introduction to Individual Differences Economic Systems and Basic Microeconomics Astrophysics	
Actuarial Sciences	Calculus Mathematical Statistics Computer Literacy Economic Systems and Basic Microeconomics Financial Management and Reporting	Calculus Mathematical Statistics Advanced Computer Literacy Actuarial Sciences Financial Management and Reporting Computer Information Systems	· NSC and an AP of 34 · Language of instruction on level 4 (50%). · Mathematics on level 7 (80%). · Participation in the NBT tests for Language and for Mathematics.

Admission requirements are subject to change.

Learning programmes in Chemical and Physical Sciences offer FIVE main options: Physics and Chemistry | Physics and Astrophysics | Physics and Agrometeorology | Physics and Engineering subjects | Chemistry in combination with biological subjects as the other majors: Chemistry and Botany | Chemistry and Food Sciences | Chemistry and Microbiology | Chemistry and Biochemistry. In other programmes, Physics can also be taken in combination with Mathematics, Geology and Computer Science. In similar programmes, Chemistry can be taken in combination with Forensic Science, Mathematics, Geology and Computer Science.

Physics:
This learning programme makes provision for the student who is interested in Physics. Careers include working in industry, research laboratories and teaching at schools or universities. This programme is well suited to careers in many manufacturing industries (mining, agriculture and metallurgy) or engineering firms concerned with mechanical, civil, telecommunication and/or electronic and electrical activities. Careers in design, energy production, computer sciences, advanced instrumentation development, and modelling are also possible. Postgraduate studies can be pursued in Physics, provided that the necessary prerequisites are met. Combined career directions, for example combinations of Physics and Law (e.g. patent lawyer) or Physics and economic fields (e.g. financial modelling or risk assessment) can also be considered after further studies in these directions.

Chemistry:
This learning programme makes provision for the student who is interested in Chemistry. Careers include working in industry, research laboratories and teaching at schools or universities. Postgraduate studies can be pursued in Chemistry, if the prerequisites are met.

Duration of study: three years

Enquiries: Dr J Venter +27 51 401 3336

Careers/fields of study: Careers in research laboratories, e.g. CSIR and Sasol; academia, e.g. university lecturing and research; industry, e.g. petrochemical, rubber, manufacturing, paint, food, mining, water purification, etc. Careers in research laboratories, e.g. CSIR and Mintek; academia, e.g. university lecturing and research; industry, e.g. manufacturing, energy, nuclear, telecommunications, instrumentation, modelling, Bureau of Standards.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Physics and Chemistry	Chemistry Calculus Mathematical Statistics Physics Computer Information Systems Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). If STSM1614 or MATM1614 is included in the learning programme, a level 6 (70%) and level 7 (80%) respectively for Mathematics is required. · Physical Science on level 4 (50%) · Students intending to offer Chemistry as a major, must take note that in the second year a maximum of 80 and in the third year a maximum number of 60 students will be admitted due to laboratory constraints. These students will be admitted based on academic excellence. · Participation in the NBT for Language and for Mathematics.

Admission requirements are subject to change.

Astrophysics:

In this learning programme, Astrophysics is presented together with Physics. Students who have successfully completed their studies, can pursue postgraduate studies in Physics with Astrophysics modules, which can lead to an MSc and a PhD in Physics, specialising in Astrophysics.

Careers/fields of study: Careers in research institutes, e.g. SAAO, SKA, HartRAO and HMO; academia, e.g. university lecturing and research; space science (satellite applications) or public education centres, e.g. planetariums or museums.

Duration of study: Three years

Enquiries: Dr J Venter: +27 51 401 3336

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Physics and Astrophysics	Chemistry Calculus Mathematical Statistics Astronomy Computer Information Systems Statistics Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 7 (80%). · Physical Science on level 4 (50%) · Students intending to offer Chemistry must take note that a maximum of 80 students will be admitted to the second year due to laboratory constraints. These students will be admitted based on academic excellence. · Participation in the NBT tests for Language and for Mathematics

Admission requirements are subject to change.

Physics and Agrometeorology:

By combining Physics with Agrometeorology, students get the opportunity to apply numerous physical principles to agrometeorological applications, such as remote sensing, developing and calibrating instrumentation, numerical model refinement, thermodynamical and microphysical processes in the atmosphere and weather forecasting in general. This is a popular combination with potential employers.

Careers/fields of study: Careers in research institutions, e.g. ARC and SAWS; private consultation, e.g. irrigation scheduling; meteorological instrumentation companies, e.g. Campbell Scientific; academia, e.g. university lecturing and research.

Duration of study: three years

Enquiries: Dr J Venter: +27 51 401 3336

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Physics and Agrometeorology	Calculus Mathematical Statistics Computer Information Systems Computer Literacy Advanced Computer Literacy Introduction to Soil, Crop and Climate Sciences	· NSC and an AP of 30. · Language of instruction on level 4 (50%). · Mathematics on level 5 (60%). · Physical Science on level 4 (50%) · Participation in the NBT tests for Language and for Mathematics

Admission requirements are subject to change.

Physics with Engineering subjects:

This is a NEW programme which provides an alternative route into Engineering studies at other academic institutions. In this learning programme, the basic building blocks for Engineering are presented together with Physics. In the last semester (third year) students will have to choose between Physics and Engineering. Students who have successfully completed the programme in the Engineering option, will be able to apply for integration into the third year of study in certain Engineering degree programmes (civil, mechanical, electrical/electronic) at universities that offer BEng or BScEng degrees. Integration will be subject to the availability of space in these degree programmes, the selection processes and other requirements prescribed by the particular collaborating university.

Duration of study: three years

Enquiries: Dr J Venter: +27 51 401 3336

Careers: Engineering assistant or construction site manager or the Physics option: this will enable graduates to either enter workplaces requiring a physics focus, or continue with postgraduate studies in Physics should they meet the entrance requirements, or the Engineering option: This will enable graduates to pursue further discipline-specific Engineering studies at other universities such as: Agricultural Engineering, Civil Engineering, Electrical Engineering, Electronic Engineering, Mechanical Engineering, Mechatronic Engineering.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Physics with Engineering Subjects	Chemistry Calculus Physics Computer Literacy Object-oriented Computer Programming Applied Mathematics: Statics Applied Mathematics: Dynamics Academic Literacy, Language and Communication Engineering Drawings Engineering Forum	· NSC and an AP of 34 or higher. · Language of instruction on level 4 (50%). · Cumulative AP score of 13 and higher for Mathematics and Physical Sciences of which at least level 6 (70%) for Mathematics. · Participation in the NBT tests for Language and for Mathematics.

Admission requirements are subject to change.

Chemistry in combination with Biological subjects:

This learning programme makes provision for a student who is interested in Chemistry and the Biological Sciences where the foundation of Biological systems and Chemistry is involved. It includes careers in any manufacturing industry, as well as in fields such as medicine, the pharmaceutical industry, agriculture (including livestock, crops, pest control, soil and water), forestry, environmental, waste and pollution management, and various careers in the marine environment. Postgraduate studies may be continued in Chemistry or any of the Biological Sciences if the necessary prerequisites are met.

Careers/fields of study: Careers in industry, e.g. food and beverage, brewing, mining, water purification, pharmaceuticals, agriculture, forestry, pollution.

Duration of study: Three years

Enquiries: Dr J Venter: +27 51 401 3336 or Mpho Leripa (Qwaqwa Campus): +27 58 718 5312, Mr R Ocaya: +27 58 718 5301 (Qwaqwa Campus)

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Chemistry and Biochemistry Chemistry and Botany [Qwaqwa] Chemistry and Food Sciences Chemistry and Microbiology Chemistry and Entomology [ONLY at Qwaqwa] Chemistry and Zoology [ONLY at Qwaqwa]	Calculus Biology Physics Computer Literacy Computer Information Systems Biometry Mathematical Statistics Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). If STSM1614 or MATM1614 is included in the learning programme, a level 6 (70%) and level 7 (80%) respectively for Mathematics is required. · Physical Science on level 4 (50) · Since Biological subjects are the second major, Life Sciences at level 5 (60%) is required. · Students intending to offer Chemistry as a major must take note that in the second year a maximum of 80 and in the third year a maximum number of 60 students will be admitted due to laboratory constraints. These students will be admitted based on academic excellence. · Participation in the NBT tests for Language and for Mathematics

Admission requirements are subject to change.

Learning programmes in Geosciences

A. Geology

Duration of study: three years

Enquiries: Justine Magson: +27 51 4019928

Learning programmes in GEOLOGY offers SIX main options with either:

- Geology specialisation
- Geochemistry
- Environmental Geology
- Geology and Chemistry
- Geology and Geography
- Geology and Physics

Geology specialisation

After completion of this learning programme up to honours level, you will be trained as a professional geologist with employment opportunities in mining, exploration and research. Careers/fields of study: Careers in mining geology, exploration geology, engineering geology, economic geology, laboratory research, and academia.

Geochemistry

After completion of this learning programme to honours level, you will be trained as a professional geologist/geochemist with job opportunities in mining, exploration and research.Careers/fields of study: Careers in laboratory research, economic geology, mining geology, exploration geology, engineering geology, and academia.

Environmental Geology

After completion of this learning programme to honours level, you will be qualified as a professional environmental geologist who is able to evaluate applicable problem areas and propose solutions. Careers/fields of study: Careers in environmental management, laboratory research, economic geology, mining geology, exploration geology, engineering geology, and academia.

Geology and Chemistry

After completion of this learning programme up to honours level, you will be trained as a professional geologist with employment opportunities in mining, exploration and research. Careers/fields of study: Careers in mining geology, exploration geology, engineering geology, economic geology, laboratory research and academia.

Geology and Geography

After completion of this learning programme up to honours level, you will be trained as a professional geologist with employment opportunities in mining, exploration and research. Careers/fields of study: Careers in mining geology, exploration geology, engineering geology, economic geology, laboratory research and academia.

Geology and Physics

After completion of this learning programme up to honours level, you will be trained as a professional geologist with employment opportunities in mining, exploration and research. Careers/fields of study: Careers in mining geology, exploration geology, engineering geology, economic geology, laboratory research and academia.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Geology Specialisation Geochemistry Environmental Geology Geology and Chemistry Geology and Geography Geology and Physics	Geology Calculus Statistics Physics Chemistry Geography Introduction to Soil, Crop and Climate Sciences Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. An AP of 34 or higher is highly recommended. · Language of instruction on level 4 (50%). · Mathematics on level 5 (60%). Alternatively at least 65% in MATD1564 is required. · Physical Science on level 5 (60%). Alternatively 65% is required in CHEM1552, CHEM1532, CHEM1622, and CHEM1642. · A selection process takes place before admission. In the first year a maximum number of 80 students will be admitted to GLGY1614 due to laboratory constraints. These students will be admitted based on academic excellence. · **Closing date for applications is 30 September 2016.** Students will be notified of the outcome as soon as examination results are available and no later than January. · Participation in the NBT tests for Language and for Mathematics.

Admission requirements are subject to change.

B. Geography

Duration of study: three years

Enquiries: Eldalize Kruger: +27 51 401 2185 – Bloemfontein. Mpho Leripa: +27 58 718 5312 – Qwaqwa

The learning programmes in Geography and the Environmental sciences are studies of the properties and processes in the earth and on the surface, and encompass a holistic study of the human environment and accompanying interactions and relationships. The programmes are aimed at students who are interested in various aspects of the environment and can lead to specialisation as environmentalists. Careers in these sciences are divergent, because all institutions that are involved with resource utilisation are legally obliged to examine the impact of their activities on the environment. The connection of geographical information and computer technology simplifies the storage, processing, modelling and presentation of information and expedites decision-making.

Geographic information systems/Geo-informatics

Geo-informatics is the science and the technology that develops and uses information science infrastructure to address the problems of geography, geosciences and related branches of engineering. Students can analyse data spatially with the aid of geographical information systems and provide links between environmental problems and their spatiality. These people typically become GIS specialists or spatial planners.
Careers/fields of study: GIS specialist or geo-informatics practitioner.

Geography and Agrometeorology/Soil Sciences

Students with a degree in Geography and Agrometeorology/Soil Sciences will understand the interaction between humans and the environment, especially as it impacts on climate, geomorphology, soil and agriculture. These people typically become geomorphologists, climate specialists or agricultural extension officers providing spatial information and advice in these fields.
Careers/fields of study: Environmental assessment practitioner, geomorphologist, climate specialist, agricultural extension officer.

Geography and Environmental Sciences

Students with a degree in Geography and Environmental Sciences will not only understand the interaction between humans and the environment, but can also offer solutions for environmental problems which humans have to deal with in the physical, as well as the cultural milieu. These people typically become environmental assessment practitioners or environmental consultants.
Careers/fields of study: Environmental assessment practitioner, environmental consultant, environmental manager, environmental officer, spatial planner.

Geography and Statistics

Students with a degree in Geography and Statistics understand the complex issue of visualising and manipulating huge data sources. Students can analyse data spatially with the aid of geographical information systems and provide links between environmental problems and their spatiality. These people typically become GIS specialists or spatial planners.
Careers/fields of study: GIS specialist, GIS planner, geographic data analyst, spatial planner.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Geo-informatics	Geography Calculus Physics Business Management Statistics Computer Information Systems Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). · Physical Sciences on level 4 (50%) · Participation in the NBT tests for Language and Mathematics.
Geography and Agrometeo-rology Geography and Environmental Sciences	Geography Chemistry Business Management Statistics Biology Introduction to Soil, Crop and Climate Sciences Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). · Life Sciences on level 5 (60%) · Participation in the NBT tests for Language and Mathematics.
Geography and Statistics	Geography Business Management Statistics Biology Computer Information Systems Introduction to Soil, Crop and Climate Sciences Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). · Life Sciences on level 5 (60%) OR Physical Sciences on level 4 (50%) · Participation in the NBT tests for Language and Mathematics.
Environmental Geography (Qwaqwa)	Geography Calculus Business Management Statistics Biology Computer Literacy Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). · Participation in the NBT tests for Language and Mathematics.

Admission requirements are subject to change.

Learning programmes in Computer Science and Informatics: BSc(IT)

Learning programmes in Computer Science and Informatics offer FIVE main fields:

- Computer Science with Chemistry
- Computer Science with Mathematical Statistics
- Computer Science with Mathematics
- Computer Science with Physics
- Computer Science in Business and Management

Duration of study: Three years

Enquiries: Jaco Marais: +27 51 401 2929

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Computer Science with Chemistry	Computer Literacy Introductory Programming in C# Introduction to Computer Hardware Internet and Webpage Development Inorganic and Analytical Chemistry Organic and Physical Chemistry Calculus One of: • Algebra and Differential Equations • Calculus and Linear Algebra	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · At least Mathematics on level 4 (50%) in order to register for BSc (IT). A higher level might be required (see below): · Mathematics on level 4 (50%) in order to register for MATM1574. · Mathematics on level 5 (60%) to register for MATM1534. · Mathematics on level 6 (70%) to register for STSM1614. · Mathematics on level 7 (80%) in order to register for MATM1614. · If Chemistry or Physics is the second major, Physical Science on performance level 4 (50%) · Students intending to take Chemistry as a major must take note that in the second year a maximum of 80 and in the third year a maximum number of 60 students will be admitted due to laboratory constraints. These students will be admitted based on academic excellence. · Participation in the NBT tests for Language and Mathematics.
Computer Science with Mathematical Statistics	Computer Literacy Introductory Programming in C# Introduction to Computer Hardware Internet and Webpage Development Introductory Statistics Introductory Probability Theory Calculus Algebra and Differential Equations	
Computer Science with Mathematics	Computer Literacy Introductory Programming in C# Introduction to Computer Hardware Internet and Webpage Development Calculus Algebra and Differential Equations One of: • Inorganic and Analytical Chemistry • Mechanics, Optics and Electricity One of: • Organic and Physical Chemistry • Mechanics, Thermodynamics, Electricity and Magnetism	
Computer Science with Physics	Computer Literacy Introductory Programming in C# Introduction to Computer Hardware Internet and Webpage Development Mechanics, Optics and Electricity Mechanics, Thermodynamics, Electricity and Magnetism Calculus One of: • Algebra and Differential Equations • Calculus and Linear Algebra	
Computer Science in Business and Management	Computer Literacy Introductory Programming in C# Introduction to Computer Hardware Internet and Webpage Development Two of: • Introduction to Information Systems • Human Resources Management • Business Functions • Business Calculations • Calculus Two of: • Computer Assisted Programming • Individual Differences • Accounting • Business Calculations • Calculus and Linear Algebra	

Admission requirements are subject to change.

Learning programmes in Computer Information Systems (BCIS)

Duration of study: Three years

Enquiries: Jaco Marais: +27 51 401 2929

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
Computer Information Systems	Computer Literacy Introductory Programming in C# Introduction to Information Systems Computer-assisted Programming Business Functions Human Resources Management Business Calculations Individual Differences	• NSC and an AP of 30. • Language of instruction on level 4 (50%) • Mathematics on level 4 (50%) in order to register for BCIS. • Participation in the NBT for Language and Mathematics.

Admission requirements are subject to change.

Learning programmes in Consumer Science

Bachelor of Consumer Science (BConsSc) is the study of people's needs regarding housing, clothing and food, and the management of resources to satisfy these needs. After completion of this programme, the BConsSc student will be capable of following a career as a consumer scientist, e.g. consumer consultant, designer, buyer, marketer, or quality-control inspector of consumer products. The student should also be capable of advising consumers on the management of time, energy and other resources. The major subjects are Foods, Consumer Science, and Textiles.

After completion of the BSc Consumer Science programme, the student will be able to follow a career in the food industry. The major subjects are Foods and Food Science. Learning programmes in the Consumer Science field of interest offer one option.

Duration of study: four years

Careers/fields of study: Consumer consultant, designer, buyer, marketer or quality controller of consumer and food products, product developer, quality controller, consultant or researcher in the food industry.

Enquiries: Prof HJH Steyn: +27 51 401 2304

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR SEMESTER 1 AND 2	MINIMUM ADMISSION REQUIREMENTS
BConsSc General	Food security Basic Construction Fashion History General Management Consumer Science Computer Literacy/Advanced Computer Literacy	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Participation in the NBT for Language.
BConsSc Food	Food security Nutrition General Management Consumer Science Computer Literacy/Advanced Computer Literacy	
BSc (Consumer Science) Food	Biology Chemistry Physics Computer Literacy / Advanced Computer Literacy Food security Consumer Science Biometry	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 5 (60%). · Both Life Sciences and Physical Science must be offered. · Life Sciences on level 5 (60%) and Physical Science on level 4 (50%). Alternatively, at least 60% is required in the modules CHEM1532, CHEM 1552, CHEM1622 and CHEM1642. · Participation in the NBT for Language and Mathematics.

Admission requirements are subject to change.

BUILDING SCIENCES

Programme in Architecture

Applications for admission to the BArch programme, on the prescribed application form, must reach the Registrar, Academic Student Services, University of the Free State, Bloemfontein, before or on 31 May of the year before intended admission. A selection procedure takes place before admission (consult www.ufs.ac.za/architecture; 'Academic Information'). Students will be notified of the outcome of the selection process no later than the end of November.

The Bachelor of Architecture involves full-time education that extends over six semesters and involves lectures, projects and continuous evaluation. The purpose of this programme is to educate candidates who may register with the South African Council for the Architectural Profession in the appropriate category for which they qualify, in terms of the provisions of the Architectural Profession Act 44 of 2000. The degree BArch provides access to the BArchHons degree. Students are strongly advised to work in an architect's

office or other similar approved institution during holidays, in order to gain practical experience. The evaluations and examinations for the degree BArch are recognised by the minister concerned, in terms of the provisions of the Architectural Profession Act (Act 44 of 2000). Training experience after completion of the BArch degree will be controlled by the conditions of the South African Council for the Architectural Profession. The registrar of this council will provide information in this regard.

Selection:

- A selection process takes place before admission. A maximum number of 55 students are admitted.
- A student registered for a programme at the UFS and wishing to change to the BArch programme, must contact the department on or before 31 May of the year before intended registration.
- All information pertaining to the selection process is available on the departmental website: www.ufs.ac.za/architecture; see 'Academic Information'.
- Applicants have to pass a preliminary selection process.
- Applicants who passed the preliminary selection will be invited to a selection interview at which a portfolio of creative work has to be presented.
- Qualifying applicants must write aptitude and NBT tests and submit the results to the department before the selection interview.
- Students will be notified of the outcome not later than the end of the year before intended registration.

Duration of study: three years

Enquiries: Jako Olivier: +27 51 401 2332

Careers/fields of study: Draughtsman, architectural technologist, architectural assistant, preparation for architect profession, urban and regional planner, landscape architect, interior designer.

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR		MINIMUM ADMISSION REQUIREMENTS
	SEMESTER 1	SEMESTER 2	
Bachelor of Architecture (BArch)	Design Construction History of Architecture Presentation Techniques Trigonometric Drawing	Photography	· NSC and an AP of 30. · Language of instruction on level 4 (50%) · Mathematics on level 4 (50%). · Participation in the NBT for Language and for Mathematics. **Closing date: 31 May 2016**

Admission requirements are subject to change.

Programme in Quantity Surveying and Construction Management

Duration of study: three years

Enquiries: Dr Benita Zulch: +27 51 401 3849

Applications for admission to the degree programme, on the prescribed form, must reach the Director, Student Administration, before or on 31 July of the year prior to the intended admission. Prospective students will be informed of the outcome.
A degree can be obtained for the academic preparation of a candidate for the profession of Quantity Surveying and Construction Management.

Learning programmes in the BUILDING SCIENCES offer four options:
BSc Construction Management (Residential)

- Careers/fields of study: Construction business management, production of real estate, operation management and building management.

BSc Quantity Surveying (Residential)

- Careers/fields of study: Professional practising of quantity surveying, construction surveying, cost project management, property development and management.

BSc Construction Management (Distance Learning)

- Careers/fields of study: Construction business management, production of real estate, operation management and building management.

BSc Quantity Surveying (Distance Learning)

- Careers/fields of study: Professional practising of quantity surveying, construction surveying, cost project management, property development and management.

All learning programmes are SELECTION PROGRAMMES –
Closing date for applications: 31 July 2016

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR		MINIMUM ADMISSION REQUIREMENTS
	SEMESTER 1	SEMESTER 2	
BSc (Construction Management) (Residential)	Production and operational management Construction economics Property development economics Physics Business functions Statistics Accounting	Mathematics Accounting	• NSC and an AP of 34. • Language of instruction on level 4 (50%) • Mathematics on level 5 (60%). • One of Economics, Business Studies, Accounting or Physical Science on level 4 (50%) is recommended. • A maximum of 50 students are considered. • Application must be submitted before or on 31 July, the year before intended registration to the programme. • A maximum of 50 students will be considered. • Participation in the NBT for Language and for Mathematics. • Consult the Faculty Rulebook for more information.
	ONE of the following:		
	English Engineering science	Statistics	
BSc (Quantity Surveying) (Residential)	Descriptive quantification Construction economics Property development economics Physics Business functions Statistics Accounting	Mathematics Accounting	
	ONE of the following:		
	English Engineering science	Statistics	

PROGRAMME DESCRIPTION	MODULES IN FIRST YEAR		MINIMUM ADMISSION REQUIREMENTS
	SEMESTER 1	SEMESTER 2	
BSc (Construction Management) (Distance Learning)	Building economics Physics Business functions Production and Operational Management Property Development economics Statistics Accounting	Mathematics Accounting	NSC and a minimum AP of 34. • Language of instruction on level 4 (50%) • Mathematics on level 5 (60%). • One of Economics, Business Studies, Accounting or Physical Science on level 4 (50%) is recommended. • A maximum of 50 students are considered. • Closing date: 31 July 2016. • Participation in the NBT for Language and for Mathematics.
	ONE of the following:		
	English Engineering science	Statistics	
BSc (Quantity Surveying) (Distance Learning)	Building economics Descriptive Quantification Physics Business functions Property development economics Statistics Accounting	Mathematics Accounting	
	ONE of the following:		
	English Engineering science	Statistics	

Admission requirements are subject to change.

Kovsies *Open Day*

BLOEMFONTEIN CAMPUS: 14 MAY 2016

08h30 – 9h30	Formal welcoming of the Class of 2017 AND their parents Venue: Callie Human Centre
08h30 –12h00	Prospective students and their parents visit faculties and exhibitions
10h30 – 11h30	Informal welcoming of the Class of 2017 (PROSPECTIVE STUDENTS ONLY) Venue: Callie Human Centre
11h30 – 15h00	Prospective students visit faculties and exhibitions
8h30 – 15h00	Student Life Programme in front of Main Building

Bring your application form and documents to the onsite application centre. Follow the directions.

QWAQWA CAMPUS: 21 MAY 2016

10h00 – 11h00	Formal welcoming of the Class of 2017 AND their parents Venue: Rolihlahla Mandela Hall
10h00 – 15h00	Prospective students and their parents visit faculties and exhibitions

Bring your application form and documents to the onsite application centre. Follow the directions.

For more information visit Facebook/Kovsie2b

T: +27(0)51 401 3384/3000 | E: info@ufs.ac.za | **www.ufs.ac.za**

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