

NELSON MANDELA UNIVERSITY



Faculty of Science **Prospectus** 2019

100 YEARS OF MANDELA

NELSON MANDELA UNIVERSITY

FACULTY OF SCIENCE

PROSPECTUS 2019

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NB:

Although the information contained in this Prospectus has been compiled as accurately as possible, the Council and the Senate of Nelson Mandela University accept no responsibility for any errors or omissions. This Prospectus is applicable only to the 2019 academic year. Information on syllabus and module outcomes is available on the Nelson Mandela University website.

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1 VISION AND MISSION

The Faculty of Science is one of seven faculties at Nelson Mandela University. It is well established with highly-motivated academic staff, together with well-qualified technical and other support staff.

The faculty offers the following qualification types: Higher Certificate, Diploma, Bachelor of Technology, Bachelor of Science, Bachelor of Science in Information Systems, Bachelor of Science Honours, Master of Science and Doctor of Philosophy.

The qualifications of the Faculty are designed to give students an adequate grounding in the fundamental principles of their chosen fields of study. The practical nature of these qualifications is reflected in the significant number of hours which students spend in modern, well-equipped laboratories. The students are prepared for interesting and rewarding careers. Short qualifications are conducted in the Nelson Mandela University Continuing Education Programme to keep those in industry at the cutting edge of technology.

Staff in the Faculty has gained recognition throughout South Africa and internationally while students are sought after across the country because of the high level of training they receive.

2 STAFF

OFFICE OF THE DEAN

Acting Executive Dean

Prof A Muronga

Secretary

Ms L D Ntintili

FACULTY ADMINISTRATION

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Manager: Faculty Administration

Ms L Roodt BCom (NMMU)

Faculty Administrators

Ms F Heilbron (Claassen)

Ms T Penrith

Ms Y Tembo

GEORGE CAMPUS

Co-ordinator: Academic Administration

Mrs E Labuschagne NDip (Com Admin) (TechPta)

SCHOOL OF BIOMOLECULAR AND CHEMICAL SCIENCES

Acting Director of School

Prof G Dealtry BSc (Hons) (Newcastle), MSc (Birmingham), PhD (Essex)

Department of Biochemistry and Microbiology

<i>Head of Department</i>	Dr B M Somai BSc (UDW), BSc (Hons) (UDW), MSc (UDW), PhD (Clemson Univ, South Carolina)
<i>Secretary</i>	Ms R Hiles Dip (Mgt) (NMMU), BTech (Mgt) (NMMU), MPhil (Conflict Transf and Mgt) (NMU)

Summerstrand South Campus

<i>Associate Professors</i>	Prof T G Downing BSc (RU), BSc (Hons) (RU), MSc (RU), PhD (US) Prof C L Frost BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE) Prof V Oosthuizen BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE) Prof S Roux HED (Potch), BSc (Potch), BSc (Hons) (Potch), MSc (Potch), DMedSci (UP) Prof M van de Venter BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE)
<i>Senior Lecturers</i>	Dr S Govender BSc (UDW), BSc (Hons) (UDW), MSc (UDW), PhD (US)
<i>Lecturer</i>	Dr S Williams BSc (US), BScHons (US), MSc (US), PhD (NMMU)

Summerstrand South Campus

<i>Research Associate</i>	Prof R Naude PhD (UPE)
<i>Honorary Professor</i>	Prof L Graf Doctor Degree (Eötvös Lorand Univ.), PhD, DSc (Hungarian Academy of Sciences)
<i>Laboratory Technicians</i>	Ms J Madubedube MTech in Biomedical Science (CPUT), BScHons (RU) Ms B Mtshemla BScHons (RU) Mrs W Wilde BSc (Hons) (RU)
<i>Laboratory Assistants</i>	Ms L Geseba Mr L Mabulu Mr G Hewitt

Department of Physiology

<i>Head of Department</i>	Dr H Davids BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE)
<i>Secretary</i>	Ms R Hiles Dip (Mgt) (NMMU), BTech (Mgt) (NMMU), MPhil (Conflict Transf and Mgt) (NMU)

Summerstrand South Campus

<i>Associate Professors</i>	Prof G Dealtry BSc (Hons) (Newcastle), MSc (Birmingham), PhD (Essex)
<i>Lecturer</i>	Ms A Prahaladh BSc (US), BSc (Hons) (US), MSc (US)
<i>Research Associate</i>	Prof S Roux HED (Potch), BSc (Potch), BSc (Hons) (Potch), MSc (Potch), DMedSci (UP)
<i>Laboratory Technicians</i>	Mrs M Fensham BSc (UPE), BScHons (UPE), HDE (UPE) Mr K Oosthuizen BSc, BScHons(US)

Department of Chemistry*Head of Department*

Prof Z R Tshentu BSc (UPE), BScHons (UPE), MSc (UPE), PhD (NMMU)

Secretaries

Ms Z Dyan Dip (Mgt) (NMMU), BTech (Mgt) (NMMU)

Mrs M Vosloo

Associate Professor

Prof Z R Tshentu BSc (UPE), BScHons (UPE), MSc (UPE), PhD (NMMU)

Summerstrand North Campus*Lecturers*

Ms M F C Ghenne NH Dip (Chem) (PET), BTech (Quality) (PET)

Ms A Noah MTech (Chem) (PET)

Dr G Rubidge DTech (Chem) (PET)

Summerstrand South Campus*Professor of Inorganic Chemistry*

Vacant

Associate Professor

Prof E Ferg DTech (Chem) (PET)

Senior Lecturers

Dr B Barton PhD (UPE)

Mr S Gerber MSc (US)

Dr N Mama PhD (NMMU)

Lecturers

Dr A Abrahams PhD (NMMU)

Dr D Grooff PhD (NWU)

Dr B G Hlangothi MSc (Vista), PhD (UJ)

Dr S P Hlangothi MSc (UniN), PhD (NMMU)

Department of Textile Science*Honorary Professor and Head of Department*

Prof L Hunter BSc (Hons) (UCT), MSc (UPE), PhD (UPE), CText ATI FTI, occupying the Philip Frame Chair of Textile Technology

Adjunct Professor

Prof R D Anandjiwala BScText (Gujarat), BText (Baroda), MTech (India Inst of Technology), PhD (Leeds), CText FTI

SCHOOL OF COMPUTING SCIENCES, MATHEMATICS, PHYSICS AND STATISTICS*Director of School*

Prof J L Wesson BCom (UPE), BComHons (UPE), MCom (UPE), PhD (UPE), MIITPSA, MICSIT

Department of Computing Sciences*Head of Department*

Prof B M Scholtz BSc (UPE), BScHons (UPE), MSc (NMMU), PhD (NMMU)

Acting Secretary

Ms K Malgas BCom (NMMU)

Summerstrand South Campus*Professors*

Prof A P Calitz BA (UPE), BCom (UPE), BScHons (UPE), MSc (UPE), PhD (UPE), DBA (NMMU), PMIITPSA, ACM, IEEE

	Prof J L Wesson BCom (UPE), BComHons (UPE), MCom (UPE), PhD (UPE), MIITPSA, MICSIT
<i>Associate Professors</i>	Prof C B Cilliers BSc (UPE), BScHons (UPE), MSc (UPE), PhD (NMMU), MICSIT
	Prof J H Greyling BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE), MICSIT
<i>Senior Lecturers</i>	Dr L Barnard BCom (UPE), NHDip (IT) (PET), MTech (IT) (PET), PhD (UPE), MICSIT, MIITPSA
	Dr M C du Plessis BSc (NMMU), BScHons (NMMU), MSc (NMMU), PhD (UP)
	Dr L van der Post HDE (UPE), BAFA (UCT), BAHons (Comp Sci) (UPE), MA (Comp Sci) (NMMU), PhD (NMMU)
	Dr D Vogts BSc (UPE), BScHons (UPE), MSc (UPE), PhD (NMMU)
<i>Lecturers</i>	Ms C H Dixie HDE (UPE), BCom (UPE), BComHons (UPE), MSc (UPE)
	Mr D Kunjuzwa BSc (UFH), BScHons (UFH), MSc (UFH)
	Mrs J Nel NDip (IT) (PET), BTech (IT) (PET), BScHons (UPE)
	Mrs M Taljaard HDE (UNISA), BSc (UOFS), BScHons (UPE), MSc (UPE), MIITPSA
	Ms N Tansley NDip (Comp Data Proc) (PET), BTech (IT) (PET), MTech (NMMU)
	Mrs A van der Hoogen BCom, BComHons, MCom (NMMU)
<i>Associate Lecturer</i>	Mrs A Esterhuysen Certified Instructor: Microsoft Office, Lotus SmartSuite, Novel/Corel WordPerfect Suite
<i>Technical – Network Administrator</i>	Mr J Rademakers NDip (Comp Data Proc) (PET), BTech (IT) (PET)
<i>Technical – Assistant Network Administrator</i>	Mr J Johnson BTech – IT (Comp Net)
<i>Technical</i>	Mrs H Irvine MSCE (NT 4), MSCE (2000), MSCA (2000), MCT, A+ Technician, Network+ Technician, Microsoft Office User Specialist on Microsoft Excel & Microsoft Word
<i>Administrative Co-ordinator</i>	Mrs D Fani BCom (NMMU), BComHons (NMMU)
<i>Administrative Assistant</i>	Ms I T Teyise
<i>Lab Assistant</i>	Mrs M Zomba
<i>Administrative Assistant</i>	Mrs D E van der Walt Dip (Education) (PECE), Cert in Org and Work Study (Tech Pta)
2nd Avenue Campus	
<i>Associate Lecturers</i>	Mr N Jafta BSc (IS) (NMMU), BTech (IT) (Nelson Mandela University)
	Mr M Twani NDip (IT) (NMMU) BTech (IT) (Nelson Mandela University)

George Campus*Associate Lecturer*Mrs N Ramantswana NDip (Forestry) (NMMU)
BTech (Forestry) (Nelson Mandela University)**Department of Mathematics and Applied Mathematics***Head of Department*Dr J E Maritz BSc Ed (UWC), BScHons (UPE),
MSc (UPE), PhD (UKZN)*Secretary*

Ms C Esterhuizen

Administrative Assistant

Ms V Xako

Summerstrand Campus*Professor*Prof S Veldsman BCom (UPE), BComHons
(UPE), MSc (UPE), PhD (UPE)*Associate Professor*

Prof E W Straeuli MSc (UP), DPhil (Zurich)

*Senior Lecturers*Dr S Juglal BPaed (Arts) (UDW), BAHons (Maths)
(UPE), MSc (Maths) (UPE), PhD (Maths)
(NMMU)Dr M Walton BCom (UPE), BComHons (UPE),
MCom (UPE), PhD (NMMU)Dr M Weigt BSc (US), BScHons (US), MSc (US),
PhD (UCT)*Lecturers*Mr J R de Jager BSc (UPE), BScHons (UPE),
MSc (UPE)Ms T Holtzhausen BSc (NMMU), BScHons
(NMMU), MSc (NMMU)Dr W Mbava BSc (UZ), BSc Hons (UZ), MSc
(UZ), PhD (NMMU)Mr C O Parsons BSc (UPE), BScHons (UPE),
MSc (UPE)Mr Q N Petersen BSc (UPE), BScHons (UPE),
MSc (UPE)Mr C J Pretorius BSc (NMMU), BScHons
(NMMU), MSc (NMMU)Mr H Smith BSc (UPE), BScHons (UPE), MSc
(UPE)Mr B J Sokopo BSc (NMMU), BScHons (NMMU),
MSc (NMMU)Mr T E Thelejane BSc (Unitra), BScHons (Unitra),
MSc (Unitra)Dr S J Wagner-Welsh BCom (UPE), BSc (UPE),
BSc Hons (UPE), MSc (UPE), PhD (NMMU)Mr P Zembe BSc (NMMU), BScHons (NMMU),
MSc (NMMU)**Missionvale Campus***Associate Professor*Prof A J M Snyders BSc (Ed) (RAU), BScHons
(RAU), MSc (UNISA), PhD (UPE)

Department of Physics*Head of Department*

Prof A Venter MSc (UPE), PhD (UPE)

Secretary

Ms C Neveling

Summerstrand South Campus*Professors*

Prof J R Botha BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE)

Prof J H Neethling BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE)

Prof E E van Dyk PhD (UPE), Pr.Nat.Sci.

Associate Professors

Prof T B Gibbon BSc (UPE), HDE (UPE), BScHons (UPE), MSc (NMMU), PhD (NMMU)

Prof M C Wagener PhD (UPE)

Senior Lecturer

Dr F J Vorster BSc (UPE), BScHons (UPE), MSc (UPE), PhD (NMMU)

Lecturers

Dr N G Hashe BSc (Vista), BScHons (NMMU), MSc (NMMU), PhD (NMMU)

Mr J Jonker BSc (UCT), BSc (Hons) (UCT), MSc (Cape Town)

Senior Technician

Mr M E Claassen

Laboratory Technicians

Mr L Somdaka

Mr J B Wessels NDip (Elec Eng)

Laboratory Assistant

Mr W Grauman

Summerstrand North Campus*Lecturer*

Vacant

Laboratory Assistant

Vacant

Missionvale Campus*Lecturers*

Mr M C Bacela BSc (Physics & Math) (Vista), BScHons (Physics) (Vista)

Mr I Coopersamy HDE (Vista), BScHons (US), MEd (Vista), QA (City & Guilds, London)

Department of Statistics*Head of Department*

Dr W Brettenny MSc (NMMU), PhD (NMU)

Secretary

Ms R Vincent-Le Roux

Administrative Co-ordinator

Mrs T E Litvine

Summerstrand South Campus*Professor*

Prof I N Litvine MSc (Kiev State Shevchenko Univ), PhD (Kiev State Shevchenko Univ)

Associate Professor

Prof G D Sharp BSc (Hons) (RU), MSc (UPE), PhD (RU)

Senior Lecturers

Dr J Hugo MSc (UOFS), PhD (UFS)

Dr V Goodall BSc (RU), BSc (Hons) (RU), MSc (RU), PhD (Wits)

Lecturers

Dr W Brettenny MSc (NMMU), PhD (NMU)

Dr C Clohessy MSc (NMMU), PhD (NMMU)

Mr L Kepe HDE (RU), MSc (US)

Mr S Mangisa BSc (NMMU), BScHons (NMMU),
MSc (NMMU)

Missionvale Campus

Lecturer

Mr J M Simakani MSc (LimburgsUniv Belgium),
GradDip (Stats) (Inst of Stats, London), PGDTE
(UNISA), CDipAF (ACCA), CStat, CSci

2nd Avenue Campus

Lecturer

Mr B J Lubczonok MSc (RU)
Mr S Pazi MSc (NMU)

SCHOOL OF ENVIRONMENTAL SCIENCES

Director of School

Dr D R du Preez BSc (Wits), BScHons (Wits),
MSc (UPE), PhD (UPE)

Department of Agriculture and Game Management

Head of Department

Mr P R Celliers B.Sc Agric. (UOFS), BSc. Agric.
Hons (Genetics) (UOFS), MSc. Agric. (Genetics
– Plant Breeding) (UOFS)

Secretary

Ms C Koen

Summerstrand North Campus

Professor

Prof P du P van Niekerk NDip (MgtPrac) (PET),
BSc (Agric) (US), DPLR, DTech (PET)

Senior Lecturer

Mr P R Celliers B.Sc Agric. (UOFS), BSc. Agric.
Hons (Genetics) (UOFS), MSc. Agric. (Genetics
– Plant Breeding) (UOFS)

Lecturers

Ms J Ferreira NDip (GRM) (NMMU), BTech
(GRM) (NMMU), MTech (GRM) (NMMU)

Ms L Kant NDip (GRM) (NMMU), BTech (GRM)
(NMMU)

Dr T M Pittaway NDip (Agric) (PET), BTech
(Agric) (PET), MTech (Agric) (PET), DTech
(Agric) (NMMU)

Department of Botany

Head of Department

Dr P T Gama MSc (NCSU), PhD (NMMU)

Secretary

Ms T Pakana

Summerstrand South Campus

Professors

Prof J B Adams BScHons (UPE), MSc (UPE),
PhD (UPE), PrSciNat

Prof R M Cowling BSc (UCT), BSc Hons (UCT),
PhD (UCT), PrSciNat

Associate Professor

Prof E E Campbell BSc (US), BScHons (UPE),
MSc (UPE), PhD (UPE), PrSciNat

Senior Lecturers

Dr D R du Preez BSc (Wits), BScHons (Wits),
MSc (UPE), PhD (UPE)

Dr P T Gama MSc (NCSU), PhD (NMMU)

Dr P Steyn PhD (UPE)

Lecturer Ms P Lithauer HDE (UPE), BSc (UPE), BScHons (UPE), M Agric (US)

Department of Geosciences

Head of Department Dr A H de Wit MA (UOFS), DPhil (UPE)

Secretary Ms Z Goldman

Summerstrand South Campus

Professors Prof M J de Wit PhD (Cantab) Chair Earth Stewardship Science Seconded from Faculty of Science

Prof V Kakembo MSc (RU), PhD (RU)

Associate Professors Prof M Doucouré (Managing Director – AEON), Doctorate (Univ. Paris-7/France), Engineer (INH/Algiers)

Lecturers Mr C R Anderson BSc (UPE), BScHons (UPE), MSc (UPE), PGCHE (NMMU), PrSciNat

Dr H W Britz NDip (Cartog) (UCT), Unigis (Manchester Metropolitan), MTech (Cartog) (UCT), PhD (NMMU)

Mr G Brunsdon BSc (NMMU), BScHons (NMMU), MSc (NMMU)

Dr A H de Wit MA (UOFS), DPhil (UPE)

Dr G Mahed BSc (UWC), MSc (UWC), PhD (NMMU)

Dr N Tonnelier BSc (Univ Joseph Fourier, Grenoble, France), MSc (Univd'Orleans, France), PhD (Laurentian Univ, Sudbury, Canada)

Mrs L L Williams BA (UPE), BAHons (UPE), MA (UPE)

Senior Technician Mr G P Baldwin

Laboratory Technician Mr W Deysel

Missionvale Campus

Lecturers Ms D Ah Goo BA Hons (RU), HDE (PG) (UPE), MA (NMMU)

Ms S Slamang BScHons (NMMU)

Department of Zoology

Head of Department Prof N A Strydom MSc (UPE), PhD (RU)

Secretary Ms M Myles MPhil (US)

Summerstrand South Campus

Professor Prof G I H Kerley MSc (UP), PhD (UPE)

Associate Processors Prof N A Strydom MSc (UPE), PhD (RU)

Prof R Nel MSc (UPE), PhD (UCT)

Professor Prof P A Pistorius BSc (UnivPmb), BSc Hons (UP), MSc (UP), PhD (UP)

Lecturers Mr N Makhase MSc (FHU)

Mr M Potgieter MSc (NMMU)

Mr S Welman MSc (NMMU)

<i>Senior Laboratory Technician</i>	Mr P H du Toit BScHons (UPE)
<i>Laboratory Technicians</i>	Ms M Hawkins BSc (Hons) (UP), MSc (NMMU) Mr S Levack Mr M Mpinga BSc (Hons) (UKZN)

SCHOOL OF NATURAL RESOURCE MANAGEMENT

George Campus

<i>Director of School</i>	Dr A G Schmidt BSc (UN), BSc (Hons) (Wildlife Mgt) (UP), MSc (Wildlife Mgt) (UP), PhD (Zoology) (NMMU)
<i>Administrative Assistants</i>	Ms S Roets (Secretarial: Office Mgt) Ms K Ramoo

Forestry Programme

<i>Associate Professors</i>	Prof K Little BSc (Hons) (Geography) (UN), HDE (UN), PhD (Botany) (UN) Prof J H Louw BSc (Hons) (Forestry) (US), PG Dipl. Terrain Evaluation (PU for CHE), MSc (Forestry) (US), PhD (Botany) (Wits)
<i>Lecturer & Programme Leader</i>	Mr C F Pool NDip (Forestry) (PET), Cert (Labour Rel) (UP), Dip (Ter Ed) (UNISA), BTech (Forestry) (PET), MTech (Forestry) (NMMU)
<i>Lecturers</i>	Mr M Ramantswana BTech (Forestry) (NMMU), MTech (Forestry) (NMMU) Mr S J van Zyl NDip (Forestry) (NMMU), BTech (Forestry) (NMMU), MTech (Forestry) (NMMU)

Wood Technology Programme

<i>Lecturer & Programme Leader</i>	Mr R Müller BSc (Wood Science) (US), B Eng (Mech) (US), MSc (Wood Science) (US)
<i>Lecturer</i>	Mr B Muller BSc (Forestry) (US), MTech (Forestry) (NMMU)

Veldfire Management Programme

<i>Lecturer & Programme Leader</i>	Mr C F Pool NDip (Forestry) (PET), Cert (Labour Rel) (UP), Dip (Ter Ed) (UNISA), BTech (Forestry) (PET), MTech (Forestry) (NMMU)
<i>Lecturer</i>	Mr S J van Zyl NDip (Forestry) (NMMU), BTech (Forestry) (NMMU), MTech (Forestry) (NMMU)

Agricultural Management Programme

<i>Senior Lecturer</i>	Mr J W Jordaan BSc (Agric) (UFS), BSc (Agric) (Hons) (UP), Bus. & Admin. (Hons) (US), MBA (US)
<i>Lecturer</i>	Vacant

Nature Conservation and Game Ranch Management Programme

<i>Senior Lecturer & Programme Leader</i>	Dr J Venter Dip (Nature Cons) (TSA), BTech (Nature Cons) (PET), MTech (Nature Cons) (NMMU), PhD (UKZN)
<i>Senior Lecturer</i>	Dr T Kraaij BSc (US), MSc (Nature Cons) (US), PhD (NMMU)
<i>Lecturers</i>	Ms B Currie Dip (Nature Cons) (NMMU), BTech (Nature Cons) (NMMU), MTech (Nature Cons) (NMMU) Mr W Mathee Dip (Nature Cons) (NMMU), BTech (Nature Cons) (NMMU), MSc (Botany) (NMMU)

REGISTERED ENTITIES**Telkom Centre of Excellence - Distributed Multimedia Applications Unit**

<i>Head</i>	Prof J L Wesson BCom (UPE), BComHons (UPE), MCom (UPE), PhD (UPE), MIITPSA, MICSIT
<i>Vice-Head</i>	Dr D Vogts BSc (UPE), BScHons (UPE), MSc (UPE), PhD (NMMU)
<i>Administrative Assistant</i>	Mrs D E van der Walt Dip (Education) (PECE), Cert in Org and Work Study (Tech Pta)

Telkom Centre of Excellence - Optical Fibre Research Unit

<i>Head</i>	Prof A W R Leitch BSc (UPE), BScHons (UPE), MSc (UPE), PhD (UPE)
<i>Manager</i>	Prof T B Gibbon BSc (UPE), HDE (UPE), BScHons (UPE), MSc (NMMU), PhD (NMMU)

Telkom Centre of Excellence - Photovoltaics Unit

<i>Head</i>	Prof E E van Dyk PhD (UPE), PrSciNat
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Centre for Energy Research

<i>Director</i>	Prof E E van Dyk PhD (UPE), PrSciNat
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Centre of Expertise in Forecasting

<i>Director</i>	Prof I N Litvine MSc (Kiev State Shevchenko Univ), PhD (Kiev State Shevchenko Univ)
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Centre for African Conservation Ecology

<i>Director</i>	Prof G I H Kerley BSc (UPE), BScHons (UPE), MSc (UP), PhD (UPE)
<i>Deputy Director</i>	Prof V Kakembo MSc (RU), PhD (RU)
<i>Staff</i>	Dr A F Boshoff BSc (RU), BSc (Hons) (UP), PhD (London) Prof E E Campbell BSc (US), BScHons (UPE), MSc (UPE), PhD (UPE) Dr D R du Preez BSc (Wits), BScHons (Wits), MSc (UPE), PhD (UPE)

Dr N Mzilikazi, BSc (Unitra), BScHons (Unitra),
MSc (UKZN), PhD (UKZN)

Dr A G Schmidt BSc (UN), MSc (UP), PhD (NMU)

Dr S L Wilson BSc (UPE), BScHons (UPE), MSc
(UPE), PhD (UPE)

Administrator

Vacant

InnoVenton and the Downstream Chemicals Technology Station

Director

Vacant

Deputy Director

Dr G Dugmore DTech (Chemistry) (PET)

SARCHI Chair

Prof P Watts BSc Hons, PhD (Bris), CSci,
CChem, FRSC

Centre for High Resolution Transmission Electron Microscopy

Director

Prof J H Neethling BSc (UPE), BScHons (UPE),
MSc (UPE), PhD (UPE), MAcad

Project Co-ordinator

Ms L Westraadt BSc (Physics and Appl Math)
(NMMU), MSc (Physics) (NMMU)

Research Associate

Prof J A A Engelbrecht PhD (UPE), MAcad,
PrSciNat

Sustainability Research Unit (George and Summerstrand South)

Head: George Campus

Prof C Fabricius BSc Hons (UP), MSc *cum laude*
(Wits), PhD (UCT)

*Academic Staff: Summerstrand
South Campus*

Prof J B Adams BScHons (UPE), MSc (UPE),
PhD (UPE), PrSciNat

Academic Staff: George Campus

Ms B Currie Dip (Nature Cons) (NMMU), BTech
(Nature Cons) (NMMU), MTech (Nature Cons)
(NMMU)

*Administrative Assistant:
George Campus*

Ms C Loubser

3 GENERAL INFORMATION AND REGULATIONS

It is the responsibility of every student to acquaint him/herself with the contents of the General Prospectus and the Faculty Prospectus.

3.1 MINIMUM REQUIREMENTS FOR ADMISSION IN THE FACULTY OF SCIENCE

- Direct admission requirement for BSc programs: Admission Points Score of at least 40 and a NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Those who have not qualified for direct entry but have an Admission Points Score between 30 and 39 and a NSC achievement rating of at least 4 (50-59%) for Mathematics will be given the opportunity to be assessed on the Access Assessment Battery (ABB).

NAME AND QUALIFICATION CODE OF PROGRAMMES:

- BACHELOR OF SCIENCE (GENERAL) (20000/20050)
- BACHELOR OF SCIENCE (BIOCHEMISTRY, CHEMISTRY, MICROBIOLOGY AND PHYSIOLOGY) (20020/20040)
- BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES) (20025/20055)
- BACHELOR OF SCIENCE (COMPUTER SCIENCE) (20023/20053)
- BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCES) (20026/20056)
- BACHELOR OF SCIENCE (GEOSCIENCES: GEOGRAPHY AND GEOLOGY) (20024/20054)
- BACHELOR OF SCIENCE (HUMAN MOVEMENT SCIENCE AND BIOCHEMISTRY) (20003/20030)
- BACHELOR OF SCIENCE (INFORMATION SYSTEMS) (20099/20090)
- BACHELOR OF SCIENCE (MATERIALS DEVELOPMENT) (20022)
- BACHELOR OF SCIENCE (PHYSICAL SCIENCE AND MATHEMATICS) (20221/20015)
- BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES: BIOCHEMISTRY, CHEMISTRY, MICROBIOLOGY AND PHYSIOLOGY) (EXTENDED) (20012)
- BACHELOR OF SCIENCE (BIOCHEMISTRY, CHEMISTRY AND MICROBIOLOGY) (EXTENDED) 20018)
- BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES: MARINE BIOLOGY, CONSERVATION BIOLOGY, ECOLOGY, ENVIRONMENTAL MANAGEMENT AND COASTAL ZONE MANAGEMENT) (EXTENDED) (20011)
- BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES) (EXTENDED) (20016)
- BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCES) (EXTENDED) (20015/20017)
- BACHELOR OF SCIENCE (GEO-SCIENCES: GEOGRAPHY AND GEOLOGY) (EXTENDED) (20014/20019)

3.2 GENERAL ADMISSION REQUIREMENTS

Prospective students who **MATRICULATED PRIOR TO 2008** must please contact Nelson Mandela University's Admissions Office to determine their admission requirements.

Tel: 041 504 3911

E-mail: admissions@mandela.ac.za

Web: www.mandela.ac.za

- Prospective students will need at least a **National Senior Certificate (NSC)** or equivalent school-leaving certificate for admission to a diploma programme and must ensure that four of their seven subjects are from the designated list for admission to a degree programme.
- If an N3 Certificate was obtained, the N3 results together with the applicant's Grade 12 language results are used.
- Apart from this, there are also specific subject requirements for some qualifications.
- Admission to an undergraduate programme will be further determined by an applicant's Admission Points Score (APS). The APS system is used for allocating point values to your seven NSC subjects (see Table A).
- Applicants who do not meet the general requirements for the APS and/or the specific requirements for admission to a module or programme may be given the opportunity to be assessed on the Access Assessment Battery (AAB). Applicants must have a minimum APS of 22 in order to apply for a programme at Nelson Mandela University.
- There are limits to the number of students that can be admitted to each programme. Meeting the minimum admission requirements does NOT guarantee acceptance and you may be required to undergo further testing and/or be interviewed. If a programme is full, you may be denied admission even though you meet the minimum requirements.

Qualification Minimum Statutory Entry Requirement

Higher Certificate: Pass NSC, together with any other university requirements.

Diploma: Pass NSC with an achievement rating of 3 (40-49%) or better in four subjects, together with any other university requirements.

Bachelor's Degree: Pass NSC with an achievement rating of 4 (50-59%) or better in four subjects from the designated list, together with any other university requirements.

How to calculate your Admission Points Score (APS)

- The APS system allocates point values to the levels of achievement obtained for your matric subjects.
- Write down your seven NSC subjects and the levels obtained. If you have 8 or more subjects, use Life Orientation + the best six subjects (the six subjects which have the highest level).
- Allocate points according to the table above.
- Add up the number of points you have to calculate your APS.

Table A:

NSC	NSC %	APS	APS %
		8	90-100%
7	80-100%	7	80-89%
6	70-79%	6	70-79%
5	60-69%	5	60-69%

NSC	NSC %	APS	APS %
4	50-59%	4	50-59%
3	40-49%	3	40-49%
2	30-39%	2	30-39%
1	0-29%	0	0-29%

3.3 FACULTY MANAGEMENT COMMITTEE

The Faculty Management Committee consists of the Dean and the Directors of Schools in the Faculty of Science.

3.4 EXPERIENTIAL LEARNING REQUIREMENTS

To fulfil the requirements of the National Diploma, a student must complete at least one semester of applicable experiential learning.

Guides outlining the requirements for successful completion of experiential learning are obtainable from the relevant Department. In each module, the student is given projects and/or assignments which must be completed and submitted for evaluation.

It is imperative for students to register for the experiential learning component. This can be done at the beginning of the term or prior to leaving the campus at the end of the preceding term. Special registration forms for this purpose are obtainable from the Faculty Administrator.

Although Nelson Mandela University will help as far as possible to arrange practical learning, in the final instance the onus in this respect will be on the student. Many firms sponsor students and in these cases the experiential learning is naturally arranged by the sponsoring firm.

3.5 CLASS ATTENDANCE

Minimum Attendance

Due to the practical nature of the classes offered, students have to attend a minimum of 80% of lectures to gain admission to the examination, unless special leave is granted.

Absenteeism

The following rules apply in particular to the students of this Faculty:

1. Students who fail to attend lectures, need to supply their lecturers with reasons for their absence. This should be done before (if possible) or within three (3) days of the date of absenteeism.
2. If students have valid reasons, they should put it in writing. The relevant lecturers will keep it on the student's record for consideration when applying the 80% attendance criterion.

In the case of illness, an official Nelson Mandela University medical certificate is required and submitted within three days of their return to the relevant Head of Department/lecturer.

If students do not write a test, submit a project, etc. as a result of absenteeism, and have not followed rules (1) and (2), they will be given a nil for that particular exercise. If a student has a valid reason for his/her absenteeism and has followed the correct procedure, lecturers may use their discretion.

3.6 RE-ADMISSION REQUIREMENTS FOR UNDERGRADUATE PROGRAMMES

The University has adopted a policy regulating the re-admission of students to undergraduate programmes. These re-admission requirements expect of students to make continuous academic progress that will allow them to complete their qualifications within a reasonable period. In the case of the three-year 360 credit Bachelors and Diploma qualifications the expectation is that students will have completed the qualification in not more than 5 years, which means that a student must pass at least 72 credits per year. It is further assumed that

- students may initially find the transition from school to university challenging;
- it is theoretically possible for a student to complete 120 credits in the fifth year of study.

Consequently, it is assumed that only students who have not managed to pass 60 credits per year up to year four of their studies will be excluded. Students who have not managed to pass a minimum of 72 credits per year will only be re-admitted subject to certain **conditions** (e.g. limiting the number of modules that a student may register for, or a requirement to pass at least 80% of the modules registered for in the first semester in order to be allowed to continue with the second semester) and will be alerted to the fact that continued lack of satisfactory progress may lead to a refusal of re-admission.

Re-admission requirements

In order to be re-admitted, a student needs to have accumulated a minimum number of credits at the end of each year of study, as indicated in the table below. If that has not been achieved, the student may either be re-admitted subject to certain conditions or be refused re-admission. In the event of refusal a student may lodge an **appeal** in terms of the procedure indicated below.

Appeals procedure

The student has the right to appeal against a decision to refuse re-admission. The decision reached by the appropriate faculty committee regarding the re-admission appeal will be final and no further appeal will be permitted.

The process followed to apply for, consider and deal with a re-admission appeal is as follows:

- A student must submit their appeal in writing on a prescribed re-admission appeal form, with full motivation and supporting documentation, to Faculty Administration by either the last day of the re-examination period or within five (5) working days of receiving notification of re-admission refusal, whichever date is the latest.
- Faculty Administration must forward the appeal, together with a copy of the student's study record and the letter in which the student was informed that he/she was being refused re-admission, to the Committee.

- The Committee will then handle the appeal where consideration could be given to factors such as:
 - (a) The student's academic record.
 - (b) The appropriateness of the reasons for the refusal to readmit the student.
 - (c) Whether there are any special circumstances related to the student's unsatisfactory academic performance that should be taken into account and which could mitigate against refusing re-admission.
- A statement of the outcome of the appeal and a motivation for the decision reached will be communicated via e-mail and placed on the student's record by Faculty Administration.

Three-year (360 credits) programmes

Period of registration	Outcome		
	Continue Studies	Conditional re-admission	No re-admission
After year 1	72+ credits	Less than 71 credits	Not applicable
After year 2	144+ credits	120 – 143 credits	Less than 120 credits
After year 3	216+ credits	180 – 215 credits	Less than 180 credits
After year 4		All students	Less than 240 credits
After year 5			Less than 360 credits, unless special circumstances exist

Extended Programmes

- Students in extended programmes will only be re-admitted to the programme at the start of their second year of study if they have passed at least 50% of the modules prescribed in year 1 of the programme.
- Students will not be re-admitted to further studies in the extended programmes if they have not passed all the foundational modules after three years of study.
- Where the maximum period allowed for the mainstream programme is five years, it is **six years** for the corresponding extended programme. For purposes of re-admission, students in extended programmes must therefore reach the benchmarks in terms of credits set for students in the mainstream programmes after 2, 3, 4 and 5 years, only after 3, 4, 5 and 6 years respectively.

Procedure to determine whether re-admission requirements have been met

The following process will be followed to determine whether a student has met the re-admission requirements:

- At the end of each year Faculty Administration reviews students' progress and simultaneously identifies those students who have not met the required re-admission requirements. Heads of Department, in consultation with Faculty Administration, finalise the list of students who have not met the re-admission requirements;
- Faculty Administration informs students accordingly in writing and copies of the letters are placed on the students' records;
- Students who have been refused re-admission have one opportunity to apply for enrolment in an alternative programme via the Faculty Administration Office;
- Students have the right to appeal against the decision to refuse them re-admission. The appeal procedure is outlined in the General Prospectus.

3.7 DEPARTMENT OF COMPUTING SCIENCES**GENERAL RULES**

A series of tutorial and programming assignments will form part of the modules offered by the Department. Students must show satisfactory progress with these assignments during scheduled practical sessions in venues designated by the University. Part-time candidates who have access to approved computer facilities may apply for exemption from practical classes at the University on condition that the practical assignments and projects are performed satisfactorily. A subminimum of 40% is required for the class mark, as well as a subminimum of 40% for the examination in each module. In the case of insufficient computer facilities the Department reserves the right to select students.

WRFV101/WRFV1X0 Exemption

Students who have passed CAT in Grade 12 with a final mark of at least 80% receive automatic exemption from WRFV101/WRFV1X0.

COMPETENCY TESTS

Competency Tests can be applied for to test whether a candidate can be exempted from modules WRFV1X0/WRFV101/102 and WRAV101/102. Refer to the exemption rules in the Prospectus.

3.8 STATEMENT ON THE UNIVERSITY'S INTERVENTION IN THE EVENT OF POSSIBLE DISRUPTIONS TO ACADEMIC ACTIVITIES

From past experience the University knows that circumstances beyond our control may disrupt our academic activities. The University therefore reserves the right to implement certain emergency measures when deemed necessary to manage such situations. Please note that the University shall not be held liable for any inconvenience, damage or other negative consequence resulting from the implementation of such emergency measures.

4 HIGHER CERTIFICATES

4.1 HIGHER CERTIFICATE IN LEATHER TECHNOLOGY: PART-TIME (QUALIFICATION CODE: 2230 – 45) (NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 240) (NO NEW INTAKE)

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 2 (30-39%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- If the applicant has Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the qualification.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

Two years of part-time study with six two-week compulsory practical courses run at the International School of Tanning Technology in Grahamstown.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	Dyehouse Operations I	Year	LDO1112	24
	Dyehouse Operations I Practical	Year	LDP1112	12
	Leather Finishing I Practical	Year	LFP1112	12
	Leather Finishing I	Year	LLF1112	24
	Tanning I Practical	Year	LPR1112	18
	Tanning I	Year	LTA1112	30
	Credits First Year			120

		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Dyehouse Operations II	Year	LDO2112	24
	Dyehouse Operations II Practical	Year	LDP2112	12
	Leather Finishing II Practical	Year	LFP2112	12
	Leather Finishing II	Year	LLF2112	24
	Tanning II Practical	Year	LPR2112	12
	Tanning II	Year	LTA2112	36
	Credits Second Year			120

Please contact: Dr C Jackson-Moss at (046) 622 7310.

**4.2 HIGHER CERTIFICATE IN VELDFIRE MANAGEMENT: GEORGE
CAMPUS: FULL-TIME
(QUALIFICATION CODE: 80001 - 02/20)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 124)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admissions Points Score of 28.
- Minimum NSC requirements for Higher Certificate entry must be met.
- English, Afrikaans or isiXhosa (Home Language or First Additional Language) on at least NSC level 3 (40-49%).
- An NSC achievement rating of at least level 2 (30-39%) for Mathematics or level 3 (40-49%) for Mathematical Literacy.
- Applicants with an Admissions Point Score of between 22 and 27 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the programme.

RE-ADMISSION

Students will be considered for re-admission if they passed more than 50% of the modules during the previous year.

DURATION

The qualification shall extend over one year (full-time) or two years (if attended on a block-release basis).

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
	Compulsory modules:			
	Principles of Veldfire Management	Semester 1	FPM1001	15
	Veldfire Legislation	Semester 1	FPL1001	6
	Urban Interface Management	Semester 1	FUM1001	7
	Financial Management Principles	Semester 1	FML1001	8

		Presented	Module Code	Credit Value
	Veldfire Management Engineering	Semester 1	FVT1001	7
	Veldfire Suppression	Semester 1	FVS1001	11
	Human Resource Management A	Semester 2	FHR1001	8
	Human Resource Management B	Semester 1	FHR2002	8
	Fire Ecology and Conservation	Semester 2	FEC1002	12
	Incident Command	Semester 2	FIC1002	13
	Integrated Fire Management	Semester 2	FIF1002	13
	Fuel Management Techniques	Semester 2	FFT1002	7
	Fire Management Planning	Semester 2	FMF1002	9
	Total Credits			124

5 EXTENDED QUALIFICATIONS

5.1 NATIONAL DIPLOMA (AGRICULTURAL MANAGEMENT) (EXTENDED): GEORGE CAMPUS: FULL-TIME (QUALIFICATION CODE: 3061 - 47) (NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 355) (NO NEW INTAKE)

ADMISSION REQUIREMENTS

- Admission Points Score of 30.
- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 for Mathematical Literacy (40-49%) or 2 (30-39%) for Mathematics.
- Applicants with an Admission Points Score between 22 and 29 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Life Sciences, Agricultural Sciences and Business Studies.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

EXPERIENTIAL TRAINING

Please note that the 2nd semester of the 2nd year and the 1st semester of the 3rd year is experiential training (practical work experience) that consists of four subjects: Agricultural Practice IIIA, Agricultural Production Techniques II, Agricultural Practice IIIB, and Agricultural Production Management II.

Students will not be allowed to go on experiential training unless they have passed Agricultural Management I, II and IIIA, Plant Production I, II and IIIA or Animal Production I, II and IIIA.

Students are responsible for finding their own placement for experiential training for the year; this may not be done in the students' family business.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Life Skills	Year	GLS1110	0
	Agricultural Law IA	Semester 1	SAL1111	12
	Agricultural Law IB	Semester 2	SAL1122	12
	Computer Skills I	Semester 1	SCC1111	5
	Pasture Science I	Semester 2	SPS1112	10
	Credits First Year			39
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Animal Production I	Semester 1	SAP1111	10
	Animal Production II	Semester 2	SAP2112	10
	Agricultural Management I	Semester 1	SGM1111	10
	Agricultural Management II	Semester 2	SGM2112	10
	Plant Production I	Semester 1	SPP1111	10
	Plant Production II	Semester 2	SPP2112	10
	Soil Classification II	Semester 2	SSC2112	10
	Agricultural Soil Science I	Semester 1	SSS1111	10
	Credits Second Year			80

		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Animal Production IIIA and/or Plant Production IIIA	Semester 1	SAP3311	12
		Semester 1	SPP3311	12
	Computer Applications: Agriculture	Semester 1	SCA2111	10
	Agricultural Engineering: Module IA	Semester 1	SGE1111	12
	Agricultural Management IIIA	Semester 1	SGM3111	12
	Agricultural Practice IIIA (Experiential Training)	Semester 2	SLP3112	48
	Agricultural Production Techniques II (Experiential Training)	Semester 2	SLT2212	12
	Personnel Management Module IA	Semester 1	SMA1111	12
	Credits Third Year			118
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Animal Production IIIB and/or Plant Production IIIB	Semester 2	SAP3322	12
		Semester 2	SPP3322	12
	Agricultural Engineering Module IB	Semester 2	SGE1122	12
	Agricultural Management Module IIIB ♦	Semester 2	SGM3122	12
	Agricultural Production Management II (Experiential Training)	Semester 1	SLB2211	12
	Agricultural Practice IIIB (Experiential Training)	Semester 1	SLP3111	48
	Personnel Management: Agriculture Module IB	Semester 2	SMA1132	12
	Production and Operational Techniques I	Semester 2	SPO1112	10
	Credits Fourth Year			118
	Total Credits			355

♦ Major module (please refer to the General Prospectus).

**5.2 DIPLOMA IN AGRICULTURAL MANAGEMENT (EXTENDED):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 2062 - 83)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 355)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- NSC achievement rating of at least level 3 (40-49%) for English, Afrikaans or isiXhosa (home language or first additional language).
- NSC achievement rating of at least level 3 (40-49%) for Mathematics or level 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least level 3 (40-49%) for Life Science OR Physical Sciences OR Agricultural Sciences.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.
- Admission is subject to departmental selection.
- Recommended NSC subjects: Business Studies.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

EXPERIENTIAL TRAINING

Please note that the 2nd semester of the 2nd year and the 1st semester of the 3rd year is experiential training (practical work experience) that consists of four subjects: Agricultural Practice IIIA, Agricultural Production Techniques II, Agricultural Practice IIIB, and Agricultural Production Management II.

Students will not be allowed to go on experiential training unless they have passed Agricultural Management I, II and IIIA, Plant Production I, II and IIIA or Animal Production I, II and IIIA.

Students are responsible for finding their own placement for experiential training for the year; this may not be done in the students' family business.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Life Skills	Year	GLS1110	0
	Agricultural Law I Module A	Semester 1	SAL1001	12
	Agricultural Law I Module B	Semester 2	SAL1002	12
	Computer Skills I	Semester 1	SCC1001	5
	Pasture Science I	Semester 2	SPS1002	10
	Credits First Year			39
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Animal Production I	Semester 1	SAP1001	10
	Animal Production II	Semester 2	SAP2002	10
	Agricultural Management I	Semester 1	SGM1001	10
	Agricultural Management II	Semester 2	SGM2002	10
	Plant Production I	Semester 1	SPP1001	10
	Plant Production II	Semester 2	SPP2002	10
	Soil Classification	Semester 2	SSC2002	10
	Agricultural Soil Science I	Semester 1	SSS1001	10
	Credits Second Year			80
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Computer Applications: Agriculture	Semester 1	SCA2001	10
	Agricultural Engineering: Module IA	Semester 1	SGE1001	12
	Agricultural Management IIIA ♦	Semester 1	SGM3011	12
	Agricultural Practice IIIA (Experiential Training)	Semester 2	SLP3002	48
	Agricultural Production Techniques II (Experiential Training)	Semester 2	SLT2002	12

		Presented	Module Code	Credit Value
	Personnel Management Module IA	Semester 1	SMA1001	12
Select one or both of the following modules:				
	Animal Production IIIA	Semester 1	SAP3001	12
	Plant Production IIIA	Semester 1	SPP3001	12
Credits Third Year				118
		Presented	Module Code	Credit Value
Fourth Year				
Compulsory modules:				
	Agricultural Engineering Module IB	Semester 2	SGE1002	12
	Agricultural Management Module IIIB ♦	Semester 2	SGM3002	12
	Agricultural Practice IIIB (Experiential Training)	Semester 1	SLP3001	48
	Agricultural Production Management II (Experiential Training)	Semester 1	SLB2001	12
	Personnel Management: Agriculture Module IB	Semester 2	SMA1002	12
	Production and Operational Techniques I	Semester 2	SPO1002	10
Select one or both of the following modules:				
	Animal Production IIIB	Semester 2	SAP3002	12
	Plant Production IIIB	Semester 2	SPP3002	12
Credits Fourth Year				118
Total Credits				379

♦ Major module (please refer to the General Prospectus).

**5.3 NATIONAL DIPLOMA (ANALYTICAL CHEMISTRY) (EXTENDED):
FULL-TIME
(QUALIFICATION CODE: 3151 – 07)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 365)
(NO NEW INTAKE)**

PROMOTION AND APPLICABLE RULES

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed all the modules prescribed in the first year of study.
- Candidates will only be allowed to continue with any modules of the second year of the regular ND qualification if they meet the corresponding requirements in the standard National Diploma qualification and abide by its promotion and applicable rules as described in the prospectus.
- Candidates who have not completed all the foundational modules in the qualification after three (3) years of full-time study will not be allowed to re-register for the qualification.
- Candidates who pass **all** the modules in the first year of the extended ND Analytical Chemistry at the first attempt will be accepted for studies in the first year of the National Diplomas in Polymer Science, Radiography, Biomedical Technology or Environmental Health, provided that space is available on the relevant qualification.

Students may be required to include further developmental language and Academic and Life Skills modules in their qualification.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

SITE OF DELIVERY

This qualification will be offered on the Summerstrand North Campus of the university.

DURATION

The qualification shall extend over a period of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	Academic and Life Skills Development 1	Year	ALM1110	2
	Academic Literacy 1	Year	CAC1220	3
	Computing Skills	Year	CCP11X0	6
	Introduction to General Chemistry 1	Semester 1	GCC1X1	12
	Introduction to Inorganic Chemistry 2	Semester 2	ICC1X2	9
	Pre-Calculus	Semester 1	MAT11X1	4
	Physics 1 for Diploma in Analytical Chemistry	Semester 1	MFS12X1	7
	Introduction to Organic Chemistry 2	Semester 2	OCC1X2	9
	Physical Chemistry 2	Semester 2	PCC2002	12
	Mathematics 1	Semester 2	WIS11X2	4
	Credit First Year			68
Second Year				
Compulsory modules:				
	Analytical Chemistry 1	Semester 1	ACC1001	24
	Analytical Chemistry 2	Semester 2	ACC2002	24
	Academic and Life Skills Development 11	Year	ALM2110	2
	Academic Literacy 11	Year	CAC2110	2
	Credit Second Year			52
	Credit First and Second Year			120

		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
	Analytical Chemistry 3A	Semester 1	ACC3001	11
	Analytical Chemistry 3A Practical	Semester 1	ACC3011	13
	Analytical Chemistry 3B	Semester 2	ACC3002	10
	Analytical Chemistry 3B Practical	Semester 2	ACC3012	13
	Computer skills for analytical chemistry	Semester 1	CCP2222	5
	Inorganic Chemistry 3A	Semester 1	ICC3001	8
	Inorganic Chemistry 3B	Semester 2	ICC3002	9
	Organic Chemistry 3A	Semester 1	OCC3001	9
	Organic Chemistry 3B	Semester 2	OCC3002	8
	Physical Chemistry 3A	Semester 1	PCC3001	8
	Physical Chemistry 3B	Semester 2	PCC3002	9
	Introduction to Quality Assurance	Semester 2	SAC32T0	6
	Statistics for Analytical Chemists	Semester 1	SAC31T0	6
	Mathematics 2	Semester 1 or Semester 2	WIS2111 WIS2112	10
	Credit Third Year			125
Fourth Year				
Compulsory modules:				
	Chemistry Industry Practical	Year	CIP2110	60
	Chemical Project	Year	CJP3110	60
	Credit Third Year			120
	Total Programme Credits			365

**5.4 NATIONAL DIPLOMA (FORESTRY) (EXTENDED): GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 3902 - 47)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 356)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- If an applicant presents with Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the programme or he/she could be placed in an extended qualification.
- Applicants with an Admission Points Score between 22 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Physical Sciences, Life Sciences.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

EXPERIENTIAL TRAINING

Students are responsible for finding their own placement for experiential training for the practical period. The relevant plantation must be suitable for proper experiential exposure of the student. **A driver's licence is a prerequisite for students to take part in their experiential training. Students without a valid driver's licence will not be assisted by the university to find placement for their experiential training.**

FPA1121 (FOREST PRACTICE I)

Assessment criteria:

- Students have to attend all courses.
- Students have to pass all course assessments.

Failure to comply with the above criteria will disqualify students from passing Forest Practice I and students will have to repeat the course to satisfaction.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Cost and Management Accounting (Module IA)	Semester 2	FAA1122	5
	Forest Botany I	Semester 1	FBO1111	13
	Computers in Forestry	Semester 1	FCR1111	8
	Human Resources Management I	Semester 2	FMR1112	8
	Life Skills	Year	GLS1110	0
	Credits First Year			34
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Forest Conservation II	Semester 2	FCN2112	10
	Forest Engineering Practice I	Semester 1	FEP1111	12
	Forest Engineering Practice II	Semester 2	FEP2212	12
	Forest Management I	Semester 1	FMN1111	10
	Forest Protection I	Year	FPR1110	8
	Silviculture I	Semester 1	FSI1111	12
	Silviculture II	Semester 2	FSI2212	11
	Credits Second Year			75

		Presented	Module Code	Credit Value
Third Year (Three months structured practical at George Campus)				
	Compulsory modules:			
	Forest Practice I	Semester 1	FPA1121	60
	Forest Practice II	Semester 2	FPA2312	60
	Organisational Effectiveness I	Semester 1	FWS1211	10
	Credits Third Year			130
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Cost and Management Accounting (Module IB)	Semester 2	FAA1322	5
	Forest Engineering Practice III ♦	Semester 2	FEP3312	12
	Forest Management III ♦	Semester 2	FMN3212	12
	Human Resource Management II	Semester 1	FMR2211	8
	Human Resource Management III ♦	Semester 2	FMR3312	12
	Forest Economics II	Year	FOE2110	12
	Forestry Laws II	Semester 1	FOL2111	11
	Forest Protection II	Semester 1	FPR2211	8
	Silviculture III ♦	Semester 2	FSI3312	12
	Forest Mensuration II	Semester 1	FSM2111	13
	Forest Utilisation II	Semester 1	FUT2111	12
	Credits Fourth Year			117
	Total Credits			356

♦ Major modules (please refer to the General Prospectus).

**5.5 DIPLOMA IN FORESTRY (EXTENDED): GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 2906 - 83)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 296)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- If an applicant presents with Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the programme or he/she could be placed in an extended qualification.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Physical Sciences, Life Sciences.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

Experiential Training

Students arriving back from experiential training have to hand in reports and logbooks 2 weeks after classes commence for the new academic year. All reports, logbooks and presentations have to be concluded at the end of the 1st semester. Students who don't meet this deadline has to register for the experiential training again the following year and will qualify for their diploma a year later. Students who register for their experiential training a 2nd time, can only score a maximum of 50% if they pass a 2nd evaluation.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Cost and Management Accounting I	Semester 2	FAA1132	10
	Computer Usage I	Semester 1	FCR1121	10
	Forest Botany I	Semester 1	FBO1121	10
	Human Resource Management I	Semester 2	FMR1122	10
	Life Skills	Year	GLS1110	0
	Credits First Year			40
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Forest Ecology I	Semester 1	FCN1001	10
	Forest Engineering I	Semester 1	FEP1001	10
	Forest Engineering II	Semester 2	FEP2002	10
	Forest Management I	Semester 2	FMN1122	10
	Environmental Management	Semester 2	FMV2002	10
	Fire Management I	Semester 1	FPR1001	10
	Silviculture I	Semester 1	FSI1121	10
	Silviculture II	Semester 2	FSI2222	10
	Credits Second Year			80
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Forest Practice I	Semester 1	FPA1131	60
	Forest Practice II	Semester 2	FPA2222	60
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Cost and Management Accounting II	Semester 2	FAA2002	10
	Forest Engineering III	Semester 2	FEP3002	12

		Presented	Module Code	Credit Value
	Forestry Finances II	Semester 1	FFI2002	10
	Forest Management III ♦	Semester 2	FMN3222	12
	Human Resource Management II	Semester 2	FMR2222	10
	Forest Economics II	Semester 1	FOE2001	10
	Forestry Law	Semester 1	FOL2001	10
	Forest Protection II	Semester 1	FPD2001	10
	Fire Management II	Semester 2	FPR2002	10
	Silviculture III	Semester 1	FSI3321	12
	Forest Mensuration II	Semester 1	FSM2121	10
	Forest Utilisation II	Semester 1	FUT2001	10
	Credits Fourth Year			120
	Total Credits			240

♦ Major modules (please refer to the General Prospectus).

**5.6 NATIONAL DIPLOMA (GAME RANCH MANAGEMENT) (EXTENDED):
GEORGE CAMPUS: FULL TIME
(QUALIFICATION CODE: 3457 - 47)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematical Literacy or 2 (30-39%) for Mathematics.
- Applicants with an Admission Points Score between 22 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Economics, Agricultural Management, Agricultural Sciences, Life Sciences, Accounting.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES**English Proficiency**

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Game Ranch Economics I	Semester 2	GER1512	12
	Game Health Management	Semester 1	GHM1511	15
	Life Skills	Year	GLS1110	0
	Game Ranch Management	Semester 1	GRM1511	12
	Computer Usage I	Semester 2	NRG1112	12
	Credits First Year			51
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Game Ranch Ecology I	Semester 1	GRE1511	12
	Game Ranch Ecology II	Semester 2	GRE2512	12
	Game Ranch Management II	Semester 2	GRM2512	12
	Game Science I	Semester 1	GRS1511	12
	Game Science II	Semester 2	GRS2512	12
	Rangeland Studies I	Semester 1	GSR1511	12
	Credits Second Year			72

		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Game Ranch Economics II	Semester 1	GER2511	15
	Game Ranch Economics III ♦	Semester 2	GER3512	15
	Game Ranch Ecology III ♦	Semester 1	GRE3511	15
	Game Ranch Management III ♦	Semester 2	GRM3512	15
	Game Science III ♦	Semester 1	GRS3511	15
	Soil Science I	Semester 2	NSS1112	12
	Select one of the following groups:			
A	Game Utilisation I	Semester 1	GGU1511	15
	Game Utilisation II	Semester 2	GGU2512	15
	OR			
B	Game Lodge Management I	Semester 1	GLM1511	15
	Game Lodge Management II	Semester 2	GLM2512	15
	Credits Third Year			117
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Game Ranch Application I	Semester 1	GRA1511	60
	Game Ranch Application II	Semester 2	GRA2512	60
	Credits Fourth Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

**5.7 DIPLOMA IN GAME RANCH MANAGEMENT (EXTENDED): GEORGE
CAMPUS: FULL TIME
(QUALIFICATION CODE: 2456 - 83)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- NSC achievement rating of at least level 3 (40-49%) for English, Afrikaans or isiXhosa (home language or first additional language).
- NSC achievement rating of at least level 3 (40-49%) for Mathematics or level 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least level 3 (40-49%) for Life Science OR Physical Sciences OR Agricultural Sciences.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.
- Recommended NSC subjects: Economics, Agricultural Management, Accounting.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Game Ranch Economics I	Semester 2	GGR1002	12
	Game Health Management	Semester 1	GHM1001	15
	Life Skills	Year	GLS1110	0
	Game Ranch Management	Semester 1	GGM1001	12
	Computer Usage I	Semester 1	FCR1121	12
	Credits First Year			51
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Game Ranch Ecology I	Semester 1	GGE1001	12
	Game Ranch Ecology II	Semester 2	GGE2002	12
	Game Ranch Management II	Semester 2	GGM2002	12
	Game Science I	Semester 1	GSG1001	12
	Game Science II	Semester 2	GSG1002	12
	Rangeland Studies I	Semester 1	GRR1001	12
	Credits Second Year			72
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Game Ranch Economics II	Semester 1	GGR2001	15
	Game Ranch Economics III ♦	Semester 2	GGR3002	15
	Game Ranch Ecology III ♦	Semester 1	GGE3001	15
	Game Ranch Management III ♦	Semester 2	GGM3001	15
	Game Science III ♦	Semester 1	GSG3001	15
	Soil Science I	Semester 2	GGG1001	12
	Select one of the following groups:			
A	Game Utilisation I	Semester 1	GUG1001	15
	Game Utilisation II	Semester 2	GUG2002	15
	OR			
B	Game Lodge Management I	Semester 1	GLG1001	15
	Game Lodge Management II	Semester 2	GLG2002	15

		Presented	Module Code	Credit Value
	Credits Third Year			117
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Game Ranch Application I	Semester 1	GAR1001	60
	Game Ranch Application II	Semester 2	GAR2002	60
	Credits Fourth Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

**5.8 NATIONAL DIPLOMA (NATURE CONSERVATION) (EXTENDED):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 3221 - 47)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 372)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 30.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 2 (30-39%) for Mathematics or 3 (40-49%) for Mathematical Literacy.
- Applicants with an Admission Points Score between 22 and 29 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

Recommended subjects: Life Sciences.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES**English Proficiency**

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Life Skills	Year	GLS1110	0
	Conservation Administration I	Semester 2	NCA1112	12
	Conservation Communication I	Semester 1	NCC1111	12
	Conservation Development I	Semester 1	NCD1111	12
	Computer Usage I	Semester 1	NRG1111	12
	Credits First Year			48
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Animal Studies I	Semester 1	NAS1111	12
	Animal Studies II	Semester 2	NAS2112	15
	Conservation Ecology I	Semester 1	NCE1111	12
	Plant Studies I	Semester 1	NPS1111	12
	Plant Studies II	Semester 2	NPS2112	15
	Resource Management I	Semester 1	NRM1111	12
	Credits Second Year			78

		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Animal Studies III ♦	Semester 1	NAS3111	15
	Conservation Communication II	Semester 2	NCC2212	15
	Conservation Ecology II	Semester 1	NCE2111	12
	Conservation Ecology III ♦	Semester 2	NCE3112	15
	Plant Studies III ♦	Semester 1	NPS3111	15
	Resource Management II	Semester 1	NRM2111	15
	Resource Management III ♦	Semester 2	NRM3112	15
	Soil Science I	Semester 2	NSS1112	12
	Credits Third Year			114
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Nature Conservation Applications I	Semester 1	NAP1111	60
	Nature Conservation Applications II	Semester 2	NAP2112	60
	Credits Fourth Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

5.9 DIPLOMA IN NATURE CONSERVATION (EXTENDED): GEORGE CAMPUS: FULL-TIME (QUALIFICATION CODE: 2222 - 83) (NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 240)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least 3 (40-49%) Life Science or Physical Sciences.
- If an applicant presents with Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the programme or he/she could be placed in an extended qualification.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES**English Proficiency**

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency.

All students who fail this assessment will be required to register for and pass the subject English B before graduating.

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculation	Year	ENU1110	0
	Life Skills	Year	GLS1110	0
	Computer Usage I	Semester 1	FCR1121	10
	Environmental Management I*	Semester 1	NEM1111	10
	Human Resource Management I*	Semester 2	FMR1122	10
	Cost and Management Accounting I*	Semester 2	NAC1112	10
	Credits First Year			40
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Conservation Ecology I	Semester 1	NCE1121	10
	Plant Studies I	Semester 1	NPS1121	12
	Animal Studies I	Semester 1	NAS1121	12
	Resource Management I	Semester 1	NRM1121	10
	Conservation Ecology II	Semester 2	NCE2112	12

		Presented	Module Code	Credit Value
	Animal Studies II	Semester 2	NAS2122	12
	Environmental Law I*	Semester 2	JLA1112	10
	Conservation Ecology I	Semester 1	NCE1121	10
	Credits Second Year			88
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Resource Management II	Semester 1	NRM2121	12
	Animal Studies III	Semester 1	NAS3121	12
	Plant Studies III	Semester 1	NPS2121	12
	Environmental Education I*	Semester 1	NEE1111	10
	Fire Ecology I*	Semester 1	NED1111	10
	Human Resource Management II*	Semester 2	FMR2222	10
	Soil Science I	Semester 2	NSS1022	12
	Resource Management III	Semester 2	NRM3122	12
	Conservation Ecology III	Semester 2	NCE3002	12
	Plant Studies III	Semester 2	NPS3122	10
	Environmental Education II*	Semester 2	NEE2112	12
	Credits Third Year			124
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Nature Conservation Applications I	Semester 1	NCP1111	60
	Nature Conservation Applications II	Semester 2	NCP2112	60
	Credits Fourth Year			120
	Total Credits			240

**5.10 NATIONAL DIPLOMA (WOOD TECHNOLOGY) (EXTENDED):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 3247 - 47)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 362)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy. If an applicant has Mathematical Literacy instead of Mathematics, he/she could be placed in an associated extended qualification.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 22 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

Recommended NSC subjects: Engineering Graphics and Design.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

FWT2110 (WOOD TECHNOLOGY PRACTICE)

Assessment criteria:

- Students have to attend all courses.
- Students have to pass all course assessments.

Failure to comply with the above criteria will disqualify students from passing Forest Practice I and students will have to repeat the course to satisfaction.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculations	Year	ENU1110	0
	Cost and Management Accounting (Module IA)	Semester 2	FAA1122	5
	Computers in Wood Technology I	Semester 1	FCP1111	10
	Properties of Wood I	Semester 1	FPW1101	10
	Timber Processing I	Semester 2	FTP1112	10
	Life Skills	Year	GLS1110	0
	Credits First Year			35
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Adhesive Technology I	Semester 2	FAD1112	12
	Heating Systems: Timber II	Semester 2	FHS2112	10
	Mechanical Drawing and Design I	Semester 1	FMD1111	10
	Mathematics and Statistics I	Year	FMS1110	10
	Physics I	Semester 1	FPH1211	6
	Production Engineering Industrial I	Semester 2	FPI1112	10
	Strength of Materials II	Semester 1	FST2111	12
	Credits Second Year			70
		Presented	Module Code	Credit Value
Third Year (Three months structured practical at George Campus)				
	Compulsory modules:			
	Organisational Effectiveness	Semester 1	FWS1211	10
	Wood Technology Practice	Year	FWT2110	60
	Credits Third Year			70

		Presented	Module Code	Credit Value
Fourth Year				
Compulsory modules:				
	Cost and Management Accounting (Module IB)	Semester 2	FAA1322	5
	Timber Preservation I	Semester 1	FHP1111	10
	Timber Structures III ♦	Semester 1	FHS3111	15
	Management Timber Processing II	Semester 1	FMT2111	12
	Management Timber Processing III ♦	Semester 2	FMT3112	15
	Production Engineering Industrial II	Semester 2	FPI2212	12
	Timber Processing IIA	Semester 1	FTP2111	11
	Timber Processing IIB (Advanced Primary Processing)	Semester 1	FTP2121	11
	Timber Processing III (Saw Doctoring) ♦	Semester 2	FTP3112	15
	Timber Seasoning III (Drying) ♦	Semester 2	FTS3112	15
	Credits Fourth Year			121
	Total Credits			296

♦ Major modules (please refer to the General Prospectus).

**5.11 DIPLOMA IN WOOD TECHNOLOGY (EXTENDED): GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 2248 - 83)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 240)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- If an applicant presents with Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the programme or he/she could be placed in an extended qualification.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES**English Proficiency**

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

Experiential Training

Students arriving back from experiential training have to hand in reports and logbooks 2 weeks after classes commence for the new academic year. All reports, logbooks and presentations have to be concluded at the end of the 1st semester.

Students who don't meet this deadline have to register for the experiential training again the following year and will qualify for their diploma a year later. Students who register for their experiential training a 2nd time, can only score a maximum of 50% if they pass a 2nd evaluation.

FWT1001 (WOOD TECHNOLOGY PRACTICE)

Assessment criteria:

- Students have to attend all courses.
- Students have to pass all course assessments.

Failure to comply with the above criteria will disqualify students from passing Wood Technology Practice I and students will have to repeat the course to satisfaction.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Communication in English B	Year	BKI1130	0
	Basic Science	Year	EBS1110	0
	Numeric Calculation	Year	ENU1110	0
	Life Skills	Year	GLS110	0
	Computers in Forestry I	Semester 1	FCR1121	10
	Properties of Wood I	Semester 1	FPW1001	12
	Cost & Management Accounting I*	Semester 2	FAA1132	10
	Human Resource Management I*	Semester 2	FMR1122	10
	Credits First Year			42

		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Mechanics in Wood Technology I*	Semester 1	FMW1001	12
	Mechanical Drawing & Design I	Semester 1	FMD1001	10
	Production Engineering Industrial I*	Semester 2	FPI1002	12
	Mathematics and Statistics I	Semester 1	FCT1001	12
	Adhesive Technology I	Semester 2	FAD1002	10
	Process Control in Wood Technology I*	Semester 2	FCW1002	12
	Timber Processing I	Semester 2	FTP1002	12
	Credits Second Year			80
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Wood Technology Practice I	Semester 1	FWT1001	60
	Wood Technology Practice I	Semester 2	FWT2002	60
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Forest Economics II*	Semester 1	FOE2001	10
	Forestry Laws II*	Semester 1	FOL2001	10
	Timber Preservation I	Semester 1	FHP1001	10
	Timber Processing II	Semester 1	FTP2001	12
	Engineered Wood Products II*	Semester 1	FEW2001	10
	Timber Structures III	Semester 1	FSS3001	12
	Cost & Management Accounting II*	Semester 2	FAA2002	10
	Human Resource Management II*	Semester 2	FMR2222	10
	Production Engineering Industrial II	Semester 2	FPI2002	12
	Timber Processing III	Semester 2	FTP3002	12
	Timber Seasoning III	Semester 2	FTS3002	12
	Credits Fourth Year			120
	Total Credits			240

♦ Major modules (please refer to the General Prospectus).

**5.12 BACHELOR OF SCIENCE (BIOCHEMISTRY, CHEMISTRY AND MICROBIOLOGY) (EXTENDED): FULL-TIME
(QUALIFICATION CODE: 20012 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 364)
(NO NEW INTAKE)**

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification.

The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50–59%) for Mathematics.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

SITE OF DELIVERY

The programme will be offered on the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extended over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	Academic and Life Skills Development I	Year	ALM111	4
	English for Science	Year	LEA1X1	4
	Pre-calculus 1	Semester 1	MATF1X1	4
	Pre-calculus 2	Semester 2	MATF1X2	4
	Plant Cell Biology	Term 1	BOT11X	7
	Plant Evolution and Systematics	Semester 1	BOT135	5
	Plant Structure	Semester 2	BOT125	5
	Extended Plant Ecology and Environmental Botany	Semester 2	BOT14X	5

		Presented	Module Code	Credit Value
	Animal Cell Biology and Histology	Term 1	ZFO11X	7
	Extended Principles of Animal Evolution	Semester 1	ZFO13X	5
	Animal Diversity	Semester 2	ZFO125	5
	Extended Animal Patterns in Time and Space	Semester 2	ZFO14X	5
	Credits First Year			60
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Academic and Life Skills Development	Year	ALM112	2
	English for Science	Year	LEA121	2
	Extended Computing Fundamentals 1.1a	Year	WRFC141	6
	Extended Computing Fundamentals 1.2	Year	WRFC142	6
	Extended General Chemistry 111	Semester 1	CHG1X1	5
	Extended General Chemistry 112	Semester 2	CHG1X2	5
	Extended Inorganic Chemistry 111	Semester 1	CHI1X1	7
	Extended Organic Chemistry 111	Semester 2	CHO1X1	5
	Electricity and Magnetism	Semester 2	FBB121	4
	Concepts of Physics	Semester 1	FF101	4
	Mechanics	Semester 2	FBB111	4
	Properties of Matter	Semester 1	FBB112	4
	Mathematics Special Extended A	Semester 1	MATA1X1	5
	Mathematics Special Extended B	Semester 2	MATA1X2	5
	Credits Second Year			64
		Presented	Module Code	Credit Value
Third Year				
	Select three of the following groups corresponding to the modules completed in the first two years:			
A	Biochemistry II			
	Introductory Biochemistry and Genetics	Semester 1	BC251	20
	Metabolism	Semester 2	BC252	20
B	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
C	Chemistry II			
	Chemistry Analytical	Semester 1	CHA201	9

		Presented	Module Code	Credit Value
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Organic	Semester 2	CHO201	12
	Chemistry Physical	Year	CHP203	12
D	Microbiology II			
	Introductory Microbiology and Control of Micro-organisms	Semester 1	BM211	20
	Medical Microbiology	Semester 2	BM212	20
E	Physiology II			
	Principles of Human Physiology and Control Systems	Semester 1	BSP211	20
	Human Systemic Physiology	Semester 2	BSP212	20
F	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Select two of the following groups:			
A	Biochemistry III ♦			
	Advanced Protein Technology	Semester 1	BC321	30
	Integrated Biochemistry	Semester 2	BC322	30
B	Microbiology III ♦			
	Bacteriology, Microbial Ecology, Virology and Mycology	Semester 1	BM331	30
	Gene Manipulation, Industrial Microbiology and Biotechnology	Semester 2	BM332	30
C	Physiology III			
	Integrated Human Physiology I	Semester 1	BSP311	30
	Integrated Human Physiology II	Semester 2	BSP312	30
D	Chemistry III ♦			
	Chemistry Inorganic	Year	CHI303	20
	Chemistry Organic	Year	CHO303	20
	Chemistry Physical	Year	CHP303	20
	Credits Fourth Year			120
	Total Credits			364

♦ Major modules (please refer to the General Prospectus).

**5.13 BACHELOR OF SCIENCE (BIOCHEMISTRY, CHEMISTRY AND MICROBIOLOGY) (EXTENDED): FULL-TIME
(QUALIFICATION CODE: 20018 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 418)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification.

The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50–59%) for Mathematics.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

SITE OF DELIVERY

The programme will be offered on the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extended over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Science Academic Skills I	Year	ALMX100	10
	English for Science I	Year	LEAX100	10
	Pre-calculus A	Semester 1	MAPX101	10
	Pre-calculus B	Semester 2	MAPX102	10
	Plant Cell Biology - Extended	Semester 1	BOTX101	7
	Plant Structure - Extended	Semester 1	BOTX111	8
	Plant Evolution and Systematics - Extended	Semester 2	BOTX102	7
	Plant Ecology and Environmental Botany - Extended	Semester 2	BOTX112	8
	Animal Cell Biology and Histology - Extended	Semester 1	ZOOX101	7
	Animal Diversity - Extended	Semester 1	ZOOX111	8
	Principles of Animal Evolution - Extended	Semester 2	ZOOX102	8

		Presented	Module Code	Credit Value
	Animal Patterns in Time and Space - Extended	Semester 2	ZOOX112	7
	Credits First Year			100
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Science Academic Skills II	Year	ALMX110	5
	English for Science II	Year	LEAX110	5
	Mathematics Special 101 - Extended	Semester 1	MATX101	8
	Mathematics Special 102 - Extended	Semester 2	MATX102	8
	General Chemistry - Extended	Semester 1	CHGX101	15
	Inorganic Chemistry - Extended	Semester 2	CHIX102	9
	Organic Chemistry - Extended	Semester 2	CHOX102	6
	Mechanics and Thermodynamics - Extended	Semester 1	FBBX101	7
	Electricity, Optics and Atomics - Extended	Semester 2	FBBX102	7
	Computing Fundamentals 1.1 - Extended	Semester 1	WRFX101	8
	Credits Second Year			78
		Presented	Module Code	Credit Value
Third Year				
	Select three of the following groups:			
A	Biochemistry II			
	Introductory Biochemistry and Genetics	Semester 1	BCV201	20
	Metabolism	Semester 2	BCV202	20
B	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
C	Chemistry II			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Organic	Semester 2	CHOV202	12
	Chemistry Physical	Year	CHPV200	12
D	Microbiology II			
	Introductory Microbiology and Control of Micro-organisms	Semester 1	BMV201	20

		Presented	Module Code	Credit Value
	Medical Microbiology	Semester 2	BMV202	20
E	Physiology II			
	Principles of Human Physiology and Control Systems	Semester 1	BSPD211	20
	Human Systemic Physiology	Semester 2	BSPD212	20
F	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Select two of the following groups:			
A	Biochemistry III ♦			
	Advanced Protein Technology	Semester 1	BCV301	30
	Integrated Biochemistry	Semester 2	BCV302	30
B	Microbiology III ♦			
	Bacteriology, Microbial Ecology, Virology and Mycology	Semester 1	BMV301	30
	Gene Manipulation, Industrial Microbiology and Biotechnology	Semester 2	BMV302	30
C	Chemistry III ♦			
	Chemistry Inorganic	Year	CHIV300	20
	Chemistry Organic	Semester 1	CHOV300	20
	Chemistry Physical	Year	CHPV300	20
D	Physiology III ♦			
	Integrated Human Physiology I	Semester 1	BSPD301	30
	Integrated Human Physiology II	Semester 2	BSPD302	30
	Credits Fourth Year			120
	Total Credits			418

♦ Major modules (please refer to the General Prospectus).

**5.14 BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES) (EXTENDED):
FULL-TIME
(QUALIFICATION CODE: 20011 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 362)
(NO NEW INTAKE)**

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification.

The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50–59%) for Mathematics.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

SITE OF DELIVERY

The programme will be offered at the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extended over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Academic and Life Skills Development I	Year	ALM111	4
	English for Science	Year	LEA1X1	4
	Pre-calculus 1	Semester 1	MATF1X1	4
	Pre-calculus 2	Semester 2	MATF1X2	4
	Plant Cell Biology	Term 1	BOT11X	7
	Plant Evolution and Systematics	Semester 1	BOT135	5
	Plant Structure	Semester 2	BOT125	5
	Extended Plant Ecology and Environmental Botany	Semester 2	BOT14X	5

		Presented	Module Code	Credit Value
	Animal Cell Biology and Histology	Term 1	ZFO11X	7
	Extended Principles of Animal Evolution	Semester 1	ZFO13X	5
	Animal Diversity	Semester 2	ZFO125	5
	Extended Animal Patterns in Time and Space	Semester 2	ZFO14X	5
	Credits First Year			60
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Academic and Life Skills Development	Year	ALM112	2
	English for Science	Year	LEA121	2
	Mathematics Special Extended A	Semester 1	MATA1X1	5
	Mathematics Special Extended B	Semester 2	MATA1X2	5
	Extended General Chemistry 111	Semester 1	CHG1X1	5
	Extended General Chemistry 112	Semester 2	CHG1X2	5
	Extended Inorganic Chemistry 111	Semester 2	CHI1X1	7
	Extended Organic Chemistry 111	Semester 2	CHO1X1	5
	Properties of Matter	Semester 1	FBB112	4
	Concepts of Physics	Semester 1	FF101	4
	Mechanics	Semester 2	FBB111	4
	Electricity and Magnetism	Semester 2	FBB121	4
	Extended Computing Fundamentals 1.1a	Year	WRFC141	6
	Extended Computing Fundamentals 1.2	Year	WRFC142	6
	Credits Second Year			64
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
	Chemistry II			
	Chemistry Analytical	Semester 1	CHA201	9
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Physical	Year	CHP203	12
	Chemistry Organic	Semester 2	CHO201	12

		Presented	Module Code	Credit Value
	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Botany III ♦			
	Applied Marine Botany	Semester 1	BOT310	12
	Plant Physiology	Semester 1	BOT320	12
	Plant Eco-physiology	Semester 2	BOT330	12
	Plant Ecology and Environmental Management	Semester 2	BOT340	12
	Project	Year	BOT350	12
	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOO311	15
	Applied Aquatic Science	Semester 2	ZOO322	15
	Integrating Topics in Zoology	Semester 1	ZOO334	15
	Evolutionary Ecology	Semester 2	ZOO342	15
	Credits Fourth Year			120
	Total Credits			362

♦ Major modules (please refer to the General Prospectus).

**5.15 BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES) (EXTENDED):
FULL-TIME
(QUALIFICATION CODE: 20016 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 418)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification.

The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50–59%) for Mathematics.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

SITE OF DELIVERY

The programme will be offered on the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extended over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Science Academic Skills I	Year	ALMX100	10
	English for Science I	Year	LEAX100	10
	Pre-calculus A	Semester 1	MAPX101	10
	Pre-calculus B	Semester 2	MAPX102	10
	Plant Cell Biology - Extended	Semester 1	BOTX101	7
	Plant Structure - Extended	Semester 1	BOTX111	8
	Plant Evolution and Systematics - Extended	Semester 2	BOTX102	7
	Plant Ecology and Environmental Botany - Extended	Semester 2	BOTX112	8
	Animal Cell Biology and Histology - Extended	Semester 1	ZOOX101	7
	Animal Diversity - Extended	Semester 1	ZOOX111	8
	Principles of Animal Evolution - Extended	Semester 2	ZOOX102	8

		Presented	Module Code	Credit Value
	Animal Patterns in Time and Space - Extended	Semester 2	ZOOX112	7
	Credits First Year			100
Second Year				
	Compulsory modules:			
	Science Academic Skills II	Year	ALMX110	5
	English for Science II	Year	LEAX110	5
	General Chemistry - Extended	Semester 1	CHGX101	15
	Inorganic Chemistry - Extended	Semester 2	CHIX102	9
	Organic Chemistry - Extended	Semester 2	CHOX102	6
	Mathematics Special 101 - Extended	Semester 1	MATX101	8
	Mathematics Special 102 - Extended	Semester 2	MATX102	8
	Mechanics and Thermodynamics - Extended	Semester 1	FBBX101	7
	Electricity, Optics and Atomics - Extended	Semester 2	FBBX102	7
	Computing Fundamentals 1.1 - Extended	Semester 1	WRFX101	8
	Credits Second Year			78
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
	Chemistry II			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Organic	Semester 2	CHOV202	12
	Chemistry Physical	Year	CHPV200	12
	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Credits Third Year			120

		Presented	Module Code	Credit Value
Fourth Year				
Compulsory modules:				
Botany III ♦				
	Applied Marine Botany	Semester 1	BOTV301	12
	Plant Physiology	Semester 1	BOTV311	12
	Plant Eco-physiology	Semester 2	BOTV302	12
	Plant Ecology and Environmental Management	Semester 2	BOTV312	12
	Project	Year	BOTV310	12
Zoology III ♦				
	Aquatic Ecology	Semester 1	ZOOV301	15
	Integrating Topics in Zoology	Semester 1	ZOOV311	15
	Applied Aquatic Science	Semester 2	ZOOV302	15
	Evolutionary Ecology	Semester 2	ZOOV312	15
Credits Fourth Year				120
Total Credits				418

♦ Major modules (please refer to the General Prospectus).

**5.16 BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCES) (EXTENDED):
FULL-TIME
(QUALIFICATION CODE: 20015 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 362)
(NO NEW INTAKE)**

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification. The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50–59%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

SITE OF DELIVERY

The programme will be offered on the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extend over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Academic and Life Skills Development I	Year	ALM111	4
	English for Science	Year	LEA1X1	4
	Pre-calculus 1	Semester 1	MATF1X1	4
	Pre-calculus 2	Semester 2	MATF1X2	4
	Select two of the following groups:			
A	Botany			
	Plant Cell Biology	Term 1	BOT11X	7
	Plant Evolution and Systematics	Semester 1	BOT135	5
	Plant Structure	Semester 2	BOT125	5
	Extended Plant Ecology and Environmental Botany	Semester 2	BOT14X	5
B	Geography			
	Foundations of Economic and Settlement Geography	Semester 1	GEO011	6
	Foundations of Geomorphology	Semester 1	GEN002	6
	Foundations of Meteorology and Climatology	Semester 2	GEN001	6
	Foundation of Geo-Information Science and Cartography	Semester 2	GIS1X1	6
C	Geology			
	Introduction to the Earth	Semester 1	GGL121	6
	Rock and Minerals	Semester 2	GGL122	6
	Geological Processes	Semester 2	GGL123	6
	Structure and Economic Geology	Semester 2	GGL124	6
D	Zoology			
	Animal Cell Biology and Histology	Term 1	ZFO11X	7
	Extended Principles of Animal Evolution	Semester 1	ZFO13X	5
	Animal Diversity	Semester 2	ZFO125	5
	Extended Animal Patterns in Time and Space	Semester 2	ZFO14X	5
	Credits First Year			62
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Academic and Life Skills Development	Year	ALM112	2
	English for Science	Year	LEA121	2
	Extended Computing Fundamentals 1.1a	Year	WRFC141	6
	Extended Computing Fundamentals 1.2	Year	WRFC142	6

		Presented	Module Code	Credit Value
Select two of the following groups (Not taken in Year 1)				
A	Botany			
	Plant Cell Biology	Term 1	BOT11X	7
	Plant Evolution and Systematics	Semester 1	BOT135	5
	Plant Structure	Semester 2	BOT125	5
	Extended Plant Ecology and Environmental Botany	Semester 2	BOT14X	5
B	Geography			
	Foundations of Economic and Settlement Geography	Semester 1	GEO011	6
	Foundations of Geomorphology	Semester 1	GEN002	6
	Foundations of Meteorology and Climatology	Semester 2	GEN001	6
	Foundation of Geo-Information Science and Cartography	Semester 2	GIS1X1	6
C	Geology			
	Introduction to the Earth	Semester 1	GGL121	6
	Rock and Minerals	Semester 1	GGL122	6
	Geological Processes	Semester 2	GGL123	6
	Structure and Economic Geology	Semester 2	GGL124	6
D	Zoology			
	Animal Cell Biology and Histology	Term 1	ZFO11X	7
	Extended Principles of Animal Evolution	Semester 1	ZFO13X	5
	Animal Diversity	Semester 2	ZFO125	5
	Extended Animal Patterns in Time and Space	Semester 2	ZFO14X	5
	Credits Second Year			62
		Presented	Module Code	Credit Value
Third Year				
Select three of the following groups:				
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
B	Geography II			
	Pedo-Geomorphological Studies	Term 1	GEN211	10
	Society and Environment	Term 4	GEN212	10
	Economic and Development Geography	Term 2	GEO212	10
	Introduction to Cartography and GIS	Term 3	GIS211	10

		Presented	Module Code	Credit Value
C	Geology II			
	Palaeontology	Semester 1	GGL201	10
	Structural Geology	Semester 1	GGL202	10
	Mineralogy	Semester 2	GGL203	10
	Sedimentary Petrology	Semester 2	GGL204	10
D	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Botany III ♦			
	Applied Marine Botany	Semester 1	BOT310	12
	Plant Physiology	Semester 1	BOT320	12
	Project	Year	BOT350	12
	Plant Eco-physiology	Semester 2	BOT330	12
	Plant Ecology and Environmental Management	Semester 2	BOT340	12
B	Geography III ♦			
	Geo-Information Systems	Term 1	GIS301	15
	Geomorphology	Term 2	GEN301	15
	Environmental Resource Management	Term 4	GEN313	15
	Photogrammetry and Remote Sensing	Term 3	GIS304	15
C	Geology III ♦			
	Igneous Petrology	Semester 1	GGL301	15
	Stratigraphy	Semester 1	GGL302	15
	Geo-tectonics and Metamorphic Petrology	Semester 2	GGL303	15
	Economic Geology	Semester 2	GGL304	15
D	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOO311	15
	Applied Aquatic Science	Semester 2	ZOO322	15
	Integrating Topics in Zoology	Semester 1	ZOO334	15
	Evolutionary Ecology	Semester 2	ZOO342	15
	Credits Fourth Year			120
	Total Credits			362

♦ Major modules (please refer to the General Prospectus).

**5.17 BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCES) (EXTENDED):
FULL-TIME
(QUALIFICATION CODE: 20017 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 418/422)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification. The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50–59%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

SITE OF DELIVERY

The programme will be offered at the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extend over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Science Academic Skills I	Year	ALMX100	10
	English for Science I	Year	LEAX100	10
	Pre-calculus A	Semester 1	MAPX101	10
	Pre-calculus B	Semester 2	MAPX102	10
	Select two of the following groups: (Modules on offer as timetable permits)			
A	Botany			
	Plant Cell Biology - Extended	Semester 1	BOTX101	7
	Plant Structure - Extended	Semester 1	BOTX111	8
	Plant Evolution and Systematics - Extended	Semester 2	BOTX102	7
	Plant Ecology and Environmental Botany - Extended	Semester 2	BOTX112	8
B	Geography			
	Introduction to Economic and Settlement Geography - Extended	Semester 1	GEOX101	7
	Introduction to Meteorology and Climatology - Extended	Semester 1	GENX101	8
	Introduction to Geomorphology - Extended	Semester 2	GENX102	8

		Presented	Module Code	Credit Value
	Introduction to Geo-Information Science and Cartography - Extended	Semester 2	GISX102	8
C	Geology (NOT OFFERED)			
	Introduction to Earth - Extended	Semester 1	GGLX101	7
	Mineralogy and Petrology - Extended	Semester 1	GGLX111	8
	Physical Geology - Extended	Semester 2	GGLX102	8
	Structure and Economic Geology - Extended	Semester 2	GGLX112	8
D	Zoology			
	Animal Cell Biology and Histology - Extended	Semester 1	ZOOX101	7
	Animal Diversity - Extended	Semester 1	ZOOX111	8
	Principles of Animal Evolution - Extended	Semester 2	ZOOX102	8
	Animal Patterns in Time and Space - Extended	Semester 2	ZOOX112	7
	Credits First Year			100/102
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Science Academic Skills II	Year	ALMX110	5
	English for Science II	Year	LEAX110	5
	Computing Fundamentals 1.1 - extended	Semester 1	WRFX101	8
	Select two of the following groups (Modules on offer as timetable permits)			
A	Botany (NOT OFFERED)			
	Plant Cell Biology - extended	Semester 1	BOTX101	7
	Plant Structure - extended	Semester 1	BOTX111	8
	Plant Evolution and Systematics - extended	Semester 2	BOTX102	7
	Plant Ecology and Environmental Botany - extended	Semester 2	BOTX112	8
B	Geography (NOT OFFERED)			
	Introduction to Economic and Settlement Geography - Extended	Semester 1	GEOX101	7
	Introduction to Meteorology and Climatology - Extended	Semester 1	GENX101	8
	Introduction to Geomorphology - Extended	Semester 2	GENX102	8
	Introduction to Geo-Information Science and Cartography - Extended	Semester 2	GISX102	8
C	Geology			
	Introduction to Earth - Extended	Semester 1	GGLX101	7
	Mineralogy and Petrology - Extended	Semester 1	GGLX111	8
	Physical Geology - Extended	Semester 2	GGLX102	8
	Structure and Economic Geology - Extended	Semester 2	GGLX112	8

		Presented	Module Code	Credit Value
D	Zoology			
	Animal Cell Biology and Histology - Extended	Semester 1	ZOOX101	7
	Animal Diversity - Extended	Semester 1	ZOOX111	8
	Principles of Animal Evolution - Extended	Semester 2	ZOOX102	8
	Animal Patterns in Time and Space - Extended	Semester 2	ZOOX112	7
Select either E1 or E2: These groups do not lead to majors and no second year modules are on offer in 2019.				
E1	Chemistry			
	General Chemistry - Extended	Semester 1	CHGX101	15
	Inorganic Chemistry - Extended	Semester 2	CHIX102	9
	Organic Chemistry - Extended	Semester 2	CHOX102	6
E2	Mathematics			
	Mathematics Special 101 - Extended	Semester 1	MATX101	8
	Mathematics Special 102 - Extended	Semester 2	MATX102	8
	Physics			
	Mechanics and Thermodynamics - Extended	Semester 1	FBBX101	7
	Electricity, Optics and Atomics - Extended	Semester 2	FBBX102	7
	Credits Second Year			78/80
		Presented	Module Code	Credit Value
Third Year				
Select three of the following groups:				
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
B	Geography II			
	Pedo-Geomorphological Studies	Term 1	GENV201	10
	Society and Environment	Term 4	GENV212	10
	Economic and Development Geography	Term 2	GEOV211	10
	Introduction to Cartography and GIS	Term 3	GISV201	10
C	Geology II			
	Palaeontology	Semester 1	GGLV201	10
	Structural Geology	Semester 1	GGLV211	10
	Mineralogy	Semester 2	GGLV202	10
	Sedimentary Petrology	Semester 2	GGLV212	10
D	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10

		Presented	Module Code	Credit Value
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Botany III ♦			
	Applied Marine Botany	Semester 1	BOTV301	12
	Plant Physiology	Semester 1	BOTV311	12
	Plant Eco-physiology	Semester 2	BOTV302	12
	Plant Ecology and Environmental Management	Semester 2	BOTV312	12
	Project	Year	BOTV310	12
B	Geography III ♦			
	Geo-Information Systems	Term 1	GISV301	15
	Geomorphology	Term 2	GENV301	15
	Environmental Resource Management	Term 4	GENV312	15
	Photogrammetry and Remote Sensing	Term 3	GISV302	15
C	Geology III ♦			
	Igneous Petrology	Semester 1	GGLV301	15
	Stratigraphy	Semester 1	GGLV311	15
	Geo-tectonics and Metamorphic Petrology	Semester 2	GGLV302	15
	Economic Geology	Semester 2	GGLV312	15
D	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOOV301	15
	Integrating Topics in Zoology	Semester 1	ZOOV311	15
	Applied Aquatic Science	Semester 2	ZOOV302	15
	Evolutionary Ecology	Semester 2	ZOOV312	15
	Credits Fourth Year			120
	Total Credits			418/422

♦ Major modules (please refer to the General Prospectus).

**5.18 BACHELOR OF SCIENCE (GEOSCIENCES: GEOGRAPHY AND GEOLOGY)
(EXTENDED): FULL-TIME
(QUALIFICATION CODE: 20014 – A7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 362)
(NO NEW INTAKE)**

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification.

The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60–69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

SITE OF DELIVERY

The programme will be offered on the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extend over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	Academic and Life Skills Development I	Year	ALM111	4
	English for Science	Year	LEA1X1	4
	Pre-calculus 1	Semester 1	MATF1X1	4
	Pre-calculus 2	Semester 2	MATF1X2	4
Select two of the following groups:				
A	Botany			
	Plant Cell Biology	Term 1	BOT11X	7
	Plant Evolution and Systematics	Semester 1	BOT135	5
	Plant Structure	Semester 2	BOT125	5

		Presented	Module Code	Credit Value
	Extended Plant Ecology and Environmental Botany	Semester 2	BOT14X	5
B	Geography			
	Foundations of Economic and Settlement Geography	Semester 1	GEO011	6
	Foundations of Geomorphology	Semester 1	GEN002	6
	Foundations of Meteorology and Climatology	Semester 2	GEN001	6
	Foundation of Geo-Information Science and Cartography	Semester 2	GIS1X1	6
C	Geology			
	Introduction to the Earth	Semester 1	GGL121	6
	Geological Processes	Semester 2	GGL123	6
	Rock and Minerals	Semester 1	GGL122	6
	Structure and Economic Geology	Semester 2	GGL124	6
D	Zoology			
	Animal Cell Biology and Histology	Term 1	ZFO11X	7
	Extended Principles of Animal Evolution	Semester 1	ZFO13X	5
	Extended Animal Patterns in Time and Space	Semester 2	ZFO14X	5
	Animal Diversity	Semester 2	ZFO125	5
	Credits First Year			62
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Academic and Life Skills Development	Year	ALM112	2
	English for Science	Year	LEA121	2
	Extended Computing Fundamentals 1.1a	Year	WRFC141	6
	Extended Computing Fundamentals 1.2	Year	WRFC142	6
	Select two of the following groups (Not taken in Year 1):			
A	Botany			
	Plant Cell Biology	Term 1	BOT11X	7
	Plant Evolution and Systematics	Semester 1	BOT135	5
	Plant Structure	Semester 2	BOT125	5
	Extended Plant Ecology and Environmental Botany	Semester 2	BOT14X	5
B	Geography			
	Foundations of Economic and Settlement Geography	Semester 1	GEO011	6
	Foundations of Geomorphology	Semester 1	GEN002	6
	Foundations of Meteorology and Climatology	Semester 2	GEN001	6
	Foundation of Geo-Information Science and Cartography	Semester 2	GIS1X1	6

		Presented	Module Code	Credit Value
C	Geology			
	Introduction to the Earth	Semester 1	GGL121	6
	Geological Processes	Semester 2	GGL123	6
	Rock and Minerals	Semester 1	GGL122	6
	Structure and Economic Geology	Semester 2	GGL124	6
D	Zoology			
	Animal Cell Biology and Histology	Term 1	ZFO11X	7
	Extended Principles of Animal Evolution	Semester 1	ZFO13X	5
	Extended Animal Patterns in Time and Space	Semester 2	ZFO14X	5
	Animal Diversity	Semester 2	ZFO125	5
	Credits Second Year			62
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Geography II			
	Pedo-Geomorphological Studies	Term 1	GEN211	10
	Society and Environment	Term 4	GEN212	10
	Economic and Development Geography	Term 2	GEO212	10
	Introduction to Cartography and GIS	Term 3	GIS211	10
	Geology II			
	Palaeontology	Semester 1	GGL201	10
	Structural Geology	Semester 1	GGL202	10
	Mineralogy	Semester 2	GGL203	10
	Sedimentary Petrology	Semester 2	GGL204	10
	Sub-total			80
	Select one of the following groups:			
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
	Project	Year	BOT250	8
B	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Third Year			120

		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Geography III ♦			
	Geo-Information Systems	Term 1	GIS301	15
	Geomorphology	Term 2	GEN301	15
	Environmental Resource Management	Term 4	GEN313	15
	Photogrammetry and Remote Sensing	Term 3	GIS304	15
	Geology III ♦			
	Igneous Petrology	Semester 1	GGL301	15
	Stratigraphy	Semester 1	GGL302	15
	Geotectonics and Metamorphic Petrology	Semester 2	GGL303	15
	Economic Geology	Semester 2	GGL304	15
	Credits Fourth Year			120
	Total Credits			362

♦ Major modules (please refer to the General Prospectus).

5.19 BACHELOR OF SCIENCE (GEOSCIENCES: GEOGRAPHY AND GEOLOGY) (EXTENDED): FULL-TIME (QUALIFICATION CODE: 20019 – A7) (NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 362)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification. The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60–69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

PROMOTION

- Candidates shall only be permitted to register for any modules in the second year of study if they have passed at least 9 of the modules prescribed in the first year of study.
- Candidates who do not meet the promotion requirement above will only be allowed to re-register for the programme if they have passed a minimum of 6 foundational modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

SITE OF DELIVERY

The programme will be offered on the Nelson Mandela University Summerstrand South Campus.

DURATION

The qualification shall extend over a minimum of four years of full-time study.

CURRICULUM (MODULES ON OFFER AS TIMETABLE PERMITS)

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Science Academic Skills I	Year	ALMX100	10
	English for Science I	Year	LEAX100	10
	Pre-calculus A	Semester 1	MAPX101	10
	Pre-calculus B	Semester 2	MAPX102	10
	Select two of the following groups:			
A	Botany (NOT OFFERED)			
	Plant Cell Biology - Extended	Semester 1	BOTX101	7
	Plant Structure - Extended	Semester 1	BOTX111	8
	Plant Evolution and Systematics - Extended	Semester 2	BOTX102	7
	Plant Ecology and Environmental Botany - Extended	Semester 2	BOTX112	8
B	Geography			
	Introduction to Economic and Settlement Geography - Extended	Semester 1	GEOX101	7
	Introduction to Meteorology and Climatology - Extended	Semester 1	GENX101	8
	Introduction to Geomorphology - Extended	Semester 2	GENX102	8
	Introduction to Geo-Information Science and Cartography - Extended	Semester 2	GISX102	8
C	Geology			
	Introduction to Earth - Extended	Semester 1	GGLX101	7
	Mineralogy and Petrology - Extended	Semester 1	GGLX111	8
	Physical Geology - Extended	Semester 2	GGLX102	8
	Structure and Economic Geology - Extended	Semester 2	GGLX112	8
D	Zoology (NOT OFFERED)			
	Animal Cell Biology and Histology - Extended	Semester 1	ZOOX101	7
	Animal Diversity - Extended	Semester 1	ZOOX111	8
	Principles of Animal Evolution - Extended	Semester 2	ZOOX102	8
	Animal Patterns in Time and Space - Extended	Semester 2	ZOOX112	7
	Credits First Year			110/112
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Science Academic Skills II	Year	ALMX110	5
	English for Science II	Year	LEAX110	5
	Computing Fundamentals 1.1 - Extended	Semester 1	WRFX101	8

		Presented	Module Code	Credit Value
Select two of the following groups:				
A	Botany			
	Plant Cell Biology - Extended	Semester 1	BOTX101	7
	Plant Structure - Extended	Semester 1	BOTX111	8
	Plant Evolution and Systematics - Extended	Semester 2	BOTX102	7
	Plant Ecology and Environmental Botany - Extended	Semester 2	BOTX112	8
B	Geography (NOT OFFERED)			
	Introduction to Economic and Settlement Geography - Extended	Semester 1	GEOX101	7
	Introduction to Meteorology and Climatology Extended	Semester 1	GENX101	8
	Introduction to Geomorphology - Extended	Semester 2	GENX102	8
	Introduction to Geo-Information Science and Cartography - Extended	Semester 2	GISX102	8
C	Geology (NOT OFFERED)			
	Introduction to Earth - Extended	Semester 1	GGLX101	7
	Mineralogy and Petrology - Extended	Semester 1	GGLX111	8
	Physical Geology - Extended	Semester 2	GGLX102	8
	Structure and Economic Geology - Extended	Semester 2	GGLX112	8
D	Zoology			
	Animal Cell Biology and Histology - Extended	Semester 1	ZOOX101	7
	Animal Diversity - Extended	Semester 1	ZOOX111	8
	Principles of Animal Evolution - Extended	Semester 2	ZOOX102	8
	Animal Patterns in Time and Space - Extended	Semester 2	ZOOX112	7
Select either E1 or E2: These groups do not lead to majors and no second year modules are on offer				
E1	Chemistry			
	General Chemistry - Extended	Semester 1	CHGX101	15
	Inorganic Chemistry - Extended	Semester 2	CHIX102	9
	Organic Chemistry - Extended	Semester 2	CHOX102	6
E2	Mathematics			
	Mathematics Special 101 - Extended	Semester 1	MATX101	8
	Mathematics Special 102 - Extended	Semester 2	MATX102	8
	Physics			
	Mechanics and Thermodynamics - Extended	Semester 1	FBBX101	7
	Electricity, Optics and Atomics - Extended	Semester 2	FBBX102	7
	Credits Second Year			78/80

		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Geography II			
	Pedo-Geomorphological Studies	Term 1	GENV201	10
	Society and Environment	Term 4	GENV212	10
	Economic and Development Geography	Term 2	GEOV211	10
	Introduction to Cartography and GIS	Term 3	GISV201	10
	Geology II			
	Palaeontology	Semester 1	GGLV201	10
	Structural Geology	Semester 1	GGLV211	10
	Mineralogy	Semester 2	GGLV202	10
	Sedimentary Petrology	Semester 2	GGLV212	10
	Sub-total			80
	Select one of the following groups:			
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
B	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Credits Third Year			120
		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Geography III ♦			
	Geo-Information Systems	Term 1	GISV301	15
	Geomorphology	Term 2	GENV301	15
	Photogrammetry and Remote Sensing	Term 3	GISV302	15
	Environmental Resource Management	Term 4	GENV312	15
	Geology III ♦			
	Igneous Petrology	Semester 1	GGLV301	15
	Stratigraphy	Semester 1	GGLV311	15
	Geotectonics and Metamorphic Petrology	Semester 2	GGLV302	15
	Economic Geology	Semester 2	GGLV312	15

	Presented	Module Code	Credit Value
Credits Fourth Year			120
Total Credits			362

♦ Major modules (please refer to the General Prospectus).

**5.20 BACHELOR OF SCIENCE (INFORMATION SYSTEMS) (EXTENDED):
FULL-TIME
(QUALIFICATION CODE: 20013 – A7/V7)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 366)
(NO NEW INTAKE)**

QUALIFICATION OVERVIEW

The qualification for BSc studies provides alternative university access to students who have the potential to succeed but do not meet the minimum admission requirements for the mainstream qualification.

The purpose of the qualification is to integrate additional academic support and skills development with mainstream modules in order to prepare the student for successful completion of the BSc degree.

ADMISSION REQUIREMENTS

- Minimum statutory NSC requirements for degree entry must be met or equivalent school-leaving certificate. In exceptional cases candidates who do not meet the statutory requirements for admission to a Bachelor's degree, but perform very well in the Nelson Mandela University access assessment battery will be considered for Senate's discretion admission.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40–49%) for Mathematics.
- Applicants with an Admission Points Score between 28 and 37 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Candidates must perform satisfactorily in the Nelson Mandela University Access Assessment Battery.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

PROMOTION

- Candidates shall only be permitted to register for any modules of the second year of study if they have passed at least 7 of the modules prescribed in the first year of study.
- Candidates who do not meet this promotion requirement will only be allowed to re-register for the programme if they have passed a minimum of 5 modules in their first year of study.
- Candidates who have not completed all the foundational modules in the programme after three (3) years of full-time study will not be allowed to re-register for the programme.

SITE OF DELIVERY

The first two years of the programme will be offered on the Nelson Mandela University Missionvale Campus and the foundational modules will only be offered on this campus. The last two years of the programme will be offered on the Nelson Mandela University Summerstrand South Campus. Students will not be allowed to move from the Missionvale Campus if they have more than one outstanding foundational module.

DURATION

The qualification shall extend over a minimum of four years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	English for Science	Year	LEA1X2	4
	Academic and Life Skills Development 2	Year	ALM111	4
	Extended Computing Fundamentals 1.1a	Year	WRFC141	6
	Pre-calculus 1	Semester 1	MATF1X1	4
	Pre-calculus 2	Semester 2	MATF1X2	4
	Mathematics for Accounting	Semester 2	MACC101	12
	Foundation Accounting	Semester 1	RF100	4
	Extended Accounting 101A	Semester 2	RF111	4
	Extended Business Management 111	Year	EB111	9
	Credits First Year			59
		Presented	Module Code	Credit Value
Second Year				
Compulsory modules:				
	English for Science	Year	LEA121	2
	Academic and Life Skills Development	Year	ALM112	2
	Foundation Statistics	Semester 1	STAF121	4
	Extended Accounting 101B	Semester 1	RF112	4
	Extended General Accounting 102	Semester 2	RGF102	10
	Extended Business Management 112	Year	EB112	9
	Extended Programming Fundamentals 1.2	Year	WRA142	8
	Extended Computing Fundamentals 1.2	Year	WRFC142	6
	Business Statistics 102	Semester 2	STAE102	12
	Mathematics Special Extended A	Semester 1	MATA1X1	5
	Mathematics Special Extended B	Semester 2	MATA1X2	5
	Credits Second Year			67

		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
Computer Science II				
	Data Structures and Algorithms 2.1	Semester 1	WRA201	8
	Data Structures and Algorithms 2.2	Semester 2	WRA202	8
	Computer Architecture Networks 2.1	Semester 1	WRC201	6
	Introduction to Business Systems	Semester 2	WRBA202	6
	Information Systems 2.1	Semester 1	WRI201	6
	Information Systems 2.2	Semester 2	WRI202	6
Web Systems II				
	Web Systems 2.1	Semester 1	WRWS201	8
	Web Systems 2.2	Semester 2	WRWS202	8
Mathematics Special II				
	Mathematics Special B1	Semester 1	MATB101	8
	Mathematics Special B2	Semester 2	MATB102	8
	Sub-total			72
Select 48 credits from groups A to E:				
A	Computer Science II			
	Business Process Modelling	Semester 1	WRBP201	6
	Computer Architecture and Networks 2.2	Semester 2	WRC202	6
B	Statistics II			
	Probability, Distributors Theory and Estimation	Semester 1	STAT202	20
	Regression Analysis and Advanced Regression Topics	Semester 2	STAT203	20
C	Accounting II/General Accounting II			
	Accounting 2A	Semester 1	R201	14
	Accounting 2B	Semester 2	R202	14
	OR			
	General Accounting 2A	Semester 1	RG201	14
	General Accounting 2B	Semester 2	RG202	14
D	Management II			
	Marketing Management	Semester 1	EBM201	14
	Logistics/Purchasing Management	Semester 2	EBM202	14
E	Economics II			
	Macroeconomics	Semester 1	EC201	14
	Microeconomics	Semester 2	EC202	14
	Credits Third Year			120

		Presented	Module Code	Credit Value
Fourth Year				
	Compulsory modules:			
	Computer Science III ♦			
	Advanced Data Structures	Semester 1	WRA301	10
	Advanced Programming 3.1	Semester 1	WRAP301	10
	Advanced Programming 3.2	Semester 2	WRAP302	11
	Database Systems	Semester 1	WRDB301	7
	User Interface Design	Semester 2	WRUI301	7
	Project	Year	WRR301	9
	Multimedia Systems III ♦			
	Multimedia Systems 3.1	Semester 1	WRMS301	10
	Multimedia Systems 3.2	Semester 2	WRMS302	10
	Management Information Systems III ♦			
	Management Information Systems 3.1	Semester 1	WRB301	8
	Management Information Systems 3.2	Semester 2	WRB302	8
	Sub-total			90
	Select 31 credits from groups A to D:			
A	Computer Science III ♦			
	Language and Automata Theory	Semester 2	WRL301	10
	Enterprise Resource Planning Systems 3.1	Semester 1	WRER301	11
	Enterprise Systems Development	Semester 2	WRER312	11
B	Statistics III			
	Non-Parametric Statistical Procedures	Semester 1	STAT302	10
	Econometric Models	Semester 1	STAT303	14
	Special Topics in Statistics	Semester 1	STAT304	6
	Experimental Design and ANOVA	Semester 2	STAT306	10
	Time Series Analysis	Semester 2	STAT307	10
	Operations Research	Semester 2	STAT309	10
C	Business Management III			
	Financial Management	Semester 1	EBM301	24
	General and Strategic Management	Semester 2	EBM302	24
D	Economics III			
	Public Economics	Semester 1	ECO301	10
	Economics of Financial Markets	Semester 1	ECO302	10
	Applied Micro-economics	Semester 1	ECO303	10
	Econometrics* *Not available to students who have completed STAT203.	Semester 1	ECO304	10
	Development Economics	Semester 2	ECO305	10
	International Economics	Semester 2	ECO306	10
	Credits Fourth Year			120

Faculty of Science

Nelson Mandela University

		Presented	Module Code	Credit Value
	Total Credits			366

♦ Major modules (please refer to the General Prospectus).

6 DIPLOMAS

6.1 NATIONAL DIPLOMA (AGRICULTURAL MANAGEMENT): NORTH CAMPUS: FULL-TIME (QUALIFICATION CODE: 3452 – 01) (NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 355) (NO NEW INTAKE)

ADMISSION REQUIREMENTS

- Admission Points Score of 30.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 2 (30-39%) for Mathematics or 3 (40-49%) for Mathematical Literacy.
- Applicants with an Admission Points Score between 22 and 29 will be referred to write the Access Assessment Battery before a decision is made on whether to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Recommended NSC subjects

Economics, Agricultural Management Practices, Agricultural Sciences, Agricultural Technology, Life Sciences, Accounting

OR

A four-subject National Certificate (N3) with two languages at Grade 12 level. Recognition of prior learning will be considered.

Additional criteria may be used during selection process at the discretion of the HOD. Places on the course are limited and not any applicant who meets the minimum criteria will be admitted.

APPLICABLE RULES

The following guidelines will apply:

- A student will not normally be allowed to proceed with new subjects if he/she has failed three or more subjects in the previous exam.
- A student, who progresses at an unacceptable rate, may be refused further registration on grounds of poor academic performance. Such students may be referred to Student Counselling for consultation and evaluation.
- If a student fails the same subject three times, he is normally not allowed further registration on grounds of poor academic performance.
- A student undergoing experiential training in the practical year must pass:
 - all the assignments;
 - the oral examination at the end of the practical year.

DURATION

The National Diploma is a three-year full-time qualification of which two years are spent at Nelson Mandela University and one year in practice undergoing experiential training.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Animal Production I	Semester 1	AAP1111	10
	Animal Production II	Semester 2	AAP2212	10
	Computer Applications: Agriculture II	Semester 2	ACA2112	10
	Agricultural Management I	Semester 1	AGM1121	10
	Agricultural Management II	Semester 2	AGM2222	10
	Production and Operational Techniques I	Semester 1	APO1111	10
	Plant Production I	Semester 1	APP1111	10
	Plant Production II	Semester 2	APP2212	10
	Pasture Science I	Semester 2	APS1112	10
	Soil Classification II	Semester 2	ASC2112	10
	Agricultural Soil Science I	Semester 1	ASS1111	10
	Computer Skills I	Semester 1	CCP1111	5
	Credits First Year			115
Second Year				
	Compulsory modules:			
	Agricultural Engineering I		AGE1120	
	Module A	Semester 1	AGE1221	12
	Module B	Semester 2	AGE1232	12
	Agricultural Management III ♦	Year	AGM3330	24
	Agricultural Law I		ALA1120	
	Commercial Law - General Principles of Contract	Semester 1	JHT1111	12
	Labour Law and Capita Selecta	Semester 2	ALA1222	12
	Personnel Management I (Agriculture)		AMA1100	
	Personnel Management	Year	AMA1120	18
	Communication	Semester 1	AMA1130	6
	Select one of the following modules:			
	Animal Production III (option) ♦	Year	AAP3310	24
	Plant Production III (option) ♦	Year	APP3310	24
	Credits Second Year			120

		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
	Agricultural Practice III	Year	APE3010	96
	Agricultural Production Management II	Year	APM2210	12
	Agricultural Production Techniques II	Year	APT2210	12
Credits Third Year				120
Total Credits				355

♦ Major modules (please refer to the General Prospectus).

PREREQUISITE TABLE

MODULES	PREREQUISITES
Agricultural Management II (AGM2222)	Agricultural Management I (AGM1121)
Agricultural Management III (AGM3330)	Agricultural Management II (AGM2222)
Plant Production II (APP2212)	Plant Production I (APP1111)
Plant Production III (APP3310)	Plant Production II (APP2212)
Animal Production II (AAP2212)	Animal Production I (AAP1111)
Animal Production III (AAP3310)	Animal Production II (AAP2212)
Soil Classification II (ASC2112)	Agricultural Soil Science I (ASS1111)
Computer Application (Agric) II (ACA2112)	Computer Skills I (CCP1111)
Agricultural Production Management II (APM2210)	Agricultural Management III (AGM3330)
	Agricultural Law I (ALA1120)
	Personnel Management Agriculture I (AMA1100)
Agricultural Production Techniques II (APT2210)	Plant Production III (APP3310)
	<u>or</u>
	Animal Production III (AAP3310)
	Pasture Science I (APS1112)

EXPERIENTIAL TRAINING REQUIREMENTS

To fulfil the requirements of the National Diploma a student must complete at least one year of applicable experiential training. In the curriculum the experiential training is treated as three modules called **Agricultural Production Management II**, **Agricultural Production Techniques II** and **Agricultural Practice III**.

Students may undergo practical training on their parents' farms, other appropriate farms or with companies and institutions involved in the agricultural sector. Although Nelson Mandela University will as far as possible try to assist students with finding employment, in the final instance the onus to obtain suitable employment will be on the student.

**6.2 DIPLOMA IN AGRICULTURAL MANAGEMENT: GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 2065 – 02)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 379)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- NSC achievement rating of at least level 3 (40-49%) for English, Afrikaans or isiXhosa (home language or first additional language).
- NSC achievement rating of at least level 3 (40-49%) for Mathematics or level 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least level 3 (40-49%) for Life Science OR Physical Sciences OR Agricultural Sciences.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.
- Admission is subject to departmental selection.
- Recommended NSC subjects: Business Studies.

ADDITIONAL REQUIREMENT

The modules with zero credit values are compulsory. Students have to pass these modules before the qualification will be awarded.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

No student registered on the Extended Programme will be allowed to register for any 2nd level subjects, unless he/she has passed all the non-credit-bearing subjects (Communication in English B, Numeric Calculations, Basic Science and Life Skills).

EXPERIENTIAL TRAINING

Please note that the 2nd semester of the 2nd year and the 1st semester of the 3rd year is experiential training (practical work experience) that consists of four subjects: Agricultural Practice IIIA, Agricultural Production Techniques II, Agricultural Practice IIIB, and Agricultural Production Management II.

Students will not be allowed to go on experiential training unless they have passed Agricultural Management I, II and IIIA, Plant Production I, II and IIIA or Animal Production I, II and IIIA.

Students are responsible for finding their own placement for experiential training for the year; this may not be done in the students' family business.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Agricultural Law I Module A	Semester 1	SAL1001	12
	Agricultural Law I Module B	Semester 2	SAL1002	12
	Animal Production I	Semester 1	SAP1001	10
	Animal Production II	Semester 2	SAP2002	10
	Computer Skills I	Semester 1	SCC1001	5
	Agricultural Management I	Semester 1	SGM1001	10
	Agricultural Management II	Semester 2	SGM2002	10
	Plant Production I	Semester 1	SPP1001	10
	Plant Production II	Semester 2	SPP2002	10
	Pasture Science I	Semester 2	SPS1002	10
	Soil Classification II	Semester 2	SSC2002	10
	Agricultural Soil Science I	Semester 1	SSS1001	10
	Credits First Year			119
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Computer Applications: Agriculture	Semester 1	SCA2001	10
	Agricultural Engineering: Module IA	Semester 1	SGE1001	12
	Agricultural Management IIIA ♦	Semester 1	SGM3011	12
	Agricultural Practice IIIA (Experiential Training)	Semester 2	SLP3002	48
	Agricultural Production Techniques II (Experiential Training)	Semester 2	SLT2002	12
	Personnel Management Module IA	Semester 1	SMA1001	12
	Select one or both of the following modules:			
	Animal Production IIIA	Semester 1	SAP3001	12
	Plant Production IIIA	Semester 1	SPP3001	12
	Credits Second Year			118

		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
	Agricultural Engineering Module IB	Semester 2	SGE1002	12
	Agricultural Management Module IIIB ♦	Semester 2	SGM3002	12
	Agricultural Practice IIIB (Experiential Training)	Semester 1	SLP3001	48
	Agricultural Production Management II (Experiential Training)	Semester 1	SLB2001	12
	Personnel Management: Agriculture Module IB	Semester 2	SMA1002	12
	Production and Operational Techniques I	Semester 2	SPO1002	10
Select one or both of the following modules:				
	Animal Production IIIB	Semester 2	SAP3002	12
	Plant Production IIIB	Semester 2	SPP3002	12
	Credits Third Year			118
	Total Credits			379

♦ Major module (please refer to the General Prospectus).

EXPERIENTIAL TRAINING REQUIREMENTS

To fulfil the requirements of the National Diploma a student must complete at least one year of applicable experiential training. In the curriculum the experiential training is treated as three modules called **Agricultural Production Management II**, **Agricultural Production Techniques II** and **Agricultural Practice III**.

Students may undergo practical training on their parents' farms, other appropriate farms or with companies and institutions involved in the agricultural sector. Although Nelson Mandela University will as far as possible try to assist students with finding employment, in the final instance the onus to obtain suitable employment will be on the student.

6.3 DIPLOMA IN AGRICULTURAL MANAGEMENT: NORTH CAMPUS: FULL-TIME (QUALIFICATION CODE: 2061 - 01) (NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 355)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language on at least level 3 (40-49%).
- NSC achievement rating of at least level 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least level 4 (40-49%) for Life Science OR Physical Sciences OR Agricultural Sciences.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether to admit the applicant to the course.

Recommended NSC subjects

Economics, Agricultural Management Practices, Agricultural Sciences, Agricultural Technology, Life Sciences, Accounting
OR

A four-subject National Certificate (N3) with two languages at Grade 12 level. Recognition of prior learning will be considered.

Additional criteria may be used during selection process at the discretion of the HOD. Places on the course are limited and not any applicant who meets the minimum criteria will be admitted.

APPLICABLE RULES

The following guidelines will apply:

- A student will not normally be allowed to proceed with new subjects if he/she has failed three or more subjects in the previous exam.
- A student, who progresses at an unacceptable rate, may be refused further registration on grounds of poor academic performance. Such students may be referred to Student Counselling for consultation and evaluation.
- If a student fails the same subject three times, he is normally not allowed further registration on grounds of poor academic performance.
- A student undergoing experiential training in the practical year must pass:
 - all the assignments;
 - the oral examination at the end of the practical year.

DURATION

The Diploma is a three-year full-time qualification of which two years are spent at Nelson Mandela University and one year in practice undergoing experiential training.

Students will not be allowed to register for more than 120 credits per year.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Animal Production I	Semester 1	AAP1001	10
	Animal Production II	Semester 2	AAP2002	10
	Computer Applications: Agriculture II	Semester 2	ITA2002	10
	Agricultural Management I	Semester 1	AGM1001	10
	Agricultural Management II	Semester 2	AGM2002	10
	Production and Operational Techniques I	Semester 1	APO1001	10
	Plant Production I	Semester 1	APP1001	10
	Plant Production II	Semester 2	APP2002	10
	Pasture Science I	Semester 2	APS1002	10
	Soil Classification II	Semester 2	ASC2002	10
	Agricultural Soil Science I	Semester 1	ASS1001	10
	Computer Skills I	Semester 1	ITC1001	5
	Credits First Year			115

		Presented	Module Code	Credit Value
Second Year				
Compulsory modules:				
Agricultural Engineering I			AGE1120	
Module A		Semester 1	AGE1001	12
Module B		Semester 2	AGE1002	12
Agricultural Management III ♦		Year	AGM3000	24
Agricultural Law I			ALA1120	
Commercial Law - General Principles of Contract		Semester 1	JHT1221	12
Labour Law and Capita Selecta		Semester 2	JLA1002	12
Personnel Management I (Agriculture)			AMA1100	
Personnel Management		Year	AMA1010	18
Communication		Semester 1	AMA1001	6
Select one of the following modules:				
Animal Production III (option) ♦		Year	AAP3000	24
Plant Production III (option) ♦		Year	APP3000	24
Credits Second Year				120
Third Year				
Compulsory modules:				
Agricultural Practice III		Year	APE3000	96
Agricultural Production Management II		Year	APM2000	12
Agricultural Production Techniques II		Year	APT2000	12
Credits Third Year				120
Total Credits				355

♦ Major modules (please refer to the General Prospectus).

PREREQUISITE TABLE

MODULES	PREREQUISITES
Agricultural Management II (AGM2002)	Agricultural Management I (AGM1001)
Agricultural Management III (AGM3000)	Agricultural Management II (AGM2002)
Plant Production II (APP2002)	Plant Production I (APP1001)
Plant Production III (APP3000)	Plant Production II (APP2002)
Animal Production II (AAP2002)	Animal Production I (AAP1001)
Animal Production III (AAP3000)	Animal Production II (AAP2002)
Soil Classification II (ASC2002)	Agricultural Soil Science I (ASS1001)
Computer Application (Agric) II (ITA2002)	Computer Skills I (ITC1001)
Agricultural Production Management II (APM2000)	Agricultural Management III (AGM3000)
	Agricultural Law I (JLA1002)
	Personnel Management Agriculture I (AMA1100)

MODULES	PREREQUISITES
Agricultural Production Techniques II (APT2000)	Plant Production III (APP3000)
	<u>or</u> Animal Production III (AAP3000)
	Pasture Science I (APS1002)

EXPERIENTIAL TRAINING REQUIREMENTS

To fulfil the requirements of the Diploma a student must complete at least one year of applicable experiential training. In the curriculum, the experiential training is treated as three modules called **Agricultural Production Management II**, **Agricultural Production Techniques II** and **Agricultural Practice III**.

Students may undergo practical training on their parents' farms, other appropriate farms or with companies and institutions involved in the agricultural sector. Although Nelson Mandela University will as far as possible try to assist students with finding employment, in the final instance the onus to obtain suitable employment will be on the student.

**6.4 NATIONAL DIPLOMA (AGRICULTURAL MANAGEMENT):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 3061 - 02)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 379)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 30.
- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 for Mathematical Literacy (40-49%) or 2 (30-39%) for Mathematics.
- Applicants with an Admission Points Score between 22 and 29 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Life Sciences, Agricultural Sciences and Business Studies.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency.

All students who fail this assessment will be required to register for and pass the subject English B before graduating.

EXPERIENTIAL TRAINING

Please note that the 2nd semester of the 2nd year and the 1st semester of the 3rd year is experiential training (practical work experience) that consists of four subjects: Agricultural Practice IIIA, Agricultural Production Techniques II, Agricultural Practice IIIB, and Agricultural Production Management II.

Students will not be allowed to go on experiential training unless they have passed Agricultural Management I, II and IIIA, Plant Production I, II and IIIA or Animal Production I, II and IIIA.

Students are responsible for finding their own placement for experiential training for the year; this may not be done in the students' family business.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

Students will not be allowed to register for more than 120 credits per year.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Agricultural Law I Module A	Semester 1	SAL1111	12
	Agricultural Law I Module B	Semester 2	SAL1122	12
	Animal Production I	Semester 1	SAP1111	10
	Animal Production II	Semester 2	SAP2112	10
	Computer Skills I	Semester 1	SCC1111	5
	Agricultural Management I	Semester 1	SGM1111	10
	Agricultural Management II	Semester 2	SGM2112	10
	Plant Production I	Semester 1	SPP1111	10
	Plant Production II	Semester 2	SPP2112	10
	Pasture Science I	Semester 2	SPS1112	10
	Soil Classification II	Semester 2	SSC2112	10
	Agricultural Soil Science I	Semester 1	SSS1111	10
	Credits First Year			119

		Presented	Module Code	Credit Value
Second Year				
Compulsory modules:				
	Computer Applications: Agriculture	Semester 1	SCA2111	10
	Agricultural Engineering: Module IA	Semester 1	SGE1111	12
	Agricultural Management IIIA ♦	Semester 1	SGM3111	12
	Agricultural Practice IIIA (Experiential Training)	Semester 2	SLP3112	48
	Agricultural Production Techniques II (Experiential Training)	Semester 2	SLT2212	12
	Personnel Management Module IA	Semester 1	SMA1111	12
Select one or both of the following modules:				
	Animal Production IIIA	Semester 1	SAP3311	12
	Plant Production IIIA	Semester 1	SPP3311	12
	Credits Second Year			118
		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
	Agricultural Engineering Module IB	Semester 2	SGE1122	12
	Agricultural Management Module IIIB ♦	Semester 2	SGM3122	12
	Agricultural Practice IIIB (Experiential Training)	Semester 1	SLP3111	48
	Agricultural Production Management II (Experiential Training)	Semester 1	SLB2211	12
	Personnel Management: Agriculture Module IB	Semester 2	SMA1132	12
	Production and Operational Techniques I	Semester 2	SPO1112	10
Select one or both of the following modules:				
	Animal Production IIIB	Semester 2	SAP3322	12
	Plant Production IIIB	Semester 2	SPP3322	12
	Credits Third Year			118
	Total Credits			379

♦ Major module (please refer to the General Prospectus).

**6.5 NATIONAL DIPLOMA (ANALYTICAL CHEMISTRY): FULL-TIME
(QUALIFICATION CODE: 3152 – 01)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 364)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 34.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50-59%) for Mathematics.
- NSC achievement rating of at least 4 (50-59%) for Physical Sciences.
- Applicants with an Admission Points Score between 24 and 33 may be referred to write the Access Assessment Battery before a decision is made on whether to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Candidates are required to complete their IST in a chemistry-related industry (approved by the programme co-ordinator) for a minimum period of 11 months.

SITE OF DELIVERY

This qualification will be presented on the Summerstrand North Campus of the university.

DURATION

Two years of full-time study at Nelson Mandela University followed by one year in-service training in a suitable laboratory, which includes Chemical Industry Practical and Chemistry Project.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Analytical Chemistry 1	Semester 1	ACC1001	24
	General Chemistry 1	Semester 1	GCC1001	16
	Analytical Chemistry 2	Semester 2	ACC2002	24
	Inorganic Chemistry 2	Semester 2	ICC2002	12
	Organic Chemistry 2	Semester 2	OCC2002	12
	Physical Chemistry 2	Semester 2	PCC2002	12
	Mathematics 1	Semester 1	WIS1111 or WIS1112	7
	Physics 1	Semester 1	MFS1201	7

		Presented	Module Code	Credit Value
	Computer Skills 1	Semester 1 or Semester 2	CCP1111 CCP1112	5
	Credit First Year			119
Second Year				
	Compulsory modules:			
	Analytical Chemistry 3A	Semester 1	ACC3001	11
	Analytical Chemistry 3A Practical	Semester 1	ACC3011	13
	Analytical Chemistry 3B	Semester 2	ACC3002	10
	Analytical Chemistry 3B Practical	Semester 2	ACC3012	13
	Inorganic Chemistry 3A	Semester 1	ICC3001	8
	Inorganic Chemistry 3B	Semester 2	ICC3002	9
	Organic Chemistry 3A	Semester 1	OCC3001	9
	Organic Chemistry 3B	Semester 2	OCC3002	8
	Physical Chemistry 3A	Semester 1	PCC3001	8
	Physical Chemistry 3B	Semester 2	PCC3002	9
	Mathematics 2	Semester 1 or Semester 2	WIS2111 or WIS2112	10
	Introduction to Quality Assurance	Semester 2	SAC32T0	6
	Statistics for Analytical chemistry	Semester 2	SAC31T0	6
	Computer skills for analytical chemistry	Semester 2	CCP2222	5
	Credits Second Year			125
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Chemistry Industry Practical ♦	Year	CIP2110	60
	Chemical Project ♦	Year	CJP3110	60
	Credits Third Year			120
	Total Credits			364

♦ Major modules (please refer to the General Prospectus).

PRE-REQUISITE TABLE

MODULE	PRE-REQUISITE
Analytical Chemistry 2 (ACC2002)	Analytical Chemistry 1 (ACC1001)
	General Chemistry 1 (GCC1001)
Inorganic Chemistry 2 (ICC2002)	General Chemistry 1 (GCC1001)
Organic Chemistry 2 (OCC2002)	General Chemistry 1 (GCC1001)
Physical Chemistry 2 (PCC2002)	General Chemistry 1 (GCC1001)
Analytical Chemistry 3A (ACC3001)	Analytical Chemistry 2 (ACC2002)
Analytical Chemistry 3A Practical (ACC3011)	Analytical Chemistry 2 (ACC2002)

MODULE	PRE-REQUISITE
Inorganic Chemistry 3A (ICC3001)	Inorganic Chemistry 2 (ICC2002)
Organic Chemistry 3A (OCC3001)	Organic Chemistry 2 (OCC2002)
Physical Chemistry 3A (PCC3001)	Physical Chemistry 2 (PCC2002)
Mathematics 2 (WIS2001)	Mathematics 1 (WIS1111)
Analytical Chemistry 3B (ACC3002)	Analytical Chemistry 2 (ACC2002)
Analytical Chemistry 3B Practical (ACC3012)	Analytical Chemistry 2 (ACC2002)
Inorganic Chemistry 3B (ICC3002)	Inorganic Chemistry 2 (ICC2002)
Organic Chemistry 3B (OCC3002)	Organic Chemistry 2 (OCC2002)
Physical Chemistry 3B (PCC3002)	Physical Chemistry 2 (PCC2002)
Statistics for Analytical Chemistry (SAC31T0)	Mathematics 1 (WIS1111)
Computer Skills for Analytical Chemistry 2 (CCP2222)	Computer Skills 1 (CCP1111)
Chemistry Industry Practical (CIP2110)	Analytical Chemistry 3A (ACC3001)
	Analytical Chemistry 3A Practical (ACC3011)
	Analytical Chemistry 3B (ACC3002)
	Analytical Chemistry 3B Practical (ACC3012)
	Inorganic Chemistry 3A (ICC3001)
	Inorganic Chemistry 3B (ICC3002)
	Physical Chemistry 3A (PCC3001)
	Physical Chemistry 3B (PCC3002)
	Organic Chemistry 3A (OCC3001)
Organic Chemistry 3B (OCC3002)	
Chemical Project (CJP3110)	Analytical Chemistry 3A (ACC3001)
	Analytical Chemistry 3A Practical (ACC3011)
	Analytical Chemistry 3B (ACC3002)
	Analytical Chemistry 3B Practical (ACC3012)
	Inorganic Chemistry 3A (ICC3001)
	Inorganic Chemistry 3B (ICC3002)
	Physical Chemistry 3A (PCC3001)
	Physical Chemistry 3B (PCC3002)
	Organic Chemistry 3A (OCC3001)
Organic Chemistry 3B (OCC3002)	

**6.6 DIPLOMA IN ANALYTICAL CHEMISTRY: FULL-TIME
(QUALIFICATION CODE: 2152 – 01)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 369)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 34.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50-59%) for Mathematics.
- NSC achievement rating of at least 4 (50-59%) for Physical Sciences.
- Applicants with an Admission Points Score between 24 and 33 may be referred to write the Access Assessment Battery before a decision is made on whether to admit the applicant to the course.

APPLICABLE RULES

Candidates are required to complete their IST in a chemistry-related industry (approved by the programme co-ordinator) for a minimum period of 12 months. Under special circumstances, candidates may apply to the program co-ordinator to consider an IST period of 11 months.

SITE OF DELIVERY

This qualification will be presented on the Summerstrand North Campus of the university.

DURATION

Two years of full-time study at Nelson Mandela University followed by one year in-service training in a suitable laboratory, which includes Chemical Industry Practical and Chemistry Project.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	Analytical Chemistry 1	Semester 1	CHA1001	24
	General Chemistry 1	Semester 1	CHG1001	16
	Analytical Chemistry 2	Semester 2	CHA2002	24
	Inorganic Chemistry 2	Semester 2	CHI2002	12
	Organic Chemistry 2	Semester 2	CHO2002	12
	Physical Chemistry 2	Semester 2	CHP2002	12
	Mathematics 1	Semester 1	MAT1001	10
	Physics 1	Semester 1	FFS1001	7
	Computer Skills 1	Semester 1 or Semester 2	ITC1001 ITC1002	5
	Credit First Year			122

		Presented	Module Code	Credit Value
Second Year				
Compulsory modules:				
	Analytical Chemistry 3A	Semester 1	CHA3001	11
	Analytical Chemistry 3A Practical	Semester 1	CHA3011	13
	Analytical Chemistry 3B	Semester 2	CHA3002	10
	Analytical Chemistry 3B Practical	Semester 2	CHA3012	13
	Inorganic Chemistry 3A	Semester 1	CHI3001	8
	Inorganic Chemistry 3B	Semester 2	CHI3002	9
	Organic Chemistry 3A	Semester 1	CHO3001	9
	Organic Chemistry 3B	Semester 2	CHO3002	8
	Physical Chemistry 3A	Semester 1	CHP3001	8
	Physical Chemistry 3B	Semester 2	CHP3002	9
	Mathematics 2	Semester 1	MAT2001	12
	Introduction to Quality Assurance	Semester 2	CHQ3000	6
	Statistics for Analytical chemistry	Semester 2	STA31T0	6
	Computer Skills for Analytical Chemistry	Semester 2	ITC2002	5
	Credits Second Year			127
Third Year				
Compulsory modules:				
	Chemistry Industry Practical ♦	Year	CIP2000	60
	Chemical Project ♦	Year	CJP3000	60
	Credits Third Year			120
	Total Credits			369

♦ Major modules (please refer to the General Prospectus).

PRE-REQUISITE TABLE

MODULE	PRE-REQUISITE
Analytical Chemistry 2 (CHA2002)	Analytical Chemistry 1 (CHA1001)
	General Chemistry 1 (CHG1001)
Inorganic Chemistry 2 (CHI2002)	General Chemistry 1 (CHG1001)
Organic Chemistry 2 (CHO2002)	General Chemistry 1 (CHG1001)
Physical Chemistry 2 (CHP2002)	General Chemistry 1 (CHG1001)
Analytical Chemistry 3A (CHA3001)	Analytical Chemistry 2 (CHA2002)
Analytical Chemistry 3A Practical (CHA3011)	Analytical Chemistry 2 (CHA2002)
Inorganic Chemistry 3A (CHI3001)	Inorganic Chemistry 2 (CHI2002)
Organic Chemistry 3A (CHO3001)	Organic Chemistry 2 (CHO2002)
Physical Chemistry 3A (CHP3001)	Physical Chemistry 2 (CHP2002)
Mathematics 2 (MAT2001)	Mathematics 1 (MAT1001)
Analytical Chemistry 3B (CHA3002)	Analytical Chemistry 2 (CHA2002)
Analytical Chemistry 3B Practical (CHA3012)	Analytical Chemistry 2 (CHA2002)
Inorganic Chemistry 3B (CHI3002)	Inorganic Chemistry 2 (CHI2002)

MODULE	PRE-REQUISITE
Organic Chemistry 3B (CHO3002)	Organic Chemistry 2 (CHO2002)
Physical Chemistry 3B (CHP3002)	Physical Chemistry 2 (CHP2002)
Statistics for Analytical Chemistry (STA31T0)	Mathematics 1 (MAT1001)
Computer Skills for Analytical Chemistry 2 (ITC2002)	Computer Skills 1 (ITC1001)
Chemistry Industry Practical (CIP2000)	Analytical Chemistry 3A (CHA3001)
	Analytical Chemistry 3A Practical (CHA3011)
	Analytical Chemistry 3B Practical (CHA3002)
	Analytical Chemistry 3B Practical (CHA3012)
	Inorganic Chemistry 3A (CHI3001)
	Inorganic Chemistry 3B (CHI3002)
	Physical Chemistry 3A (CHP3001)
	Physical Chemistry 3B (CHP3002)
	Organic Chemistry 3A (CHO3001)
Organic Chemistry 3B (CHO3002)	
Chemical Project (CJP3000)	Analytical Chemistry 3A (CHA3001)
	Analytical Chemistry 3A Practical (CHA3011)
	Analytical Chemistry 3B Practical (CHA3002)
	Analytical Chemistry 3B Practical (CHA3012)
	Inorganic Chemistry 3A (CHI3001)
	Inorganic Chemistry 3B (CHI3002)
	Physical Chemistry 3A (CHP3001)
	Physical Chemistry 3B (CHP3002)
	Organic Chemistry 3A (CHO3001)
Organic Chemistry 3B (CHO3002)	

**6.7 DIPLOMA IN CHEMICAL PROCESS TECHNOLOGY: FULL-TIME
(QUALIFICATION CODE: 3181 – 01)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 35.
- Minimum NSC requirements for diploma entry must be met.
- English and home language on at least level 4 (50-59%).
- NSC achievement rating of at least 4 (50-59%) for Mathematics.
- NSC achievement rating of at least 4 (50-59%) for Physical Sciences.
- Applicants with an Admission Points Score between 28 and 34 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- An N3 Certificate with a minimum of 60% in Mathematics and Engineering Science and 50% for any other electives subject to admissions and placement testing.

Please **note that, due to health and safety reasons, the chemical industry screens prospective employees for a medical history of asthma or lung diseases.** Do not consider the programme if you have had any previous medical illness like Asthma or lung diseases.

RE-ADMISSION

A student who progresses at an unacceptable rate, may be refused further registration on the grounds of poor academic performance. If a student fails the same subject three times, they are normally not allowed further registration on the grounds of poor academic performance.

DURATION

The qualification shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Mathematics I	Semester 1	WIS1131	15
	General Chemistry	Semester 1	GCC1101	18
	Introductory Inorganic and Organic Chemistry	Semester 2	GCC1102	12
	Introductory Physics	Semester 1	MFS1211	8
	Electricity, Magnetism and Optics	Semester 2	MFS1212	7
	Essential Computer Skills I	Semester 2	CCE1112	15
	Professional Skills I	Semester 2	OPS1102	15
	Introduction to Process Technology	Semester 1	GPT1101	15
	Basic Process Technology	Semester 2	GPT1102	15
	Credits First Year			120
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Quality Assurance and Plant Performance	Semester 1	CQA2101	15
	Applied Computing II	Semester 1	CCP2101	15
	Professional Skills II	Semester 2	OPS2102	15
	Physical Process Chemistry	Semester 1	CPI2011	15
	Routes to Chemicals	Semester 2	CPI2012	15
	Process Equipment and Operation	Semester 1	GPT2101	15
	Process Control	Semester 2	GPT2102	15
	Chemical Process Technology Laboratory II	Year	GPT2200	15
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Chemical Process Technology Practice ♦	Semester 2	GPP3102	60
	Chemical Process Technology III ♦	Semester 2	GPT3102	20

		Presented	Module Code	Credit Value
	Process Chemistry III ♦	Semester 1	CPI3011	20
	Chemical Process Technology Lab III	Semester 1	GPL3101	20
	Credits Third Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

PRE-REQUISITE TABLE

MODULE	PRE-REQUISITE
Introductory Inorganic and Organic Chemistry (GCC1102)	General Chemistry 1 (GCC1101)
Basic Process Technology (GPT1102)	Introduction to Process Technology (GPT1101)
Physical Process Chemistry (CPI2011)	Introductory Inorganic and Organic Chemistry (GCC1102)
Routes of Chemicals (CPI2012)	Introductory Inorganic and Organic Chemistry (GCC1102)
Process Equipment and Operation (GPT2101)	Basic Process Technology (GPT1102)
Process Control (GPT2102)	Basic Process Technology (GPT1102)
	Introductory Inorganic and Organic Chemistry (GCC1102)
Chemical Process Technology Laboratory II (GPT2200)	Basic Process Technology (GPT1102)
Applied Computing II (CCP2101)	Essential Computer Skills I (CCE1112)
Quality Assurance and Plant Performance (CQA2101)	Mathematics I (WIS1131)
Professional Skills II (OPS2102)	Professional Skills I (OPS1102)
Process Chemistry III (CPI3011)	Physical Process Chemistry (CPI2011)
	Routes of Chemicals (CPI2012)
Chemical Process Technology III (GPT3102)	Process Equipment and Operation (GPT2101)
	Process Control (GPT2102)
Chemical Process Technology Laboratory III (GPL3101)	Process Equipment and Operation (GPT2101)
	Process Control (GPT2102)
	Chemical Process Technology Laboratory II (GPT2200)

**6.8 NATIONAL DIPLOMA (FORESTRY): GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 3902 - 02)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 356)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- If an applicant presents with Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the programme or he/she could be placed in an extended qualification.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Physical Sciences, Life Sciences.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

English Proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. All students who fail this assessment will be required to register for and pass the subject English B before graduating.

EXPERIENTIAL TRAINING

Students are responsible for finding their own placement for experiential training for the practical period. The relevant plantation must be suitable for proper experiential exposure of the student. **A driver's licence is a prerequisite for students to take part in their experiential training. Students without a valid driver's licence will not be assisted by the university to find placement for their experiential training.**

FPA1121 (FOREST PRACTICE I)

Assessment criteria:

- Students have to attend all courses.
- Students have to pass all course assessment.

Failure to comply with the above criteria will disqualify students from passing Forest Practice I and students will have to repeat the course to satisfaction.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

Students will not be allowed to register for more than 120 credits per year.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Cost and Management Accounting (Module 1A)	Semester 2	FAA1122	5
	Forest Botany I	Semester 1	FBO1111	13
	Forest Conservation II	Semester 2	FCN2112	10
	Computers in Forestry I	Semester 1	FCR1111	8
	Forest Engineering Practice I	Semester 1	FEP1111	12
	Forest Engineering Practice II	Semester 2	FEP2212	12
	Forest Management I	Semester 1	FMN1111	10
	Human Resource Management I	Semester 2	FMR1112	8
	Forest Protection I	Year	FPR1110	8
	Silviculture I	Semester 1	FSI1111	12
	Silviculture II	Semester 2	FSI2212	11
	Credits First Year			109
		Presented	Module Code	Credit Value
Second Year (Three months structured practical at George Campus)				
	Compulsory modules:			
	Forest Practice I	Semester 1	FPA1121	60
	Forest Practice II	Semester 2	FPA2312	60
	Organisational Effectiveness I	Semester 1	FWS1211	10
	Credits Second Year			130
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Cost and Management Accounting II	Semester 2	FAA1322	5
	Forest Engineering Practice III ♦	Semester 2	FEP3312	12
	Forest Management III ♦	Semester 2	FMN3212	12
	Human Resource Management II	Semester 1	FMR2211	8
	Human Resource Management III ♦	Semester 2	FMR3312	12
	Forest Economics II	Year	FOE2110	12
	Forestry Laws II	Semester 1	FOL2111	11
	Forest Protection II	Semester 1	FPR2211	8

		Presented	Module Code	Credit Value
	Silviculture III	Semester 1	FSI3311	12
	Forest Mensuration II	Semester 1	FSM2111	13
	Forest Utilisation II	Semester 2	FUT2112	12
	Credits Third Year			117
	Total Credits			356

♦ Major modules (please refer to the General Prospectus).

THE SCHLICH MEDAL

This award is made annually out of the proceeds of a grant to South Africa, to commemorate Sir William Schlich's valuable services to Forestry.

One medal is awarded each year to a final-year Forestry student who has had the best performance in the class over the full three-year study period, provided the average mark is not below 75% and provided further that a minimum mark of 70% has been obtained in each module and with consideration of the candidate's general performance. Furthermore, the student must have earned the marks concerned throughout his three-year study period at the *first* examination; that means that marks obtained through re-examinations do not count for this award.

A silver medal is awarded if the student concerned has attained an average of 75% to 79% and a gold-plated medal is awarded if an average of 80% or more is obtained.

6.9 DIPLOMA IN FORESTRY: GEORGE CAMPUS: FULL-TIME (QUALIFICATION CODE: 2905 - 02) (NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 360)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy.
- If an applicant presents with Mathematical Literacy instead of Mathematics, additional modules may be added to the programme, which will extend the length of the programme or he/she could be placed in an extended qualification.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Physical Sciences, Life Sciences.

APPLICABLE RULES**English proficiency**

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

Experiential Training

Students arriving back from experiential training have to hand in reports and logbooks 2 weeks after classes commence for the new academic year. All reports, logbooks and presentations have to be concluded at the end of the 1st semester.

Students who don't meet this deadline have to register for the experiential training again the following year and will qualify for their diploma a year later. Students who register for their experiential training a 2nd time, can only score a maximum of 50% if they pass a 2nd evaluation.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Cost and Management Accounting I	Semester 2	FAA1132	10
	Forest Botany	Semester 1	FBO1121	10
	Computers Usage I	Semester 1	FCR1121	10
	Human Resource Management I	Semester 2	FMR1122	10
	Forest Ecology	Semester 1	FCN1001	10
	Silviculture I	Semester 1	FSI1121	10
	Forest Engineering I	Semester 1	FEP1001	10
	Environmental Management	Semester 2	FMV2002	10
	Forest Management I	Semester 2	FMN1122	10
	Silviculture II	Semester 2	FSI2222	10
	Forest Engineering II	Semester 2	FEP2002	10
	Fire Management I	Semester 1	FPR1001	10
	Credits First Year			120

		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Forest Practice I	Semester 1	FPA1131	60
	Forest Practice II	Semester 2	FPA2222	60
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Cost and Management Accounting II	Semester 2	FAA2002	10
	Forest Engineering III	Semester 2	FEP3002	12
	Forestry Finances II	Semester 1	FFI2002	10
	Forest Management III ♦	Semester 2	FMN3222	12
	Human Resource Management II	Semester 2	FMR2222	10
	Forest Economics II	Semester 1	FOE2001	10
	Forestry Law	Semester 1	FOL2001	10
	Forest Protection II	Semester 1	FPD2001	10
	Fire Management II	Semester 2	FPR2002	10
	Silviculture III	Semester 1	FSI3321	12
	Forest Mensuration II	Semester 1	FSM2121	12
	Forest Utilisation	Semester 1	FUT2001	10
	Credits Third Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

THE SCHLICH MEDAL

This award is made annually by the Southern African Institute of Forestry (SAIF) to commemorate Sir William Schlich's valuable services to Forestry.

One medal is awarded each year to a final-year Forestry student who has had the best performance in the class over the full three-year study period, provided the average mark is not below 75% and provided further that a minimum mark of 70% has been obtained in each module and with consideration of the candidate's general performance. Furthermore, the student must have earned the marks concerned throughout his three-year study period at the *first* examination; that means that marks obtained through re-examinations do not count for this award.

A silver medal is awarded if the student concerned has attained an average of 75% to 79% and a gold-plated medal is awarded if an average of 80% or more is obtained.

**6.10 NATIONAL DIPLOMA (GAME RANCH MANAGEMENT): ADDO CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 3456 – 01)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 30.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 2 (30-39%) for Mathematics or 3 (40-49%) for Mathematical Literacy.
- Applicants with an Admission Points Score between 22 and 29 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Recommended NSC subjects

Economics, Agricultural Management, Agricultural Sciences, Life Sciences, Accounting

OR

A four-subject National Certificate (N3) with two languages at Grade 12 level. Recognition of prior learning will be considered.

APPLICABLE RULES

- A student will not normally be allowed to proceed with new subjects if he has failed three or more subjects in the previous exam.
- A student who progresses at an unacceptable rate, may be refused further registration on grounds of poor academic performance. Such student may be referred to Student Counselling and evaluation.
- If a student fails the same subject three times, he is normally not allowed further registration on grounds of poor academic performance.

DURATION

The National Diploma is a three-year full-time qualification of which two years are spent at Nelson Mandela University and one year in practice undergoing experiential training.

SITE OF DELIVERY

This qualification will be offered at the Addo Campus of the university (+- 50km from the Port Elizabeth Campus). Accommodation is available at the Addo Campus. The Head of the Department is based at the Nelson Mandela University North Campus, Port Elizabeth. Enquiries at telephone 041-5043527.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Soil Science I	Semester 1	AGG1111	12
	Computer Usage I	Semester 2	GCU1212	12
	Game Ranch Economics I	Semester 2	GER1212	12
	Game Ranch Ecology I	Semester 1	GRE1111	12
	Game Ranch Ecology II	Semester 2	GRE2212	12
	Game Ranch Management I	Semester 1	GRM1111	12
	Game Ranch Management II	Semester 2	GRM2212	12
	Game Science I	Semester 1	GRS1111	12
	Game Science II	Semester 2	GRS2212	12
	Rangeland Studies I	Semester 2	GSR1111	12
	Credits First Year			120
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Game Ranch Economics II	Semester 1	GER2311	15
	Game Ranch Economics III	Semester 2	GER3412	15
	Game Utilization I or Game Lodge Management I	Semester 1	GGU1311	15
	Game Utilization II or Game Lodge Management II	Semester 2	GGU2412	15
	Game Health Management I	Semester 2	GHM1412	15
	Game Ranch Ecology III	Semester 1	GRE3311	15
	Game Ranch Management III	Semester 2	GRM3412	15
	Game Science III	Semester 1	GRS3311	15
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Game Ranch Application I	Year	GRA1011	60
	Game Ranch Application II	Semester 2	GRA2012	60
	Credits Third Year			120
	Total Credits			360

PRE-REQUISITE TABLE

MODULES	PRE-REQUISITES
Game Science II (GRS2212)	Game Science I (GRS1111)
Game Science III (GRS3311)	Game Science II (GRS2212)
Game Ranch Ecology II (GRE2212)	Game Ranch Ecology I (GRE1111)
Game Ranch Ecology III (GRE3311)	Game Ranch Ecology II (GRE2212)
Game Lodge Management II (GLM2412)	Game Lodge Management I (GLM1311)
Game Ranch Management II (GRM2212)	Game Ranch Management I (GRM1111)
Game Ranch Management III (GRM3412)	Game Ranch Management II (GRM2212)
Game Ranch Application I (GRA1011)	Game Ranch Ecology III (GRE3311)
	Game Ranch Management III (GRM3412)
	Game Science III (GRS3311)
Game Ranch Application II (GRA2012)	Game Ranch Ecology III (GRE3311)
	Game Ranch Management III (GRM3412)
	Game Science III (GRS3311)

EXPERIENTIAL TRAINING REQUIREMENTS

To fulfil the requirements of the National Diploma a student must complete at least one year of applicable experiential training. Students may undergo experiential training with any approved employer within the game industry. Although Nelson Mandela University will assist students in finding suitable employment, the onus to obtain suitable employment is on the student.

**6.11 NATIONAL DIPLOMA (GAME RANCH MANAGEMENT): GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 3457 - 02)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematical Literacy or 2 (30-39%) for Mathematics.
- Applicants with an Admission Points Score between 22 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who have completed the Higher Certificate in Veldfire Management with an average of at least 60% will be considered.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Recommended NSC subjects

Economics, Agricultural Management, Agricultural Sciences, Life Sciences, Accounting.

APPLICABLE RULES**English proficiency**

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

Students will not be allowed to register for more than 120 credits per year.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Game Ranch Economics I	Semester 2	GER1512	12
	Game Health Management I	Semester 1	GHM1511	15
	Game Ranch Ecology I	Semester 1	GRE1511	12
	Game Ranch Ecology II	Semester 2	GRE2512	12
	Game Ranch Management I	Semester 1	GRM1511	12
	Game Ranch Management II	Semester 2	GRM2512	12
	Game Science I	Semester 1	GRS1511	12
	Game Science II	Semester 2	GRS2512	12
	Rangeland Studies I	Semester 1	GSR1511	12
	Computer Usage I	Semester 1	NRG1111	12
	Credits First Year			123
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Game Ranch Economics II	Semester 1	GER2511	15
	Game Ranch Economics III ♦	Semester 2	GER3512	15
	Game Ranch Ecology III ♦	Semester 1	GRE3511	15
	Game Ranch Management III ♦	Semester 2	GRM3512	15
	Game Science III ♦	Semester 1	GRS3511	15
	Soil Science I	Semester 2	NSS1112	12

		Presented	Module Code	Credit Value
	Sub-total			87
Select one of the following groups:				
A	Game Utilisation I	Semester 1	GGU1511	15
	Game Utilisation II	Semester 2	GGU2512	15
	OR			
B	Game Lodge Management I	Semester 1	GLM1511	15
	Game Lodge Management II	Semester 2	GLM2512	15
	Credits Second Year			117
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Game Ranch Application I	Semester 1	GRA1511	60
	Game Ranch Application II	Semester 2	GRA2512	60
	Credits Third Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

**6.12 DIPLOMA IN GAME RANCH MANAGEMENT: ADDO CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 2457 – 01)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- Mathematics 3 (40-49%) or Mathematical Literacy 5 (60-69%).
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.

Recommended NSC subjects

Economics, Agricultural Management, Agricultural Sciences, Life Sciences, Accounting

OR

A four-subject National Certificate (N3) with two languages at Grade 12 level. Recognition of prior learning will be considered.

APPLICABLE RULES

- A student will not normally be allowed to proceed with new subjects if he has failed three or more subjects in the previous exam.
- A student who progresses at an unacceptable rate, may be refused further registration on grounds of poor academic performance. Such student may be referred to Student Counselling and evaluation.
- If a student fails the same subject three times, he is normally not allowed further registration on grounds of poor academic performance.

SITE OF DELIVERY

This qualification will be offered at the Addo Campus of the university (+- 50km from the Port Elizabeth Campus). Accommodation is available at the Addo Campus. The Head of the Department is based at the Nelson Mandela University North Campus, Port Elizabeth. Enquiries at telephone 041-5043527.

DURATION

The Diploma is a three-year full-time qualification of which two years are spent at Nelson Mandela University and one year in practice undergoing experiential training.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Computer Usage I	Semester 1	GCU1001	12
	Game Ranch Economics I	Semester 1	GER1001	12
	Soil Science I	Semester 1	AGG1001	12
	Game Science I	Semester 1	GG1001	12
	Game Science II	Semester 2	GG2002	12
	Game Ranch Ecology I	Semester 1	GRE1001	12
	Game Ranch Ecology II	Semester 2	GRE2002	12
	Game Ranch Management I	Semester 1	GRM1001	12
	Game Ranch Management II	Semester 2	GRM2002	12
	Rangeland Studies I	Semester 2	GSR1001	12
	Credits First Year			120
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Game Ranch Economics II	Semester 1	GER2001	15
	Game Ranch Economics III	Semester 2	GER3002	15
	Game Science III	Semester 1	GG3001	15
	Game Utilisation I	Semester 1	GGU1001	15
	or			
	Game Lodge Management I	Semester 1	GLM1001	15

		Presented	Module Code	Credit Value
	Game Utilisation II	Semester 2	GGU2002	15
	or Game Lodge Management II	Semester 2	GLM2002	15
	Game Health Management I	Semester 2	GHM1002	15
	Game Ranch Ecology III	Semester 1	GRE3001	15
	Game Ranch Management III	Semester 2	GRM3002	15
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Game Ranch Application I	Year	GRA1001	60
	Game Ranch Application II	Semester 2	GRA2002	60
	Credits Third Year			120
	Total Credits			360

PRE-REQUISITE TABLE

MODULES	PRE-REQUISITES
Game Science II (GGS2002)	Game Science I (GGS1001)
Game Science III (GGS3001)	Game Science II (GGS2002)
Game Ranch Ecology II (GRE2002)	Game Ranch Ecology I (GRE1001)
Game Ranch Ecology III (GRE3001)	Game Ranch Ecology II (GRE2002)
Game Lodge Management II (GLM2002)	Game Lodge Management I (GLM1001)
Game Ranch Management II (GRM2002)	Game Ranch Management I (GRM1001)
Game Ranch Management III (GRM3002)	Game Ranch Management II (GRM2002)
Game Ranch Application I (GRA1001)	Game Ranch Ecology III (GRE3001)
	Game Ranch Management III (GRM3002)
	Game Science III (GGS3001)
Game Ranch Application II (GRA2002)	Game Ranch Ecology III (GRE3001)
	Game Ranch Management III (GRM3002)
	Game Science III (GGS3001)

EXPERIENTIAL TRAINING REQUIREMENTS

To fulfil the requirements of the Diploma a student must complete at least one year of applicable experiential training. Students may undergo experiential training with any approved employer within the game industry. Although Nelson Mandela University will assist students in finding suitable employment, the onus to obtain suitable employment is on the student.

**6.13 DIPLOMA IN GAME RANCH MANAGEMENT: GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 2457 – 02)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 372)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum statutory NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- Mathematics 3 (40-49%) or Mathematical Literacy 5 (60-69%).
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.

Recommended NSC subjects

Economics, Agricultural Management, Agricultural Sciences, Life Sciences, Accounting

OR

A four-subject National Certificate (N3) with two languages at Grade 12 level. Recognition of prior learning will be considered.

APPLICABLE RULES

- A student will not normally be allowed to proceed with new subjects if he has failed three or more subjects in the previous exam.
- A student who progresses at an unacceptable rate, may be refused further registration on grounds of poor academic performance. Such student may be referred to Student Counselling and evaluation.
- If a student fails the same subject three times, he is normally not allowed further registration on grounds of poor academic performance.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The National Diploma is a three-year full-time qualification of which two years are spent at Nelson Mandela University and one year in practice undergoing experiential training.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
	Computer Usage I	Semester 1	FCR1121	12
	Game Ranch Economics I	Semester 2	GGR1002	12
	Game Science I	Semester 1	GSG1001	12
	Game Science II	Semester 2	GSG1002	12

		Presented	Module Code	Credit Value
	Game Health Management I	Semester 1	GHM1001	12
	Game Ranch Ecology I	Semester 1	GGE1001	12
	Game Ranch Ecology II	Semester 2	GGE2002	12
	Game Ranch Management I	Semester 1	GGM1001	12
	Game Ranch Management II	Semester 2	GGM2002	12
	Rangeland Studies I	Semester 1	GRR1001	12
	Credits First Year			120
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Game Ranch Economics II	Semester 1	GGR2001	15
	Game Ranch Economics III	Semester 2	GGR3002	15
	Game Science III	Semester 1	GSG3001	15
	Game Utilisation I or Game Lodge Management I	Semester 1	GUG1001 GLG1001	15
	Game Utilisation II or Game Lodge Management II	Semester 2	GUG2002 GLG2002	15
	Game Ranch Ecology III	Semester 1	GGE3001	15
	Game Ranch Management III	Semester 2	GGM3002	15
	Soil Science I	Semester 2	GGG1001	15
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Game Ranch Application I	Year	GAR1001	60
	Game Ranch Application II	Semester 2	GAR2002	60
	Credits Third Year			120
	Total Credits			372

PRE-REQUISITE TABLE

MODULES	PRE-REQUISITES
Game Science II (GGS2002)	Game Science I (GGS1001)
Game Science III (GGS3001)	Game Science II (GGS2002)
Game Ranch Ecology II (GRE2002)	Game Ranch Ecology I (GRE1001)
Game Ranch Ecology III (GRE3001)	Game Ranch Ecology II (GRE2002)
Game Lodge Management II (GLM2002)	Game Lodge Management I (GLM1001)
Game Ranch Management II (GRM2002)	Game Ranch Management I (GRM1001)

MODULES	PRE-REQUISITES
Game Ranch Management III (GRM3002)	Game Ranch Management II (GRM2002)

EXPERIENTIAL TRAINING REQUIREMENTS

To fulfil the requirements of the National Diploma a student must complete at least one year of applicable experiential training. Students may undergo experiential training with any approved employer within the game industry. Although Nelson Mandela University will assist students in finding suitable employment, the onus to obtain suitable employment is on the student.

**6.14 NATIONAL DIPLOMA (NATURE CONSERVATION): GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 3221 - 02)
(NQF CREDITS: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- NSC achievement rating of at least level 3 (40-49%) for Life Science OR Physical Sciences.
- NSC achievement rating of at least level 3 (40-49%) for Mathematics or level 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least level 3 (40-49%) for English, Afrikaans or isiXhosa (home language or first additional language).
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.
- Admission is subject to departmental selection.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

English proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. All students who fail this assessment will be required to register for and pass the subject English B before graduating.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Animal Studies I	Semester 1	NAS1111	12
	Animal Studies II	Semester 2	NAS2112	15
	Conservation Administration I	Semester 2	NCA1112	12
	Conservation Communications I	Semester 1	NCC1111	12
	Conservation Development I	Semester 1	NCD1111	12
	Conservation Ecology I	Semester 1	NCE1111	12
	Plant Studies I	Semester 1	NPS1111	12
	Plant Studies II	Semester 2	NPS2112	15
	Computer Usage I	Semester 1	NRG1111	12
	Resource Management I	Semester 1	NRM1111	12
	Credits First Year			126
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Animal Studies III ♦	Semester 1	NAS3111	15
	Conservation Communication II	Semester 2	NCC2212	15
	Conservation Ecology II	Semester 1	NCE2111	12
	Conservation Ecology III ♦	Semester 2	NCE3112	15
	Plant Studies III ♦	Semester 1	NPS3111	15
	Resource Management II	Semester 1	NRM2111	15
	Resource Management III ♦	Semester 2	NRM3112	15
	Soil Science I	Semester 2	NSS1112	12
	Credits Second Year			114
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Nature Conservation Applications I	Semester 1	NAP1111	60
	Nature Conservation Applications II	Semester 2	NAP2112	60
	Credits Third Year			120
	Total Credits			360

♦ Major modules (please refer to the General Prospectus).

**6.15 DIPLOMA IN NATURE CONSERVATION: GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 2222 - 02)
(NQF CREDITS: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 362)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- NSC achievement rating of at least level 3 (40-49%) for English, Afrikaans or isiXhosa (home language or first additional language).
- NSC achievement rating of at least level 3 (40-49%) for Mathematics or level 5 (60-69%) for Mathematical Literacy.
- NSC achievement rating of at least level 3 (40-49%) for Life Science OR Physical Sciences.
- Applicants with an Admission Points Score between 26 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Applicants who present with Mathematical Literacy instead of Mathematics will be placed in the associated Extended curriculum programme.
- Admission is subject to departmental selection.

APPLICABLE RULES

English proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. All students who fail this assessment will be required to register for and pass the subject English B before graduating.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Animal Studies I	Semester 1	NAS1121	12
	Animal Studies II	Semester 2	NAS2122	12
	Conservation Ecology I	Semester 1	NCE1121	10
	Conservation Ecology II	Semester 2	NCE2122	12
	Cost and Management Accounting I	Semester 2	NAC1112	10
	Computer Usage I	Semester 1	FCR1121	10
	Environmental Law I	Semester 2	JLA1112	10
	Environmental Management	Semester 1	NEM1111	10
	Human Resource Management I	Semester 2	FMR1122	10

		Presented	Module Code	Credit Value
	Resource Management I	Semester 1	NRM1121	10
	Plant Studies I	Semester 1	NPS1121	12
	Credits First Year			118
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Animal Studies III	Semester 1	NAS3121	12
	Conservation Ecology III	Semester 2	NCE3002	12
	Environmental Education I	Semester 1	NEE1111	10
	Environmental Education II	Semester 2	NEE2112	12
	Fire Ecology I	Semester 1	NED1111	10
	Human Resource Management II	Semester 2	FMR2222	10
	Plant Studies II	Semester 1	NPS2121	10
	Plant Studies III	Semester 2	NPS3122	12
	Resource Management II	Semester 1	NRM2121	12
	Resource Management III	Semester 2	NRM3122	12
	Soil Science	Semester 2	NSS1022	12
	Credits Second Year			124
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Nature Conservation Applications I	Semester 1	NCP1111	60
	Nature Conservation Applications II	Semester 2	NCP2112	60
	Credits Third Year			120
	Total Credits			362

♦ Major modules (please refer to the General Prospectus).

**6.16 NATIONAL DIPLOMA (POLYMER TECHNOLOGY): FULL-TIME
(QUALIFICATION CODE: 3234 – 01)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 34.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50-59%) for Mathematics.
- NSC achievement rating of at least 4 (50-59%) for Physical Sciences.
- If an applicant has not taken the optional Mathematics topics, additional modules may be added, which may extend the duration of study.
- Applicants with an Admission Points Score between 24 and 33 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Students can migrate from Analytical Chemistry (3146) to Polymer Technology and vice versa after the first six months of study, subject to space available in the respective courses.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

PROMOTION AND APPLICABLE RULES

- Candidates will only be allowed to continue to the second level of studies (Year 1, semester 2) if they passed both ACC1001 and GCC1001.
- For candidates to be promoted to the 2nd year of study, they must consult the relevant module pre-requisites and co-requisites as listed below:

PRE-REQUISITE TABLE

MODULE	PRE-REQUISITE
All 1st year 2nd semester modules	Analytical Chemistry I (ACC1001)
	General Chemistry I (GCC1001)
Paint Technology III Theory (PPA31T1) & Paint Technology III Practical (PPA31P1)	Paint Technology Theory II (PPA21T2)
	Paint Technology Practical II (PPA21P2)
Polymer Raw Materials III (WPT3111)	Polymer Raw Materials II - Rubber (WPT2122)
	Polymer Raw Materials II - Plastics (WPT2132)
	Polymer Raw Materials II Practical - Rubber (WPP2122)
	Polymer Raw Materials II Practical - Plastics (WPP2132)
Polymer Science II (WST2111) & Polymer Science II Practical (WSP2111)	Organic Chemistry II Practical (CHO22P2)
	Organic Chemistry II Theory (CHO22T2)
Polymer Technology III - Rubber (PPT3211) & Polymer Technology III - Plastics (PPT3221) & Polymer Technology III Practical - Rubber (PPP3211) & Polymer Technology II Practical - Plastics (PPP3221)	Polymer Technology II - Rubber (PPT2212)
	Polymer Technology II - Plastics (PPT2222)
	Polymer Technology II Practical - Rubber (PPP2212)
	Polymer Technology II Practical - Plastics (PPP2222)
	Analytical Chemistry I (ACC1001)

MODULE	PRE-REQUISITE
Analytical Techniques III Practical (CAP3112) & Analytical Techniques III Theory (CAT3112) & Process Chemistry II (CPR2222)	General Chemistry I (GCC1001)
Polymer Science III (WST3212) & Polymer Science III Practical (WSP3212)	Polymer Science II (WST2111)
	Polymer Science II Practical (WSP2111)

- In-service training may only commence once all theory modules have been completed.
- Candidates who have not completed all of the first-year modules in the qualification after three (3) years of full-time study will not be allowed to re-register for the qualification.

DURATION

Theoretical training of 24 months at Nelson Mandela University and a further 12 months of practical training in a related industry.

CURRICULUM

		Presented	Module Code	Credit Value
First Year – Semester 1				
Compulsory modules:				
	Analytical Chemistry I	Semester 1	ACC1001	24
	Computer Skills I	Semester 1 or Semester 2	CCP1111 CCP1112	5
	General Chemistry I	Semester 1	GCC1001	16
	Physics I	Semester 1	MFS1201	7
	Mathematics I	Semester 1 or Semester 2	WIS1111 WIS1112	7
To register for Second Semester of First Year, Analytical Chemistry I and General Chemistry I must be passed.				
		Presented	Module Code	Credit Value
First Year – Semester 2				
Compulsory modules:				
	Organic Chemistry II (mother module)		CHO22M2	
	Practical Module	Semester 2	CHO22P2	5
	Theory Module	Semester 2	CHO22T2	5
	Paint Technology II Practical	Semester 2	PPA21P2	10
	Paint Technology II Theory	Semester 2	PPA21T2	10
	Polymer Technology II Practical (mother module)		PPP2001	
	Polymer Technology II Practical – Rubber	Semester 2	PPP2212	5
	Polymer Technology II Practical – Plastics	Semester 2	PPP2222	5
	Polymer Technology II (mother module)		PPT2001	
	Polymer Technology II – Rubber	Semester 2	PPT2212	5
	Polymer Technology II – Plastics	Semester 2	PPT2222	5

		Presented	Module Code	Credit Value
	Polymer Raw Materials II Practical (mother module)		WPP2112	
	Polymer Raw Materials II Practical – Rubber	Semester 2	WPP2122	5
	Polymer Raw Materials II Practical – Plastics	Semester 2	WPP2132	5
	Polymer Raw Materials II (mother module)		WPT2112	
	Polymer Raw Materials II – Rubber	Semester 2	WPT2122	5
	Polymer Raw Materials II – Plastics	Semester 2	WPT2132	5
	Credits First Year			129
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Analytical Techniques III Practical	Semester 2	CAP3112	9
	Analytical Techniques III Theory	Semester 2	CAT3112	9
	Process Chemistry II	Semester 2	CPR2222	9
	Paint Technology III Practical ♦	Semester 1	PPA31P1	9
	Paint Technology III ♦	Semester 1	PPA31T1	9
	Polymer Technology III Practical (mother module) ♦		PPP3001	
	Polymer Technology III Practical – Rubber	Semester 1	PPP3211	4
	Polymer Technology III Practical – Plastics	Semester 1	PPP3221	4
	Polymer Technology III (mother module) ♦		PPT3001	
	Polymer Technology III – Rubber	Semester 1	PPT3211	5
	Polymer Technology III – Plastics	Semester 1	PPT3221	5
	Polymer Raw Materials III	Semester 1	WPT3111	9
	Polymer Science II Practical	Semester 1	WSP2111	10
	Polymer Science III Practical ♦	Semester 2	WSP3212	9
	Polymer Science II	Semester 1	WST2111	10
	Polymer Science III ♦	Semester 2	WST3212	9
	Credits Second Year			110
		Presented	Module Code	Credit Value
Third Year				
	Compulsory module:			
	Polymer Production Practice	Year	CPP3110	120
	Total Credits			359

♦ Major modules (please refer to the General Prospectus).

**6.17 DIPLOMA IN POLYMER TECHNOLOGY: FULL-TIME
(QUALIFICATION CODE: 2234 – 01)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 362)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 34.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 4 (50-59%) for Mathematics.
- NSC achievement rating of at least 4 (50-59%) for Physical Sciences.
- If an applicant has not taken the optional Mathematics topics, additional modules may be added, which may extend the duration of study.
- Applicants with an Admission Points Score between 24 and 33 may be referred to write the Access Assessment Battery before a decision is made on whether to admit the applicant to the course.
- Students can migrate from Analytical Chemistry (2152) to Polymer Technology and vice versa after the first six months of study, subject to space available in the respective courses.

PROMOTION AND APPLICABLE RULES

- Candidates will only be allowed to continue to the second level of studies (Year 1, semester 2) if they passed both CHA1001 and CHG1001.
- In order for candidates to be promoted to the 2nd year of study, they must consult the relevant module pre-requisites and co-requisites as listed below:

PRE-REQUISITE TABLE

MODULE	PRE-REQUISITE
All 1st year 2nd semester modules	Analytical Chemistry I (CHA1001)
	General Chemistry I (CHG1001)
Paint Technology III Theory (CPA30T1) & Paint Technology III Practical (CPA30P1)	Paint Technology Theory II (CPA20T2)
	Paint Technology Practical II (CPA20P2)
Polymer Raw Materials III (CWP3001)	Polymer Raw Materials II - Rubber (CWP2022)
	Polymer Raw Materials II - Plastics (CWP2032)
	Polymer Raw Materials II Practical - Rubber (CWP2002)
	Polymer Raw Materials II Practical - Plastics (CWP2012)
Polymer Science II (CST2001) & Polymer Science II Practical (CSP2001)	Organic Chemistry II Practical (CHO20P2)
	Organic Chemistry II Theory (CHO20T2)
Polymer Technology III - Rubber (CPT3001) & Polymer Technology III - Plastics (CPT3011) & Polymer Technology III Practical - Rubber (CPP3001) & Polymer Technology II Practical - Plastics (CPP3011)	Polymer Technology II - Rubber (CPT2002)
	Polymer Technology II - Plastics (CPT2012)
	Polymer Technology II Practical - Rubber (CPP2002)
	Polymer Technology II Practical - Plastics (CPP2012)

MODULE	PRE-REQUISITE
Analytical Techniques III Practical (CAP3002) & Analytical Techniques III Theory (CAT3002) & Process Chemistry II (CPR2002)	Analytical Chemistry I (CHA1001)
	General Chemistry I (CHG1001)
Polymer Science III (CST3002) & Polymer Science III Practical (CSP3002)	Polymer Science II (CST2001)
	Polymer Science II Practical (CSP2001)

- In-service training may only commence once all theory modules have been completed.
- Candidates who have not completed all of the first-year modules in the qualification after three (3) years of full-time study will not be allowed to re-register for the qualification.

DURATION

Theoretical training of 24 months at Nelson Mandela University and a further 12 months of practical training in a related industry.

CURRICULUM

		Presented	Module Code	Credit Value
First Year – Semester 1				
Compulsory modules:				
	Analytical Chemistry I	Semester 1	CHA1001	24
	Computer Skills I	Semester 1 or Semester 2	ITC1001 ITC1002	5
	General Chemistry I	Semester 1	CHG1001	16
	Physics I	Semester 1	FFS1001	7
	Mathematics I	Semester 1	MAT1001	10
To register for Second Semester of First Year, Analytical Chemistry I (CHA1001) and General Chemistry I (CHG1001) must be passed.				
		Presented	Module Code	Credit Value
First Year – Semester 2				
Compulsory modules:				
Organic Chemistry II				
	Practical Module	Semester 2	CHO20P2	5
	Theory Module	Semester 2	CHO20T2	5
	Paint Technology II Practical	Semester 2	CPA20P2	10
	Paint Technology II Theory	Semester 2	CPA20T2	10
Polymer Technology II Practical				
	Polymer Technology II Practical – Rubber	Semester 2	CPP2002	5
	Polymer Technology II Practical – Plastics	Semester 2	CPP2012	5
Polymer Technology II				
	Polymer Technology II – Rubber	Semester 2	CPT2002	5
	Polymer Technology II – Plastics	Semester 2	CPT2012	5

		Presented	Module Code	Credit Value
	Polymer Raw Materials II Practical			
	Polymer Raw Materials II Practical – Rubber	Semester 2	CWP2002	5
	Polymer Raw Materials II Practical – Plastics	Semester 2	CWP2012	5
	Polymer Raw Materials II			
	Polymer Raw Materials II – Rubber	Semester 2	CWP2022	5
	Polymer Raw Materials II – Plastics	Semester 2	CWP2032	5
	Credits First Year			132
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Analytical Techniques III Practical	Semester 2	CAP3002	9
	Analytical Techniques III Theory	Semester 2	CAT3002	9
	Process Chemistry II	Semester 2	CPR2002	9
	Paint Technology III Practical ♦	Semester 1	CPA30P1	9
	Paint Technology III ♦	Semester 1	CPA30T1	9
	Polymer Technology III Practical ♦			
	Polymer Technology III Practical – Rubber	Semester 1	CPP3001	4
	Polymer Technology III Practical – Plastics	Semester 1	CPP3011	4
	Polymer Technology III ♦			
	Polymer Technology III – Rubber	Semester 1	CPT3001	5
	Polymer Technology III – Plastics	Semester 1	CPT3011	5
	Polymer Raw Materials III	Semester 1	CWP3001	9
	Polymer Science II Practical	Semester 1	CSP2001	10
	Polymer Science III Practical ♦	Semester 2	CSP3002	9
	Polymer Science II	Semester 1	CST2001	10
	Polymer Science III ♦	Semester 2	CST3002	9
	Credits Second Year			110
		Presented	Module Code	Credit Value
Third Year				
	Compulsory module:			
	Polymer Production Practice	Year	CPP3000	120
	Total Credits			362

♦ Major modules (please refer to the General Prospectus).

**6.18 NATIONAL DIPLOMA (WOOD TECHNOLOGY): GEORGE CAMPUS:
FULL-TIME
(QUALIFICATION CODE: 3247 - 02)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 296)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy. If an applicant has Mathematical Literacy instead of Mathematics, he/she could be placed in an associated extended qualification.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 22 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Engineering Graphics and Design.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

English proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. All students who fail this assessment will be required to register for and pass the subject English B before graduating.

FWT2110 (WOOD TECHNOLOGY PRACTICE)

Assessment criteria:

- Students have to attend all courses.
 - Students have to pass all course assessments.
- Failure to comply with the above criteria will disqualify students from passing Forest Practice I and students will have to repeat the course to satisfaction.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Cost and Management Accounting (Module IA)	Semester 2	FAA1122	5
	Adhesive Technology I	Semester 2	FAD1112	12
	Computers in Wood Technology I	Semester 1	FCP1111	10
	Heating Systems: Timber II	Semester 2	FHS2112	10
	Mechanical Drawing and Design I	Semester 1	FMD1111	10
	Mathematics and Statistics I	Year	FMS1110	10
	Physics I	Semester 1	FPH1211	6
	Production Engineering Industrial I	Semester 2	FPI1112	10
	Properties of Wood I	Semester 1	FPW1101	10
	Strength of Materials II	Semester 1	FST2111	12
	Timber Processing I	Semester 2	FTP1112	10
	Credits First Year			105
		Presented	Module Code	Credit Value
Second Year (Three months structured practical at George Campus)				
	Compulsory modules:			
	Organisational Effectiveness	Semester 1	FWS1211	10
	Wood Technology Practice	Year	FWT2110	60
	Credits Second Year			70
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Cost and Management Accounting (Module IB)	Semester 2	FAA1322	5
	Timber Preservation I	Semester 1	FHP1111	10
	Timber Structures III ♦	Semester 1	FHS3111	15
	Management Timber Processing II	Semester 1	FMT2111	12
	Management Timber Processing III ♦	Semester 2	FMT3112	15
	Production Engineering Industrial II	Semester 2	FPI2212	12
	Timber Processing IIA	Semester 1	FTP2111	11
	Timber Processing IIB (Advanced primary processing)	Semester 1	FTP2121	11
	Timber Processing III (Saw Doctoring) ♦	Semester 2	FTP3112	15
	Timber Seasoning III (Drying) ♦	Semester 2	FTS3112	15
	Credits Third Year			121
	Total Credits			296

♦ Major modules (please refer to the General Prospectus).

**6.19 DIPLOMA IN WOOD TECHNOLOGY: GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 2248 - 02)
(NQF LEVEL: 5, TOTAL NQF CREDITS FOR QUALIFICATION: 296)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 32.
- Minimum NSC requirements for diploma entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 3 (40-49%) for Mathematics or 5 (60-69%) for Mathematical Literacy. If an applicant has Mathematical Literacy instead of Mathematics, he/she could be placed in an associated extended qualification.
- NSC achievement rating of at least 2 (30-39%) for Physical Sciences.
- Applicants with an Admission Points Score between 22 and 31 will be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.
- Recommended NSC subjects: Engineering Graphics and Design.

APPLICABLE RULES

English proficiency

All students in the School of Natural Resource Management are required to demonstrate English proficiency before graduating. To this end, all first-time entering students will complete an English proficiency assessment. A pass mark for this test will be accepted as evidence of English proficiency. *All students who fail this assessment will be required to register for and pass the subject English B before graduating.*

Experiential Training

Students arriving back from experiential training have to hand in reports and logbooks 2 weeks after classes commence for the new academic year. All reports, logbooks and presentations have to be concluded at the end of the 1st semester.

Students who don't meet this deadline have to register for the experiential training again the following year and will qualify for their diploma a year later. Students who register for their experiential training a 2nd time, can only score a maximum of 50% if they pass a 2nd evaluation.

FWT1001 (WOOD TECHNOLOGY PRACTICE)

Assessment criteria:

- Students have to attend all courses.
- Students have to pass all course assessments.

Failure to comply with the above criteria will disqualify students from passing Wood Technology Practice I and students will have to repeat the course to satisfaction.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Cost and Management Accounting I	Semester 2	FAA1132	10
	Adhesive Technology I	Semester 2	FAD1002	10
	Computer Usage I	Semester 1	FCR1121	10
	Mathematics and Statistics I	Semester 1	FCT1001	12
	Process Control in Wood Technology	Semester 2	FCW1002	12
	Mechanical Drawing and Design I	Semester 1	FMD1001	12
	Human Resource Management I	Semester 2	FMR1122	10
	Mechanics in Wood Technology I	Semester 1	FMW1001	10
	Production Engineering Industrial I	Semester 2	FPI1002	12
	Properties of Wood	Semester 1	FPW1001	12
	Timber Processing I	Semester 2	FTP1002	12
	Credits First Year			122
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Wood Technology Practice I	Semester 1	FWT1001	60
	Wood Technology Practice II	Semester 2	FWT2002	60
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Cost and Management Accounting II	Semester 2	FAA2002	10
	Engineered Wood Products II	Semester 1	FEW2001	10
	Timber Preservation I	Semester 1	FHP1001	10
	Human Resource Management II	Semester 2	FMR2222	10
	Forest Economics II	Semester 1	FOE2001	10
	Forestry Law II	Semester 1	FOL2001	10
	Production Engineering Industrial I	Semester 2	FPI2002	12
	Timber Structures III	Semester 1	FSS3001	12
	Timber Processing II	Semester 1	FTP2001	12
	Timber Processing III	Semester 2	FTP3002	12
	Timber Seasoning III	Semester 2	FTS3002	12
	Credits Third Year			120
	Total Credits			296

♦ Major modules (please refer to the General Prospectus).

**7 ADVANCED DIPLOMA IN ANALYTICAL CHEMISTRY: FULL-TIME
(QUALIFICATION CODE: 20510 - A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

The Advanced Diploma: Analytical Chemistry qualification forms the fourth year of study at Nelson Mandela University. The standard of this qualification is high and offers a high degree of specialisation.

ADMISSION REQUIREMENTS

Access to the Advanced Diploma will be for students that had successfully completed one of the following:

- A diploma in Analytical Chemistry
- A BSc with chemistry as major
- An equivalent qualification with chemistry or analytical chemistry as a major

In each case, the credit-weighted average mark for final year academic chemistry modules must be at least a 60 %.

If the demand for the programme exceeds the allowed capacity, then a competitive entry will be used, based on academic merit. Where the first preference will be given to students with the highest marks from their final year academic chemistry modules. Mature students or those that do not qualify for the programme based on their initial lower entrance requirements can apply if they had worked in the related industry for at least one year after their undergraduate diploma or BSc qualification, would be considered for acceptance onto the programmes by an interview process. The route of entry will be governed by the Nelson Mandela University policy on RPL.

RE-ADMISSION

- Students must complete the qualification within a maximum of four semesters (2 years).
- Students who do not pass all modules within the first two semesters of registration must have accumulated at least 60 credits to be considered for readmission for a third semester.
- Under special circumstances, the student can appeal in writing to complete outstanding modules in a 3rd year of study.

DURATION

The qualification shall extend over one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Material Chemistry Analysis	Semester 1	CMC401	20
	Data Analysis in Chemistry	Semester 1	CPC401	10
	Sample Handling	Semester 1	CSH401	10
	Advanced Analytical Chemistry I	Semester 1	CAA401	20
	Advanced Analytical Chemistry II	Semester 2	CAA402	20

		Presented	Module Code	Credit Value
	Chemical Industrial Control	Semester 2	CCI402	10
	Organic Chemistry Analysis	Semester 2	COC402	10
	Inorganic/Polymer Chemistry Analysis	Semester 2	CIP402	20
	Total Credits			120

8 BACHELOR OF SCIENCE (QUALIFICATION CODES: 20000/20050, 20020/20040, 20025/20055, 20023/20053, 20026/20056, 20024/20054, 20003/20030, 20099/20090, 20022 & 20021/20051 – A1)

APPLICABLE RULES

- Unless Senate decides otherwise the degree shall be obtained by completing modules with a total credit value of at least 368 (360 credits for students who have passed all the modules WRFV101/WRSC111; WRFV102; WRAV101 and WRAV102 comprising the first year of Computer Science and Information Systems) of which
 - at least 120 credits are on Nelson Mandela University 3rd year and at least 240 credits on Nelson Mandela University 2nd year or a higher level;
 - at least 338 credits are from the list of approved subjects below.
- Two major subjects are required to qualify for the BSc. To obtain credits for a major subject the student must obtain 30 credits for the first year, 40 for the second year and 60 for the third year in that major subject. In those subjects that have no first year, a major will consist of 40 credits at second year and 60 credits at third-year level. A maximum of 30 credits from another Faculty may be selected.
- Exit-level major modules are those third-year modules which make up the major subjects referred to in the previous bullet.
- The exit-level modules in HMS modules as offered in Curriculum 20003/20030 are HMS359, 332, 333, 334 and 335 (HMSV322, 331, 341, 352).

Approved Subjects (Exit-level Majors)

Applied Mathematics

Biochemistry

Botany

Chemistry

Computer Science/Computer Science and Information Systems

Geology

Geography

Mathematics

Microbiology

Physics

Physiology

Statistics

Zoology

- **Computer literacy:** All BSc students must pass at least WRSC111 (8 credits) if registered for Applied Mathematics 1 or WRFV101 (8 credits) (or equivalent) or have passed an appropriate competency test or have received automatic exemption for WRFV101/WRFV1X0 based on Grade 12 CAT marks.
- Unless Senate decides otherwise, a candidate who has failed a particular module three times shall not be allowed to re-register for that module.
- Where modules have substantially overlapping outcomes, credit shall not be given for more than one of those modules.
- Candidates registered for a degree in Statistics may not accumulate more than 40 credits from second year modules and 60 credits from third year modules presented by the Department of Statistics.
- Candidates registered for a degree in Geography may not accumulate more than 60 credits from third year modules presented in the Department of Geosciences.
- **Maximum credits offered for the BSc:** Unless the Dean decides otherwise, students may not exceed modules to a value of more than 380 credits.

PROMOTION

- A candidate shall be allowed to register for modules on the second-year level only if he/she has passed first-year level modules in an approved programme with a total of at least 72 credits.
- A candidate shall be allowed to register for modules on the third-year level only if he/she has passed modules in an approved programme with a total of at least 181 credits of which at least 60 are on second-year level.
- Notwithstanding points 1 and 2 above, students who have not completed 128 credits at first-year level, must register for the balance of the 128 first-year credits before they may concurrently register for any second-year level credits. In the same way students who have not completed 120 credits at second-year level, must register for the balance of the 120 second-year credits before they may concurrently register for any third-year credits. In the case of timetable clashes between higher and lower year level modules the student must complete the lower level modules first.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CHOICE OF MODULES

Unless Senate decides otherwise, an approved curriculum shall consist of modules satisfying the requirements of the applicable rules above and be such that there are no lecture or examination timetable clashes at any stage and all prerequisites for subsequent modules are satisfied.

Specific prerequisites for certain modules

Candidates must comply with the sub-minimum requirements for modules set out in the Syllabus sections of the General Prospectus.

Summerstrand South Campus: All modules for the BSc degree will be offered on the Summerstrand South Campus.

**8.1 BACHELOR OF SCIENCE: FULL-TIME
(QUALIFICATION CODE: 20000 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

With majors chosen from Applied Mathematics, Computer Science, Mathematics, Mathematical Statistics and Physics.

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Discuss any other subject combinations with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM (MODULES ON OFFER AS TIMETABLE PERMITS)

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
A	Botany 1			
	Plant Cell Biology	Semester 1	BOT110	7
	Plant Structure	Semester 1	BOT120	8
	Plant Evolution and Systematics	Semester 2	BOT130	7
	Plant Ecology and Environmental Botany	Semester 2	BOT140	8
B	Chemistry 1 (Note that if Chemistry 1 is selected, then you must register for Mathematics Special 1 and Physics Special 1)			
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6
	Mathematics Special 1			
	Mathematics Special 101	Semester 1	MATA101	8
	Mathematics Special 102	Semester 2	MATA102	8
	Physics Special 1			
	Mechanics and Thermodynamics	Semester 1	FBB101	7
	Electricity, Optics and Atomics	Semester 2	FBB102	7
C	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEO111	7
	Introduction to Meteorology and Climatology	Term 2	GEN101	8
	Introduction to Geomorphology	Term 3	GEN102	8

		Presented	Module Code	Credit Value
	Introduction to Geo-Information Science and Cartography	Term 4	GIS101	8
D	Geology I			
	Introduction to Earth	Semester 1	GGL111	7
	Mineralogy and Petrology	Semester 1	GGL112	8
	Physical Geology	Semester 2	GGL113	7
	Structural and Economic Geology	Semester 2	GGL114	8
E	Mathematics I			
	Mathematics 1A	Semester 1	MATH111	16
	Mathematics 1b	Semester 2	MATH112	16
F	Applied Mathematics I			
	Graph Theory	Semester 1	MAPM111	8
	Mathematical Modelling	Semester 1	MAPM112	8
	Mechanics	Semester 2	MAPM113	8
	Numerical Methods I	Semester 2	MAPM114	8
G	Computer Science I (if Applied Mathematics selected)			
	Programming Fundamentals 1.1	Semester 1	WRA101	8
	Programming Fundamentals 1.2	Semester 2	WRA102	8
	Computing Fundamentals for Scientists 1.1	Semester 1	WRSC101	8
	Computing Fundamentals 1.2	Semester 2	WRFC102	8
	Computer Science I			
	Programming Fundamentals 1.1	Semester 1	WRA101	8
	Programming Fundamentals 1.2	Semester 2	WRA102	8
	Computing Fundamentals 1.1	Semester 1	WRFC101	8
	Computing Fundamentals 1.2	Semester 2	WRFC102	8
H	Physics I			
	Mechanics and Thermodynamics	Semester 1	F101	15
	Electricity, Magnetism and Optics	Semester 2	F102	15
I	Statistics I			
	Statistics Probability and Distribution Theory	Semester 1	STAT101	15
	Introduction to Statistical Inference	Semester 2	STAT102	15
J	Zoology 1			
	Animal Cell Biology and Histology	Term 1	ZOO110	7
	Animal Diversity	Term 2	ZOO120	8
	Principles of Animal Evolution	Term 3	ZOO131	8
	Animal Patterns in Time and Space	Term 4	ZOO141	7
	Credits First Year			128

		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups corresponding to the modules selected in the first year:			
A	Botany 2			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
B	Biochemistry 2			
	Introductory Biochemistry and Genetics	Semester 1	BC251	20
	Metabolism	Semester 2	BC252	20
C	Microbiology 2			
	Introductory Microbiology and Control of Micro-organisms	Semester 1	BM211	20
	Medical Microbiology	Semester 2	BM212	20
D	Chemistry 2			
	Chemistry Analytical	Semester 1	CHA201	9
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Organic	Semester 2	CHO201	12
	Chemistry Physical	Year	CHP203	12
E	Computer Science II			
	The following modules are compulsory for Computer Science majors:			
	Data Structures and Algorithms 2.1	Semester 1	WRA201	8
	Data Structures and Algorithms 2.2	Semester 2	WRA202	8
	Computer Architecture 2.1	Semester 1	WRC201	6
	Computer Architecture 2.2	Semester 2	WRC202	6
	Information Systems 2.1	Semester 1	WRI201	6
	Information Systems 2.2	Semester 2	WRI202	6
	The following additional modules are available as optional electives, and are of primary interest to Computer Science non-majors:			
F	Computer Science II			
	Web Systems 2.1	Semester 1	WRWS201	8
	Web Systems 2.2	Semester 2	WRWS202	8
G	Geography II			
	Pedo-Geomorphological Studies	Term 1	GEN211	10
	Society and Environment	Term 4	GEN212	10
	Economic and Development Geography	Term 2	GEO212	10
	Introduction to Cartography and GIS	Term 3	GIS211	10
H	Geology II			
	Palaeontology	Semester 1	GGL201	10

		Presented	Module Code	Credit Value
	Structural Geology	Semester 1	GGL202	10
	Mineralogy	Semester 2	GGL203	10
	Sedimentary Petrology	Semester 2	GGL204	10
I	Mathematics II			
	Multivariable and Vector Calculus	Semester 1	MATH211	20
	Linear Algebra	Semester 2	MATH203	10
	Real Analysis	Semester 2	MATH214	10
J	Applied Mathematics II			
	Differential Equations	Semester 1	MAPM211	10
	Numerical Methods 2	Semester 1	MAPM212	10
	Transform Theory	Semester 2	MAPM213	10
	Linear Optimisation	Semester 2	MAPM214	10
K	Statistics II			
	Theory of Distribution	Semester 1	STAT201	20
	Regression Analysis and Advanced Regression Topics	Semester 2	STAT203	20
L	Physics II			
	Optics AC Theory and Thermodynamics	Semester 1	F210	20
	Mechanics, Modern and Nuclear Physics	Semester 2	F212	20
M	Zoology 2			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
N	Physiology 2			
	Principles of Human Physiology and Control Systems	Semester 1	BSP211	20
	Human Systemic Physiology	Semester 2	BSP212	20
	Credits Second Year			120/130
		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Botany III ♦			
	Applied Marine Botany	Semester 1	BOT310	12
	Plant Physiology	Semester 1	BOT320	12
	Plant Eco-physiology	Semester 2	BOT330	12
	Plant Ecology and Environmental Management	Semester 2	BOT340	12
	Project	Year	BOT350	12

		Presented	Module Code	Credit Value
B	Biochemistry III ♦			
	Advanced Protein Technology	Semester 1	BC321	30
	Integrated Biochemistry	Semester 2	BC322	30
C	Microbiology III ♦			
	Bacteriology, Microbial Ecology, Virology and Mycology	Semester 1	BM331	30
	Gene Manipulation, Industrial Microbiology and Biotechnology	Semester 2	BM332	30
D	Chemistry III ♦			
	Chemistry Inorganic	Year	CHI303	20
	Chemistry Organic	Semester 1	CHO303	20
	Chemistry Physical	Year	CHP303	20
E	Computer Science III ♦			
	The following modules are compulsory for Computer Science majors:			
	Advanced Programming 3.1	Semester 1	WRAP301	10
	Advanced Programming 3.2	Semester 2	WRAP302	11
	Advanced Data Structures	Semester 1	WRA301	10
	Languages and Automata Theory	Semester 2	WRL301	10
	Database Systems 3	Semester 1	WRDB301	7
	User Interface Design	Semester 2	WRUI301	7
	Project	Year	WRR301	9
	The following additional modules are available as optional electives:			
F	Multimedia Systems 3.1	Semester 1	WRMS301	10
	Multimedia Systems 3.2	Semester 2	WRMS302	10
G	Geography III ♦			
	Geo-Information Systems	Term 1	GIS301	15
	Geomorphology	Term 2	GEN301	15
	Environmental Resource Management	Term 4	GEN313	15
	Photogrammetry and Remote Sensing	Term 3	GIS304	15
H	Geology III ♦			
	Igneous Petrology	Semester 1	GGL301	15
	Stratigraphy	Semester 1	GGL302	15
	Geo-tectonics and Metamorphic Petrology	Semester 2	GGL303	15
	Economic Geology	Semester 2	GGL304	15
I	Mathematics III ♦			
	Advanced Linear Algebra	Semester 1	MATH311	15
	Advanced Real Analysis	Semester 1	MATH302	15
	Modern Algebra	Semester 2	MATH303	15
	Complex Functions	Semester 2	MATH314	15
J	Applied Mathematics III ♦			
	Partial Differential Equations	Semester 1	MAPM311	15

		Presented	Module Code	Credit Value
	Finite Difference Methods	Semester 1	MAPM312	15
	Non-linear Optimisation	Semester 2	MAPM313	15
	Dynamical Systems	Semester 2	MAPM314	15
K	Statistics III ♦			
	Statistical Inference	Semester 1	STAT301	24
	Special Topics in Statistics	Semester 1	STAT304	6
	Theory of Linear Modules	Semester 2	STAT305	10
	Time Series Analysis	Semester 2	STAT307	10
	Operations Research	Semester 2	STAT309	10
L	Physics III ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	F310	30
	Crystallography and Solid State Physics	Semester 2	F321	30
M	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOO311	15
	Integrating Topics in Zoology	Semester 2	ZOO322	15
	Applied Aquatic Science	Semester 1	ZOO334	15
	Evolutionary Ecology	Semester 2	ZOO342	15
N	Physiology III			
	Integrated Human Physiology I	Semester 1	BSP311	30
	Integrated Human Physiology II	Semester 2	BSP312	30
	Credits Third Year			124
	Total Credits			368

**8.2 BACHELOR OF SCIENCE: FULL-TIME
(QUALIFICATION CODE: 20050 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

With majors chosen from Applied Mathematics, Computer Science, Mathematics, Mathematical Statistics and Physics.

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Discuss any other subject combinations with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM (MODULES ON OFFER AS TIMETABLE PERMITS)

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
A	Botany 1			
	Plant Cell Biology	Semester 1	BOTV101	7
	Plant Structure	Semester 1	BOTV111	8
	Plant Evolution and Systematics	Semester 2	BOTV102	7
	Plant Ecology and Environmental Botany	Semester 2	BOTV112	8
B	Chemistry 1 (Note that if Chemistry 1 is selected, then you must register for Mathematics Special 1 and Physics Special 1)			
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9
	Chemistry Organic	Semester 2	CHOV102	6
	Mathematics Special 1			
	Mathematics Special 101	Semester 1	MATS101	8
	Mathematics Special 102	Semester 2	MATS102	8
	Physics Special 1			
	Mechanics and Thermodynamics	Semester 1	FBBV101	7
	Electricity, Optics and Atomics	Semester 2	FBBV102	7
C	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEOV101	7
	Introduction to Meteorology and Climatology	Term 2	GENV101	8
	Introduction to Geomorphology	Term 3	GENV102	8
	Introduction to Geo-Information Science and Cartography	Term 4	GISV102	8
D	Geology I			
	Introduction to Earth	Semester 1	GGLV101	7
	Mineralogy and Petrology	Semester 1	GGLV111	8
	Physical Geology	Semester 2	GGLV102	7
	Structural and Economic Geology	Semester 2	GGLV112	8
E	Mathematics I			
	Mathematics 1A	Semester 1	MATT101	16

		Presented	Module Code	Credit Value
	Mathematics 1b	Semester 2	MATT102	16
F	Applied Mathematics I			
	Graph Theory	Semester 1	MAPV101	8
	Mathematical Modelling	Semester 1	MAPV111	8
	Mechanics	Semester 2	MAPV102	8
	Numerical Methods I	Semester 2	MAPV112	8
G	Computer Science I (if Applied Mathematics selected)			
	Programming Fundamentals 1.1	Semester 1	WRAV101	8
	Programming Fundamentals 1.2	Semester 2	WRAV102	8
	Computing Fundamentals for Scientists 1.1	Semester 1	WRSC111	8
	Computing Fundamentals 1.2	Semester 2	WRFV102	8
	Computer Science I			
	Programming Fundamentals 1.1	Semester 1	WRAV101	8
	Programming Fundamentals 1.2	Semester 2	WRAV102	8
	Computing Fundamentals 1.1	Semester 1	WRFV101	8
	Computing Fundamentals 1.2	Semester 2	WRFV102	8
H	Physics I			
	Mechanics and Thermodynamics	Semester 1	FVV101	15
	Electricity, Magnetism and Optics	Semester 2	FVV102	15
I	Statistics I			
	Statistics Probability and Distribution Theory	Semester 1	STAS101	15
	Introduction to Statistical Inference	Semester 2	STAS102	15
J	Zoology 1			
	Animal Cell Biology and Histology	Term 1	ZOOV101	7
	Animal Diversity	Term 2	ZOOV111	8
	Principles of Animal Evolution	Term 3	ZOOV102	8
	Animal Patterns in Time and Space	Term 4	ZOOV112	7
	Credits First Year			128
		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups corresponding to the modules selected in the first year:			
A	Botany 2			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8

		Presented	Module Code	Credit Value
B	Biochemistry 2			
	Introductory Biochemistry and Genetics	Semester 1	BCV201	20
	Metabolism	Semester 2	BCV202	20
C	Microbiology 2			
	Introductory Microbiology and Control of Micro-organisms	Semester 1	BMV201	20
	Medical Microbiology	Semester 2	BMV202	20
D	Chemistry 2			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Organic	Semester 2	CHOV202	12
	Chemistry Physical	Year	CHPV200	12
E	Computer Science II			
	The following modules are compulsory for Computer Science majors:			
	Data Structures and Algorithms 2.1	Semester 1	WRAV201	8
	Data Structures and Algorithms 2.2	Semester 2	WRAV202	8
	Computer Architecture 2.1	Semester 1	WRCV201	6
	Computer Architecture 2.2	Semester 2	WRCV202	6
	Information Systems 2.1	Semester 1	WRIV201	6
	Information Systems 2.2	Semester 2	WRIV202	6
F	The following additional modules are available as optional electives, and are of primary interest to Computer Science non-majors:			
	Web Systems 2.1	Semester 1	WRWV201	8
	Web Systems 2.2	Semester 2	WRWV202	8
G	Geography II			
	Pedo-Geomorphological Studies	Term 1	GENV201	10
	Society and Environment	Term 4	GENV212	10
	Economic and Development Geography	Term 2	GEOV211	10
	Introduction to Cartography and GIS	Term 3	GISV201	10
H	Geology II			
	Palaeontology	Semester 1	GGLV201	10
	Structural Geology	Semester 1	GGLV211	10
	Mineralogy	Semester 2	GGLV202	10
	Sedimentary Petrology	Semester 2	GGLV212	10
I	Mathematics II			
	Multivariable and Vector Calculus	Semester 1	MATT201	20
	Linear Algebra	Semester 2	MATT212	10
	Real Analysis	Semester 2	MATT202	10
J	Applied Mathematics II			
	Differential Equations	Semester 1	MAPV201	10
	Numerical Methods 2	Semester 1	MAPV211	10

		Presented	Module Code	Credit Value
	Transform Theory	Semester 2	MAPV202	10
	Linear Optimisation	Semester 2	MAPV222	10
K	Statistics II			
	Theory of Distribution	Semester 1	STAS201	20
	Regression Analysis and Advanced Regression Topics	Semester 2	STAS202	20
L	Physics II			
	Optics AC Theory and Thermodynamics	Semester 1	FVV201	20
	Mechanics, Modern and Nuclear Physics	Semester 2	FVV202	20
M	Zoology 2			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
N	Physiology 2			
	Principles of Human Physiology and Control Systems	Semester 1	BSPD211	20
	Human Systemic Physiology	Semester 2	BSPD212	20
	Credits Second Year			120/130
		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Botany III ♦			
	Applied Marine Botany	Semester 1	BOTV301	12
	Plant Physiology	Semester 1	BOTV311	12
	Plant Eco-physiology	Semester 2	BOTV302	12
	Plant Ecology and Environmental Management	Semester 2	BOTV312	12
	Project	Year	BOTV310	12
B	Biochemistry III ♦			
	Advanced Protein Technology	Semester 1	BCV301	30
	Integrated Biochemistry	Semester 2	BCV302	30
C	Microbiology III ♦			
	Bacteriology, Microbial Ecology, Virology and Mycology	Semester 1	BMV301	30
	Gene Manipulation, Industrial Microbiology and Biotechnology	Semester 2	BMV302	30
D	Chemistry III ♦			
	Chemistry Inorganic	Year	CHIV300	20
	Chemistry Organic	Semester 1	CHOV300	20

		Presented	Module Code	Credit Value
	Chemistry Physical	Year	CHPV300	20
E	Computer Science III ♦			
	The following modules are compulsory for Computer Science majors:			
	Advanced Programming 3.1	Semester 1	WRPV301	10
	Advanced Programming 3.2	Semester 2	WRPV302	11
	Advanced Data Structures	Semester 1	WRAV301	10
	Languages and Automata Theory	Semester 2	WRLV302	10
	Database Systems 3	Semester 1	WRDV301	7
	User Interface Design	Semester 2	WUIV302	7
	Project	Year	WRRV301	9
	The following additional modules are available as optional electives:			
F	Multimedia Systems 3.1	Semester 1	WRMV301	10
	Multimedia Systems 3.2	Semester 2	WRMV302	10
G	Geography III ♦			
	Geo-Information Systems	Term 1	GISV301	15
	Geomorphology	Term 2	GENV301	15
	Environmental Resource Management	Term 4	GENV312	15
	Photogrammetry and Remote Sensing	Term 3	GISV302	15
H	Geology III ♦			
	Igneous Petrology	Semester 1	GGLV301	15
	Stratigraphy	Semester 1	GGLV311	15
	Geo-tectonics and Metamorphic Petrology	Semester 2	GGLV302	15
	Economic Geology	Semester 2	GGLV312	15
I	Mathematics III ♦			
	Advanced Linear Algebra	Semester 1	MATT311	15
	Advanced Real Analysis	Semester 1	MATT301	15
	Modern Algebra	Semester 2	MATT302	15
	Complex Functions	Semester 2	MATT312	15
J	Applied Mathematics III ♦			
	Partial Differential Equations	Semester 1	MAPV301	15
	Finite Difference Methods	Semester 1	MAPV311	15
	Non-linear Optimisation	Semester 2	MAPV302	15
	Dynamical Systems	Semester 2	MAPV312	15
K	Statistics III ♦			
	Statistical Inference	Semester 1	STAS301	24
	Special Topics in Statistics	Semester 1	STAS321	6
	Theory of Linear Modules	Semester 2	STAS322	10
	Time Series Analysis	Semester 2	STAS312	10
	Operations Research	Semester 2	STAS342	10

		Presented	Module Code	Credit Value
L	Physics III ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	FVV301	30
	Crystallography and Solid State Physics	Semester 2	FVV302	30
M	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOOV301	15
	Integrating Topics in Zoology	Semester 1	ZOOV311	15
	Applied Aquatic Science	Semester 2	ZOOV302	15
	Evolutionary Ecology	Semester 2	ZOOV312	15
N	Physiology III			
	Integrated Human Physiology I	Semester 1	BSPD301	30
	Integrated Human Physiology II	Semester 2	BSPD302	30
	Credits Third Year			124
	Total Credits			368

**8.3 BACHELOR OF SCIENCE (BIOCHEMISTRY, CHEMISTRY AND MICROBIOLOGY): FULL-TIME
(QUALIFICATION CODE: 20020 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Botany 1			
	Plant Cell Biology	Semester 1	BOT110	7
	Plant Structure	Semester 1	BOT120	8
	Plant Evolution and Systematics	Semester 2	BOT130	7
	Plant Ecology and Environmental Botany	Semester 2	BOT140	8
	Chemistry 1			
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6
	Computer Science 1			
	Computing Fundamentals	Semester 1	WRFC101	8

		Presented	Module Code	Credit Value
	Mathematics Special 1			
	Mathematics Special 101	Semester 1	MATA101	8
	Mathematics Special 102	Semester 2	MATA102	8
	Physics Special 1			
	Mechanics and Thermodynamics	Semester 1	FBB101	7
	Electricity, Optics and Atomics	Semester 2	FBB102	7
	Zoology 1			
	Animal Cell Biology and Histology	Term 1	ZOO110	7
	Animal Diversity	Term 2	ZOO120	8
	Principles of Animal Evolution	Term 3	ZOO131	8
	Animal Patterns in Time and Space	Term 4	ZOO141	7
	Credits First Year			128
		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups:			
A	Biochemistry 2			
	Introductory Biochemistry and Genetics	Semester 1	BC251	20
	Metabolism	Semester 2	BC252	20
B	Botany 2			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
C	Chemistry 2			
	Chemistry Analytical	Semester 1	CHA201	9
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Organic	Semester 2	CHO201	12
	Chemistry Physical	Year	CHP203	12
D	Microbiology 2			
	Introductory Microbiology and Control of Micro-organisms	Semester 1	BM211	20
	Medical Microbiology	Semester 2	BM212	20
E	Physiology 2			
	Principles of Human Physiology and Control Systems	Semester 1	BSP211	20
	Human Systemic Physiology	Semester 2	BSP212	20
F	Zoology 2			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10

		Presented	Module Code	Credit Value
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
	Biochemistry 3 ♦			
	Advanced Protein Technology	Semester 1	BC321	30
	Integrated Biochemistry	Semester 2	BC322	30
	Chemistry 3 ♦			
	Chemistry Inorganic	Year	CHI303	20
	Chemistry Organic	Semester 1	CHO303	20
	Chemistry Physical	Year	CHP303	20
	Microbiology 3 ♦			
	Bacteriology, Microbial Ecology, Virology and Mycology	Semester 1	BM331	30
	Gene Manipulation, Industrial Microbiology and Biotechnology	Semester 2	BM332	30
	Physiology 3			
	Integrated Human Physiology I	Semester 1	BSP311	30
	Integrated Human Physiology II	Semester 2	BSP312	30
	Credits Third Year			120
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

LINKED MODULES

For assessment purposes, certain modules offered by the Department of Biochemistry and Microbiology in the Faculty of Science are classified as **linked modules**. Linked modules are linked with their relevant couplet modules. The pass mark for modules in the department is 50%. Linked modules, however, may be "passed on link" by earning a mark of less than 50%, provided that the aggregate mark for the linked module and the relevant couplet module is at least 50%, a mark of 40% is obtained in an examination, and provided that at least a sub-minimum mark is achieved for the linked module. The sub-minimum mark for linked modules is 40%. A "fail" result achieved in a linked module will be amended to "pass on link" if the abovementioned conditions have been met. **Modules may only be passed on link in the same academic year.**

CAREER OPTIONS

Industry (chemical, food, biotechnological), teaching, research (medical, agricultural, chemical, sport, nutritional).

**8.4 BACHELOR OF SCIENCE (BIOCHEMISTRY, CHEMISTRY AND MICROBIOLOGY): FULL-TIME
(QUALIFICATION CODE: 20040 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
Botany 1				
	Plant Cell Biology	Semester 1	BOTV101	7
	Plant Structure	Semester 1	BOTV111	8
	Plant Evolution and Systematics	Semester 2	BOTV102	7
	Plant Ecology and Environmental Botany	Semester 2	BOTV112	8
Chemistry 1				
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9
	Chemistry Organic	Semester 2	CHOV102	6
Computer Science 1				
	Computing Fundamentals	Semester 1	WRFV101	8
Mathematics Special 1				
	Mathematics Special 101	Semester 1	MATS101	8
	Mathematics Special 102	Semester 2	MATS102	8
Physics Special 1				
	Mechanics and Thermodynamics	Semester 1	FBBV101	7
	Electricity, Optics and Atomics	Semester 2	FBBV102	7
Zoology 1				
	Animal Cell Biology and Histology	Term 1	ZOOV101	7
	Animal Diversity	Term 2	ZOOV111	8
	Principles of Animal Evolution	Term 3	ZOOV102	8
	Animal Patterns in Time and Space	Term 4	ZOOV112	7
Credits First Year				128

		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups:			
A	Biochemistry 2			
	Introductory Biochemistry and Genetics	Semester 1	BCV201	20
	Metabolism	Semester 2	BCV202	20
B	Botany 2			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
C	Chemistry 2			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Organic	Semester 2	CHOV202	12
	Chemistry Physical	Year	CHPV200	12
D	Microbiology 2			
	Introductory Microbiology and Control of Micro-organisms	Semester 1	BMV201	20
	Medical Microbiology	Semester 2	BMV202	20
E	Physiology 2			
	Principles of Human Physiology and Control Systems	Semester 1	BSPD211	20
	Human Systemic Physiology	Semester 2	BSPD212	20
F	Zoology 2			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
	Biochemistry 3 ♦			
	Advanced Protein Technology	Semester 1	BCV301	30
	Integrated Biochemistry	Semester 2	BCV302	30
	Chemistry 3 ♦			
	Chemistry Inorganic	Year	CHIV300	20

		Presented	Module Code	Credit Value
	Chemistry Organic	Semester 1	CHOV300	20
	Chemistry Physical	Year	CHPV300	20
	Microbiology 3 ♦			
	Bacteriology, Microbial Ecology, Virology and Mycology	Semester 1	BMV301	30
	Gene Manipulation, Industrial Microbiology and Biotechnology	Semester 2	BMV302	30
	Physiology 3			
	Integrated Human Physiology I	Semester 1	BSPD301	30
	Integrated Human Physiology II	Semester 2	BSPD302	30
	Credits Third Year			120
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

LINKED MODULES

For assessment purposes, certain modules offered by the Department of Biochemistry and Microbiology in the Faculty of Science are classified as **linked modules**. Linked modules are linked with their relevant couplet modules. The pass mark for modules in the department is 50%.

Linked modules, however, may be "passed on link" by earning a mark of less than 50%, provided that the aggregate mark for the linked module and the relevant couplet module is at least 50%, a mark of 40% is obtained in an examination, and provided that at least a sub-minimum mark is achieved for the linked module. The sub-minimum mark for linked modules is 40%. A "fail" result achieved in a linked module will be amended to "pass on link" if the abovementioned conditions have been met. **Modules may only be passed on link in the same academic year.**

CAREER OPTIONS

Industry (chemical, food, biotechnological), teaching, research (medical, agricultural, chemical, sport, nutritional).

**8.5 BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES): FULL-TIME
(QUALIFICATION CODE: 20025 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Botany I			
	Plant Cell Biology	Semester 1	BOT110	7
	Plant Structure	Semester 1	BOT120	8
	Plant Evolution and Systematics	Semester 2	BOT130	7
	Plant Ecology and Environmental Botany	Semester 2	BOT140	8
	Computer Science I			
	Computing Fundamentals	Semester 1	WRFC101	8
	Zoology I			
	Animal Cell Biology and Histology	Term 1	ZOO110	7
	Animal Diversity	Term 2	ZOO120	8
	Principles of Animal Evolution	Term 3	ZOO131	8
	Animal Patterns in Time and Space	Term 4	ZOO141	7
	Select either Group A or Group B:			
A	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEO111	7
	Introduction to Meteorology and Climatology	Term 2	GEN101	8
	Introduction to Geomorphology	Term 3	GEN102	8
	Introduction to Geo-Information Science and Cartography	Term 4	GIS101	8
	Geology I			
	Introduction to Earth	Semester 1	GGL111	7
	Mineralogy and Petrology	Semester 1	GGL112	8
	Physical Geology	Semester 2	GGL113	7
	Structural and Economic Geology	Semester 2	GGL114	8

		Presented	Module Code	Credit Value
B	Chemistry I			
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6
	Mathematics Special I			
	Mathematics Special	Semester 1	MATA101	8
	Mathematics Special	Semester 2	MATA102	8
	Physics Special I			
	Mechanics and Thermodynamics	Semester 1	FBB101	7
	Electricity, Optics and Atomics	Semester 2	FBB102	7
	Credits First Year			128/129
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Select one of the following groups corresponding to the modules selected in the first year:			
A	Chemistry II			
	Chemistry Analytical	Semester 1	CHA201	9
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Physical	Year	CHP203	12
	Chemistry Organic	Semester 2	CHO201	12
B	Geography II			
	Pedo-Geomorphological Studies	Term 1	GEN211	10
	Society and Environment	Term 4	GEN212	10
	Economic and Development Geography	Term 2	GEO212	10
	Introduction to Cartography and GIS	Term 3	GIS211	10
C	Geology II			
	Palaeontology	Semester 1	GGL201	10

		Presented	Module Code	Credit Value
	Structural Geology	Semester 1	GGL202	10
	Mineralogy	Semester 2	GGL203	10
	Sedimentary Petrology	Semester 2	GGL204	10
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Botany III ♦			
	Applied Marine Botany	Semester 1	BOT310	12
	Plant Physiology	Semester 1	BOT320	12
	Plant Eco-physiology	Semester 2	BOT330	12
	Plant Ecology and Environmental Management	Semester 2	BOT340	12
	Project	Year	BOT350	12
	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOO311	15
	Applied Aquatic Science	Semester 2	ZOO322	15
	Integrating Topics in Zoology	Semester 1	ZOO334	15
	Evolutionary Ecology	Semester 2	ZOO342	15
	Credits Third Year			120
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

**8.6 BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES): FULL-TIME
(QUALIFICATION CODE: 20055 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Botany I			
	Plant Cell Biology	Semester 1	BOTV101	7
	Plant Structure	Semester 1	BOTV111	8
	Plant Evolution and Systematics	Semester 2	BOTV102	7
	Plant Ecology and Environmental Botany	Semester 2	BOTV112	8
	Computer Science I			
	Computing Fundamentals	Semester 1	WRFV101	8
	Zoology I			
	Animal Cell Biology and Histology	Term 1	ZOOV101	7

		Presented	Module Code	Credit Value
	Animal Diversity	Term 2	ZOOV111	8
	Principles of Animal Evolution	Term 3	ZOOV102	8
	Animal Patterns in Time and Space	Term 4	ZOOV112	7
Select either Group A or Group B:				
A	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEOV101	7
	Introduction to Meteorology and Climatology	Term 2	GENV101	8
	Introduction to Geomorphology	Term 3	GENV102	8
	Introduction to Geo-Information Science and Cartography	Term 4	GISV102	8
	Geology I			
	Introduction to Earth	Semester 1	GGLV101	7
	Mineralogy and Petrology	Semester 1	GGLV111	8
	Physical Geology	Semester 2	GGLV102	7
	Structural and Economic Geology	Semester 2	GGLV112	8
B	Chemistry I			
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9
	Chemistry Organic	Semester 2	CHOV102	6
	Mathematics Special I			
	Mathematics Special	Semester 1	MATS101	8
	Mathematics Special	Semester 2	MATS102	8
	Physics Special I			
	Mechanics and Thermodynamics	Semester 1	FBBV101	7
	Electricity, Optics and Atomics	Semester 2	FBBV102	7
	Credits First Year			128/129
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10

		Presented	Module Code	Credit Value
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Select one of the following groups corresponding to the modules selected in the first year:			
A	Chemistry II			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Physical	Year	CHPV200	12
	Chemistry Organic	Semester 2	CHOV202	12
B	Geography II			
	Pedo-Geomorphological Studies	Term 1	GENV201	10
	Society and Environment	Term 4	GENV212	10
	Economic and Development Geography	Term 2	GEOV211	10
	Introduction to Cartography and GIS	Term 3	GISV201	10
C	Geology II			
	Palaeontology	Semester 1	GGLV201	10
	Structural Geology	Semester 1	GGLV211	10
	Mineralogy	Semester 2	GGLV202	10
	Sedimentary Petrology	Semester 2	GGLV212	10
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Botany III ♦			
	Applied Marine Botany	Semester 1	BOTV301	12
	Plant Physiology	Semester 1	BOTV311	12
	Plant Eco-physiology	Semester 2	BOTV302	12
	Plant Ecology and Environmental Management	Semester 2	BOTV312	12
	Project	Year	BOTV310	12
	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOOV301	15
	Integrating Topics in Zoology	Semester 1	ZOOV311	15
	Applied Aquatic Science	Semester 2	ZOOV302	15
	Evolutionary Ecology	Semester 2	ZOOV312	15
	Credits Third Year			120
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

**8.7 BACHELOR OF SCIENCE (COMPUTER SCIENCE): FULL-TIME
(QUALIFICATION CODE: 20023 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

With majors chosen from Applied Mathematics, Computer Science, Mathematics, Mathematical Statistics and Physics.

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Discuss any other subject combinations with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Mathematics I			
	Mathematics 1A	Semester 1	MATH111	16
	Mathematics 1B	Semester 2	MATH112	16
	Select three of the following groups:			
A	Applied Mathematics I			
	Graph Theory	Semester 1	MAPM111	8
	Mathematical Modelling	Semester 1	MAPM112	8
	Mechanics	Semester 2	MAPM113	8
	Numerical Methods I	Semester 2	MAPM114	8
B	Computer Science I (if Applied Mathematics selected)			
	Programming Fundamentals 1.1	Semester 1	WRA101	8
	Programming Fundamentals 1.2	Semester 2	WRA102	8
	Computing Fundamentals for Scientists 1.1	Semester 1	WRSC101	8
	Computing Fundamentals 1.2	Semester 2	WRFC102	8
C	Computer Science I			
	Programming Fundamentals 1.1	Semester 1	WRA101	8
	Programming Fundamentals 1.2	Semester 2	WRA102	8
	Computing Fundamentals 1.1	Semester 1	WRFC101	8
	Computing Fundamentals 1.2	Semester 2	WRFC102	8
D	Physics I			
	Mechanics and Thermodynamics	Semester 1	F101	15
	Electricity, Magnetism and Optics	Semester 2	F102	15
E	Statistics I			
	Probability and Distribution Theory	Semester 1	STAT101	15
	Introduction to Statistical Inference	Semester 2	STAT102	15
	Credits First Year			124/126

		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups corresponding to the modules selected in the first year:			
A	Computer Science II			
	The following modules are compulsory for Computer Science majors:			
	Data Structures and Algorithms 2.1	Semester 1	WRA201	8
	Data Structures and Algorithms 2.2	Semester 2	WRA202	8
	Computer Architecture 2.1	Semester 1	WRC201	6
	Computer Architecture 2.2	Semester 2	WRC202	6
	Information Systems 2.1	Semester 1	WRI201	6
	Information Systems 2.2	Semester 2	WRI202	6
	The following additional modules are available as optional electives , and are of primary interest to Computer Science non-majors:			
	Web Systems 2.1	Semester 1	WRWS201	8
	Web Systems 2.2	Semester 2	WRWS202	8
B	Applied Mathematics II			
	Differential Equations	Semester 1	MAPM211	10
	Numerical Methods 2	Semester 1	MAPM212	10
	Transform Theory	Semester 2	MAPM213	10
	Linear Optimisation	Semester 2	MAPM214	10
C	Mathematics II			
	Multivariable and Vector Calculus	Semester 1	MATH211	20
	Linear Algebra	Semester 2	MATH203	10
	Real Analysis	Semester 2	MATH214	10
D	Physics II			
	Optics, AC Theory and Thermodynamics	Semester 1	F210	20
	Mechanics, Modern and Nuclear Physics	Semester 2	F212	20
E	Statistics II			
	Theory of Distribution	Semester 1	STAT201	20
	Regression Analysis and Advanced Regression Topics	Semester 2	STAT203	20
	Credits Second Year			120/130

		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Computer Science III ♦			
	The following modules are compulsory for Computer Science majors:			
	Advanced Programming 3.1	Semester 1	WRAP301	10
	Advanced Programming 3.2	Semester 2	WRAP302	11
	Advanced Data Structures	Semester 1	WRA301	10
	Languages and Automata Theory	Semester 2	WRL301	10
	Database Systems 3	Semester 1	WRDB301	7
	User Interface Design	Semester 2	WRUI301	7
	Project	Year	WRR301	9
	The following additional modules are available as optional electives:			
	Multimedia Systems 3.1	Semester 1	WRMS301	10
	Multimedia Systems 3.2	Semester 2	WRMS302	10
B	Applied Mathematics III ♦			
	Partial Differential Equations	Semester 1	MAPM311	15
	Finite Difference Methods	Semester 1	MAPM312	15
	Non-linear Optimisation	Semester 2	MAPM313	15
	Dynamical Systems	Semester 2	MAPM314	15
C	Mathematics III ♦			
	Advanced Linear Algebra	Semester 1	MATH311	15
	Real Analysis	Semester 1	MATH302	15
	Modern Algebra	Semester 2	MATH303	15
	Complex Functions	Semester 2	MATH314	15
D	Physics III ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	F310	30
	Crystallography and Solid State Physics	Semester 2	F321	30
E	Statistics III ♦			
	Statistical Inference	Semester 1	STAT301	24
	Special Topics in Statistics	Semester 1	STAT304	6
	Theory of Linear Modules	Semester 2	STAT305	10
	Time Series Analysis	Semester 2	STAT307	10
	Operations Research	Semester 2	STAT309	10
	Credits Third Year			124
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics 1 and Mathematical Statistics 1.
Year 2:	Applied Mathematics 2, Mathematics 2 and Mathematical Statistics 2.
Year 3:	Applied Mathematics 3 and Mathematical Statistics 3 leads to a career in Industrial Mathematics which is the problem-driven blend of Mathematics and Statistics that uses mathematical technologies to solve industrial problems. Industrial mathematics is an independent field which studies all mathematical methods that are directly relevant to industry.
	Industrial Mathematicians apply their talents to: <ul style="list-style-type: none"> • Optimise and manage factory production. • Design and test products. • Ensure quality control and customer service procedure. • Strategic planning. • Risk management. • Perform statistical analyses.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics1 and (Mathematical Statistics 1or Physics 1).
Year 2:	Applied Mathematics 2, Computer Science 2, Mathematics 2.
Year 3:	Applied Mathematics 3 and Computer Science 3 leads to a career in Computational Mathematics . Computational Mathematics is an innovative, multidisciplinary program whose focus lies in the intersection of mathematics and computer science. Graduates of the program will be able to deploy effectively a wide range of mathematical and computational techniques to solve problems in science and commerce; to develop, enhance and maintain the relevant software tools; and to communicate results of complex modules and simulations to end-users.
	Computational mathematicians study: <ul style="list-style-type: none"> • Parallel processes and parallel algorithms. • Numerical analysis and complexity. • Artificial intelligence and neural networks. • Optimization and non-linear programming. • Numerical solutions to PDE's and large scale computations. • Mathematical problems too complex for paper/pencil solutions. • Coding and Cryptography. • Computational geometry.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Mathematics 1, Mathematical Statistics1, Physics and Computer Fundamentals.
Year 2:	Applied Mathematics 2, Physics 2 and the modules MATH202, 203 and STAT201.
Year 3:	Applied Mathematics 3 and Physics 3 leads to a career in Computational Physics . Computational physics is the study and implementation of numerical algorithms in order to solve problems in physics for which a quantitative theory already exists.

Choosing the combination:	
	Physicists often have a very precise mathematical theory describing how a system will behave. Physics problems are in general very difficult to solve exactly. Even apparently simple problems, such as calculating the wave function of an electron orbiting an atom in a strong electric field, may require great effort to formulate a practical algorithm (if one can be found). In addition, the computational cost of solving quantum mechanical problems is generally exponential in the size of the system (see computational complexity theory). Seeing as a typical macroscopic solid has of the order of 10^{23} constituent particles, it may be somewhat of an understatement to say this is a bit of a problem.
	Applications of computational physics Computational methods are widely used in solid state physics, fluid mechanics and image analysis in electron microscopy, amongst others. Computational physics borrows a number of ideas from computational chemistry – for example, the density functional theory used by computational physicists to calculate properties of solids is basically the same as that used by chemists to calculate the properties of molecules.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.
Year 2:	Physics 2, Computer Science 2 (and 40 credits from Applied Mathematics 2 and Mathematics 2).
Year 3:	Computer Science 3 or (Computer Science 3 and Physics 3) provides for a combination of the problem-solving skills and analytical thinking developed through Physics and Computer Science which is an interface between science, technology and engineering and business. This combination provides a powerful platform for entering a variety of businesses, banks, the government and the military as well as various postgraduate programmes. Graduates in physics and computer science can, and do, excel in a diverse range of situations and occupation.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.
Year 2:	Computer Science 2, Mathematics 2 (and 40 credits from Applied Mathematics 2 and Physics 2).
Year 3:	Computer Science 3 and Mathematics 3 provides for a combination of the problem-solving skills, analytical thinking, programming design and application development. This program provides a powerful platform for entering a variety of employment opportunities in business. It can also lead to various postgraduate programmes.

**8.8 BACHELOR OF SCIENCE (COMPUTER SCIENCE): FULL-TIME
(QUALIFICATION CODE: 20053 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

With majors chosen from Applied Mathematics, Computer Science, Mathematics, Mathematical Statistics and Physics.

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Discuss any other subject combinations with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHO102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHO1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHO1202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHO1300, CHPV300		FVV201, FVV202

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Mathematics I			
	Mathematics 1A	Semester 1	MATT101	16
	Mathematics 1b	Semester 2	MATT102	16
	Select three of the following groups:			
A	Applied Mathematics I			
	Graph Theory	Semester 1	MAPV101	8
	Mathematical Modelling	Semester 1	MAPV111	8
	Mechanics	Semester 2	MAPV102	8
	Numerical Methods I	Semester 2	MAPV112	8
B	Computer Science I (if Applied Mathematics selected)			
	Programming Fundamentals 1.1	Semester 1	WRAV101	8
	Programming Fundamentals 1.2	Semester 2	WRAV102	8
	Computing Fundamentals for Scientists 1.1	Semester 1	WRSC111	8
	Computing Fundamentals 1.2	Semester 2	WRFV102	8
C	Computer Science I			
	Programming Fundamentals 1.1	Semester 1	WRAV101	8
	Programming Fundamentals 1.2	Semester 2	WRAV102	8
	Computing Fundamentals 1.1	Semester 1	WRFV101	8
	Computing Fundamentals 1.2	Semester 2	WRFV102	8
D	Physics I			
	Mechanics and Thermodynamics	Semester 1	FVV101	15
	Electricity, Magnetism and Optics	Semester 2	FVV102	15
E	Statistics I			
	Probability and Distribution Theory	Semester 1	STAS101	15
	Introduction to Statistical Inference	Semester 2	STAS102	15

		Presented	Module Code	Credit Value
	Credits First Year			124/126
		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups corresponding to the modules selected in the first year:			
A	Computer Science II			
	The following modules are compulsory for Computer Science majors :			
	Data Structures and Algorithms 2.1	Semester 1	WRAV201	8
	Data Structures and Algorithms 2.2	Semester 2	WRAV202	8
	Computer Architecture 2.1	Semester 1	WRCV201	6
	Computer Architecture 2.2	Semester 2	WRCV202	6
	Information Systems 2.1	Semester 1	WRIV201	6
	Information Systems 2.2	Semester 2	WRIV202	6
	The following additional modules are available as optional electives , and are of primary interest to Computer Science non-majors:			
	Web Systems 2.1	Semester 1	WRWV201	8
	Web Systems 2.2	Semester 2	WRWV202	8
B	Applied Mathematics II			
	Differential Equations	Semester 1	MAPV201	10
	Numerical Methods 2	Semester 1	MAPV211	10
	Transform Theory	Semester 2	MAPV202	10
	Linear Optimisation	Semester 2	MAPV222	10
C	Mathematics II			
	Multivariable and Vector Calculus	Semester 1	MATT201	20
	Linear Algebra	Semester 2	MATT212	10
	Real Analysis	Semester 2	MATT202	10
D	Physics II			
	Optics, AC Theory and Thermodynamics	Semester 1	FVV201	20
	Mechanics, Modern and Nuclear Physics	Semester 2	FVV202	20
E	Statistics II			
	Theory of Distribution	Semester 1	STAS201	20
	Regression Analysis and Advanced Regression Topics	Semester 2	STAS202	20
	Credits Second Year			120/130

		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Computer Science III ♦			
	The following modules are compulsory for Computer Science majors:			
	Advanced Programming 3.1	Semester 1	WRPV301	10
	Advanced Programming 3.2	Semester 2	WRPV302	11
	Advanced Data Structures	Semester 1	WRAV301	10
	Languages and Automata Theory	Semester 2	WRLV302	10
	Database Systems 3	Semester 1	WRDV301	7
	User Interface Design	Semester 2	WUIV302	7
	Project	Year	WRRV301	9
	The following additional modules are available as optional electives:			
	Multimedia Systems 3.1	Semester 1	WRMV301	10
	Multimedia Systems 3.2	Semester 2	WRMV302	10
B	Applied Mathematics III ♦			
	Partial Differential Equations	Semester 1	MAPV301	15
	Finite Difference Methods	Semester 1	MAPV311	15
	Non-linear Optimisation	Semester 2	MAPV302	15
	Dynamical Systems	Semester 2	MAPV312	15
C	Mathematics III ♦			
	Real Analysis	Semester 1	MATT301	15
	Advanced Linear Algebra	Semester 1	MATT311	15
	Modern Algebra	Semester 2	MATT302	15
	Complex Functions	Semester 2	MATT312	15
D	Physics III ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	FVV301	30
	Crystallography and Solid State Physics	Semester 2	FVV302	30
E	Statistics III ♦			
	Statistical Inference	Semester 1	STAS301	24
	Special Topics in Statistics	Semester 1	STAS321	6
	Time Series Analysis	Semester 2	STAS312	10
	Theory of Linear Modules	Semester 2	STAS322	10
	Operations Research	Semester 2	STAS342	10
	Credits Third Year			124
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics 1 and Mathematical Statistics 1.
Year 2:	Applied Mathematics 2, Mathematics 2 and Mathematical Statistics 2.
Year 3:	Applied Mathematics 3 and Mathematical Statistics 3 leads to a career in Industrial Mathematics which is the problem-driven blend of Mathematics and Statistics that uses mathematical technologies to solve industrial problems. Industrial mathematics is an independent field which studies all mathematical methods that are directly relevant to industry.
	Industrial Mathematicians apply their talents to: <ul style="list-style-type: none"> • Optimise and manage factory production. • Design and test products. • Ensure quality control and customer service procedure. • Strategic planning. • Risk management. • Perform statistical analyses.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics1 and (Mathematical Statistics 1or Physics 1).
Year 2:	Applied Mathematics 2, Computer Science 2, Mathematics 2.
Year 3:	Applied Mathematics 3 and Computer Science 3 leads to a career in Computational Mathematics . Computational Mathematics is an innovative, multidisciplinary program whose focus lies in the intersection of mathematics and computer science. Graduates of the program will be able to deploy effectively a wide range of mathematical and computational techniques to solve problems in science and commerce; to develop, enhance and maintain the relevant software tools; and to communicate results of complex modules and simulations to end-users.
	Computational mathematicians study: <ul style="list-style-type: none"> • Parallel processes and parallel algorithms. • Numerical analysis and complexity. • Artificial intelligence and neural networks. • Optimization and non-linear programming. • Numerical solutions to PDE's and large scale computations. • Mathematical problems too complex for paper/pencil solutions. • Coding and Cryptography. • Computational geometry.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Mathematics 1, Mathematical Statistics1, Physics and Computer Fundamentals.
Year 2:	Applied Mathematics 2, Physics 2 and the modules MATT211, 203 and STAS201.
Year 3:	Applied Mathematics 3 and Physics 3 leads to a career in Computational Physics . Computational physics is the study and implementation of numerical algorithms in order to solve problems in physics for which a quantitative theory already exists.

Choosing the combination:	
	Physicists often have a very precise mathematical theory describing how a system will behave. Physics problems are in general very difficult to solve exactly. Even apparently simple problems, such as calculating the wave function of an electron orbiting an atom in a strong electric field, may require great effort to formulate a practical algorithm (if one can be found). In addition, the computational cost of solving quantum mechanical problems is generally exponential in the size of the system (see computational complexity theory). Seeing as a typical macroscopic solid has of the order of 10^{23} constituent particles, it may be somewhat of an understatement to say this is a bit of a problem.
	Applications of computational physics Computational methods are widely used in solid state physics, fluid mechanics and image analysis in electron microscopy, amongst others. Computational physics borrows a number of ideas from computational chemistry – for example, the density functional theory used by computational physicists to calculate properties of solids is basically the same as that used by chemists to calculate the properties of molecules.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.
Year 2:	Physics 2, Computer Science 2 (and 40 credits from Applied Mathematics 2 and Mathematics 2).
Year 3:	Computer Science 3 or (Computer Science 3 and Physics 3) provides for a combination of the problem-solving skills and analytical thinking developed through Physics and Computer Science which is an interface between science, technology and engineering and business. This combination provides a powerful platform for entering a variety of businesses, banks, the government and the military as well as various postgraduate programmes. Graduates in physics and computer science can, and do, excel in a diverse range of situations and occupation.
Choosing the combination:	
Year 1:	Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.
Year 2:	Computer Science 2, Mathematics 2 (and 40 credits from Applied Mathematics 2 and Physics 2).
Year 3:	Computer Science 3 and Mathematics 3 provides for a combination of the problem-solving skills, analytical thinking, programming design and application development. This program provides a powerful platform for entering a variety of employment opportunities in business. It can also lead to various postgraduate programmes.

**8.9 BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCES): FULL-TIME
(QUALIFICATION CODE: 20026 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory module:			
	Computer Science I			
	Computing Fundamentals	Semester 1	WRFC101	8
	Select four of the following groups:			
A	Botany I			
	Plant Cell Biology	Semester 1	BOT110	7
	Plant Structure	Semester 1	BOT120	8
	Plant Evolution and Systematics	Semester 2	BOT130	7
	Plant Ecology and Environmental Botany	Semester 2	BOT140	8
B	Chemistry I			
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6
C	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEO111	7
	Introduction to Meteorology and Climatology	Term 2	GEN101	8
	Introduction to Geomorphology	Term 3	GEN102	8
	Introduction to Geo-Information Science and Cartography	Term 4	GIS101	8
D	Geology I			
	Introduction to Earth	Semester 1	GGL111	7
	Mineralogy and Petrology	Semester 1	GGL112	8
	Physical Geology	Semester 2	GGL113	7
	Structural and Economic Geology	Semester 2	GGL114	8
E	Mathematics Special I			
	Mathematics Special 101	Semester 1	MATA101	8

		Presented	Module Code	Credit Value
	Mathematics Special 102	Semester 2	MATA102	8
F	Physics Special I			
	Mechanics and Thermodynamics	Semester 1	FBB101	7
	Electricity, Optics and Atomics	Semester 2	FBB102	7
G	Zoology I			
	Animal Cell Biology and Histology	Term 1	ZOO110	7
	Animal Diversity	Term 2	ZOO120	8
	Principles of Animal Evolution	Term 3	ZOO131	8
	Animal Patterns in Time and Space	Term 4	ZOO141	7
	Credits First Year			128/129
		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups corresponding to the modules selected in the first year:			
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Project	Year	BOT250	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
	Select either B1 or B2:			
B1	Chemistry II			
	Chemistry Analytical	Semester 1	CHA201	9
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Physical	Year	CHP203	12
	Chemistry Organic	Semester 2	CHO201	12
B2	Geography II			
	Pedo-Geomorphological Studies	Term 1	GEN211	10
	Society and Environment	Term 4	GEN212	10
	Economic and Development Geography	Term 2	GEO212	10
	Introduction to Cartography and GIS	Term 3	GIS211	10
C	Geology II			
	Palaeontology	Semester 1	GGL201	10
	Structural Geology	Semester 1	GGL202	10
	Mineralogy	Semester 2	GGL203	10
	Sedimentary Petrology	Semester 2	GGL204	10
D	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10

		Presented	Module Code	Credit Value
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Botany III ♦			
	Applied Marine Botany	Semester 1	BOT310	12
	Plant Physiology	Semester 1	BOT320	12
	Project	Year	BOT350	12
	Plant Eco-physiology	Semester 2	BOT330	12
	Plant Ecology and Environmental Management	Semester 2	BOT340	12
	Select either B1 or B2:			
B1	Chemistry III			
	Chemistry Inorganic	Year	CHI303	20
	Chemistry Organic	Semester 1	CHO303	20
	Chemistry Physical	Year	CHP303	20
B2	Geography III ♦			
	Geo-Information Systems	Term 1	GIS301	15
	Geomorphology	Term 2	GEN301	15
	Environmental Resource Management	Term 4	GEN313	15
	Photogrammetry and Remote Sensing	Term 3	GIS304	15
C	Geology III ♦			
	Igneous Petrology	Semester 1	GGL301	15
	Stratigraphy	Semester 1	GGL302	15
	Geo-tectonics and Metamorphic Petrology	Semester 2	GGL303	15
	Economic Geology	Semester 2	GGL304	15
D	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOO311	15
	Applied Aquatic Science	Semester 2	ZOO322	15
	Integrating Topics in Zoology	Semester 1	ZOO334	15
	Evolutionary Ecology	Semester 2	ZOO342	15
	Credits Third Year			120
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

**8.10 BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCES): FULL-TIME
(QUALIFICATION CODE: 20056 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory module:			
	Computer Science I			
	Computing Fundamentals	Semester 1	WRFV101	8
	Select four of the following groups:			
A	Botany I			
	Plant Cell Biology	Semester 1	BOTV101	7
	Plant Structure	Semester 1	BOTV111	8
	Plant Evolution and Systematics	Semester 2	BOTV102	7
	Plant Ecology and Environmental Botany	Semester 2	BOTV112	8
B	Chemistry I			
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9
	Chemistry Organic	Semester 2	CHOV102	6
C	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEOV101	7
	Introduction to Meteorology and Climatology	Term 2	GENV101	8
	Introduction to Geomorphology	Term 3	GENV102	8
	Introduction to Geo-Information Science and Cartography	Term 4	GISV102	8
D	Geology I			
	Introduction to Earth	Semester 1	GGLV101	7
	Mineralogy and Petrology	Semester 1	GGLV111	8
	Physical Geology	Semester 2	GGLV102	7
	Structural and Economic Geology	Semester 2	GGLV112	8
E	Mathematics Special I			
	Mathematics Special 101	Semester 1	MATS101	8
	Mathematics Special 102	Semester 2	MATS102	8
F	Physics Special I			
	Mechanics and Thermodynamics	Semester 1	FBBV101	7
	Electricity, Optics and Atomics	Semester 2	FBBV102	7

		Presented	Module Code	Credit Value
G	Zoology I			
	Animal Cell Biology and Histology	Term 1	ZOOV101	7
	Animal Diversity	Term 2	ZOOV111	8
	Principles of Animal Evolution	Term 3	ZOOV102	8
	Animal Patterns in Time and Space	Term 4	ZOOV112	7
	Credits First Year			128/129
		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups corresponding to the modules selected in the first year:			
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Project	Year	BOTV210	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
	Select either B1 or B2:			
B1	Chemistry II			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Physical	Year	CHPV200	12
	Chemistry Organic	Semester 2	CHOV202	12
B2	Geography II			
	Pedo-Geomorphological Studies	Term 1	GENV201	10
	Society and Environment	Term 4	GENV212	10
	Economic and Development Geography	Term 2	GEOV211	10
	Introduction to Cartography and GIS	Term 3	GISV201	10
C	Geology II			
	Palaeontology	Semester 1	GGLV201	10
	Structural Geology	Semester 1	GGLV211	10
	Mineralogy	Semester 2	GGLV202	10
	Sedimentary Petrology	Semester 2	GGLV212	10
D	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
	Credits Second Year			120

		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Botany III ♦			
	Applied Marine Botany	Semester 1	BOTV301	12
	Plant Physiology	Semester 1	BOTV311	12
	Project	Year	BOTV310	12
	Plant Eco-physiology	Semester 2	BOTV302	12
	Plant Ecology and Environmental Management	Semester 2	BOTV312	12
	Select either B1 or B2:			
B1	Chemistry III			
	Chemistry Inorganic	Year	CHIV300	20
	Chemistry Organic	Semester 1	CHOV300	20
	Chemistry Physical	Year	CHPV300	20
B2	Geography III ♦			
	Geo-Information Systems	Term 1	GISV301	15
	Geomorphology	Term 2	GENV301	15
	Environmental Resource Management	Term 4	GENV312	15
	Photogrammetry and Remote Sensing	Term 3	GISV302	15
C	Geology III ♦			
	Igneous Petrology	Semester 1	GGLV301	15
	Stratigraphy	Semester 1	GGLV311	15
	Geo-tectonics and Metamorphic Petrology	Semester 2	GGLV302	15
	Economic Geology	Semester 2	GGLV312	15
D	Zoology III ♦			
	Aquatic Ecology	Semester 1	ZOOV301	15
	Integrating Topics in Zoology	Semester 1	ZOOV311	15
	Applied Aquatic Science	Semester 2	ZOOV302	15
	Evolutionary Ecology	Semester 2	ZOOV312	15
	Credits Third Year			120
	Total Credits			368

♦ Major modules (please refer to the General Prospectus).

**8.11 BACHELOR OF SCIENCE (GEOSCIENCES: GEOGRAPHY AND GEOLOGY): FULL-TIME
(QUALIFICATION CODE: 20024 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Computer Science I			
	Computing Fundamentals	Semester 1	WRFC101	8
	Geography I			
	Introduction to Economic and Settlement Geography	Term 1	GEO111	7
	Introduction to Meteorology and Climatology	Term 2	GEN101	8
	Introduction to Geomorphology	Term 3	GEN102	8
	Introduction to Geo-Information Science and Cartography	Term 4	GIS101	8
	Geology I			
	Introduction to Earth	Semester 1	GGL111	7
	Mineralogy and Petrology	Semester 1	GGL112	8
	Physical Geology	Semester 2	GGL113	7
	Structural and Economic Geology	Semester 2	GGL114	8
	Select either Group A or Group B:			
A	Chemistry I			
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6
	Mathematics Special			
	Mathematics Special 101	Semester 1	MATA101	8
	Mathematics Special 102	Semester 2	MATA102	8
	Physics Special I			
	Mechanics and Thermodynamics	Semester 1	FBB101	7
	Electricity, Optics and Atomics	Semester 2	FBB102	7

		Presented	Module Code	Credit Value
B	Botany I			
	Plant Cell Biology	Semester 1	BOT110	7
	Plant Structure	Semester 1	BOT120	8
	Plant Evolution and Systematics	Semester 2	BOT130	7
	Plant Ecology and Environmental Botany	Semester 2	BOT140	8
	Zoology I			
	Animal Cell Biology and Histology	Term 1	ZOO110	7
	Animal Diversity	Term 2	ZOO120	8
	Principles of Animal Evolution	Term 3	ZOO131	8
	Animal Patterns in Time and Space	Term 4	ZOO141	7
	Credits First Year			128/129
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Geography II			
	Pedo-Geomorphological Studies	Term 1	GEN211	10
	Society and Environment	Term 4	GEN212	10
	Economic and Development Geography	Term 2	GEO212	10
	Introduction to Cartography and GIS	Term 3	GIS211	10
	Geology II			
	Palaeontology	Semester 1	GGL201	10
	Structural Geology	Semester 1	GGL202	10
	Mineralogy	Semester 2	GGL203	10
	Sedimentary Petrology	Semester 2	GGL204	10
	Select one of the following groups:			
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOT210	8
	Plant Ecology	Semester 1	BOT220	8
	Marine Botany	Semester 2	BOT230	8
	Economic Botany and Plant Biotechnology	Semester 2	BOT240	8
	Project	Year	BOT250	8
B	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOO211	10
	Animal Physiology	Semester 1	ZOO221	10
	Population Ecology	Semester 2	ZOO231	10
	Community Ecology	Semester 2	ZOO241	10
	Credits Second Year			120

		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
Geography III ♦				
	Geo-Information Systems	Term 1	GIS301	15
	Geomorphology	Term 2	GEN301	15
	Environmental Resource Management	Term 4	GEN313	15
	Photogrammetry and Remote Sensing	Term 3	GIS304	15
Geology III ♦				
	Igneous Petrology	Semester 1	GGL301	15
	Stratigraphy	Semester 1	GGL302	15
	Geotectonics and Metamorphic Petrology	Semester 2	GGL303	15
	Economic Geology	Semester 2	GGL304	15
Credits Third Year				120
Total Credits				368

♦ Major modules (please refer to the General Prospectus).

**8.12 BACHELOR OF SCIENCE (GEOSCIENCES: GEOGRAPHY AND GEOLOGY): FULL-TIME
(QUALIFICATION CODE: 20054 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHOV102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHOV1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHOV202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHOV300, CHPV300		FVV201, FVV202

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
Computer Science I				
Computing Fundamentals		Semester 1	WRFV101	8
Geography I				
Introduction to Economic and Settlement Geography		Term 1	GEOV101	7
Introduction to Meteorology and Climatology		Term 2	GENV101	8
Introduction to Geomorphology		Term 3	GENV102	8
Introduction to Geo-Information Science and Cartography		Term 4	GISV102	8
Geology I				
Introduction to Earth		Semester 1	GGLV101	7

		Presented	Module Code	Credit Value
	Mineralogy and Petrology	Semester 1	GGLV111	8
	Physical Geology	Semester 2	GGLV102	7
	Structural and Economic Geology	Semester 2	GGLV112	8
Select either Group A or Group B:				
A	Chemistry I			
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9
	Chemistry Organic	Semester 2	CHOV102	6
	Mathematics Special			
	Mathematics Special 101	Semester 1	MATS101	8
	Mathematics Special 102	Semester 2	MATS102	8
	Physics Special I			
	Mechanics and Thermodynamics	Semester 1	FBBV101	7
	Electricity, Optics and Atomics	Semester 2	FBBV102	7
B	Botany I			
	Plant Cell Biology	Semester 1	BOTV101	7
	Plant Structure	Semester 1	BOTV111	8
	Plant Evolution and Systematics	Semester 2	BOTV102	7
	Plant Ecology and Environmental Botany	Semester 2	BOTV112	8
	Zoology I			
	Animal Cell Biology and Histology	Term 1	ZOOV101	7
	Animal Diversity	Term 2	ZOOV111	8
	Principles of Animal Evolution	Term 3	ZOOV102	8
	Animal Patterns in Time and Space	Term 4	ZOOV112	7
	Credits First Year			128/129
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Geography II			
	Pedo-Geomorphological Studies	Term 1	GENV201	10
	Society and Environment	Term 4	GENV212	10
	Economic and Development Geography	Term 2	GEOV211	10
	Introduction to Cartography and GIS	Term 3	GISV201	10
	Geology II			
	Palaeontology	Semester 1	GGLV201	10
	Structural Geology	Semester 1	GGLV211	10
	Mineralogy	Semester 2	GGLV202	10
	Sedimentary Petrology	Semester 2	GGLV212	10

		Presented	Module Code	Credit Value
Select one of the following groups:				
A	Botany II			
	Plant and Algal Systematics	Semester 1	BOTV201	8
	Plant Ecology	Semester 1	BOTV211	8
	Marine Botany	Semester 2	BOTV202	8
	Economic Botany and Plant Biotechnology	Semester 2	BOTV212	8
	Project	Year	BOTV210	8
B	Zoology II			
	Comparative Vertebrate Anatomy	Semester 1	ZOOV201	10
	Animal Physiology	Semester 1	ZOOV211	10
	Population Ecology	Semester 2	ZOOV202	10
	Community Ecology	Semester 2	ZOOV212	10
Credits Second Year				120
		Presented	Module Code	Credit Value
Third Year				
Compulsory modules:				
	Geography III ♦			
	Geo-Information Systems	Term 1	GISV301	15
	Geomorphology	Term 2	GENV301	15
	Environmental Resource Management	Term 4	GENV312	15
	Photogrammetry and Remote Sensing	Term 3	GISV302	15
	Geology III ♦			
	Igneous Petrology	Semester 1	GGLV301	15
	Stratigraphy	Semester 1	GGLV311	15
	Geotectonics and Metamorphic Petrology	Semester 2	GGLV302	15
	Economic Geology	Semester 2	GGLV312	15
Credits Third Year				120
Total Credits				368

♦ Major modules (please refer to the General Prospectus).

**8.13 BACHELOR OF SCIENCE (HUMAN MOVEMENT SCIENCE AND BIOCHEMISTRY): FULL-TIME
(QUALIFICATION CODE: 20003 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 372)
(NO NEW INTAKE)**

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

Examination

Candidates shall be examined both during and at the end of each module. The examinations shall consist of continuous practical evaluation as well as a written examination.

General Rules (HMS140)

In order to graduate, students will be required to provide evidence of having successfully completed a Level Two first aid course (at student's cost), which is recognised by the Department of Human Movement Science.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
Chemistry I				
Chemistry General		Semester 1	CHG101	15
Chemistry Inorganic		Semester 2	CHI101	9
Chemistry Organic		Semester 2	CHO101	6
Computer Science I				
Computing Fundamentals 1.1		Semester 1	WRFC101	8
Human Movement Science				
Sport Coaching I		Semester 1	HMS130	8
Anatomy		Semester 2	HMS131	8
Sport and Exercise Psychology		Semester 1	HMS134	8
Motor Control and Learning I		Semester 2	HMS135	8
Exercise Science I		Semester 1	HMS136	8
Sport Management I		Semester 1	HMS137	8
Recreation I		Semester 2	HMS138	8
Evaluation I		Semester 2	HMS139	8
Mathematics Special I				
Mathematics Special 101		Semester 1	MATA101	8
Mathematics Special 102		Semester 2	MATA102	8
Select two of the following modules:				
Human Movement Science I				
Athletics (Field)		Term 2	HMS116	5

		Presented	Module Code	Credit Value
	Athletics (Track)	Term 1	HMS117	5
	Cricket	Term 4	HMS118	5
	Dance	Term 3	HMS119	5
	Gymnasium-based Training	Term 4	HMS129	5
	Hockey	Term 2	HMS121	5
	Life Saving	Term 1	HMS122	5
	Netball	Term 2	HMS123	5
	Rugby	Term 3	HMS124	5
	Soccer	Term 3	HMS125	5
	Swimming	Term 1	HMS126	5
	Tennis	Term 4	HMS127	5
	Credits First Year			128
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Biochemistry II			
	Introductory Biochemistry and Genetics	Semester 1	BC251	20
	Metabolism	Semester 2	BC252	20
	Physiology II			
	Principles of Human Physiology and Control Systems	Semester 1	BSP211	20
	Human Systemic Physiology	Semester 2	BSP212	20
	Human Movement Science 2			
	Biomechanics I	Semester 2	HMS132	8
	Exercise Physiology I	Semester 1	HMS133	8
	Anatomy II	Semester 2	HMS231	8
	Exercise Science II	Semester 1	HMS236	8
	Select one of the following modules:			
	Human Movement Science II			
	Exercise Science Practice Specialisation	Year	HMS359	16
	Sport Specialisation	Year	HMS360	16
	Credits Second Year			128

		Presented	Module Code	Credit Value
Third Year				
	Select A1 or A2			
A1	Biochemistry III ♦			
	Advanced Protein Technology	Semester 1	BC321	30
	Integrated Biochemistry	Semester 2	BC322	30
A2	Physiology III			
	Integrated Human Physiology I	Semester 1	BSP311	30
	Integrated Human Physiology II	Semester 2	BSP312	30
Compulsory modules:				
	Human Movement Science III ♦			
	Exercise Physiology II	Semester 1	HMS333	8
	Sport and Exercise Psychology II	Semester 1	HMS334	8
	Motor Control and Learning II	Semester 1	HMS335	8
	Biomechanics II	Semester 2	HMS332	8
	Evaluation Methods II	Semester 2	HMS339	8
	Growth and Development	Semester 2	HMS340	8
Credits Third Year				116
Total Credits				372

♦ Major modules (please refer to the General Prospectus).

**8.14 BACHELOR OF SCIENCE (HUMAN MOVEMENT SCIENCE AND BIOCHEMISTRY): FULL-TIME
(QUALIFICATION CODE: 20030 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 372)
(NO NEW INTAKE)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Any other subject combinations must be discussed with the relevant Heads of Department.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

APPLICABLE RULES

Please refer to General Faculty Rules.

Examination

Candidates shall be examined both during and at the end of each module. The examinations shall consist of continuous practical evaluation as well as a written examination.

General Rules

In order to graduate, students will be required to provide evidence of having successfully completed a Level Two first aid course (at student's cost), which is recognised by the Department of Human Movement Science.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHO102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHO1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHO1202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHO1300, CHPV300		FVV201, FVV202

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
	Chemistry I			
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9

		Presented	Module Code	Credit Value
	Chemistry Organic	Semester 2	CHOV102	6
	Computer Science I			
	Computing Fundamentals 1.1	Semester 1	WRFV101	8
	Human Movement Science			
	Coaching Science I	Semester 1	HMSV101	8
	Anatomy	Semester 2	HMSV112	8
	Sport and Exercise Psychology	Semester 1	HMSV141	8
	Motor Control and Learning I	Semester 2	HMSV152	8
	Exercise Science I	Semester 1	HMSV161	8
	Sport Management I	Semester 1	HMSV171	8
	Recreation I	Semester 2	HMSV182	8
	Evaluation Methods I	Semester 2	HMSV192	8
	Mathematics Special I			
	Mathematics Special 101	Semester 1	MATS101	8
	Mathematics Special 102	Semester 2	MATS102	8
	Select one of the following modules:			
	Human Movement Science I			
	Aquatics	Semester 1	HMSV153	10
	Athletics	Semester 2	HMSV154	10
	Implement Sports	Semester 1	HMSV155	10
	Team Sports	Semester 2	HMSV156	10
	Credits First Year			128
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Biochemistry II			
	Introductory Biochemistry and Genetics	Semester 1	BCV201	20
	Metabolism	Semester 2	BCV202	20
	Physiology II			
	Principles of Human Physiology and Control Systems	Semester 1	BSPD211	20
	Human Systemic Physiology	Semester 2	BSPD212	20
	Human Movement Science 2			
	Biomechanics I	Semester 2	HMSV122	8
	Exercise Physiology I	Semester 1	HMSV131	8
	Anatomy II	Semester 2	HMSV312	8
	Exercise Science II	Semester 1	HMSV261	8
	Select one of the following modules:			

		Presented	Module Code	Credit Value
	Human Movement Science II			
	Exercise Science Practice Specialisation	Year	HMSV390	16
	Coaching Science Specialisation	Year	HMSV300	20
	Credits Second Year			128/132
		Presented	Module Code	Credit Value
Third Year				
	Select A1 or A2			
A1	Biochemistry III ♦			
	Advanced Protein Technology	Semester 1	BCV301	30
	Integrated Biochemistry	Semester 2	BCV302	30
A2	Physiology III			
	Integrated Human Physiology I	Semester 1	BSPD301	30
	Integrated Human Physiology II	Semester 2	BSPD302	30
	Compulsory modules:			
	Human Movement Science III ♦			
	Exercise Physiology II	Semester 1	HMSV331	8
	Sport and Exercise Psychology II	Semester 1	HMSV341	8
	Motor Control and Learning II	Semester 2	HMSV352	8
	Biomechanics II	Semester 2	HMSV322	8
	Evaluation Methods II	Semester 2	HMSV392	8
	Human Growth and Development	Semester 2	HMSV302	8
	Credits Third Year			108
	Total Credits			364/368

♦ Major modules (please refer to the General Prospectus).

**8.15 BACHELOR OF SCIENCE (INFORMATION SYSTEMS): FULL-TIME
(QUALIFICATION CODE: 20099 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Admission Points Score of 38.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 28 and 37 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Specific prerequisites for certain modules

Candidates must comply with the prerequisites for modules listed in the Syllabus and the "List of Modules", as well as with the sub-minimum requirements for modules set out in the Faculty Prospectus.

APPLICABLE RULES

- Unless Senate decides otherwise, the degree shall be obtained by completing modules with a total credit value of at least 360 of which
 - a minimum of 136 credits are on NQF level 5 and a minimum of 174 credits are on NQF level 6;
 - a minimum of 246 credits are from the compulsory modules and 114 are from the elective modules.
- Unless Senate decides otherwise, a candidate who has failed a particular module three times shall not be allowed to re-register for that module.
- Where modules have substantially overlapping outcomes, credit shall not be given for more than one of those modules.

CHOICE OF MODULES

Unless Senate decides otherwise, the approved curriculum shall consist of the modules outlined below, satisfying the requirements and be such that there are no lecture or examination timetable clashes at any stage and all prerequisites for subsequent modules are satisfied.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
Computer Science I				
	Computing Fundamentals 1.1	Semester 1	WRFC101	8
	Computing Fundamentals 1.2	Semester 2	WRFC102	8
	Programming Fundamentals 1.1	Semester 1	WRA101	8
	Programming Fundamentals 1.2	Semester 2	WRA102	8
	Computing Fundamentals for Scientists *	Semester 1	WRSC101	8
* To be taken by students selecting Applied Mathematics as elective instead of WRFC101.				
Mathematics Special I				
	Mathematics Special A1	Semester 1	MATA101	8
	Mathematics Special A2	Semester 2	MATA102	8
Statistics I				
	Financial Mathematics	Semester 1	STAE101	12

		Presented	Module Code	Credit Value
	Business Statistics	Semester 2	STAE102	12
	Business Management I			
	Introduction to Business Management and Entrepreneurship	Semester 1	EB101	12
	Select any of the following modules to a total of 36 credits:			
A	Applied Mathematics I			
	Graph Theory	Semester 1	MAPM111	8
	Mathematical Modelling	Semester 1	MAPM112	8
B	Business Management I			
	Introduction to Business Functions	Semester 2	EB102	12
C	Economics I			
	Introduction to Microeconomics	Semester 1	EC101	12
	Introduction to Macroeconomics	Semester 2	EC102	12
D	Accounting I			
	Accounting 1A	Semester 1	R101	10
	Accounting 1B Or General Accounting 1B	Semester 2 Semester 2	R102 RG102	14 14
	OR			
	Business Accounting 1A	Semester 1	RNC111	12
	Business Accounting 1B	Semester 2	RNC112	12
	Credits First Year			120
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Computer Science II			
	Data Structures and Algorithms 2.1	Semester 1	WRA201	8
	Data Structures and Algorithms 2.2	Semester 2	WRA202	8
	Computer Architecture Networks 2.1	Semester 1	WRC201	6
	Business Systems II	Semester 2	WRBA202	8
	Information Systems 2.1	Semester 1	WRI201	6
	Information Systems 2.2	Semester 2	WRI202	6
	Web Systems II			
	Web Systems 2.1	Semester 1	WRWS201	8
	Web Systems 2.2	Semester 2	WRWS202	8
	Mathematics Special II			
	Mathematics Special B1	Semester 1	MATB101	8
	Mathematics Special B2	Semester 2	MATB102	8

		Presented	Module Code	Credit Value
Select any of the following modules to a total of 48 credits:				
A	Computer Science II			
	Business Process Modelling	Semester 1	WRBP201	6
	Computer Architecture and Networks 2.2	Semester 2	WRC202	6
B	Statistics II			
	Probability, Distributors Theory and Estimation	Semester 1	STAT202	20
	Regression Analysis and Advanced Regression Topics	Semester 2	STAT203	20
C	Accounting II/General Accounting II			
	Accounting 2A	Semester 1	R201	14
	Accounting 2B	Semester 2	R202	14
	OR			
	General Accounting 2A	Semester 1	RG201	14
	General Accounting 2B	Semester 2	RG202	14
D	Management II			
	Marketing Management	Semester 1	EBM201	14
	Logistics/Purchasing Management	Semester 2	EBM202	14
E	Economics II			
	Macroeconomics	Semester 1	EC201	14
	Microeconomics	Semester 2	EC202	14
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Computer Science III ♦			
	Advanced Data Structures	Semester 1	WRA301	10
	Advanced Programming 3.1	Semester 1	WRAP301	10
	Advanced Programming 3.2	Semester 2	WRAP302	11
	Database Systems	Semester 1	WRDB301	7
	User Interface Design	Semester 2	WRUI301	7
	Project	Year	WRR301	9
	Multimedia Systems III ♦			
	Multimedia Systems 3.1	Semester 1	WRMS301	10
	Multimedia Systems 3.2	Semester 2	WRMS302	10
	Management Information Systems III ♦			
	Management Information Systems 3.1	Semester 1	WRB301	8
	Management Information Systems 3.2	Semester 2	WRB302	8
Select any of the following modules to a total of 31 credits:				

		Presented	Module Code	Credit Value
A	Computer Science III ♦			
	Language and Automata Theory	Semester 2	WRL301	10
	Enterprise Resource Planning Systems 3.1	Semester 1	WRER301	11
	Enterprise Systems Development	Semester 2	WRER312	11
B	Statistics III			
	Non-Parametric Statistical Procedures	Semester 1	STAT302	10
	Econometric Models	Semester 1	STAT303	14
	Special Topics in Statistics	Semester 1	STAT304	6
	Experimental Design and ANOVA	Semester 2	STAT306	10
	Time Series Analysis	Semester 2	STAT307	10
	Operations Research	Semester 2	STAT309	10
C	Business Management III			
	Financial Management	Semester 1	EBM301	24
	General and Strategic Management	Semester 2	EBM302	24
D	Economics III			
	Public Economics	Semester 1	ECO301	10
	Economics of Financial Markets	Semester 1	ECO302	10
	Econometrics	Semester 1	ECO304	10
	Development Economics	Semester 2	ECO305	10
	International Economics	Semester 2	ECO306	10
	Credits Third Year			120
	Total Credits			360

NOTE: Candidates must ensure that they comply with all the prerequisites for the elective modules.

♦ Major modules (please refer to the General Prospectus).

**8.16 BACHELOR OF SCIENCE (INFORMATION SYSTEMS): FULL-TIME
(QUALIFICATION CODE: 20090 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 38.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 28 and 37 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Specific prerequisites for certain modules

Candidates must comply with the prerequisites for modules listed in the Syllabus and the "List of Modules", as well as with the sub-minimum requirements for modules set out in the Faculty Prospectus.

APPLICABLE RULES

- Unless Senate decides otherwise, the degree shall be obtained by completing modules with a total credit value of at least 360 of which
 - a minimum of 136 credits are on NQF level 5 and a minimum of 174 credits are on NQF level 6;
 - a minimum of 246 credits are from the compulsory modules and 114 are from the elective modules.
- Unless Senate decides otherwise, a candidate who has failed a particular module three times shall not be allowed to re-register for that module.
- Where modules have substantially overlapping outcomes, credit shall not be given for more than one of those modules.

CHOICE OF MODULES

Unless Senate decides otherwise, the approved curriculum shall consist of the modules outlined below, satisfying the requirements and be such that there are no lecture or examination timetable clashes at any stage and all prerequisites for subsequent modules are satisfied.

DURATION

The qualification shall extend over three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
Computer Science I				
Computing Fundamentals 1.1		Semester 1	WRFV101	8
Computing Fundamentals 1.2		Semester 2	WRFV102	8
Programming Fundamentals 1.1		Semester 1	WRAV101	8
Programming Fundamentals 1.2		Semester 2	WRAV102	8
Computing Fundamentals for Scientists *		Semester 1	WRSC111	8
* To be taken by students selecting Applied Mathematics as elective instead of WRFV101.				
Mathematics Special I				
Mathematics Special A1		Semester 1	MATS101	8
Mathematics Special A2		Semester 2	MATS102	8
Statistics I				
Financial Mathematics		Semester 1	STAV101	12
Business Statistics		Semester 2	STAV102	12
Business Management I				
Introduction to Business Management and Entrepreneurship		Semester 1	EB121	12
Select any of the following modules to a total of 36 credits:				

		Presented	Module Code	Credit Value
A	Applied Mathematics I			
	Graph Theory	Semester 1	MAPV101	8
	Mathematical Modelling	Semester 1	MAPV111	8
B	Business Management I			
	Introduction to Business Functions	Semester 2	EB122	12
C	Economics I			
	Introduction to Microeconomics	Semester 1	ECC101	12
	Introduction to Macroeconomics	Semester 2	ECC102	12
D	Accounting I			
	Accounting 1A	Semester 1	R101	10
	Accounting 1B	Semester 2	R102	14
	Or General Accounting 1B	Semester 2	RG102	14
	OR			
	Business Accounting 1A	Semester 1	RNC111	12
	Business Accounting 1B	Semester 2	RNC112	12
	Credits First Year			120
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Computer Science II			
	Data Structures and Algorithms 2.1	Semester 1	WRAV201	8
	Data Structures and Algorithms 2.2	Semester 2	WRAV202	8
	Computer Architecture Networks 2.1	Semester 1	WRCV201	6
	Business Systems II	Semester 2	WRBV202	8
	Information Systems 2.1	Semester 1	WRIV201	6
	Information Systems 2.2	Semester 2	WRIV202	6
	Web Systems II			
	Web Systems 2.1	Semester 1	WRWV201	8
	Web Systems 2.2	Semester 2	WRWV202	8
	Mathematics Special II			
	Mathematics Special B1	Semester 1	MATB111	8
	Mathematics Special B2	Semester 2	MATB112	8
	Select any of the following modules to a total of 48 credits:			
A	Computer Science II			
	Business Process Modelling	Semester 1	WRBP211	6
	Computer Architecture and Networks 2.2	Semester 2	WRCV202	6
B	Statistics II			
	Probability, Distributors Theory and Estimation	Semester 1	STAS211	20

		Presented	Module Code	Credit Value
	Regression Analysis and Advanced Regression Topics	Semester 2	STAS202	20
C	Accounting II/General Accounting II			
	Accounting 2A	Semester 1	RV201	14
	Accounting 2B	Semester 2	RV202	14
	OR			
	General Accounting 2A	Semester 1	RGV201	14
	General Accounting 2B	Semester 2	RGV202	14
D	Management II			
	Marketing Management	Semester 1	EBMV201	14
	Logistics/Purchasing Management	Semester 2	EBMV202	14
E	Economics II			
	Macroeconomics	Semester 1	ECC201	14
	Microeconomics	Semester 2	ECC202	14
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Compulsory modules:			
	Computer Science III ♦			
	Advanced Data Structures	Semester 1	WRAV301	10
	Advanced Programming 3.1	Semester 1	WRPV301	10
	Advanced Programming 3.2	Semester 2	WRPV302	11
	Database Systems	Semester 1	WRDV301	7
	User Interface Design	Semester 2	WUIV302	7
	Project	Year	WRRV301	9
	Multimedia Systems III ♦			
	Multimedia Systems 3.1	Semester 1	WRMV301	10
	Multimedia Systems 3.2	Semester 2	WRMV302	10
	Management Information Systems III ♦			
	Management Information Systems 3.1	Semester 1	WRBV301	8
	Management Information Systems 3.2	Semester 2	WRBV302	8
	Select any of the following modules to a total of 31 credits:			
A	Computer Science III ♦			
	Language and Automata Theory	Semester 2	WRLV302	10
	Enterprise Resource Planning Systems 3.1	Semester 1	WREV301	11
	Enterprise Systems Development	Semester 2	WREV312	11
B	Statistics III			
	Non-Parametric Statistical Procedures	Semester 1	STAS311	10
	Special Topics in Statistics	Semester 1	STAS321	6

		Presented	Module Code	Credit Value
	Econometric Models	Semester 1	STAS331	14
	Experimental Design and ANOVA	Semester 2	STAS302	10
	Time Series Analysis	Semester 2	STAS312	10
	Operations Research	Semester 2	STAS342	10
C	Business Management III			
	Financial Management	Semester 1	EBMV301	24
	General and Strategic Management	Semester 2	EBMV302	24
D	Economics III			
	Public Economics	Semester 1	ECC301	10
	Economics of Financial Markets	Semester 1	ECC311	10
	Econometrics	Semester 1	ECC321	10
	Development Economics	Semester 2	ECC302	10
	International Economics	Semester 2	ECC312	10
	Credits Third Year			120
	Total Credits			360

NOTE: Candidates must ensure that they comply with all the prerequisites for the elective modules.

♦ Major modules (please refer to the General Prospectus).

**8.17 BACHELOR OF SCIENCE (MATERIALS DEVELOPMENT): FULL-TIME
(QUALIFICATION CODE: 20022 – A1)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 372)
(NO NEW INTAKE)**

The following curriculum is based on the three cornerstone subjects in Science (Mathematics, Physics and Chemistry) and provides an excellent basis for persons wishing to **teach physical science and/or mathematics** up to senior secondary level at school. It also offers a sensible subject combination for postgraduate studies in these subjects.

This curriculum will also launch into a **postgraduate programme** at Nelson Mandela University in Solid State Physics, Electron Microscopy, Crystal Growth, Optical Fibre studies and Renewable Energy; all **with an emphasis on materials development**. In addition, the programme provides a platform from which the student can enter the field of materials science and engineering. Materials scientists develop and analyse various alloys, ceramics and other novel materials. As such they play an increasingly important role in adding value to the range of minerals mined in South Africa.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES**1.6.12.2** Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
Compulsory modules:				
Chemistry I				
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6

		Presented	Module Code	Credit Value
	Physics I			
	Mechanics and Thermodynamics	Semester 1	F101	15
	Electricity, Magnetism and Optics	Semester 2	F102	15
	Applied Mathematics I			
	Graph Theory	Semester 1	MAPM111	8
	Mathematical Modelling	Semester 1	MAPM112	8
	Mechanics	Semester 2	MAPM113	8
	Numerical Methods 1	Semester 2	MAPM114	8
	Mathematics I			
	Mathematics 1A	Semester 1	MATH111	16
	Mathematics 1B	Semester 2	MATH112	16
	Computer Science I			
	Computing Fundamentals 1.1	Semester 1	WRFC101	8
	Credits First Year			132
		Presented	Module Code	Credit Value
Second Year				
	Select three of the following groups:			
A	Applied Mathematics II			
	Differential Equations	Semester 1	MAPM211	10
	Numerical Methods 2	Semester 1	MAPM212	10
	Transform Theory	Semester 2	MAPM213	10
	Linear Optimisation	Semester 2	MAPM214	10
B	Chemistry II			
	Chemistry Analytical	Semester 1	CHA201	9
	Chemistry Inorganic	Semester 1	CHI201	7
	Chemistry Organic	Semester 2	CHO201	12
	Chemistry Physical	Year	CHP203	12
C	Physics II			
	Optics and Thermodynamics	Semester 1	F210	20
	Mechanics, Modern and Nuclear Physics	Semester 2	F212	20
D	Mathematics II			
	Multivariable and Vector Calculus	Semester 1	MATH211	20
	Linear Algebra	Semester 2	MATH203	10
	Real Analysis	Semester 2	MATH214	10
	Credits Second Year			120

		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules offered in the previous year:			
A	Applied Mathematics III ♦			
	Partial Differential Equations	Semester 1	MAPM311	15
	Finite Difference Methods	Semester 1	MAPM312	15
	Non-linear Optimisation	Semester 2	MAPM313	15
	Dynamical Systems	Semester 2	MAPM314	15
B	Chemistry III ♦			
	Chemistry Inorganic	Year	CHI303	20
	Chemistry Organic	Semester 1	CHO303	20
	Chemistry Physical	Year	CHP303	20
C	Physics III ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	F310	30
	Crystallography and Solid State Physics	Semester 2	F321	30
D	Mathematics III			
	Advanced Linear Algebra	Semester 1	MATH311	15
	Real Analysis	Semester 1	MATH302	15
	Modern Algebra	Semester 2	MATH303	15
	Complex Functions	Semester 2	MATH314	15
	Credits Third Year			120
	Total Credits			372

♦ Major modules (please refer to the General Prospectus).

**8.18 BACHELOR OF SCIENCE (PHYSICAL SCIENCE AND MATHEMATICS):
FULL-TIME
(QUALIFICATION CODE: 20021 – A1)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 368)
(NO NEW INTAKE)**

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Discuss any other subject combinations with the relevant Heads of Department.

The following curriculum is based on the three cornerstone subjects in Science (Mathematics, Physics and Chemistry) and provides an excellent basis for postgraduate studies in these subjects. Furthermore, it offers a sensible subject combination for persons wishing to teach physical science and/or mathematics up to senior secondary level.

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BC251, BC252	CHG101, CHI101, CHO101	BM211, BM212	FBB101, FBB102
BC321, BC322	CHG1X1, CHG1X2, CHI1X1, CHO1X1	BM331, BM332	FF101, FBB111, FBB112, FBB121
	CHA201, CHI201, CHO201, CHP203		F101, F102
	CHI303, CHO303, CHP303		F210, F212

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
A	Chemistry 1			
	Chemistry General	Semester 1	CHG101	15
	Chemistry Inorganic	Semester 2	CHI101	9
	Chemistry Organic	Semester 2	CHO101	6
B	Computer Science and Information Systems 1			
	Programming Fundamentals 1.1	Semester 1	WRA101	8
	Programming Fundamentals 1.2	Semester 2	WRA102	8
	Computing Fundamentals 1.1	Semester 1	WRFC101	8
	Computer Fundamentals 1.2	Semester 2	WRFC102	8
C	Mathematics 1			
	Mathematics 1A	Semester 1	MATH111	16
	Mathematics 1B	Semester 2	MATH112	16
D	Physics 1			
	Mechanics and Thermo-dynamics	Semester 1	F101	15
	Electricity, Magnetism and Optics	Semester 2	F102	15
	Credits First Year			124

		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
A	Chemistry 2			
	Chemistry Analytical	Semester 1	CHA201	10
	Chemistry Inorganic	Semester 1	CHI201	10
	Chemistry Organic	Semester 2	CHO201	10
	Chemistry Physical	Year	CHP203	10
B	Mathematics 2			
	Multivariable and Vector Calculus	Semester 1	MATH211	20
	Linear Algebra	Semester 2	MATH203	10
	Real Analysis	Semester 2	MATH214	10
C	Physics 2			
	Optic, AC Theory and Thermodynamics	Semester 1	F210	20
	Mechanics, Modern and Nuclear Physics	Semester 2	F212	20
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
	Select two of the following majors corresponding to the modules selected in the previous year:			
A	Chemistry 3 ♦			
	Chemistry Inorganic	Year	CHI303	20
	Chemistry Organic	Semester 1	CHO303	20
	Chemistry Physical	Year	CHP303	20
B	Mathematics 3 ♦			
	Advanced Linear Algebra	Semester 1	MATH311	15
	Real Analysis	Semester 1	MATH302	15
	Modern Algebra	Semester 2	MATH303	15
	Complex Functions	Semester 2	MATH314	15
C	Physics 3 ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	F310	30
	Crystallography and Solid State Physics	Semester 2	F321	30
	Credits Third Year			120
	Total Credits			364

♦ Major modules (please refer to the General Prospectus)

**8.19 BACHELOR OF SCIENCE (PHYSICAL SCIENCE AND MATHEMATICS):
FULL-TIME
(QUALIFICATION CODE: 20051 – A1)
(NQF LEVEL: 6, TOTAL NQF CREDITS FOR QUALIFICATION: 368)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- Admission Points Score of 40.
- Minimum statutory NSC requirements for degree entry must be met.
- English, Afrikaans or isiXhosa (home language or first additional language) on at least level 3 (40-49%).
- NSC achievement rating of at least 5 (60-69%) for Mathematics.
- Applicants with an Admission Points Score between 30 and 39 may be referred to write the Access Assessment Battery before a decision is made on whether or not to admit the applicant to the course.

The following curriculum is a recommended programme for the BSc degree in the Faculty of Science. Other subject combinations are possible but not necessarily sensible. Discuss any other subject combinations with the relevant Heads of Department.

The following curriculum is based on the three cornerstone subjects in Science (Mathematics, Physics and Chemistry) and provides an excellent basis for postgraduate studies in these subjects. Furthermore, it offers a sensible subject combination for persons wishing to teach physical science and/or mathematics up to senior secondary level.

APPLICABLE RULES

Please refer to General Faculty Rules.

PASS ON LINKED MODULES

1.6.12.2 Passing of linked modules

It is acknowledged that certain modules, while being stand-alone modules for which individual credit may be obtained in terms of Rule 1.6.12.1 in the General Prospectus, are nevertheless intrinsically linked to one or more other modules. Such linkages must be confirmed by specific faculty rules which must adhere to the following general rules:

1.6.12.2.1 In the case where learning in the subsequent module builds cumulatively on the learning in the previous module, the previous module may be passed if the weighted average mark for the two modules is at least 50%, provided that the subsequent module must have been passed on its own and that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must have been obtained for the first module.

1.6.12.2.2 In the case where the content of two or more modules form an integrated whole, these modules may be passed if the weighted average mark of these modules is at least 50%, provided that a minimum final mark of at least 40%, as well as a subminimum mark of at least 40% for the examination, must be obtained for each individual module. **Modules may only be passed on link in the same academic year.**

Departments that offer Pass on Link modules are:			
Biochemistry	Chemistry	Microbiology	Physics
BCV201, BCV202	CHGV101, CHIV100, CHO102	BMV201, BMV202	FBBV101, FBBV102
BCV301, BCV302	CHGV1X1, CHGV1X2, CHIV1X1, CHO1X2	BMV301, BMV302	FVV101, FVV102
	CHAV201, CHIV201, CHO1202, CHPV200		FFV1X1, FBBV1X1, FBBV1X2, FBBVX12
	CHIV300, CHO1300, CHPV300		FVV201, FVV202

DURATION

The programme shall extend over a minimum of three years of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
First Year				
	Compulsory modules:			
A	Chemistry 1			
	Chemistry General	Semester 1	CHGV101	15
	Chemistry Inorganic	Semester 2	CHIV100	9
	Chemistry Organic	Semester 2	CHOV102	6
B	Computer Science and Information Systems 1			
	Programming Fundamentals	Semester 1	WRAV101	8
	Programming Fundamentals 1.2	Semester 2	WRAV102	8
	Computing Fundamentals 1.1	Semester 1	WRFV101	8
	Computer Fundamentals 1.2	Semester 2	WRFV102	8
C	Mathematics 1			
	Mathematics 1A	Semester 1	MATT101	16
	Mathematics 1B	Semester 2	MATT102	16
D	Physics 1			
	Mechanics and Thermo-dynamics	Semester 1	FVV101	15
	Electricity, Magnetism and Optics	Semester 2	FVV102	15
	Credit First Year			124
		Presented	Module Code	Credit Value
Second Year				
A	Chemistry 2			
	Chemistry Analytical	Semester 1	CHAV201	9
	Chemistry Inorganic	Semester 1	CHIV201	7
	Chemistry Organic	Semester 2	CHOV202	12
	Chemistry Physical	Year	CHPV200	12

		Presented	Module Code	Credit Value
B	Mathematics 2			
	Multivariable and Vector Calculus	Semester 1	MATT201	20
	Real Analysis	Semester 2	MATT202	10
	Linear Algebra	Semester 2	MATT212	10
C	Physics 2			
	Optic, AC Theory and Thermodynamics	Semester 1	FVV201	20
	Mechanics, Modern & Nuclear Physics	Semester 2	FVV202	20
	Credits Second Year			120
		Presented	Module Code	Credit Value
Third Year				
Choose two majors (60 credits each) from the following:				
A	Chemistry 3 ♦			
	Chemistry Inorganic	Year	CHIV300	20
	Chemistry Organic	Semester 1	CHOV300	20
	Chemistry Physical	Year	CHPV300	20
B	Mathematics 3 ♦			
	Advanced Real Analysis	Semester 1	MATT301	15
	Advanced Linear Algebra	Semester 1	MATT311	15
	Modern Algebra	Semester 2	MATT302	15
	Complex Functions	Semester 2	MATT312	15
D	Physics 3 ♦			
	Electrodynamics and Quantum Mechanics	Semester 1	FVV301	30
	Crystallography and Solid State Physics	Semester 2	FVV302	30
	Credits Third Year			120
	Total Credits			364

♦ Major modules (please refer to the General Prospectus).

9 BACHELOR OF TECHNOLOGY

9.1 BACHELOR OF TECHNOLOGY (AGRICULTURAL MANAGEMENT): FULL-TIME (QUALIFICATION CODE: 4452 – 01/38) (NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120) (NO NEW INTAKE)

ADMISSION REQUIREMENTS

- An applicable three-year tertiary or equivalent qualification.
- Academic qualifications, as well as relevant work experience, will be taken into account during selection.
- Students with less than two years' relevant experience will be required to write an admission test.
- Recognition of prior learning will be considered.

Final year for admission

The final year for new admission into this programme was 2017.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The Bachelor of Technology: Agricultural Management is offered on a block release basis. This means that students attend two study schools of one week and two weeks respectively per year. Students master the skills and knowledge needed by means of self-study and project work. This method of delivery makes it possible for working persons to register for the degree. On this basis, the duration of the degree qualification is two years. If sufficient demand exists, the qualification is also offered on a one-year full-time basis.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Financial Management IV ♦	Year	AGM4110	30
	Strategic Management IV ♦	Year	ASM4110	30
	Leadership development II ♦	Year	ALD2110	30
Select one of the following:				
	Animal Production IV (Option) ♦	Year	AAP4110	30
	Or Plant Production IV (Option) ♦	Year	APP4110	30
	Total Credits			120

		Presented	Module Code	Credit Value
Block release				
First Year				
	Compulsory modules:			
	Financial Management IV ♦	Year	AGM4110	30
	Strategic Management IV ♦	Year	ASM4110	30
	Credits First Year			60
		Presented	Module Code	Credit Value
Second Year				
	Compulsory modules:			
	Animal Production IV (Option) ♦	Year	AAP4110	30
	Or Plant Production IV (Option) ♦	Year	APP4110	30
	Leadership development II ♦	Year	ALD2110	30
	Credits Second Year			60

♦ Major modules (please refer to the General Prospectus).

**9.2 BACHELOR OF TECHNOLOGY (AGRICULTURAL MANAGEMENT):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 4061 - 02)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

ADMISSION REQUIREMENTS

Applicants must be in possession of the three-year National Diploma: Agricultural Management or equivalent qualification. Although not a requirement, it is regarded as desirable that an applicant has completed at least two years' applicable practical service after having graduated. Candidates with less than two years' service will be considered if their average mark for the final year of diploma studies is at least 60%.

APPLICATION, SELECTION AND REGISTRATION

Candidates must apply before the first closing date for applications of the preceding year. At selection, an assessment is made of each applicant's qualifications. It may, in some cases, be expected of candidates to register for additional modules in order to be admitted to the degree qualification.

SEMINARS AND PROJECTS

As a general guideline, three to four major projects/seminars have to be submitted per module and will contribute towards a qualifying module mark. A qualifying mark of 40% must be obtained per module to qualify for admission to examinations. Students need to arrange for access to information from a commercial farm/ concern in order to do the projects/seminars for the module Financial Management (Agriculture IV).

General note:

The Instructional Design is subject to change by Nelson Mandela University without prior notice. Students concerned will, however, be notified of any changes or impending changes as soon as possible.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Financial Management Agriculture IV	Year	SFB4110	30
	Leadership Development II	Year	SLD2110	30
	Strategic Management: Agriculture IV	Year	SSB4110	30
Select one of the following modules:				
	Animal Production IV	Year	SAP4110	30
	Plant Production IV	Year	SPP4110	30
	Total Credits			120

**9.3 BACHELOR OF TECHNOLOGY (CHEMISTRY): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 4165 – 01/21)
(NQF LEVEL: 7, TOTAL CREDITS FOR QUALIFICATION: 135)
(NO NEW INTAKE)**

The Bachelor of Technology: Chemistry qualification forms the fourth year of study at Nelson Mandela University. The standard of this qualification is high and offers a high degree of specialisation.

ADMISSION REQUIREMENTS

Entrance requirements for the B Tech Chemistry degree qualification are as follows:
National Diploma: Analytical Chemistry or an equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2017.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification can be done full-time (1 year) or part-time (2 years) at the university. The part-time qualification will only cover two of the subject areas within each respective year. The course timetable is structured to accommodate the part-time student. The theoretical modules for a particular year are offered during two evenings per week and one afternoon per week for the practical.

The modules of research methodology will be done in the first year and the research project that is linked to the person's employment in the second year of study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time and Part-time				
Compulsory modules:				
Chemistry Project (Special topic and research project) ♦		Year	CMP4110	24
Analytical Chemistry IV ♦			CHA4120	
Advanced Atomic Spectroscopy		Year	ACC41T1	6
Advanced Chromatography		Year	ACC42T1	6
Analytical Method Development and Validation		Year	ACC43T1	6
Analytical Practical Project		Year	ACC41P1	6
Inorganic Chemistry IV ♦			CHI4120	
Organometallic Chemistry		Year	ICC41T1	6
Homogeneous Catalysis		Year	ICC42T1	6
Bio-inorganic Chemistry		Year	ICC43T1	6
Inorganic Practical Project		Year	ICC41P1	6
Organic Chemistry IV ♦			CHO4120	
Advanced Topics in Organic Chemistry		Year	OCC41T1	14
Organic Practical Project		Year	OCC41P1	6
Heterocycles and Natural Products		Year	OCC4101	4
Physical Chemistry IV ♦			CPC4120	
Advanced Kinetics		Year	PCC41T1	8
Surface Chemistry		Year	PCC43T1	10
Physical Practical Project		Year	PCC41P1	6
Research Methodology *		Year	CRM4111	15
Total Credits				135

♦ Major modules (please refer to the General Prospectus).

* Compulsory additional requirement for the degree.

**9.4 BACHELOR OF TECHNOLOGY (FORESTRY): GEORGE CAMPUS:
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 4903 - 02/20)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

INTRODUCTION

The B Tech: Forestry qualification offers the opportunity for students to specialise in a specific combination of disciplines. In order to maintain a Forestry focus, one of the following modules is compulsory: Silviculture, Forest Engineering or Forest Management. The B Tech qualification is offered on both a full-time (1-year) and a part-time (2-year) basis, with registration in January of the specific year.

ADMISSION REQUIREMENTS

Applicants must be in possession of the three-year National Diploma: Forestry or equivalent qualification. Although not a requirement, it is regarded as desirable that an applicant has completed at least two years' applicable practical service after having graduated. Candidates with less than two years' service will be considered if their average mark for the final year of diploma studies is at least 60%.

Prospective students who have not completed subjects in Management, Engineering, Silviculture, Economics and Utilisation on a third-year level of study, with a specific focus on the commercial plantation forestry sector, who apply for admission to the **full-time** B Tech Forestry Programme, will be required first to do the third (final) year of the Diploma in Forestry offered by Nelson Mandela University.

Prospective students will not be allowed to register for any B Tech subjects during this year and all 3rd-year subjects must be completed successfully before a student can commence to the B Tech Programme. These students will be registered as occasional students and will not be awarded the Nelson Mandela University Diploma in Forestry.

Some students only apply for admission to the B Tech programme after some years of industry experience. In such cases, they apply for studies on a **part-time** basis. The admission of these students will therefore depend on the duration and relevance of their industry experience (minimum 3 years if the applicant did achieve an average of 60% during his final year of diploma studies), as evaluated by the Programme Co-ordinator of the Forestry Programme and the Director of Schools: Natural Resource Management.

APPLICATION, SELECTION AND REGISTRATION

Applicants must apply before the first closing date for applications of the preceding year.

SEMINARS AND PROJECTS

As a general guideline, three major projects/seminars have to be submitted per module and will contribute towards a qualifying module mark. Tests written during block courses supplement such a module mark. A qualifying mark of 40% must be obtained per module to qualify for entry to examinations.

General note:

- The module design is subject to change by Nelson Mandela University without prior notice. Students concerned will, however, be notified of any changes or impending changes as soon as possible after implementation.
- The B Tech degree qualifies a student to register for the M and D Tech degrees in Forestry. Refer to the General Prospectus for more information.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over one year of full-time or two years of part-time study. Students register part-time for two modules and full-time for four modules per year. Logistics may impose constraints on the offering of module choices in a particular year.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time and Part-time				
Select one of the following modules:				
	Forest Engineering Practice IV *	Year	FEP4110	30
	Forest Management IV *	Year	FMN4110	30
	Silviculture IV *	Year	FSI4110	30
Select three of the following modules:				
	Applied Biometry IV	Year	FAB4110	30
	Business Management III	Year	FBM3110	30
	Community Forestry III	Year	FCO3110	30
	Environmental Management III	Year	FEM3110	30
	Fire Management IV	Year	FED4110	30
	Human Resource Management IV	Year	BMI4210	30
	Woodland Ecology and Management III	Year	FWM3110	30
	Total Credits			120

*Any **one** of these modules is compulsory.

NOTE: Nelson Mandela University will not necessarily offer all ten subjects each year; sufficient registrations are required to make the module viable. Students will be informed timeously on which modules will be offered in the following year. At least **two** modules must be on fourth-year level. A total of four modules is needed to obtain the B Tech: Forestry qualification.

**9.5 BACHELOR OF TECHNOLOGY (GAME RANCH MANAGEMENT):
 ADDO CAMPUS: FULL-TIME/PART-TIME
 (QUALIFICATION CODE: 4456 – 01/21)
 (NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

ADMISSION REQUIREMENTS

- An applicable three-year tertiary qualification or equivalent qualification.
- Academic qualifications, as well as relevant work experience, will be taken into account.
- Recognition of prior learning will also be considered.

DURATION

The Bachelor of Technology (Game Ranch Management) is offered on a block release basis. This means that students attend two study schools of one week and two weeks respectively per year. Students master the skills and knowledge needed by means of self-study and project work. This method of delivery makes it possible for working persons to register for the qualification. On this basis, the duration of the qualification is two years. If sufficient demand exists, the qualification is also offered on a one-year full-time basis.

CURRICULUM

		Presented	Module Code	Credit Value
Part-time First Year				
	Compulsory modules:			
	Research Methodology ♦	Year	GMR4410	12
	Game Ranch Management IV ♦	Year	GRM4410	36
	Game Science IV ♦	Year	GRS4410	36
	Credits First Year			84
Second Year				
	Compulsory modules:			
	Game Ranch Economics IV ♦	Year	GER4410	18
	Game Ranch Strategic Management IV ♦	Year	GSM4410	18
	Credits Second Year			36
	Total Credits			120
Full-time First Year				
	Research Methodology ♦	Year	GMR4410	12
	Game Ranch Management IV ♦	Year	GRM4410	36
	Game Science IV ♦	Year	GRS4410	36

		Presented	Module Code	Credit Value
	Game Ranch Economics IV ♦	Year	GER4410	18
	Game Ranch Strategic Management IV ♦	Year	GSM4410	18
	Total Credits			120

♦ Major modules (please refer to the General Prospectus).

**9.6 BACHELOR OF TECHNOLOGY (GAME RANCH MANAGEMENT):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION CODE: 4457 - 02)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

ADMISSION REQUIREMENTS

Applicants must be in possession of the three-year National Diploma: Game Ranch Management or equivalent qualification. Although not a requirement, it is regarded as desirable that an applicant has completed at least two years' applicable practical service after having graduated. Candidates with less than two years' service will be considered if their average mark for the final year of diploma studies is at least 60%.

BRIEF DESCRIPTION

The B Tech: Game Ranch Management qualification consists of five modules. All these modules are compulsory.

APPLICATION, SELECTION AND REGISTRATION

Candidates must apply before the first closing date for applications of the preceding year. Facilities at George Campus are limited and this necessitates a selection process.

SEMINARS AND PROJECTS

As a general guideline, three major projects/seminars have to be submitted per module and will contribute towards a qualifying module mark. Tests written during the year supplement such a module mark.

A qualifying mark of 40% must be obtained per module to qualify for entry to examinations. Students need to arrange for access to information from a commercial game ranch in order to do the projects/ seminars for the module Game Ranch Economics IV.

TUTORIAL MATERIALS

George Campus will endeavour to arrange that prescribed books are available for each of the modules concerned. Candidates are, however, expected to obtain for themselves the literature listed as prescribed in each module. Supplementary reference material should be obtained through library services.

BOOKS AND TUTORIAL MATERIAL

The cost hereof will probably amount to between R500 and R700 per module.

GENERAL NOTE

The Instructional Design is subject to change without prior notice. Students concerned will, however, be notified about any changes or impending changes as soon as possible.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over one year of full-time study only (all instructional offerings are compulsory).

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Game Ranch Economics IV	Year	GER4510	18
	Game Ranch Management IV	Year	GRM4510	36
	Game Ranch Strategic Management IV	Year	GSM4510	18
	Game Science IV	Year	GRS4510	36
	Research Methodology	Year	GMR4510	12
	Total Credits			120

**9.7 BACHELOR OF TECHNOLOGY (NATURE CONSERVATION):
GEORGE CAMPUS: FULL-TIME
(QUALIFICATION: 4220 - 02)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

ADMISSION REQUIREMENTS

Applicants must be in possession of the three-year National Diploma: Nature Conservation or equivalent qualification. Although not a requirement, it is regarded as desirable that an applicant has completed at least two years' applicable practical service after having graduated. Candidates with less than two years' service will be considered if their average mark for the final year of diploma studies is at least 60%.

BRIEF DESCRIPTION

The B Tech: Nature Conservation qualification consists of six modules. Of these modules, four are compulsory (marked with an asterisk).

APPLICATION, SELECTION AND REGISTRATION

Candidates must apply before the first closing date for applications of the preceding year. Facilities at George Campus are limited and this necessitates a selection process.

SEMINARS AND PROJECTS

As a general guideline, three major projects/seminars have to be submitted per module and will contribute towards a qualifying module mark. Tests written during the year supplement such a module mark. A qualifying mark of 40% must be obtained per module to qualify for entry to examinations.

TUTORIAL MATERIALS

George Campus will endeavour to arrange that prescribed books are available for each of the subjects concerned. Candidates are, however, expected to obtain for themselves the literature listed as prescribed in each module. Supplementary reference material should be obtained through library services.

BOOKS AND TUTORIAL MATERIAL

The cost hereof will probably amount to between R500 and R700 per module.

GENERAL NOTE

The Instructional Design is subject to change without prior notice. Students concerned will, however, be notified of any changes or impending changes as soon as possible.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over one year of full-time study. Students register for six modules per year.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Conservation Management I	Year	NCM1110	12
	Research Methodology I	Year	NRE1110	12
	Resource Management IV	Year	NRS4110	36
	Plant Studies IV	Year	NPS4110	36
	Sub-total			96
Select two of the following modules:				
	Financial Management I	Year	NFB1110	12
	Environmental Education I	Year	NEE1110	12
	Fresh Water Management IV	Year	NFW4110	12
	Coastal and Marine Management	Year	NMC1110	12
	Principles of Management	Year	NMP1110	12
	Total Credits			120

**9.8 BACHELOR OF TECHNOLOGY (WOOD TECHNOLOGY):
GEORGE CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 4243 - 02/20)
(NQF LEVEL: 7, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

ADMISSION REQUIREMENTS

Applicants must be in possession of the three-year National Diploma: Wood Technology or equivalent qualification. Although not a requirement, it is regarded as desirable that an applicant has completed at least two years' applicable practical service after having graduated. Candidates with less than two years' service will be considered if their average mark for the final year of diploma studies is at least 60%.

BRIEF DESCRIPTION

The B Tech: Wood Technology qualification is offered on a part-time (block release) basis over two years.

APPLICATION, SELECTION AND REGISTRATION

Candidates must apply before the first closing date for applications of the preceding year.

MODULE WORK

In addition to compulsory attendance of all block courses, candidates will be required to submit projects and seminars in partial fulfilment of module marks as well as write tests. A minimum module mark of 40% is required for entrance to examinations.

Note:

The module design described above may be changed by Nelson Mandela University without prior notice. Nelson Mandela University reserves the right not to offer the module in any particular year if it considers the number of candidates insufficient to make the module financially viable.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time and Part-time				
Select one of the following modules:				
	Panel Board Production IV * (F-t students only)	Year	FPB4110	30
	Timber Processing IV *	Year	FTP4210	30
	Timber Seasoning IV *	Year	FTS4110	30
Select three of the following modules:				
	Applied Biometry IV	Year	FAB4110	30
	Business Management III	Year	FBM3110	30
	Environmental Management III	Year	FEM3110	30
	Human Resource Management IV	Year	BMI4210	30

		Presented	Module Code	Credit Value
	Production Engineering: Industrial III	Year	FPI3110	30
	Timber Structures IV	Year	FHS4110	30
	Total Credits			120

NOTE: Students must have at least one Timber-related module marked with *. A total of **four** modules are needed to obtain the B Tech: Wood Technology qualification. At least two modules must be on fourth-year level.

10 BACHELOR OF COMMERCE HONOURS

10.1 BACHELOR OF COMMERCE HONOURS (COMPUTER SCIENCE AND INFORMATION SYSTEMS): FULL-TIME (QUALIFICATION CODE: 21509 – A1) (NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

60% weighted average for at least all the following Computer Science and/or Information Systems modules offered at third-year level. The total credits for qualifying third-year modules must be at least 60.

- WRPV301 and WRPV302 (or equivalent); and
- WRRV301 (or equivalent); and
- WRDV301 (or equivalent); and
- WUIV302 (or equivalent); and
- Approved third-year Computer Science and/or Information Systems modules with a total credit of at least 16.

GENERAL

The Department must approve all applications for renewal of registration annually. The Department must approve the enrolment of a candidate for all the modules.

The Honours course consists of at least eight semester lecture modules with a total credit value of at least 88 and a treatise on an independent project. Each module will consist of a single topic taken over either one or two semesters. A two-semester module contributes 22 credits, a one-semester module 11 credits and the treatise on the project 32 credits. A total of at least 120 credits is required for the learning programme. The final mark for the Honours course is an aggregate of the marks for the module and the treatise, weighted according to their respective credit values.

RE-ADMISSION REQUIREMENTS

To be re-admitted to the Honours programme, the candidate in the previous year:

- must not have failed Honours modules with a total credit value of more than 33 credits;
- must not have failed the treatise, WHPV400; and
- must have passed Honours modules with a total credit value of at least 44 credits.

In order to register for the treatise, WHPV400, the candidate must have passed Honours modules with a total credit value of at least 66 credits.

DURATION

The qualification shall extend over at least one year of full-time study and a maximum of three years of part-time study.

CURRICULUM

		Presented*	Module Code	Credit Value
Full-time/Part-time				
Compulsory modules:				
	Information Systems Project Management	Semester 1	WHVV401	11
	Treatise on the Project	Year	WHPV400	32
	Data Warehousing	Semester 2*	WDWV401	11
	E-Commerce	Semester 1*	WREV402	11
	Usability Engineering	Semester 1*	WEUV401	11
Select at least 44 credits from the following modules (not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):				
	Design in the Digital Domain	Semester 1*	WDDV401	11
	Algorithmics	Semester 1	WHAV401	11
	Computer Graphics	Not offered	WHGV401	11
	Advanced Programming	Semester 2*	WHQV401	11
	Compiler Construction	Semester 1*	WHWV401	11
	Research Frontiers in Computing	Semester 1*	WHYV401	11
	Business Intelligence (subject to pre-requisite credit of WREV312)	Semester 1*	WBIV402	11
	Evolutionary Computing and Intelligent Systems	Semester 2*	WRCV402	11
	Automata Theory	Semester 2	WHUV402	11
	<i>Capita Selecta</i>	Semester 2*	WHZV401	11
	Virtual Reality Environment Development	Semester 1*	WVRV402	11
	Mobile Computing	Not offered	WMCV401	11
	Environmental Information Systems	Semester 2*	WEIM411	11
	Another Honours module which must be approved by the HoD of Computing Sciences, subject to the condition that it should complement the other modules in the programme. Approval is dependent upon submission of request on appropriate form available in the Department.			22
	Total Credits	Minimum		120

* The semester in which modules are offered can differ annually. The Department must be consulted prior to registration to confirm in which semester any particular module will be offered.

**10.2 BACHELOR OF COMMERCE HONOURS (INFORMATION SYSTEMS AND ACCOUNTING): FULL-TIME
(QUALIFICATION CODE: 21529 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 121)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless otherwise approved by the Head of Department, and subject to General Rule G3.6, the prerequisites for entry into the Honours modules are as follows:

- A pass mark in Accounting 3A (RV301) or General Accounting 3A (RGV301) and a pass mark in Accounting 3B (RV302) or a mark of at least 55% for General Accounting 3B (RGV302).
- A weighted average of at least 60% for Database Systems (WRDV301), Project (WRRV301), Management Information Systems 3.1 (WRBV301), Management Information Systems 3.2 (WRBV302), User Interface Design (WUIV302), ERP Systems 3.1 (WREV301) and Enterprise Systems Development (WREV312).

provided that all these marks have been achieved in the two years preceding the year of registration for the Honours programme.

RE-ADMISSION REQUIREMENTS

To be re-admitted to the Honours programme, the candidate in the previous year:

- must not have failed Honours modules with a total credit value of more than 33 credits;
- must not have failed the treatise, WPCV400; and
- must have passed Honours modules with a total credit value of at least 44 credits.

In order to register for the treatise, WPCV400, the candidate must have passed Honours modules with a total credit value of at least 66 credits.

DURATION

The qualification shall extend over at least one year of full-time study and a maximum of three years of part-time study.

CURRICULUM

		Presented*	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Corporate Reporting	Year	RCR400	30
	Information Systems Research Project in Accounting Information Systems	Year	WPCV400	36
	Electronic Commerce	Semester 1*	WREV402	11
	Business Intelligence	Semester 1*	WBIV402	11
	Information Systems Project Management	Semester 1	WHVV401	11
Elective modules - select at least 22 credits from the following modules (not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):				
	Business Process Re-engineering	Semester 2*	WHBV402	11
	Software Engineering	Semester 2*	WHSV402	11
	<i>Capita Selecta</i>	Semester 1*	WHZV401	11

		Presented*	Module Code	Credit Value
	Data Warehousing	Semester 2*	WDWV401	11
	Usability Engineering	Semester 2*	WEUV401	11
	Design in the Digital Domain	Semester 1*	WDDV401	11
	Environmental Information Systems	Semester 2*	WEIM411	11
	Total Credits			121

* The semester in which modules are offered can differ annually. The Department must be consulted prior to registration to confirm in which semester any particular module will be offered.

**10.3 BACHELOR OF COMMERCE HONOURS (INFORMATION SYSTEMS AND AUDITING): FULL-TIME
(QUALIFICATION CODE: 21532 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless otherwise approved by the Head of Department, and subject to General Rule G3.6, the prerequisites for entry into the Honours modules are as follows:

- A pass mark in Auditing 3A (ROV301) or General Auditing 3A (RGOV301) and a pass mark in Auditing 3B (ROV302) or a mark of at least 55% for General Auditing 3B (RGOV302).
- A weighted average of at least 60% for Database Systems (WRDV301), Project (WRRV301), Management Information Systems 3.1 (WRBV301), Management Information Systems 3.2 (WRBV302), User Interface Design (WUIV302), ERP Systems 3.1 (WREV301) and Enterprise Systems Development (WREV312).

provided that all these marks have been achieved in the two years preceding the year of registration for the Honours programme.

RE-ADMISSION REQUIREMENTS

To be re-admitted to the Honours programme, the candidate in the previous year:

- must not have failed Honours modules with a total credit value of more than 33 credits;
- must not have failed the treatise, WPAV400; and
- must have passed Honours modules with a total credit value of at least 44 credits.

In order to register for the treatise, WPAV400, the candidate must have passed Honours modules with a total credit value of at least 66 credits.

DURATION

The qualification shall extend over at least one year of full-time study and a maximum of three years of part-time study.

CURRICULUM

		Presented*	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Risk-based Auditing	Semester 1	RRO401	15
	Information Systems Auditing	Semester 2	RIS402	15
	Information Systems Research Project in Computing Auditing	Year	WPAV400	36
	Electronic Commerce	Semester 1*	WREV402	11
	Business Intelligence	Semester 1*	WBIV402	11
	Information Systems Project Management	Semester 1	WHVV401	11
Select two of the following modules (not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):				
	Business Process Re-engineering	Semester 1*	WHBV402	11
	Software Engineering	Semester 2*	WHSV402	11
	<i>Capita Selecta</i>	Semester 2*	WHZV401	11
	Data Warehousing	Semester 2*	WDWV401	11
	Usability Engineering	Semester 2*	WEUV401	11
	Design in the Digital Domain	Semester 1*	WDDV401	11
	Environmental Information Systems	Semester 2*	WEIM411	11
	Total Credits			120

* The semester in which modules are offered can differ annually. The Department must be consulted prior to registration to confirm in which semester any particular module will be offered.

A person holding a BCom Honours in Information Systems with Auditing will be allowed to do the following two international qualifications:

1. Certified Internal Auditor (CIA).
2. Certified Information Systems Analyst (CISA).

**10.4 BACHELOR OF COMMERCE HONOURS (INFORMATION SYSTEMS AND BUSINESS MANAGEMENT): FULL-TIME
(QUALIFICATION CODE: 21528 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 121)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless otherwise approved by the Head of Department, and subject to General Rule G3.6, the prerequisites for entry into the Honours modules are as follows:

- An average mark of at least 60% for the third-year Business Management modules.
- A weighted average of at least 60% for Database Systems (WRDV301), Project (WRRV301), Management Information Systems 3.1 (WRBV301), Management Information Systems 3.2 (WRBV302), User Interface Design (WUIV302), ERP Systems 3.1 (WREV301) and Enterprise Systems Development (WREV312).

provided that all these marks have been achieved in the two years preceding the year of registration for the Honours programme.

RE-ADMISSION REQUIREMENTS

To be re-admitted to the Honours programme, the candidate in the previous year:

- must not have failed Honours modules with a total credit value of more than 33 credits;
- must not have failed the treatise, WPBV400; and
- must have passed Honours modules with a total credit value of at least 44 credits.

In order to register for the treatise, WPBV400, the candidate must have passed Honours modules with a total credit value of at least 66 credits.

DURATION

The qualification shall extend over at least one year of full-time study and a maximum of three years of part-time study.

CURRICULUM

		Presented*	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Business Research	Year	EBMR420	10
	Information Systems Research Project in Business Management Information Systems	Year	WPBV400	36
	Electronic Commerce	Semester 1*	WREV402	11
	Business Intelligence	Semester 1*	WBIV402	11
	Information Systems Project Management	Semester 1	WHVV401	11
Elective modules - select one of the following modules:				
	Advanced Strategic Management	Semester 1	EBMH411	20
	Advanced Financial Management	Semester 2	EBMJ402	20
	Investment Management	Semester 2	EBMG402	20
	Advanced Strategic and International Marketing Management	Semester 2	EBMI402	20

		Presented*	Module Code	Credit Value
	Entrepreneurship and Small Business Management	Year	EBMN410	20
Elective modules - select two of the following modules (not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):				
	Business Process Re-engineering	Semester 2*	WHBV402	11
	Software Engineering	Semester 2*	WHSV402	11
	<i>Capita Selecta</i>	Semester 2*	WHZV401	11
	Data Warehousing	Semester 2*	WDWV401	11
	Usability Engineering	Semester 2*	WEUV401	11
	Design in the Digital Domain	Semester 1*	WDDV401	11
	Environmental Information Systems	Semester 2*	WEIM411	11
	Total Credits			121

* The semester in which modules are offered can differ annually. The Department must be consulted prior to registration to confirm in which semester any particular module will be offered.

**10.5 BACHELOR OF COMMERCE HONOURS IN MATHEMATICAL STATISTICS:
FULL-TIME
(QUALIFICATION CODE: 20508 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Mathematical Statistics is a Bachelor's degree with either Mathematical Statistics or Statistics as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department of Statistics, and on such conditions as may be determined by the Department and approved by FMC. The same rules will apply to candidates joining the programme after obtaining Bachelor's degrees at other universities. For these students, however, the Department of Statistics reserves the right to refuse students with inadequate Mathematical and End User Computing skills.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

The curriculum normally consists of five modules chosen from the list below. Candidates may replace some of these modules with other appropriate modules with the permission of the Department.

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Honours Project	Year	STAT400	30
	Multi-variate Statistical Methods	Semester 1	STAT401	24
Select three of the following modules:				
	Time Series Analysis	Year	STAT410	24
	Quantitative Data Analysis with Statistics	Year	STAT420	24
	Categorical Data Analysis	Year	STAT430	24
	Sampling Theory	Year	STAT440	24
	Selective Topics in Actuarial Statistics	Year	STAT450	24
	Non-parametric Statistics	Year	STAT460	24
	Econometrics	Year	STAT470	24
	Capita Selecta A	Year	STAT480	24
	Capita Selecta B	Year	STAT490	24
	Regression Analysis	Year	STAS410	24
	Analysis of Variance	Year	STAS420	24
	Probability Theory	Year	STAS430	24
	Mathematical Programming	Year	STAS440	24
	Total Credits			120

11 BACHELOR OF SCIENCE HONOURS**11.1 BACHELOR OF SCIENCE HONOURS (APPLIED MATHEMATICS):
FULL-TIME
(QUALIFICATION CODE: 21523 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Applied Mathematics is a Bachelor's degree with Applied Mathematics as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department. Candidates must in addition have completed the prerequisites for the modules which they select.

General

The Department must approve all applications for renewal of registration annually. The Department must approve the enrolment of a candidate for all the modules.

The Honours programme consists of at least four coursework modules and a Project. Successful completion of the Project is required for the degree. The Project must be completed and submitted for assessment the first week of the November examination period. Project submissions thereafter may mean the results are released with the January re-assessment marks.

The Honours programme consists of 126 credits, which are obtained from the approved modules selected from the list below. The three (3) core modules for Applied Mathematics are: MAPM411, MAPM421 and MAPM420.

Note that two elective modules offered in any year will depend on both the availability of staff and student demand. A candidate may, with the approval of the Department, obtain a maximum of 24 credits from other appropriate modules offered in other Departments, provided that no substitutions may be made in respect of the core modules.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Finite Element Methods	Year	MAPM411	24
	Project	Year	MAPM420	30
	Biomathematics	Year	MAPM421	24

		Presented	Module Code	Credit Value
Select two of the following modules:				
	Numerical Linear Algebra	Year	MAPM412	24
	Graph Theory	Year	MAPM413	24
	Continuum Mechanics	Year	MAPM414	24
	Mathematical Control Theory	Year	MAPM415	24
	Capita Selecta	Year	MAPM417	24
	Mathematical Control Theory	Year	MAPM415	24
	Total Credits			126

**11.2 BACHELOR OF SCIENCE HONOURS IN BIOCHEMISTRY: FULL TIME
(QUALIFICATION CODE: 21531 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Biochemistry is a Bachelor's degree with Biochemistry as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department.

General evaluation

The pass mark for all modules is 50%. A general oral examination is conducted at the end of the Honours programme.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Cell Biology	Year	BCV410	12
	Protein Chemistry	Year	BCV440	12
	Standard Practicals	Semester 1	BCV401	20
	Research Project	Year	BCV460	40
	Mini-Project	Year	BCV470	12
	Sub-total			96
Select two of the following modules:				
	Analytical and Physical Biochemistry	Year	BCV430	12
	Biotechnology	Year	BCV480	12
	Medical Biochemistry	Year	BCV490	12

		Presented	Module Code	Credit Value
	Molecular Biology	Year	BCV420	12
	Total Credits			120

**11.3 BACHELOR OF SCIENCE HONOURS IN BOTANY: FULL TIME
(QUALIFICATION CODE: 21522 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Botany is a Bachelor's degree with Botany as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department.

Students may select from the following specialisation fields:

- Conservation Biology.
- Marine Botany.
- Ecology.
- Environmental Management.
- Plant Physiology.
- Systematic Botany.

Selected topics that may be chosen with any of the specialisation fields are:

- Landscape Ecology and GIS.
- Environmental Management Procedures.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
	Compulsory modules:			
	Botanical Techniques	Year	BOTV410	30
	Selected topic 1	Semester 1	BOTV401	15
	Selected topic 2	Semester 2	BOTV402	15
	Selected topic 3	Semester 2	BOTV412	15
	Project 1	Year	BOTV450	20
	Project 2	Year	BOTV460	20
	Oral examination	Year	BOTV470	5
	Total Credits			120

**11.4 BACHELOR OF SCIENCE HONOURS IN CHEMISTRY: FULL TIME
(QUALIFICATION CODE: 21525 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- BSc degree majoring in Chemistry.
- At least 60% for CH300 or equivalent. Students with a mark lower than 60% could be considered provided other criteria such as completion of the degree within the minimum prescribed period are met.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Analytical Methods	Year	CHA420	22
	General Theory A	Year	CHG420	22
	General Theory B	Year	CHG430	22
	Sub-total			66
Select one of the following groups:				
A	Inorganic Theory			
	Inorganic Theory	Year	CHI420	22
	Analytical/Inorganic Practical/Project	Year	CHI430	32
B	Organic Theory			
	Organic Theory	Year	CHO420	22
	Organic Practical/Project	Year	CHO430	32
C	Physical / Polymer Theory			
	Physical / Polymer Theory	Year	CHP420	22
	Physical / Polymer Practical/Project	Year	CHP430	32
	Total Credits			120

**11.5 BACHELOR OF SCIENCE HONOURS IN COMPUTER SCIENCE AND INFORMATION SYSTEMS: FULL-TIME
(QUALIFICATION CODE: 21524 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

60% weighted average for at least all the following Computer Science and Information Systems modules offered at third-year level. The total credits for qualifying third-year modules must be at least 60.

- WRPV301 and WRPV302 (or equivalent); and
- WRRV301 (or equivalent); and
- WRDV301 (or equivalent); and
- WUIV302 (or equivalent); and
- Approved third-year Computer Science modules with a total credit of at least 16.

A BSc degree majoring in Computer Science is usually required for acceptance into any fourth-year-level module.

GENERAL

The Department must approve all applications for renewal of registration annually. The Department must approve the enrolment of a candidate for all the modules.

The Honours course consists of at least eight semester lecture modules with a total credit value of at least 88 and a treatise on an independent project. Each module will consist of a single topic taken over either one or two semesters. A two-semester module contributes 22 credits, a one-semester module 11 credits and the treatise on the project 32 credits. A total of at least 120 credits is required for the learning programme. The final mark for the Honours course is an aggregate of the marks for the module and the treatise, weighted according to their respective credit values.

RE-ADMISSION REQUIREMENTS

To be re-admitted to the Honours programme, the candidate in the previous year:

- must not have failed Honours modules with a total credit value of more than 33 credits;
- must not have failed the treatise, WHPV400; and
- must have passed Honours modules with a total credit value of at least 44 credits.

In order to register for the treatise, WHPV400, the candidate must have passed Honours modules with a total credit value of at least 66 credits.

DURATION

The qualification shall extend over at least one year of full-time study and a maximum of three years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Information Systems Project Management	Semester 1	WHVV401	11
	Treatise on the project	Year	WHPV400	32

		Presented	Module Code	Credit Value
Select elective modules comprising 77 credits, with at least 44 credits chosen from Set A, and at most 33 credits chosen from Set B.				
Set A (select at least 44 credits) (not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):				
Computer Graphics	Semester 1*	WHGV401	11	
Compiler Construction	Semester 1*	WHWV401	11	
Usability Engineering	Semester 1*	WEUV401	11	
Evolutionary Computing and Intelligent Systems	Semester 2	WRCV402	11	
Virtual Reality Environment Development	Semester 2*	WVRV402	11	
Advanced Programming	Semester 1*	WHQV401	11	
Set B (select at most 33 credits) (not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):				
Design in the Digital Domain	Semester 1*	WDDV401	11	
Data Warehousing	Semester 1*	WDWV401	11	
Electronic Commerce	Semester 2*	WREV402	11	
Research Frontiers in Computing	Semester 1*	WHYV401	11	
<i>Capita Selecta</i>	Semester 1*	WHZV401	11	
Mobile Computing	Semester 1*	WMCV401	11	
Environmental Information Systems	Semester 2*	WEIM411	11	
Theory of Computation	Semester 2*	WRHC422	11	
Another Honours module which must be approved by the HoD of Computing Science, subject to the condition that it should complement the other modules in the programme. Approval is dependent upon submission of request on appropriate form available in the Department.				22
Total Credits		Minimum		120

* The semester in which modules are offered can differ annually. The Department must be consulted prior to registration to confirm in which semester any particular module will be offered.

**11.6 BACHELOR OF SCIENCE HONOURS IN ENVIRONMENTAL GEOGRAPHY:
FULL TIME
(QUALIFICATION CODE: 21559 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Environmental Geography is a Bachelor's degree Geography as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Landscape Functions Degradation and Sustainability	Term 3	GEN412	25
	Analytical Prospect on Human Environment Interaction	Term 1	GEN421	25
	Research Project	Year	GEN450	30
	Qualitative Research Methodologies	Term 2	GEN451	15
	Issues in Sustainability	Term 4	GEN452	25
	Total Credits			120

**11.7 BACHELOR OF SCIENCE HONOURS IN FORMULATION SCIENCE:
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 21540 – 01/21)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

A 360-credit post-school qualification at NQF level 7 from an accredited HEI with majors in an allied science (biology, chemistry, physics, biochemistry, or pharmacy), or chemical engineering, provided the 360-credit qualification includes a two-semester sequence of Organic Chemistry consisting of at least 20 credits. A full study record must be submitted along with:

- details of related work experience where applicable; and
- a typed motivation of maximum 2 A4 pages (1.5 line spacing, font size 10) that focuses on an applicant's ability to innovate and which will be evaluated by a standing panel.

DURATION

The qualification shall extend over at least one year of full-time study and two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
	Compulsory modules:			
	Product Analysis and Testing	Year	CHFV410	12
	Consumer Product Regulatory Frameworks	Year	CHFV420	12
	Formulatory Statistical Methodologies	Year	CHFV430	12
	Technology of Formulations	Year	CHFV440	24
	Formulation Science	Year	CHFV450	15
	Formulation Project	Year	CHFV460	36
	Innovation and Entrepreneurship	Year	CHFV470	9
	Total Credits			120
		Presented	Module Code	Credit Value
Part-time				
First Year				
	Formulatory Statistical Methodologies	Year	CHFV430	12
	Technology of Formulations	Year	CHFV440	24
	Formulation Science	Year	CHFV450	15
	Credits First Year			51
		Presented	Module Code	Credit Value
Second Year				
	Product Analysis and Testing	Year	CHFV410	12
	Consumer Product Regulatory Frameworks	Year	CHFV420	12
	Formulation Project	Year	CHFV460	36
	Innovation and Entrepreneurship	Year	CHFV470	9
	Credits Second Year			69
	Total Credits			120

11.8 BACHELOR OF SCIENCE HONOURS IN GEOGRAPHICAL INFORMATION SYSTEMS: FULL TIME
(QUALIFICATION CODE: 21557 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 126)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Geographical Information Systems is a Bachelor's degree with Geography as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Cartography	Term 1	GISV421	24
	Remote Sensing	Term 3	GISV422	24
	Geographical Information Systems	Term 2	GISV431	24
	Research Project	Term 4	GISV412	30
Select one of the following:				
	Environmental Impact Studies OR Any other module in The School of Environmental Sciences with credit value not less than 24	Term 4	GENV400	24
	Total Credits			126

11.9 BACHELOR OF SCIENCE HONOURS IN GEOLOGY: FULL TIME
(QUALIFICATION CODE: 21555 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Geology is a Bachelor's degree with Geology as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department.

Examinations

The examination consists of 4 written papers of equal weight (GGL411, GGL412, GGL431 and GGL421). The examination mark together with the class mark will be used to calculate the final mark for each of the above modules.

Treatise

The mark for the treatise (GGL420) is equal to the final mark for one of the modules for which written exams are held.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
	Compulsory modules:			
	Fieldwork	Year	GGL410	10
	Sedimentary Geology	Semester 1	GGL411	20
	Applied Geology	Semester 2	GGL412	20
	Treatise	Year	GGL420	30
	Igneous Petrology	Semester 1	GGL421	20
	Structural Geology	Semester 1	GGL431	20
	Total Credits			120

**11.10 BACHELOR OF SCIENCE HONOURS IN MATHEMATICAL STATISTICS:
FULL-TIME
(QUALIFICATION CODE: 21537 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Only candidates who satisfy Senate that they have attained an acceptable level of competence in their studies for the Bachelor's degree, shall be admitted to studies for the Honours degree. In particular a student shall, in addition to special provisions in departmental requirements as stated in the General List of Modules, have received an average mark of at least 60% at third-year level for the subject he/she intends to study at Honours level. Notwithstanding this requirement, FMC may grant a concession in exceptional circumstances, on the recommendation of the Head of the relevant department.

DURATION

The qualification shall extend over at least one year of full-time.

CURRICULUM

The curriculum normally consists of five modules chosen from the list below. Candidates may replace some of these modules with other appropriate modules with the permission of the Department.

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Honours Project	Year	STAT400	30
	Multi-variate Statistical Methods	Semester 1	STAT401	24
Select three of the following modules:				
	Time Series Analysis	Year	STAT410	24
	Quantitative Data Analysis with Statistics	Year	STAT420	24
	Categorical Data Analysis	Year	STAT430	24
	Sampling Theory	Year	STAT440	24
	Selective Topics in Actuarial Statistics	Year	STAT450	24
	Non-parametric Statistics	Year	STAT460	24
	Econometrics	Year	STAT470	24
	Capita Selecta A	Year	STAT480	24
	Capita Selecta B	Year	STAT490	24
	Regression Analysis	Year	STAS410	24
	Analysis of Variance	Year	STAS420	24
	Probability Theory	Year	STAS430	24
	Mathematical Programming	Year	STAS440	24
	Total Credits			120

**11.11 BACHELOR OF SCIENCE HONOURS IN MATHEMATICS: FULL-TIME
(QUALIFICATION CODE: 21527 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance requirement for the Honours degree in Mathematics is a Bachelor's degree with a weighted average of at least 60% in Mathematics as the major subject.

GENERAL

The Department must approve all applications for renewal of registration annually. The Department must approve the enrolment of a candidate for all the modules. All candidates must make themselves available for the honours programme meeting the first day of official lectures as per the Nelson Mandela University almanac. The Honours programme consists of four coursework modules and a Project. Successful completion of the Project is required for the degree. The Project must be completed and submitted for assessment the first week of the November examination period. Submissions of the report thereafter may mean the results are released with the January re-assessment marks.

DURATION

The qualification shall extend over one year of full-time and two years of part-time study.

CURRICULUM

The curriculum normally consists of five modules chosen from the list below. Candidates may replace one of these modules with other appropriate modules with the permission of the Head of the Department.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Project	Year	MATH430	30
	Functional Analysis	Year	MATH440	24
	Topology	Year	MATH450	24
	Abstract Algebra	Year	MATH460	24
Select one of the following modules:				
	Modern Applied Algebra	Year	MATH420	24
	Capita Selecta	Year	MATH470	24
	Measure and Integration Theory	Year	MATH480	24
	Total Credits			126

**11.12 BACHELOR OF SCIENCE HONOURS IN MICROBIOLOGY: FULL TIME
(QUALIFICATION CODE: 21530 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Microbiology is a Bachelor's degree with Microbiology as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme if they scored a combined average of 60% between Microbiology and Biochemistry as major subject or with the special permission of the Department, and on such conditions as may be determined by the Department.

GENERAL EVALUATION

The pass mark for all modules is 50%. A general oral examination is conducted at the end of the Honours programme.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Techniques Course	Year	BMV410	18
	General Microbiology	Year	BMV420	12
	Molecular Biology	Year	BMV430	12
	Industrial Microbiology	Year	BMV440	12
	Seminars	Year	BMV450	6
	Project	Year	BMV460	60
	Total Credits			120

**11.13 BACHELOR OF SCIENCE HONOURS IN PHYSICS: FULL TIME
(QUALIFICATION CODE: 21558 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The admission requirement for the Honours degree in Physics is a Bachelor's degree with a weighted average of at least 60% in Physics as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department.

APPLICABLE RULES

The Honours programme consists of 120 credits, which are obtained from approved modules selected from the list below:

Three compulsory theoretical modules:

F411: Quantum Mechanics

F412: Statistical Mechanics and Thermodynamics

F421: Electrodynamics

One theoretical module on or relating to Solid State Physics, as determined by the department:

F422: Solid State Physics

F432: Semiconductor Physics

F442: Electron Diffraction and Image-Contrast Theory

F420: Module on topics in physics prescribed by the Department or taken in conjunction with other Departments.

- A practical module F410 based on experimental techniques and the utilisation of advanced research equipment. This could include a mini-project which would be written up as a treatise for external examination.
- Seminars, which form an integral part of the BSc Honours curriculum. Students are expected to submit their seminars in written format after presentation.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Quantum Mechanics	Semester 1	F411	22
	Statistical Mechanics and Thermodynamics	Semester 2	F412	22
	Electrodynamics	Semester 1	F421	22
	Practical	Year	F410	32
	Sub-total			98
Select one of the following modules:				

		Presented	Module Code	Credit Value
	Solid State Physics	Year	F422	22
	Semiconductor Physics	Year	F432	22
	Electron diffraction, image contrast theory	Year	F442	22
	Courses as prescribed by the Department	Year	F420	22
	Total Credits			120

**11.14 BACHELOR OF SCIENCE HONOURS IN PHYSIOLOGY: FULL TIME
(QUALIFICATION CODE: 21550 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Physiology is a Bachelor's degree with Physiology as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department. **Any equivalent NQF 7 qualification or RPL as approved by the departmental selection committee.**

General evaluation

The pass mark for all modules is 50%. An oral examination of the research project (BSPV400) will be conducted at the end of the Honours programme.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
	Compulsory modules:			
	Research Project	Year	BSPV400	40
	Core Laboratory Techniques	Semester 1	BSPV401	20
	Advanced Integrative Physiology	Year	BSPV410	40
	Special Skills in Physiology	Semester 1	BSPV411	20
	Total Credits			120

**11.15 BACHELOR OF SCIENCE HONOURS IN ZOOLOGY: FULL TIME
(QUALIFICATION CODE: 21560 – A1)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

The entrance qualification for the Honours degree in Zoology is a Bachelor's degree with Zoology as a major subject. Candidates who have not obtained an average of at least 60% in this major subject will only be admitted to the Honours programme with the special permission of the Department, and on such conditions as may be determined by the Department. Candidates must in addition have completed the prerequisites for the modules which they select.

APPLICABLE RULES

Continuous assessment (CA) mark

Varies from module to module. Detailed information will be supplied at the start of each module.

Exam mark

The right to write exams for a module is not automatic, but must be earned by achieving a "Duly Performed" (DP) status. If you do not qualify for DP status, you are not allowed to write the exams.

DP status requirements

Attendance of all lectures, field trips, excursions and other activities as indicated by the Zoology Department, satisfactory performance in all assignments and a continuous assessment (CA) mark of at least 40%.

Computation of final mark

The CA mark generally contributes 60% and the Exam mark 40% to the final mark *but this may vary from module to module and year to year.*

Requirements to pass

Each module has the same requirements, i.e. a final mark of 50% for the module. Candidates must accumulate 120 Honours level credits from the list of approved modules, and must pass ZOOV410 and ZOOV420.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
Compulsory modules:				
	Data Skills	Year	ZOOV410	21
	Research Competencies	Year	ZOOV420	35
	Sub-total			56
Select four of the following modules:				
	Sustaining Exploited Marine Resources	Semester 1	ZOOV401	16

		Presented	Module Code	Credit Value
Full-time				
	Coastal Zone Integrated Environmental Management	Semester 1	ZOOV411	16
	Marine Predators	Semester 2	ZOOV402	16
	Conservation Biology and Planning	Semester 2	ZOOV412	16
	Ecology of African Animals	Year	ZOOV431	16
	Applied Ecophysiology	Semester 1	ZOOV441	16
	Global Change and Biodiversity	Semester 1	ZOOV461	16
	Fish Conservation	Year	ZOOV472	16
	Total Credits			120

12 MASTER OF TECHNOLOGY

**12.1 MASTER OF TECHNOLOGY (AGRICULTURE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 5452 – 01/21)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

Further studies in Agricultural Management are possible as the M Tech and D Tech degrees in Agricultural Management are available as study options. These are research-based qualifications.

ADMISSION REQUIREMENTS

A suitable degree at B Tech level. A minimum of 60% weighted average must have been obtained in the B Tech qualification with a 65% mark in the major to be used as specialisation for the M Tech research project. Recognition of prior learning will be considered.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over a minimum of one year of full-time study or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	ADT5000	120

**12.2 MASTER OF TECHNOLOGY (AGRICULTURE) (RESEARCH): GEORGE
CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 5060 - 02/20)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

QUALIFICATION OBJECTIVE

To provide an opportunity for the student to undertake a research project in the broad field of Agriculture. Candidates work independently under the guidance of a supervisor with a view to writing a research dissertation that is acceptable for the level of study. The dissertation must comply with the normal technical requirements and rules with regard to scope, quality and layout. Students are expected to submit, from their dissertation, one article for publication in a peer-reviewed journal.

ADMISSION REQUIREMENTS

Bachelor of Technology: Agricultural Management or equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over a minimum of one year of full-time study or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	SMT5110	120

**12.3 MASTER OF TECHNOLOGY (CHEMISTRY: PRODUCT AND PROCESS DEVELOPMENT) (COURSE WORK AND RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 6166 - 01/21)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Technology: Chemistry, BSc Hons or B Eng (Chem) or equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time and Part-time				
Compulsory modules:				
	Research Project	Year	MRP5110	60
	Technopreneurship	Year	MTP5120	10
	Sub-total			70
Select five of the following modules:				
	Chemical Engineering for Chemists*	Year	MCE5120	10
	Environmental Management*	Year	MEA5120	10
	Financial Management*	Year	MFA5110	10
	Marketing for Chemists	Year	MFC5110	10
	IP Management	Year	MIA5110	10
	Project Management*	Year	MPA5110	10
	Statistical Experimental Design and Optimisation (Process Development)	Year	MPC5120	10
	Statistical Experimental Design and Optimisation (Product Development)	Year	MPD5120	10
	Quality, and Health and Safety Management*	Year	MQM5120	10
	Laboratory Process Research and Development	Year	MRD5120	10
	Regulatory Matters	Year	MRM5120	10
	Technological Economics	Year	MTE5120	10
	Total Credits			120

*Not offered in 2019.

**12.4 MASTER OF TECHNOLOGY (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 6165 – 01/21)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

A research project in the form of a dissertation is submitted to a panel of experts for evaluation. In addition to the research project, a compulsory qualification in Research Methodology must be completed.

ADMISSION REQUIREMENTS

Bachelor of Technology: Chemistry or equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

APPLICABLE RULES

Candidates may be required to complete coursework to the satisfaction of the supervisor in preparation of the research for the dissertation.

DURATION

The qualification shall extend over a minimum of one year of full-time study or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	CMT5000	120

**12.5 MASTER OF TECHNOLOGY (FORESTRY) (RESEARCH):
GEORGE CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 5901 - 02/20)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Technology: Forestry or equivalent qualification which includes the subject Research Methodology.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

QUALIFICATION OBJECTIVES

In their dissertations, students must demonstrate that they understand a particular problem and are able to make a proposal for the improvement/elimination of the problem. The dissertation must comply with the normal technical requirements and rules with regard to scope, quality and layout.

OTHER REQUIREMENTS

Students are expected to submit one article for publication resulting from the dissertation.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over a minimum of one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	FOR5110	120

12.6 MASTER OF TECHNOLOGY (GAME RANCH MANAGEMENT) (RESEARCH): FULL-TIME/PART-TIME (QUALIFICATION CODE: 5456 – 01/21) (NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120) (NO NEW INTAKE)

Further studies in Game Ranch Management are possible as the M Tech qualification in Game Ranch Management is available as a study option. This is a research-based qualification.

ADMISSION REQUIREMENTS

Bachelor of Technology: Game Ranch Management or equivalent qualification. A minimum of 60% must have been obtained in previous qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	GRP5510	120

**12.7 MASTER OF TECHNOLOGY (NATURE CONSERVATION) (RESEARCH):
GEORGE CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 5220 - 02/20)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Technology: Nature Conservation or equivalent qualification, which includes the module Research Methodology.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

QUALIFICATION OBJECTIVE

To provide an opportunity for the student to undertake a research project in the broad field of Nature Conservation. Candidates work independently under the guidance of a supervisor with a view to writing a research dissertation that is acceptable for the Master's level of study. The dissertation must comply with the normal technical requirements and rules with regard to scope, quality and layout.

DURATION

The qualification shall extend over a minimum of one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	NAT5110	120

13 MASTER OF COMMERCE

**13.1 MASTER OF COMMERCE (COMPUTER SCIENCE AND INFORMATION SYSTEMS) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 41012 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be admitted to the studies for the Master's degree in Computer Science and Information Systems only if they hold one of the following degrees: BCom Honours: Computer Science & Information Systems, BCom Information Systems Honours, or equivalent; and have obtained a weighted average mark of at least 60% for all Honours modules in Computer Science and/or Information Systems and at least 65% for the Honours treatise (project), as well as complying with such other selection criteria as laid down by the Department.

NOTE: All candidates shall be subject to selection.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- See also *General Rules for Master's Degrees* in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

RE-ADMISSION

Unless Senate decides otherwise, candidates shall only be re-admitted to the studies for the degree if they have satisfactorily completed at least 2 chapters of the dissertation in the previous academic year. The Department must approve all applications for renewal of registration annually.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	WRMD501	120

**13.2 MASTER OF COMMERCE (COMPUTER SCIENCE AND INFORMATION SYSTEMS) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25012 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be admitted to the studies for the Master's degree in Computer Science and Information Systems only if they hold one of the following degrees: BCom Honours: Computer Science & Information Systems, BCom Information Systems Honours, or equivalent; and have obtained a weighted average mark of at least 60% for all Honours modules in Computer Science and/or Information Systems and at least 65% for the Honours treatise (project), as well as complying with such other selection criteria as laid down by the Department.

NOTE: All candidates shall be subject to selection.

APPLICABLE RULES

- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- See also *General Rules for Master's Degrees* in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

RE-ADMISSION

Unless Senate decides otherwise, candidates shall be re-admitted to the studies for the degree if they have completed at least two additional chapters of the dissertation to the satisfaction of their supervisor(s) in the previous academic year. The Department must approve all applications for renewal of registration annually.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	WRMD500	180

**13.3 MASTER OF COMMERCE (STATISTICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 41011 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Mathematical Statistics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	WSPE500	120

**13.4 MASTER OF COMMERCE (STATISTICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25011 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Mathematical Statistics.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	STAV500	180

14 MASTER OF SCIENCE

Except as otherwise provided below, the degree of Magister Scientiae shall be awarded in accordance with the General Rules for Masters' degrees.

ALLOCATION OF FINAL MARK FOR RESEARCH PROJECT

The mark for a Master's treatise/dissertation is calculated as follows:

- The mark(s) of the external examiner(s) count at least 50% towards the final mark. If there is more than one external examiner, the average of the marks allocated by them constitutes the external mark. The same applies to the internal examiner(s).
- Where all the examiners pass the candidate, but there is a significant discrepancy between the marks allocated by the external and internal examiners, the Faculty Research, Technology and Innovation Committee has the discretion to attach a greater weight to the mark(s) of the external examiner(s).

AWARDING OF THE DEGREE CUM LAUDE

A Master's candidate obtains the degree *cum laude* if he/she –

- In the case of a course work degree:
 - Passes all the modules at the first attempt;
 - obtains a weighted average mark of at least 75% for all the modules; and
 - obtains a final mark of at least 75% for the treatise.
- In the case of a research degree, obtains a final mark of at least 75%.
- Completes the qualification within the prescribed maximum period of study for the applicable full-time or part-time programme.

14.1 MASTER OF SCIENCE (AGRICULTURE) (RESEARCH): GEORGE CAMPUS: FULL-TIME/PART-TIME (QUALIFICATION CODE: 25060 - 02/20) (NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

QUALIFICATION OBJECTIVE

To provide an opportunity for the student to undertake a research project in the broad field of Agriculture. Candidates work independently under the guidance of a supervisor with a view to writing a research dissertation that is acceptable for the level of study. The dissertation must comply with the normal technical requirements and rules regarding scope, quality and layout. Students are expected to submit, from their dissertation, one article for publication in a peer-reviewed journal.

ADMISSION REQUIREMENTS

Bachelor of Technology: Agricultural Management (a bridging methodology module may be required if application is approved) or equivalent qualification.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over a minimum of one year of full-time study or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	AGR500	180

**14.2 MASTER OF SCIENCE (AGRICULTURE) (RESEARCH): NORTH CAMPUS
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25060 – 01/21)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Further studies in Agricultural Management are possible as the MSc and PhD degrees in Agricultural Management are available as study options. These are research-based qualifications.

ADMISSION REQUIREMENTS

A suitable degree at B Tech level. A minimum of 60% weighted average must have been obtained in the B Tech qualification with a 65% mark in the major to be used as specialisation for the MSc research project. Recognition of prior learning will be considered. Successful applicants with a BTech qualification may be required to successfully complete a methodology module in their first year of Master's degree studies.

DURATION

The qualification shall extend over a minimum of one year of full-time study or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	AGR500	180

**14.3 MASTER OF SCIENCE (APPLIED MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22013 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

Upon recommendation by the Department, changes in the prescribed syllabus may be considered.

ADMISSION REQUIREMENTS

BSc Honours: Applied Mathematics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Dissertation

- The presentation of a dissertation on an approved research project.
- The presentation of at least one seminar on an approved topic.
- Additional courses or advanced lectures on current topics, which may be prescribed by the Department in special circumstances.
- The presentation of one article on the dissertation for publication in a recognised journal.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	MAPM500	120

**14.4 MASTER OF SCIENCE (APPLIED MATHEMATICS) (RESEARCH):
FULL-TIME
(QUALIFICATION CODE: 22053 – A1)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Upon recommendation by the Department, changes in the prescribed syllabus may be considered.

ADMISSION REQUIREMENTS

BSc Honours: Applied Mathematics.

Dissertation

- The presentation of a dissertation on an approved research project.
- The presentation of at least one seminar on an approved topic.
- Additional courses or advanced lectures on current topics, which may be prescribed by the Department in special circumstances.
- The presentation of one article on the dissertation for publication in a recognised journal.

DURATION

The qualification shall extend over at least one year of full-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	MAPV500	180

**14.5 MASTER OF SCIENCE (BIOCHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22011 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

Upon recommendation by the Department, changes in the prescribed syllabus may be considered.

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Biochemistry.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Dissertation

- The presentation of a dissertation on an approved research project.
- The presentation of at least one seminar on an approved topic.
- Additional courses or advanced lectures on current topics, which may be prescribed by the Department in special circumstances.
- The presentation of one article on the dissertation for publication in a recognised journal.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	BC500	120

**14.6 MASTER OF SCIENCE (BIOCHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25021 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Upon recommendation by the Department, changes in the prescribed syllabus may be considered.

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Biochemistry.

Dissertation

- The presentation of a dissertation on an approved research project.
- The presentation of at least one seminar on an approved topic.
- Additional courses or advanced lectures on current topics, which may be prescribed by the Department in special circumstances.
- The presentation of one article on the dissertation for publication in a recognised journal.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	BCV500	180

**14.7 MASTER OF SCIENCE IN BIOLOGICAL OCEANOGRAPHY (RESEARCH):
FULL TIME/PART-TIME
(QUALIFICATION CODE: 25030 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Except as otherwise provided below, the degree of Master of Science shall be awarded in accordance with the General Rules for Masters' degrees.

ADMISSION REQUIREMENTS

Bachelor of Science Honours or equivalent.

ALLOCATION OF FINAL MARK FOR RESEARCH PROJECT

The mark for a Master's treatise/dissertation is calculated as follows:

- The mark(s) of the external examiner(s) count at least 50% towards the final mark. If there is more than one external examiner, the average of the marks allocated by them constitutes the external mark. The same applies to the internal examiner(s).

- Where all the examiners pass the candidate, but there is a significant discrepancy between the marks allocated by the external and internal examiners, the Faculty Research, Technology and Innovation Committee has the discretion to attach a greater weight to the mark(s) of the external examiner(s).

AWARDING OF THE DEGREE *cum laude*

A Master's candidate obtains the degree *cum laude* if he/she –

- in the case of a course work degree:
 - passes all the modules at the first attempt;
 - obtains a weighted average mark of at least 75% for all the modules; and
 - obtains a final mark of at least 75% for the treatise.
- in the case of a research degree, obtains a final mark of at least 75%.
- The Department may prescribe additional courses in Oceanography-related topics or in any other subject deemed to be necessary.
- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	OCEB500	180

14.8 MASTER OF SCIENCE (BOTANY) (RESEARCH): FULL TIME/PART-TIME (QUALIFICATION CODE: 22003 – A1/A2) (NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120) (NO NEW INTAKE)

Except as otherwise provided below, the degree of Master of Science shall be awarded in accordance with the General Rules for Masters' degrees.

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Botany or equivalent.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

ALLOCATION OF FINAL MARK FOR RESEARCH PROJECT

The mark for a Master's treatise/dissertation is calculated as follows:

- The mark(s) of the external examiner(s) count at least 50% towards the final mark. If there is more than one external examiner, the average of the marks allocated by them constitutes the external mark. The same applies to the internal examiner(s).

- Where all the examiners pass the candidate, but there is a significant discrepancy between the marks allocated by the external and internal examiners, the Faculty Research, Technology and Innovation Committee has the discretion to attach a greater weight to the mark(s) of the external examiner(s).

AWARDING OF THE DEGREE *cum laude*

A Master's candidate obtains the degree *cum laude* if he/she –

- in the case of a course work degree:
 - passes all the modules at the first attempt;
 - obtains a weighted average mark of at least 75% for all the modules; and
 - obtains a final mark of at least 75% for the treatise.
- in the case of a research degree, obtains a final mark of at least 75%.
- The Department may prescribe additional courses in Botany or in any other subject.
- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	BOT500	120

14.9 MASTER OF SCIENCE (BOTANY) (RESEARCH): FULL TIME/PART-TIME (QUALIFICATION CODE: 25003 – A1/A2) (NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Except as otherwise provided below, the degree of Master of Science shall be awarded in accordance with the General Rules for Masters' degrees.

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Botany or equivalent.

ALLOCATION OF FINAL MARK FOR RESEARCH PROJECT

The mark for a Master's treatise/dissertation is calculated as follows:

- The mark(s) of the external examiner(s) count at least 50% towards the final mark. If there is more than one external examiner, the average of the marks allocated by them constitutes the external mark. The same applies to the internal examiner(s).
- Where all the examiners pass the candidate, but there is a significant discrepancy between the marks allocated by the external and internal examiners, the Faculty Research, Technology and Innovation Committee has the discretion to attach a greater weight to the mark(s) of the external examiner(s).

AWARDING OF THE DEGREE *cum laude*

A Master's candidate obtains the degree *cum laude* if he/she –

- in the case of a course work degree:
 - passes all the modules at the first attempt;
 - obtains a weighted average mark of at least 75% for all the modules; and
 - obtains a final mark of at least 75% for the treatise.
- in the case of a research degree, obtains a final mark of at least 75%.
- completes the qualification within the prescribed maximum period of study for the applicable full-time or part-time programme.
- The Department may prescribe additional courses in Botany or in any other subject.
- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	BOTV500	180

14.10 MASTER OF SCIENCE IN CHEMICAL AND PHYSICAL OCEANOGRAPHY (RESEARCH): FULL TIME/PART-TIME (QUALIFICATION CODE: 25033 – A1/A2) (NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Except as otherwise provided below, the degree of Master of Science shall be awarded in accordance with the General Rules for Masters' degrees.

ADMISSION REQUIREMENTS

Bachelor of Science Honours or equivalent.

ALLOCATION OF FINAL MARK FOR RESEARCH PROJECT

The mark for a Master's treatise/dissertation is calculated as follows:

- The mark(s) of the external examiner(s) count at least 50% towards the final mark. If there is more than one external examiner, the average of the marks allocated by them constitutes the external mark. The same applies to the internal examiner(s).
- Where all the examiners pass the candidate, but there is a significant discrepancy between the marks allocated by the external and internal examiners, the Faculty Research, Technology and Innovation Committee has the discretion to attach a greater weight to the mark(s) of the external examiner(s).

AWARDING OF THE DEGREE *cum laude*

A Master's candidate obtains the degree *cum laude* if he/she –

- in the case of a course work degree:

- passes all the modules at the first attempt;
- obtains a weighted average mark of at least 75% for all the modules; and
- obtains a final mark of at least 75% for the treatise.
- in the case of a research degree, obtains a final mark of at least 75%.
- completes the qualification within the prescribed maximum period of study for the applicable full-time or part-time programme.
- The Department may prescribe additional courses in Oceanography-related topics or in any other subject deemed to be necessary.
- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	OCEB500	180

**14.11 MASTER OF SCIENCE (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22015 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Chemistry or equivalent.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.
- Candidates may be required to complete coursework to the satisfaction of the supervisor in preparation of the research for the dissertation.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	CHM500	120

**14.12 MASTER OF SCIENCE (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25015 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Chemistry or equivalent.

APPLICABLE RULES

- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.
- Candidates may be required to complete coursework to the satisfaction of the supervisor in preparation of the research for the dissertation.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	CHEM500	180

**14.13 MASTER OF SCIENCE (COMPUTER SCIENCE AND INFORMATION SYSTEMS) (RESEARCH): FULL TIME/PART-TIME
(QUALIFICATION CODE: 22020 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- Unless Senate decides otherwise, candidates shall be admitted to the studies for the Master's degree in Computer Science and Information Systems only if they hold an Honour's degree in Computer Science and Information Systems and have obtained a weighted average mark of at least 60% for all Honours modules in Computer Science and Information Systems and at least 65% for the Honours treatise (project), as well as complying with such other selection criteria as laid down by the Department.
- Unless Senate decides otherwise, candidates shall only be re-admitted to the studies for the degree if they have satisfactorily completed at least two chapters of the dissertation and, if applicable, passed at least one 9-credit Master's module in the previous academic year.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

APPLICABLE RULES

- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	WRMD501	120

**14.14 MASTER OF SCIENCE (COMPUTER SCIENCE AND INFORMATION SYSTEMS) (RESEARCH): FULL TIME/PART-TIME
(QUALIFICATION CODE: 25020 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be admitted to the studies for the Master's degree in Computer Science and Information Systems only if they hold an Honour's degree in Computer Science and Information Systems and have obtained a weighted average mark of at least 60% for all Honours modules in Computer Science and Information Systems and at least 65% for the Honours treatise (project), as well as complying with such other selection criteria as laid down by the Department.

NOTE: All candidates shall be subject to selection.

APPLICABLE RULES

- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- See also general rules for Masters' degrees in the General Prospectus.\

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

RE-ADMISSION

Unless Senate decides otherwise, candidates shall be re-admitted to the studies for the degree if they have completed at least two additional chapters of the dissertation to the satisfaction of their supervisor(s) in the previous academic year. The Department must approve all applications for renewal of registration annually.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	WRMD500	180

**14.15 MASTER OF SCIENCE (FORESTRY) (RESEARCH): GEORGE CAMPUS:
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25062 - 02/20)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Technology: Forestry or equivalent qualification which includes the subject Research Methodology.

QUALIFICATION OBJECTIVES

In their dissertations, students must demonstrate that they understand a particular problem and are able to make a proposal for the improvement/elimination of the problem. The dissertation must comply with the normal technical requirements and rules with regard to scope, quality and layout.

OTHER REQUIREMENTS

Students are expected to submit one article for publication resulting from the dissertation.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over a minimum of one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	FOR500	180

**14.16 MASTER OF SCIENCE (GAME RANCH MANAGEMENT) (RESEARCH):
NORTH CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25064 – 01/21)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Further studies in Game Ranch Management are possible as the MSc qualification in Game Ranch Management is available as a study option. This is a research-based qualification.

ADMISSION REQUIREMENTS

Bachelor of Technology: Game Ranch Management or equivalent qualification. A minimum of 60% must have been obtained in previous qualification (a bridging methodology module may be required in the first year of Master's studies if application is approved).

DURATION

The qualification shall extend over one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	GRP500	180

**14.17 MASTER OF SCIENCE (GEOGRAPHY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22018 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- The General Rules for Masters' degrees are applicable.
- A candidate must also comply with the requirements in the departmental policy document regarding studies towards a Master's degree.
- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- BSc Honours: Geology or equivalent.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	GEN500	120

**14.18 MASTER OF SCIENCE (GEOGRAPHY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25018 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- The General Rules for Masters' degrees are applicable.
- A candidate must also comply with the requirements in the departmental policy document regarding studies towards a Master's degree.
- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- BSc Honours: Geology or equivalent.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	GENV500	180

**14.19 MASTER OF SCIENCE (GEOLOGY) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22005 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

- The General Rules for Masters' degrees are applicable.
- A candidate must also comply with the requirements in the departmental policy document regarding studies towards a Master's degree.
- The research project for the dissertation must be approved by the Faculty Management Committee (Science).
- BSc Honours: Geology or equivalent.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	GGL500	120

**14.20 MASTER OF SCIENCE (GEOLOGY) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25005 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- The General Rules for Masters' degrees are applicable.
- A candidate must also comply with the requirements in the departmental policy document regarding studies towards a Master's degree.
- The research project for the dissertation must be approved by the Faculty Postgraduate Studies Committee (Science).
- BSc Honours: Geology or equivalent.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	GGLV500	180

**14.21 MASTER OF SCIENCE (INDUSTRIAL CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25061 – 01/21)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

A research project in the form of a dissertation is submitted to a panel of experts for evaluation. In addition to the research project, a compulsory qualification in Research Methodology must be completed.

ADMISSION REQUIREMENTS

Bachelor of Technology: Chemistry or equivalent qualification.

APPLICABLE RULES

Candidates may be required to complete coursework to the satisfaction of the supervisor in preparation of the research for the dissertation.

DURATION

The qualification shall extend over a minimum of one year of full-time study or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	CIC500	180

**14.22 MASTER OF SCIENCE (MATHEMATICAL STATISTICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22007 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Mathematical Statistics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	WSPE500	120

**14.23 MASTER OF SCIENCE (MATHEMATICAL STATISTICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25007 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Mathematical Statistics.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	STAS500	180

**14.24 MASTER OF SCIENCE (MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22006 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Students wishing to register for this degree must be in possession of an Honours degree in Mathematics or Applied Mathematics and have demonstrated ability in the chosen area of specialisation. They must, in addition, have completed any prerequisites prescribed for the modules which make up their curriculum, or must otherwise satisfy the Department of their ability to perform the work of the courses.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	MATH511	120

Pure Mathematics

A Dissertation MATH511 (120 credits) on an approved topic.

**14.25 MASTER OF SCIENCE (MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22055 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Students wishing to register for this degree must be in possession of an Honours degree in Mathematics or Applied Mathematics and have demonstrated ability in the chosen area of specialisation. They must, in addition, have completed any prerequisites prescribed for the modules which make up their curriculum, or must otherwise satisfy the Department of their ability to perform the work of the courses.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	MATT500	180

Pure Mathematics

A Dissertation MATT500 (180 credits) on an approved topic.

**14.26 MASTER OF SCIENCE (MICROBIOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22012 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Microbiology.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

Dissertation

- Project proposal seminar with defence to be delivered within the department.
- Dissertation on research.

- Examining will be done according to the rules of the Faculty of Science.
- Preparation of one article in the dissertation for publication in a recognised journal.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	BM500	120

**14.27 MASTER OF SCIENCE (MICROBIOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25022 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Microbiology.

Dissertation

- Project proposal seminar with defence to be delivered within the department.
- Dissertation on research.
- Examining will be done according to the rules of the Faculty of Science.
- Preparation of one article in the dissertation for publication in a recognised journal.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and dissertation	Year	BMV500	180

14.28 MASTER OF SCIENCE (NANOSCIENCE) (COURSE WORK AND RESEARCH): FULL-TIME/DISTANCE (QUALIFICATION CODE: 22050 – A1/16) (NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

- The minimum admission requirement is a Bachelor of Science Honours Degree with a specialisation in one **or more** of the following: Chemistry, Physics or Biotechnology/Medical Biosciences.
- Applications will only be considered from students with at least 65% for the Honours Degree.
- Applications from persons with equivalent qualifications will be considered by a constituted status committee in line with the University and Faculty regulations
- Only 10 new Nelson Mandela University students can be enrolled per year.

RE-ADMISSION RULES

As per the General Rules listed in the Prospectus.

DURATION

The qualification shall extend over at least two years of full-time study. Academic activities for modules could be offered on multiple campuses as required.

CURRICULUM

		Presented	Module Code	Credit Value
Full-time				
	Select one of the following groups A – C:			
A	Nanophysics			
	Central Concepts in Nanoscience	Semester 1	FSS501	4
	Management for Nanoscientists	Semester 1	FSS502	4
	Nanoscience Research Project	2nd Year	FSS503	100
	Foundations of Nanobiomedical Sciences for Non-Biologists	Semester 1	FSS513	4
	Foundations of Nanochemistry for Non-Chemists	Semester 1	FSS523	4
	Advanced Nanophysics	Year	FSS531	48
	Experimental Techniques in Nanophysics	Year	FSS532	16
B	Nanobiomedical			
	Central Concepts in Nanoscience	Semester 1	FSS501	4
	Management for Nanoscientists	Semester 1	FSS502	4
	Nanoscience Research Project	2nd Year	FSS503	100
	Advanced Nanobiomedical Science	Year	FSS511	48
	Experimental Techniques in Nanobiomedical	Year	FSS512	16
	Foundations of Nanochemistry for Non-Chemists	Semester 1	FSS523	4
	Foundations of Nanophysics for Non-Physicists	Semester 1	FSS533	4

		Presented	Module Code	Credit Value
C	Nanochemistry			
	Central Concepts in Nanoscience	Semester 1	FSS501	4
	Management for Nanoscientists	Semester 1	FSS502	4
	Nanoscience Research Project	2nd Year	FSS503	100
	Foundations of Nanobiomedical Sciences for Non-Biologists	Semester 1	FSS513	4
	Advanced Nanochemistry	Year	FSS521	48
	Experimental Techniques in Nanochemistry	Year	FSS522	16
	Foundations of Nanophysics for Non-Physicists	Semester 1	FSS533	4
	Total Credits			180

**14.29 MASTER OF SCIENCE (NATURE CONSERVATION) (RESEARCH):
GEORGE CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25063 - 02/20)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Technology: Nature Conservation or equivalent qualification, which includes the module Research Methodology.

QUALIFICATION OBJECTIVE

To provide an opportunity for the student to undertake a research project in the broad field of Nature Conservation. Candidates work independently under the guidance of a supervisor with a view to writing a research dissertation that is acceptable for the Master's level of study. The dissertation must comply with the normal technical requirements and rules with regard to scope, quality and layout.

DURATION

The qualification shall extend over a minimum of one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	NAT500	180

**14.30 MASTER OF SCIENCE (PHYSICS) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22008 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Physics.

After satisfactory completion of the Honours course, a candidate may complete his/her Master's degree by following a course which consists of the following:

- A dissertation, completed according to the *General Rules for Master's Degrees* as published in the Prospectus of Nelson Mandela University.
- Seminars, which form an integral part of the MSc programme.
- It may be required of the student to register concurrently for one of the following modules for non- degree purposes:
 - F405: Semiconductor physics
 - F406: Electron Diffraction and Image-Contrast Theory
 - F407: Module on topics in physics prescribed by the Department or taken in conjunction with other departments.

Please Note:

A candidate may be required to present him/herself for an oral examination on the contents of his/her dissertation.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	F500	120

**14.31 MASTER OF SCIENCE (PHYSICS) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25008 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Bachelor of Science Honours: Physics.

After satisfactory completion of the Honours course, a candidate may complete his/her Master's degree by following a course which consists of the following:

- A dissertation, completed according to the *General Rules for Master's Degrees* as published in the Prospectus of Nelson Mandela University.
- Seminars, which form an integral part of the MSc programme.
- It may be required of the student to register concurrently for one of the following modules for non- degree purposes:

F405: Semiconductor physics

F406: Electron Diffraction and Image-Contrast Theory

F407: Module on topics in physics prescribed by the Department or taken in conjunction with other departments.

Please Note:

A candidate may be required to present him/herself for an oral examination on the contents of his/her dissertation.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	FV500	180

**14.32 MASTER OF SCIENCE (TEXTILE SCIENCE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22016 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be in possession of the following minimum qualifications in order to qualify for admission:

- Bachelor of Science: Textiles obtained at a local or recognised overseas university; or
- A diploma in Textile Engineering obtained at a recognised overseas Technical High School or University, and recognised by the Department of National Education as being equivalent to a Bachelor of Science Honours degree; or
- A Bachelor of Science Honours degree in Chemistry, Physics, Mathematics or Mathematical Statistics.
- Candidates may be required to pass a qualifying test in one or more fields in Textile Science and/or Technology.
- All candidates should be employed by, or have access to, a well-established textile laboratory having the necessary research facilities.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

FIELDS OF STUDY

One of the following fields may be selected for research:

- Textile Chemistry (protein, cellulose, man-made fibre chemistry, detergency, dyeing, finishing).
- Textile Physics (Physics of fibres, yarns or fabrics).
- Textile Statistics.
- Mechanical Processing (carding, combing, spinning, knitting, weaving, non-wovens, etc).
- Textile Engineering (machine manufacture).
- Biopolymers and Bio-composites.
- Textile Preforms.
- Fire-retardancy of Textiles and Composites.
- Medical Textiles.
- Nano-fibres.
- Computational/Applied Mechanics of Textile Materials.
- The certificate for the degree shall bear an endorsement, signifying the field of study.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	TT500	120

**14.33 MASTER OF SCIENCE IN TEXTILE SCIENCE (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25016 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)
(NO NEW INTAKE)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be in possession of the following minimum qualifications in order to qualify for admission:

- Bachelor of Science: Textiles obtained at a local or recognised overseas university; or
- A diploma in Textile Engineering obtained at a recognised overseas Technical High School or University, and recognised by the Department of National Education as being equivalent to a Bachelor of Science Honours degree; or
- A Bachelor of Science Honours degree in Chemistry, Physics, Mathematics or Mathematical Statistics.
- Candidates may be required to pass a qualifying test in one or more fields in Textile Science and/or Technology.
- All candidates should be employed by, or have access to, a well-established textile laboratory having the necessary research facilities.

FIELDS OF STUDY

One of the following fields may be selected for research:

- Textile Chemistry (protein, cellulose, man-made fibre chemistry, detergency, dyeing, finishing).
- Textile Physics (Physics of fibres, yarns or fabrics).
- Textile Statistics.
- Mechanical Processing (carding, combing, spinning, knitting, weaving, non-wovens, etc).
- Textile Engineering (machine manufacture).
- Biopolymers and Bio-composites.
- Textile Preforms.
- Fire-retardancy of Textiles and Composites.
- Medical Textiles.
- Nano-fibres.
- Computational/Applied Mechanics of Textile Materials.
- The certificate for the degree shall bear an endorsement, signifying the field of study.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	TTV500	180

**14.34 MASTER OF SCIENCE (ZOOLOGY) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22010 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

After satisfactory completion of the Honours degree, a candidate may complete his Master's degree by:

- submitting a dissertation as approved by the Department on a subject chosen to satisfy the requirements and objectives of the Department;
- submitting at least one satisfactory manuscript for publication on the dissertation;
- presenting at least one formal research seminar on the dissertation;
- satisfactory participation in Departmental academic activities.
- A candidate may be required to present himself for an oral examination on the contents of his dissertation.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2019.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	ZOO500	120

**14.35 MASTER OF SCIENCE (ZOOLOGY) (RESEARCH): FULL-TIME/PART-TIME
(QUALIFICATION CODE: 25010 – A1/A2)
(NQF LEVEL: 9, TOTAL NQF CREDITS FOR QUALIFICATION: 180)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

After satisfactory completion of the Honours degree, a candidate may complete his Master's degree by:

- submitting a dissertation as approved by the Department on a subject chosen to satisfy the requirements and objectives of the Department;
- submitting at least one satisfactory manuscript for publication on the dissertation;
- presenting at least one formal research seminar on the dissertation;
- satisfactory participation in Departmental academic activities.
- A candidate may be required to present himself for an oral examination on the contents of his dissertation.

DURATION

The qualification shall extend over at least one year of full-time or two years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and dissertation	Year	ZOOV500	180

15 DOCTOR OF TECHNOLOGY

**15.1 DOCTOR OF TECHNOLOGY (AGRICULTURE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 6451 – 01/21)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

Further studies in Agricultural Management are possible as the D Tech degree in Agriculture is available as a study option. This is a research-based qualification.

ADMISSION REQUIREMENTS

Master of Technology: Agricultural Management or equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2021.

DURATION

Full-time:

Minimum period: 2 years

Maximum period: 4 years

Part-time:

Minimum period: 2 years

Maximum period: 6 years

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	ADT6000	120

**15.2 DOCTOR OF TECHNOLOGY (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 7360 – 01/21)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

This qualification is awarded on completion of a comprehensive original research project in Applied Chemistry.

ADMISSION REQUIREMENTS

Master of Technology: Chemistry or equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2021.

DURATION

Full-time:

Minimum period: 2 years

Maximum period: 4 years

Part-time:

Minimum period: 2 years

Maximum period: 6 years

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	CDT6000	120

**15.3 DOCTOR OF TECHNOLOGY (NATURE CONSERVATION) (RESEARCH):
GEORGE CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 6220 - 02/20)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 120)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master of Technology: Nature Conservation or equivalent qualification.

Final year for admission

The final year for new admission into this programme was 2016.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2021.

QUALIFICATION OBJECTIVE

Students must produce a thesis in which they provide proof of original and creative thinking and problem-solving and make a real contribution in the field to which their research applies. The thesis must comply with the normal technical requirements and rules with regard to scope, quality and layout.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over a minimum of two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	NAT6110	120

16 DOCTOR OF PHILOSOPHY
**16.1 DOCTOR OF PHILOSOPHY (AGRICULTURE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26300 – 01/21)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

Further studies in Agricultural Management are possible as the PhD degree in Agriculture is available as a study option. This is a research-based qualification.

ADMISSION REQUIREMENTS

Master of Science: Agricultural Management, Master of Technology: Agricultural Management or equivalent qualification.

DURATION

Full-time:

Minimum period: 2 years

Maximum period: 4 years

Part-time:

Minimum period: 2 years

Maximum period: 6 years

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	ADT100	360

**16.2 DOCTOR OF PHILOSOPHY (APPLIED MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22513 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**
ADMISSION REQUIREMENTS

Master's degree in Mathematics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	MAPM600	240

**16.3 DOCTOR OF PHILOSOPHY (APPLIED MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26513 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Mathematics.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	MAPV600	360

**16.4 DOCTOR OF PHILOSOPHY (BIOCHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22511 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Biochemistry.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	BC600	240

**16.5 DOCTOR OF PHILOSOPHY (BIOCHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26511 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Biochemistry.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	BCV600	360

**16.6 DOCTOR OF PHILOSOPHY (BOTANY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22503 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Botany.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	BOT600	240

**16.7 DOCTOR OF PHILOSOPHY (BOTANY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26503 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Botany.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	BOTV600	360

**16.8 DOCTOR OF PHILOSOPHY (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22515 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Chemistry.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	CHD600	240

**16.9 DOCTOR OF PHILOSOPHY (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26515 – A1)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

This qualification is awarded on completion of a comprehensive original research project in Applied Chemistry.

ADMISSION REQUIREMENTS

Master's degree in Chemistry.

DURATION

Full-time:

Minimum period: 2 years

Maximum period: 4 years

Part-time:

Minimum period: 2 years

Maximum period: 6 years

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	CHEM600	360

**16.10 DOCTOR OF PHILOSOPHY (CHEMISTRY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26500 – 01/21)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

This qualification is awarded on completion of a comprehensive original research project in Applied Chemistry.

ADMISSION REQUIREMENTS

Master of Technology: Chemistry or equivalent qualification.

DURATION

Full-time:

Minimum period: 2 years

Maximum period: 4 years

Part-time:

Minimum period: 2 years

Maximum period: 6 years

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	CDT600	360

**16.11 DOCTOR OF PHILOSOPHY (COMPUTER SCIENCE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22504 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be admitted to the studies for the Doctor's degree in Computer Science and Information Systems only if they hold a Master's degree in Computer Science and Information Systems, at a level considered satisfactory by the Department, and have obtained a final mark of at least 65 for the Master's degree, as well as complying with such other selection criteria as laid down by the Department.

NOTE: All candidates shall be subject to selection.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

Unless Senate decides otherwise, candidates shall only be re-admitted to the studies for the degree if at least two chapters of the thesis have been satisfactorily completed in the previous academic year.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	WR600	240

**16.12 DOCTOR OF PHILOSOPHY (COMPUTER SCIENCE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26504 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be admitted to the studies for the Doctor's degree in Computer Science and Information Systems only if they hold a Master's degree in Computer Science and Information Systems, and have obtained a weighted average mark of at least 65% for the Master's degree, as well as complying with such other selection criteria as laid down by the Department.

NOTE: All candidates shall be subject to selection.

APPLICABLE RULES

- The research project for the thesis must be approved by the Faculty Management Committee (Science).
- See also *General Rules for Doctor's Degrees* in the General Prospectus.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

RE-ADMISSION

Unless Senate decides otherwise, candidates shall be re-admitted to the studies for the degree if they have completed at least two additional chapters of the thesis to the satisfaction of their supervisor(s) in the previous academic year. The Department must approve all applications for renewal of registration annually.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	WRV600	360

**16.13 DOCTOR OF PHILOSOPHY (ENVIRONMENTAL GEOGRAPHY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22518 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Relevant MSc degree.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	GEN600	240

**16.14 DOCTOR OF PHILOSOPHY (GEOGRAPHY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26608 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Appropriate Master's degree.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	GEOV600	360

**16.15 DOCTOR OF PHILOSOPHY (GEOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22505 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Geology.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	GGL600	240

**16.16 DOCTOR OF PHILOSOPHY (GEOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26505 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Geology.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	GGLV600	360

**16.17 DOCTOR OF PHILOSOPHY (INFORMATION SYSTEMS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22514 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Information Systems.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	WR600	240

**16.18 DOCTOR OF PHILOSOPHY (INFORMATION SYSTEMS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26514 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Information Systems.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	WRV600	360

**16.19 DOCTOR OF PHILOSOPHY (MATHEMATICAL STATISTICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22507 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Mathematical Statistics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	WS600	240

**16.20 DOCTOR OF PHILOSOPHY (MATHEMATICAL STATISTICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26507 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Mathematical Statistics.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	STAS600	360

**16.21 DOCTOR OF PHILOSOPHY (MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22506 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Mathematics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	W600	240

**16.22 DOCTOR OF PHILOSOPHY (MATHEMATICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26506 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Mathematics.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	MATT600	360

**16.23 DOCTOR OF PHILOSOPHY (MICROBIOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22512 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Microbiology.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	BM600	240

**16.24 DOCTOR OF PHILOSOPHY (MICROBIOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26512 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Microbiology.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	BMV600	360

**16.25 DOCTOR OF PHILOSOPHY (NATURE CONSERVATION) (RESEARCH):
GEORGE CAMPUS: FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26520 - 02/20)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master of Technology: Nature Conservation or equivalent qualification.

QUALIFICATION OBJECTIVE

Students must produce a thesis in which they provide proof of original and creative thinking and problem-solving and make a real contribution in the field to which their research applies. The thesis must comply with the normal technical requirements and rules with regard to scope, quality and layout.

SITE OF DELIVERY

This qualification will be offered at the George Campus of the university.

DURATION

The qualification shall extend over a minimum of two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	NAT600	360

**16.26 DOCTOR OF PHILOSOPHY (OCEANOGRAPHY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22517 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Relevant Master's degree.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	OCE600	240

**16.27 DOCTOR OF PHILOSOPHY (OCEANOGRAPHY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26517 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Relevant Master's degree.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	OCEV600	360

**16.28 DOCTOR OF PHILOSOPHY (PHYSICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22508 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Physics.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	F600	240

**16.29 DOCTOR OF PHILOSOPHY (PHYSICS) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26508 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Physics.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	FV600	360

**16.30 DOCTOR OF PHILOSOPHY (TEXTILE SCIENCE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22516 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be in possession of the following minimum qualifications in order to qualify for admission:

- An MSc degree in Chemistry, Physics or Textile Engineering obtained at a local university or a recognised overseas university with at least two years' experience in the textile research field; or
- An MSc (Textiles) degree obtained at a local or recognised overseas university; or
- They must have passed the examinations on the grounds of which they will be awarded a Master's degree by the University or on the grounds of which the required status may later be granted to them by Senate.
- All candidates where necessary shall be required to pass a qualifying test in one or more fields in Textile Science and/or Technology.
- All candidates should be employed by, or have access to, a well-established textile laboratory, having the necessary research facilities.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or four years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	TT600	240

**16.31 DOCTOR OF PHILOSOPHY (TEXTILE SCIENCE) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26516 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)
(NO NEW INTAKE)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Unless Senate decides otherwise, candidates shall be in possession of the following minimum qualifications in order to qualify for admission:

- An MSc degree in Chemistry, Physics or Textile Engineering obtained at a local university or a recognised overseas university with at least two years' experience in the textile research field; or
- An MSc (Textiles) degree obtained at a local or recognised overseas university; or
- They must have passed the examinations on the grounds of which they will be awarded a Master's degree by the University or on the grounds of which the required status may later be granted to them by Senate.
- All candidates where necessary shall be required to pass a qualifying test in one or more fields in Textile Science and/or Technology.
- All candidates should be employed by, or have access to, a well-established textile laboratory, having the necessary research facilities.

DURATION

The qualification shall extend over at least two years of full-time or four years of part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
	Compulsory module:			
	Research project and thesis	Year	TTV600	360

**16.32 DOCTOR OF PHILOSOPHY (ZOOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 22510 – A1/A2)
(NQF LEVEL: 8, TOTAL NQF CREDITS FOR QUALIFICATION: 240)
(NO NEW INTAKE)**

ADMISSION REQUIREMENTS

Master's degree in Zoology.

Final year for admission

The final year for new admission into this programme was 2015.

Completion of qualification

The final year for all students to comply with all requirements for this qualification is 2020.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	ZOO600	240

**16.33 DOCTOR OF PHILOSOPHY (ZOOLOGY) (RESEARCH):
FULL-TIME/PART-TIME
(QUALIFICATION CODE: 26510 – A1/A2)
(NQF LEVEL: 10, TOTAL NQF CREDITS FOR QUALIFICATION: 360)**

This programme has been approved in terms of the new Higher Education Qualification Sub-Framework (HEQSF).

ADMISSION REQUIREMENTS

Master's degree in Zoology.

DURATION

The qualification shall extend over at least two years of full-time or part-time study.

CURRICULUM

		Presented	Module Code	Credit Value
Compulsory module:				
	Research project and thesis	Year	ZOOV600	360

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