

# 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:** Your **student number** must appear on all correspondence.  
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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.

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Vacant

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| <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)<br>Mr W Matthee Dip (Nature Cons) (NMMU), BTech (Nature Cons) (NMMU), MSc (Botany) (NMMU) |

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| <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 |
|-------------|--------------------------------------|

***Centre for Energy Research***

|                 |                                      |
|-----------------|--------------------------------------|
| <i>Director</i> | Prof E E van Dyk PhD (UPE), PrSciNat |
|-----------------|--------------------------------------|

***Centre of Expertise in Forecasting***

|                 |   |
|-----------------|---|
| <i>Director</i> | Prof I N Litvine MSc (Kiev State Shevchenko Univ), PhD (Kiev State Shevchenko Univ) |
|-----------------|---|

***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)<br>Prof E E Campbell BSc (US), BScHons (UPE), MSc (UPE), PhD (UPE)<br>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 BIO-CHEMISTRY) (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](mailto:admissions@mandela.ac.za)

**Web:** [www.mandela.ac.za](http://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%  |

| <b>NSC</b> | <b>NSC %</b> | <b>APS</b> | <b>APS %</b> |
|------------|--------------|------------|--------------|
| 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 |
|-------------------|---------------------------------|-----------|-------------|--------------|
| <b>First Year</b> |                                 |           |             |              |
|                   | <b>Compulsory modules:</b>      |           |             |              |
|                   | 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           |
|                   | <b>Credits First Year</b>       |           |             | <b>120</b>   |

|                    |                                  | Presented | Module Code | Credit Value |
|--------------------|----------------------------------|-----------|-------------|--------------|
| <b>Second Year</b> |                                  |           |             |              |
|                    | <b>Compulsory modules:</b>       |           |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b>       |           |             | <b>120</b>   |

**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 |
|------------------|-----------------------------------|------------|-------------|--------------|
| <b>Full-time</b> |                                   |            |             |              |
|                  | <b>Compulsory modules:</b>        |            |             |              |
|                  | 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            |

|  |                                 | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|---------------------------------|------------------|--------------------|---------------------|
|  | 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                   |
|  | <b>Total Credits</b>            |                  |                    | <b>124</b>          |

## 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 2<sup>nd</sup> 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 2<sup>nd</sup> semester of the 2<sup>nd</sup> year and the 1<sup>st</sup> semester of the 3<sup>rd</sup> 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***

|                    |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-----------------------------|------------------|--------------------|---------------------|
| <b>First Year</b>  |                             |                  |                    |                     |
|                    | <b>Compulsory modules:</b>  |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits First Year</b>   |                  |                    | <b>39</b>           |
|                    |                             |                  |                    |                     |
|                    |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |                             |                  |                    |                     |
|                    | <b>Compulsory modules:</b>  |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Second Year</b>  |                  |                    | <b>80</b>           |

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
| <b>Third Year</b>  |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                    |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Third Year</b>                                     |                  |                    | <b>118</b>          |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                    |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Fourth Year</b>                                    |                  |                    | <b>118</b>          |
|                    | <b>Total Credits</b>  |                  |                    | <b>355</b>          |

♦ 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 2<sup>nd</sup> 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 2<sup>nd</sup> semester of the 2<sup>nd</sup> year and the 1<sup>st</sup> semester of the 3<sup>rd</sup> 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 |
|--------------------|---|------------|-------------|--------------|
| <b>First Year</b>  |   |            |             |              |
|                    | <b>Compulsory modules:</b>                                    |            |             |              |
|                    | Communication in English B                                    | Year       | BK11130     | 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           |
|                    | <b>Credits First Year</b>                                     |            |             | <b>39</b>    |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |   |            |             |              |
|                    | <b>Compulsory modules:</b>                                    |            |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b>                                    |            |             | <b>80</b>    |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |   |            |             |              |
|                    | <b>Compulsory modules:</b>                                    |            |             |              |
|                    | 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           |

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
|                    | Personnel Management Module IA                                | Semester 1       | SMA1001            | 12                  |
|                    | <b>Select one or both of the following modules:</b>           |                  |                    |                     |
|                    | Animal Production IIIA  | Semester 1       | SAP3001            | 12                  |
|                    | Plant Production IIIA   | Semester 1       | SPP3001            | 12                  |
|                    | <b>Credits Third Year</b>                                     |                  |                    | <b>118</b>          |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                    |                  |                    |                     |
|                    | 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                  |
|                    | <b>Select one or both of the following modules:</b>           |                  |                    |                     |
|                    | Animal Production IIIB  | Semester 2       | SAP3002            | 12                  |
|                    | Plant Production IIIB   | Semester 2       | SPP3002            | 12                  |
|                    | <b>Credits Fourth Year</b>                                    |                  |                    | <b>118</b>          |
|                    | <b>Total Credits</b>  |                  |                    | <b>379</b>          |

♦ 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**

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
| <b>First Year</b>  |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                    |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credit First Year</b>                      |                  |                    | <b>68</b>           |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                    |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credit Second Year</b>                     |                  |                    | <b>52</b>           |
|                    | <b>Credit First and Second Year</b>           |                  |                    | <b>120</b>          |
|                    |   |                  |                    |                     |

|                    |  | Presented                | Module Code        | Credit Value |
|--------------------|--|--------------------------|--------------------|--------------|
| <b>Third Year</b>  |  |                          |                    |              |
|                    | <b>Compulsory modules:</b>               |                          |                    |              |
|                    | 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<br>WIS2112 | 10           |
|                    | <b>Credit Third Year</b>                 |                          |                    | <b>125</b>   |
|                    |  |                          |                    |              |
|                    |  | Presented                | Module Code        | Credit Value |
| <b>Fourth Year</b> |  |                          |                    |              |
|                    | <b>Compulsory modules:</b>               |                          |                    |              |
|                    | Chemistry Industry Practical             | Year                     | CIP2110            | 60           |
|                    | Chemical Project                         | Year                     | CJP3110            | 60           |
|                    | <b>Credit Third Year</b>                 |                          |                    | <b>120</b>   |
|                    | <b>Total Programme Credits</b>           |                          |                    | <b>365</b>   |

**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 2<sup>nd</sup> 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**

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
| <b>First Year</b>  |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits First Year</b>                  |                  |                    | <b>34</b>           |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Second Year</b>                 |                  |                    | <b>75</b>           |

|  |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|--|------------------|--------------------|---------------------|
| <b>Third Year</b> (Three months structured practical at George Campus) |  |                  |                    |                     |
|  | <b>Compulsory modules:</b>                 |                  |                    |                     |
|  | Forest Practice I                          | Semester 1       | FPA1121            | 60                  |
|  | Forest Practice II                         | Semester 2       | FPA2312            | 60                  |
|  | Organisational Effectiveness I             | Semester 1       | FWS1211            | 10                  |
|  | <b>Credits Third Year</b>                  |                  |                    | <b>130</b>          |
|  |  |                  |                    |                     |
|  |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b>   |  |                  |                    |                     |
|  | <b>Compulsory modules:</b>                 |                  |                    |                     |
|  | 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                  |
|  | <b>Credits Fourth Year</b>                 |                  |                    | <b>117</b>          |
|  | <b>Total Credits</b>                       |                  |                    | <b>356</b>          |

♦ 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 2<sup>nd</sup> 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 1<sup>st</sup> 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 2<sup>nd</sup> time, can only score a maximum of 50% if they pass a 2<sup>nd</sup> 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**

|                    |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-----------------------------------|------------------|--------------------|---------------------|
| <b>First Year</b>  |                                   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>        |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits First Year</b>         |                  |                    | <b>40</b>           |
|                    |                                   |                  |                    |                     |
|                    |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |                                   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>        |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Second Year</b>        |                  |                    | <b>80</b>           |
|                    |                                   |                  |                    |                     |
|                    |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |                                   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>        |                  |                    |                     |
|                    | Forest Practice I                 | Semester 1       | FPA1131            | 60                  |
|                    | Forest Practice II                | Semester 2       | FPA2222            | 60                  |
|                    | <b>Credits Third Year</b>         |                  |                    | <b>120</b>          |
|                    |                                   |                  |                    |                     |
|                    |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |                                   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>        |                  |                    |                     |
|                    | Cost and Management Accounting II | Semester 2       | FAA2002            | 10                  |
|                    | Forest Engineering III            | Semester 2       | FEP3002            | 12                  |

|  |                              | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|------------------------------|------------------|--------------------|---------------------|
|  | 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                  |
|  | <b>Credits Fourth Year</b>   |                  |                    | <b>120</b>          |
|  | <b>Total Credits</b>         |                  |                    | <b>240</b>          |

♦ 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 2<sup>nd</sup> 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 |
|--------------------|----------------------------|------------|-------------|--------------|
| <b>First Year</b>  |                            |            |             |              |
|                    | <b>Compulsory modules:</b> |            |             |              |
|                    | 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           |
|                    | <b>Credits First Year</b>  |            |             | <b>51</b>    |
|                    |                            | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |                            |            |             |              |
|                    | <b>Compulsory modules:</b> |            |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b> |            |             | <b>72</b>    |

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

♦ 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 2<sup>nd</sup> 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 |
|--------------------|--|------------|-------------|--------------|
| <b>First Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>                 |            |             |              |
|                    | 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           |
|                    | <b>Credits First Year</b>                  |            |             | <b>51</b>    |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>                 |            |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b>                 |            |             | <b>72</b>    |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>                 |            |             |              |
|                    | 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           |
|                    | <b>Select one of the following groups:</b> |            |             |              |
| <b>A</b>           | Game Utilisation I                         | Semester 1 | GUG1001     | 15           |
|                    | Game Utilisation II                        | Semester 2 | GUG2002     | 15           |
|                    | <b>OR</b>                                  |            |             |              |
| <b>B</b>           | Game Lodge Management I                    | Semester 1 | GLG1001     | 15           |
|                    | Game Lodge Management II                   | Semester 2 | GLG2002     | 15           |

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

♦ 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 2<sup>nd</sup> 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 |
|--------------------|-------------------------------|------------|-------------|--------------|
| <b>First Year</b>  |                               |            |             |              |
|                    | <b>Compulsory modules:</b>    |            |             |              |
|                    | 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           |
|                    | <b>Credits First Year</b>     |            |             | <b>48</b>    |
|                    |                               | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |                               |            |             |              |
|                    | <b>Compulsory modules:</b>    |            |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b>    |            |             | <b>78</b>    |

|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-------------------------------------|------------------|--------------------|---------------------|
| <b>Third Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Third Year</b>           |                  |                    | <b>114</b>          |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | Nature Conservation Applications I  | Semester 1       | NAP1111            | 60                  |
|                    | Nature Conservation Applications II | Semester 2       | NAP2112            | 60                  |
|                    | <b>Credits Fourth Year</b>          |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                |                  |                    | <b>360</b>          |

♦ 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 2<sup>nd</sup> 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 |
|--------------------|-----------------------------------|------------|-------------|--------------|
| <b>First Year</b>  |                                   |            |             |              |
|                    | <b>Compulsory modules:</b>        |            |             |              |
|                    | 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           |
|                    | <b>Credits First Year</b>         |            |             | <b>40</b>    |
|                    |                                   |            |             |              |
|                    |                                   | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |                                   |            |             |              |
|                    | <b>Compulsory modules:</b>        |            |             |              |
|                    | 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           |

|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-------------------------------------|------------------|--------------------|---------------------|
|                    | Animal Studies II                   | Semester 2       | NAS2122            | 12                  |
|                    | Environmental Law I*                | Semester 2       | JLA1112            | 10                  |
|                    | Conservation Ecology I              | Semester 1       | NCE1121            | 10                  |
|                    | <b>Credits Second Year</b>          |                  |                    | <b>88</b>           |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Third Year</b>           |                  |                    | <b>124</b>          |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | Nature Conservation Applications I  | Semester 1       | NCP1111            | 60                  |
|                    | Nature Conservation Applications II | Semester 2       | NCP2112            | 60                  |
|                    | <b>Credits Fourth Year</b>          |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                |                  |                    | <b>240</b>          |

**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 2<sup>nd</sup> 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 |
|--|--|------------|-------------|--------------|
| <b>First Year</b>  |  |            |             |              |
|  | <b>Compulsory modules:</b>                 |            |             |              |
|  | 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            |
|  | <b>Credits First Year</b>                  |            |             | <b>35</b>    |
|  |  |            |             |              |
|  |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b>   |  |            |             |              |
|  | <b>Compulsory modules:</b>                 |            |             |              |
|  | 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           |
|  | <b>Credits Second Year</b>                 |            |             | <b>70</b>    |
|  |  |            |             |              |
|  |  | Presented  | Module Code | Credit Value |
| <b>Third Year (Three months structured practical at George Campus)</b> |  |            |             |              |
|  | <b>Compulsory modules:</b>                 |            |             |              |
|  | Organisational Effectiveness               | Semester 1 | FWS1211     | 10           |
|  | Wood Technology Practice                   | Year       | FWT2110     | 60           |
|  | <b>Credits Third Year</b>                  |            |             | <b>70</b>    |

|                    |   | Presented  | Module Code | Credit Value |
|--------------------|---|------------|-------------|--------------|
| <b>Fourth Year</b> |   |            |             |              |
|                    | <b>Compulsory modules:</b>                          |            |             |              |
|                    | 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           |
|                    | <b>Credits Fourth Year</b>                          |            |             | <b>121</b>   |
|                    | <b>Total Credits</b>                                |            |             | <b>296</b>   |

♦ 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 2<sup>nd</sup> 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 1<sup>st</sup> 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 2<sup>nd</sup> time, can only score a maximum of 50% if they pass a 2<sup>nd</sup> 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 |
|-------------------|---------------------------------|------------|-------------|--------------|
| <b>First Year</b> |                                 |            |             |              |
|                   | <b>Compulsory modules:</b>      |            |             |              |
|                   | 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           |
|                   | <b>Credits First Year</b>       |            |             | <b>42</b>    |



|                    |                                       | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---------------------------------------|------------------|--------------------|---------------------|
| <b>Second Year</b> |                                       |                  |                    |                     |
|                    | <b>Compulsory modules:</b>            |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Second Year</b>            |                  |                    | <b>80</b>           |
|                    |                                       |                  |                    |                     |
|                    |                                       | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |                                       |                  |                    |                     |
|                    | <b>Compulsory modules:</b>            |                  |                    |                     |
|                    | Wood Technology Practice I            | Semester 1       | FWT1001            | 60                  |
|                    | Wood Technology Practice I            | Semester 2       | FWT2002            | 60                  |
|                    | <b>Credits Third Year</b>             |                  |                    | <b>120</b>          |
|                    |                                       |                  |                    |                     |
|                    |                                       | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |                                       |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Fourth Year</b>            |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                  |                  |                    | <b>240</b>          |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                      |            |             |              |
|                   | 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            |
|                    | <b>Credits First Year</b>  |            |             | <b>60</b>    |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>   |            |             |              |
|                    | 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            |
|                    | <b>Credits Second Year</b>   |            |             | <b>64</b>    |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|                    | <b>Select three of the following groups corresponding to the modules completed in the first two years:</b> |            |             |              |
| <b>A</b>           | <b>Biochemistry II</b>   |            |             |              |
|                    | Introductory Biochemistry and Genetics   | Semester 1 | BC251       | 20           |
|                    | Metabolism   | Semester 2 | BC252       | 20           |
| <b>B</b>           | <b>Botany II</b>   |            |             |              |
|                    | 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>C</b>           | <b>Chemistry II</b>  |            |             |              |
|                    | Chemistry Analytical   | Semester 1 | CHA201      | 9            |

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

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                        |            |             |              |
|                   | 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            |
|                    | <b>Credits First Year</b>                                |            |             | <b>100</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>                               |            |             |              |
|                    | 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            |
|                    | <b>Credits Second Year</b>                               |            |             | <b>78</b>    |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|                    | <b>Select three of the following groups:</b>             |            |             |              |
| <b>A</b>           | <b>Biochemistry II</b>                                   |            |             |              |
|                    | Introductory Biochemistry and Genetics                   | Semester 1 | BCV201      | 20           |
|                    | Metabolism   | Semester 2 | BCV202      | 20           |
| <b>B</b>           | <b>Botany II</b>   |            |             |              |
|                    | 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>C</b>           | <b>Chemistry II</b>                                      |            |             |              |
|                    | Chemistry Analytical                                     | Semester 1 | CHAV201     | 9            |
|                    | Chemistry Inorganic                                      | Semester 1 | CHIV201     | 7            |
|                    | Chemistry Organic  | Semester 2 | CHOV202     | 12           |
|                    | Chemistry Physical                                       | Year       | CHPV200     | 12           |
| <b>D</b>           | <b>Microbiology II</b>                                   |            |             |              |
|                    | Introductory Microbiology and Control of Micro-organisms | Semester 1 | BMV201      | 20           |



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

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                      |            |             |              |
|                   | 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            |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | 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                   |
|                    | <b>Credits First Year</b>                  |                  |                    | <b>60</b>           |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits Second Year</b>                 |                  |                    | <b>64</b>           |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                    | <b>Botany II</b>                           |                  |                    |                     |
|                    | 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>Chemistry II</b>                        |                  |                    |                     |
|                    | Chemistry Analytical                       | Semester 1       | CHA201             | 9                   |
|                    | Chemistry Inorganic                        | Semester 1       | CHI201             | 7                   |
|                    | Chemistry Physical                         | Year             | CHP203             | 12                  |
|                    | Chemistry Organic                          | Semester 2       | CHO201             | 12                  |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | <b>Zoology II</b>                          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Third Year</b>                  |                  |                    | <b>120</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                    | <b>Botany III ♦</b>                        |                  |                    |                     |
|                    | 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                  |
|                    | <b>Zoology III ♦</b>                       |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Fourth Year</b>                 |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                       |                  |                    | <b>362</b>          |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                        |            |             |              |
|                   | 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            |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | Animal Patterns in Time and Space - Extended | Semester 2       | ZOOX112            | 7                   |
|                    | <b>Credits First Year</b>                    |                  |                    | <b>100</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                   |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits Second Year</b>                   |                  |                    | <b>78</b>           |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                   |                  |                    |                     |
|                    | <b>Botany II</b>                             |                  |                    |                     |
|                    | 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>Chemistry II</b>                          |                  |                    |                     |
|                    | Chemistry Analytical                         | Semester 1       | CHAV201            | 9                   |
|                    | Chemistry Inorganic                          | Semester 1       | CHIV201            | 7                   |
|                    | Chemistry Organic                            | Semester 2       | CHOV202            | 12                  |
|                    | Chemistry Physical                           | Year             | CHPV200            | 12                  |
|                    | <b>Zoology II</b>                            |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Third Year</b>                    |                  |                    | <b>120</b>          |



|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
| <b>Fourth Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                    | <b>Botany III ♦</b>                        |                  |                    |                     |
|                    | 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>Zoology III ♦</b>                       |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Fourth Year</b>                 |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                       |                  |                    | <b>418</b>          |

♦ 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**

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
| <b>First Year</b>  |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                            |                  |                    |                     |
|                    | 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                   |
|                    | <b>Select two of the following groups:</b>            |                  |                    |                     |
| <b>A</b>           | <b>Botany</b>   |                  |                    |                     |
|                    | 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>B</b>           | <b>Geography</b>                                      |                  |                    |                     |
|                    | 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                   |
| <b>C</b>           | <b>Geology</b>  |                  |                    |                     |
|                    | 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                   |
| <b>D</b>           | <b>Zoology</b>  |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits First Year</b>                             |                  |                    | <b>62</b>           |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                            |                  |                    |                     |
|                    | 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 |
|---|---|------------|-------------|--------------|
| <b>Select two of the following groups (Not taken in Year 1)</b> |   |            |             |              |
| <b>A</b>  | <b>Botany</b>   |            |             |              |
|   | 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>B</b>  | <b>Geography</b>                                      |            |             |              |
|   | 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            |
| <b>C</b>  | <b>Geology</b>  |            |             |              |
|   | 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            |
| <b>D</b>  | <b>Zoology</b>  |            |             |              |
|   | 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            |
|   | <b>Credits Second Year</b>                            |            |             | <b>62</b>    |
|   |   | Presented  | Module Code | Credit Value |
| <b>Third Year</b>   |   |            |             |              |
|   | <b>Select three of the following groups:</b>          |            |             |              |
| <b>A</b>  | <b>Botany II</b>                                      |            |             |              |
|   | 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>B</b>  | <b>Geography II</b>                                   |            |             |              |
|   | 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 |
|--------------------|---|------------|-------------|--------------|
| <b>C</b>           | <b>Geology II</b>   |            |             |              |
|                    | Palaeontology   | Semester 1 | GGL201      | 10           |
|                    | Structural Geology  | Semester 1 | GGL202      | 10           |
|                    | Mineralogy  | Semester 2 | GGL203      | 10           |
|                    | Sedimentary Petrology   | Semester 2 | GGL204      | 10           |
| <b>D</b>           | <b>Zoology II</b>   |            |             |              |
|                    | 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           |
|                    | <b>Credits Third Year</b>   |            |             | <b>120</b>   |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Fourth Year</b> |   |            |             |              |
|                    | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
| <b>A</b>           | <b>Botany III ♦</b>   |            |             |              |
|                    | 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>B</b>           | <b>Geography III ♦</b>  |            |             |              |
|                    | 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           |
| <b>C</b>           | <b>Geology III ♦</b>  |            |             |              |
|                    | 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           |
| <b>D</b>           | <b>Zoology III ♦</b>  |            |             |              |
|                    | 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           |
|                    | <b>Credits Fourth Year</b>  |            |             | <b>120</b>   |
|                    | <b>Total Credits</b>  |            |             | <b>362</b>   |

♦ 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 |
|-------------------|--|------------|-------------|--------------|
| <b>First Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>   |            |             |              |
|                   | 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           |
|                   | <b>Select two of the following groups: (Modules on offer as timetable permits)</b> |            |             |              |
| <b>A</b>          | <b>Botany</b>  |            |             |              |
|                   | 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>B</b>          | <b>Geography</b>   |            |             |              |
|                   | 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            |

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
|                    | Introduction to Geo-Information Science and Cartography - Extended                | Semester 2       | GISX102            | 8                   |
| <b>C</b>           | <b>Geology (NOT OFFERED)</b>  |                  |                    |                     |
|                    | 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                   |
| <b>D</b>           | <b>Zoology</b>  |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits First Year</b>   |                  |                    | <b>100/102</b>      |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>  |                  |                    |                     |
|                    | Science Academic Skills II  | Year             | ALMX110            | 5                   |
|                    | English for Science II  | Year             | LEAX110            | 5                   |
|                    | Computing Fundamentals 1.1 - extended   | Semester 1       | WRFX101            | 8                   |
|                    | <b>Select two of the following groups (Modules on offer as timetable permits)</b> |                  |                    |                     |
| <b>A</b>           | <b>Botany (NOT OFFERED)</b>   |                  |                    |                     |
|                    | 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>B</b>           | <b>Geography (NOT OFFERED)</b>  |                  |                    |                     |
|                    | 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                   |
| <b>C</b>           | <b>Geology</b>  |                  |                    |                     |
|                    | 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 |
|--|--|------------|-------------|--------------|
| <b>D</b>   | <b>Zoology</b>                               |            |             |              |
|  | 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            |
| <b>Select either E1 or E2: These groups do not lead to majors and no second year modules are on offer in 2019.</b> |  |            |             |              |
| <b>E1</b>  | <b>Chemistry</b>                             |            |             |              |
|  | General Chemistry - Extended                 | Semester 1 | CHGX101     | 15           |
|  | Inorganic Chemistry - Extended               | Semester 2 | CHIX102     | 9            |
|  | Organic Chemistry - Extended                 | Semester 2 | CHOX102     | 6            |
| <b>E2</b>  | <b>Mathematics</b>                           |            |             |              |
|  | Mathematics Special 101 - Extended           | Semester 1 | MATX101     | 8            |
|  | Mathematics Special 102 - Extended           | Semester 2 | MATX102     | 8            |
|  | <b>Physics</b>                               |            |             |              |
|  | Mechanics and Thermodynamics - Extended      | Semester 1 | FBBX101     | 7            |
|  | Electricity, Optics and Atomics - Extended   | Semester 2 | FBBX102     | 7            |
|  | <b>Credits Second Year</b>                   |            |             | <b>78/80</b> |
|  |  |            |             |              |
|  |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|  | <b>Select three of the following groups:</b> |            |             |              |
| <b>A</b>   | <b>Botany II</b>                             |            |             |              |
|  | 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>B</b>   | <b>Geography II</b>                          |            |             |              |
|  | 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           |
| <b>C</b>   | <b>Geology II</b>                            |            |             |              |
|  | Palaeontology                                | Semester 1 | GGLV201     | 10           |
|  | Structural Geology                           | Semester 1 | GGLV211     | 10           |
|  | Mineralogy                                   | Semester 2 | GGLV202     | 10           |
|  | Sedimentary Petrology                        | Semester 2 | GGLV212     | 10           |
| <b>D</b>   | <b>Zoology II</b>                            |            |             |              |
|  | Comparative Vertebrate Anatomy               | Semester 1 | ZOOV201     | 10           |

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
|                    | Animal Physiology   | Semester 1       | ZOOV211            | 10                  |
|                    | Population Ecology  | Semester 2       | ZOOV202            | 10                  |
|                    | Community Ecology   | Semester 2       | ZOOV212            | 10                  |
|                    | <b>Credits Third Year</b>   |                  |                    | <b>120</b>          |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Fourth Year</b> |   |                  |                    |                     |
|                    | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |                  |                    |                     |
| <b>A</b>           | <b>Botany III ♦</b>   |                  |                    |                     |
|                    | 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>B</b>           | <b>Geography III ♦</b>  |                  |                    |                     |
|                    | 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                  |
| <b>C</b>           | <b>Geology III ♦</b>  |                  |                    |                     |
|                    | 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                  |
| <b>D</b>           | <b>Zoology III ♦</b>  |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Fourth Year</b>  |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>  |                  |                    | <b>418/422</b>      |

♦ 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 |
|-------------------|--|------------|-------------|--------------|
| <b>First Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>                 |            |             |              |
|                   | 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            |
|                   | <b>Select two of the following groups:</b> |            |             |              |
| <b>A</b>          | <b>Botany</b>                              |            |             |              |
|                   | Plant Cell Biology                         | Term 1     | BOT11X      | 7            |
|                   | Plant Evolution and Systematics            | Semester 1 | BOT135      | 5            |
|                   | Plant Structure                            | Semester 2 | BOT125      | 5            |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | Extended Plant Ecology and Environmental Botany                  | Semester 2       | BOT14X             | 5                   |
| <b>B</b>           | <b>Geography</b>   |                  |                    |                     |
|                    | 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                   |
| <b>C</b>           | <b>Geology</b>   |                  |                    |                     |
|                    | 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                   |
| <b>D</b>           | <b>Zoology</b>   |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits First Year</b>  |                  |                    | <b>62</b>           |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                       |                  |                    |                     |
|                    | 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                   |
|                    | <b>Select two of the following groups (Not taken in Year 1):</b> |                  |                    |                     |
| <b>A</b>           | <b>Botany</b>  |                  |                    |                     |
|                    | 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>B</b>           | <b>Geography</b>   |                  |                    |                     |
|                    | 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 |
|-------------------|--|------------|-------------|--------------|
| <b>C</b>          | <b>Geology</b>                             |            |             |              |
|                   | 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            |
| <b>D</b>          | <b>Zoology</b>                             |            |             |              |
|                   | 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            |
|                   | <b>Credits Second Year</b>                 |            |             | <b>62</b>    |
|                   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>                 |            |             |              |
|                   | <b>Geography II</b>                        |            |             |              |
|                   | 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           |
|                   | <b>Geology II</b>                          |            |             |              |
|                   | Palaeontology                              | Semester 1 | GGL201      | 10           |
|                   | Structural Geology                         | Semester 1 | GGL202      | 10           |
|                   | Mineralogy                                 | Semester 2 | GGL203      | 10           |
|                   | Sedimentary Petrology                      | Semester 2 | GGL204      | 10           |
|                   | <b>Sub-total</b>                           |            |             | <b>80</b>    |
|                   | <b>Select one of the following groups:</b> |            |             |              |
| <b>A</b>          | <b>Botany II</b>                           |            |             |              |
|                   | 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>B</b>          | <b>Zoology II</b>                          |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>                  |            |             | <b>120</b>   |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
| <b>Fourth Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>             |            |             |              |
|                    | <b>Geography III ♦</b>                 |            |             |              |
|                    | 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           |
|                    | <b>Geology III ♦</b>                   |            |             |              |
|                    | 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           |
|                    | <b>Credits Fourth Year</b>             |            |             | <b>120</b>   |
|                    | <b>Total Credits</b>                   |            |             | <b>362</b>   |

♦ 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   |
|--------------------|--|------------|-------------|----------------|
| <b>First Year</b>  |  |            |             |                |
|                    | <b>Compulsory modules:</b>   |            |             |                |
|                    | 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             |
|                    | <b>Select two of the following groups:</b>                         |            |             |                |
| <b>A</b>           | <b>Botany (NOT OFFERED)</b>  |            |             |                |
|                    | 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>B</b>           | <b>Geography</b>   |            |             |                |
|                    | 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              |
| <b>C</b>           | <b>Geology</b>   |            |             |                |
|                    | 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              |
| <b>D</b>           | <b>Zoology (NOT OFFERED)</b>                                       |            |             |                |
|                    | 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              |
|                    | <b>Credits First Year</b>  |            |             | <b>110/112</b> |
|                    |  | Presented  | Module Code | Credit Value   |
| <b>Second Year</b> |  |            |             |                |
|                    | <b>Compulsory modules:</b>   |            |             |                |
|                    | Science Academic Skills II   | Year       | ALMX110     | 5              |
|                    | English for Science II   | Year       | LEAX110     | 5              |
|                    | Computing Fundamentals 1.1 - Extended                              | Semester 1 | WRFX101     | 8              |
|                    |  |            |             |                |

|           |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|-----------|---|------------------|--------------------|---------------------|
|           | <b>Select two of the following groups:</b>  |                  |                    |                     |
| <b>A</b>  | <b>Botany</b>   |                  |                    |                     |
|           | 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>B</b>  | <b>Geography (NOT OFFERED)</b>  |                  |                    |                     |
|           | 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                   |
| <b>C</b>  | <b>Geology (NOT OFFERED)</b>  |                  |                    |                     |
|           | 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                   |
| <b>D</b>  | <b>Zoology</b>  |                  |                    |                     |
|           | 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                   |
|           | <b>Select either E1 or E2:<br/>These groups do not lead to majors and no second year modules are on offer</b> |                  |                    |                     |
| <b>E1</b> | <b>Chemistry</b>  |                  |                    |                     |
|           | General Chemistry - Extended  | Semester 1       | CHGX101            | 15                  |
|           | Inorganic Chemistry - Extended  | Semester 2       | CHIX102            | 9                   |
|           | Organic Chemistry - Extended  | Semester 2       | CHOX102            | 6                   |
| <b>E2</b> | <b>Mathematics</b>  |                  |                    |                     |
|           | Mathematics Special 101 - Extended  | Semester 1       | MATX101            | 8                   |
|           | Mathematics Special 102 - Extended  | Semester 2       | MATX102            | 8                   |
|           | <b>Physics</b>  |                  |                    |                     |
|           | Mechanics and Thermodynamics - Extended   | Semester 1       | FBBX101            | 7                   |
|           | Electricity, Optics and Atomics - Extended  | Semester 2       | FBBX102            | 7                   |
|           | <b>Credits Second Year</b>  |                  |                    | <b>78/80</b>        |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
| <b>Third Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>                 |            |             |              |
|                    | <b>Geography II</b>                        |            |             |              |
|                    | 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           |
|                    | <b>Geology II</b>                          |            |             |              |
|                    | Palaeontology                              | Semester 1 | GGLV201     | 10           |
|                    | Structural Geology                         | Semester 1 | GGLV211     | 10           |
|                    | Mineralogy                                 | Semester 2 | GGLV202     | 10           |
|                    | Sedimentary Petrology                      | Semester 2 | GGLV212     | 10           |
|                    | <b>Sub-total</b>                           |            |             | <b>80</b>    |
|                    | <b>Select one of the following groups:</b> |            |             |              |
| <b>A</b>           | <b>Botany II</b>                           |            |             |              |
|                    | 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>B</b>           | <b>Zoology II</b>                          |            |             |              |
|                    | 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           |
|                    | <b>Credits Third Year</b>                  |            |             | <b>120</b>   |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Fourth Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>                 |            |             |              |
|                    | <b>Geography III ♦</b>                     |            |             |              |
|                    | 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           |
|                    | <b>Geology III ♦</b>                       |            |             |              |
|                    | 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 |
|--|----------------------------|-----------|-------------|--------------|
|  | <b>Credits Fourth Year</b> |           |             | <b>120</b>   |
|  | <b>Total Credits</b>       |           |             | <b>362</b>   |

♦ 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 |
|--------------------|--|------------|-------------|--------------|
| <b>First Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>             |            |             |              |
|                    | 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            |
|                    | <b>Credits First Year</b>              |            |             | <b>59</b>    |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>             |            |             |              |
|                    | 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            |
|                    | <b>Credits Second Year</b>             |            |             | <b>67</b>    |
|                    |  |            |             |              |

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

|                    |   | Presented  | Module Code | Credit Value |
|--------------------|---|------------|-------------|--------------|
| <b>Fourth Year</b> |   |            |             |              |
|                    | <b>Compulsory modules:</b>  |            |             |              |
|                    | <b>Computer Science III ♦</b>   |            |             |              |
|                    | 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            |
|                    | <b>Multimedia Systems III ♦</b>   |            |             |              |
|                    | Multimedia Systems 3.1  | Semester 1 | WRMS301     | 10           |
|                    | Multimedia Systems 3.2  | Semester 2 | WRMS302     | 10           |
|                    | <b>Management Information Systems III ♦</b>                             |            |             |              |
|                    | Management Information Systems 3.1                                      | Semester 1 | WRB301      | 8            |
|                    | Management Information Systems 3.2                                      | Semester 2 | WRB302      | 8            |
|                    | <b>Sub-total</b>  |            |             | <b>90</b>    |
|                    | <b>Select 31 credits from groups A to D:</b>                            |            |             |              |
| <b>A</b>           | <b>Computer Science III ♦</b>   |            |             |              |
|                    | 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>B</b>           | <b>Statistics III</b>   |            |             |              |
|                    | 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           |
| <b>C</b>           | <b>Business Management III</b>  |            |             |              |
|                    | Financial Management  | Semester 1 | EBM301      | 24           |
|                    | General and Strategic Management  | Semester 2 | EBM302      | 24           |
| <b>D</b>           | <b>Economics III</b>  |            |             |              |
|                    | Public Economics  | Semester 1 | ECO301      | 10           |
|                    | Economics of Financial Markets  | Semester 1 | ECO302      | 10           |
|                    | Applied Micro-economics   | Semester 1 | ECO303      | 10           |
|                    | Econometrics*<br>*Not available to students who have completed STAT203. | Semester 1 | ECO304      | 10           |
|                    | Development Economics   | Semester 2 | ECO305      | 10           |
|                    | International Economics   | Semester 2 | ECO306      | 10           |
|                    | <b>Credits Fourth Year</b>  |            |             | <b>120</b>   |

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|  |                      | <b>Presented</b> | <b>Module<br/>Code</b> | <b>Credit<br/>Value</b> |
|--|----------------------|------------------|------------------------|-------------------------|
|  | <b>Total Credits</b> |                  |                        | <b>366</b>              |

♦ 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 |
|--------------------|---|------------|----------------|--------------|
| <b>First Year</b>  |   |            |                |              |
|                    | <b>Compulsory modules:</b>                      |            |                |              |
|                    | 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            |
|                    | <b>Credits First Year</b>                       |            |                | <b>115</b>   |
|                    |   |            |                |              |
|                    |   | Presented  | Module Code    | Credit Value |
| <b>Second Year</b> |   |            |                |              |
|                    | <b>Compulsory modules:</b>                      |            |                |              |
|                    | <b>Agricultural Engineering I</b>               |            | <b>AGE1120</b> |              |
|                    | Module A  | Semester 1 | AGE1221        | 12           |
|                    | Module B  | Semester 2 | AGE1232        | 12           |
|                    | Agricultural Management III ♦                   | Year       | AGM3330        | 24           |
|                    | <b>Agricultural Law I</b>                       |            | <b>ALA1120</b> |              |
|                    | Commercial Law - General Principles of Contract | Semester 1 | JHT1111        | 12           |
|                    | Labour Law and Capita Selecta                   | Semester 2 | ALA1222        | 12           |
|                    | <b>Personnel Management I (Agriculture)</b>     |            | <b>AMA1100</b> |              |
|                    | Personnel Management                            | Year       | AMA1120        | 18           |
|                    | Communication                                   | Semester 1 | AMA1130        | 6            |
|                    | <b>Select one of the following modules:</b>     |            |                |              |
|                    | Animal Production III (option) ♦                | Year       | AAP3310        | 24           |
|                    | Plant Production III (option) ♦                 | Year       | APP3310        | 24           |
|                    | <b>Credits Second Year</b>                      |            |                | <b>120</b>   |

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

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

#### **PREREQUISITE TABLE**

| <b>MODULES</b>                                  | <b>PREREQUISITES</b>                         |
|---|--|
| 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 2<sup>nd</sup> 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 2<sup>nd</sup> semester of the 2<sup>nd</sup> year and the 1<sup>st</sup> semester of the 3<sup>rd</sup> 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**

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
| <b>First Year</b>  |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                    |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits First Year</b>                                     |                  |                    | <b>119</b>          |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                    |                  |                    |                     |
|                    | 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                  |
|                    | <b>Select one or both of the following modules:</b>           |                  |                    |                     |
|                    | Animal Production IIIA  | Semester 1       | SAP3001            | 12                  |
|                    | Plant Production IIIA   | Semester 1       | SPP3001            | 12                  |
|                    | <b>Credits Second Year</b>                                    |                  |                    | <b>118</b>          |

|                   |   | Presented  | Module Code | Credit Value |
|-------------------|---|------------|-------------|--------------|
| <b>Third Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                                    |            |             |              |
|                   | 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           |
|                   | <b>Select one or both of the following modules:</b>           |            |             |              |
|                   | Animal Production IIIB  | Semester 2 | SAP3002     | 12           |
|                   | Plant Production IIIB   | Semester 2 | SPP3002     | 12           |
|                   | <b>Credits Third Year</b>                                     |            |             | <b>118</b>   |
|                   | <b>Total Credits</b>  |            |             | <b>379</b>   |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>              |            |             |              |
|                   | 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            |
|                   | <b>Credits First Year</b>               |            |             | <b>115</b>   |

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

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

### **PREREQUISITE TABLE**

| <b>MODULES</b>                                  | <b>PREREQUISITES</b>                         |
|---|--|
| 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 2<sup>nd</sup> semester of the 2<sup>nd</sup> year and the 1<sup>st</sup> semester of the 3<sup>rd</sup> 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 |
|-------------------|-----------------------------|------------|-------------|--------------|
| <b>First Year</b> |                             |            |             |              |
|                   | <b>Compulsory modules:</b>  |            |             |              |
|                   | 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           |
|                   | <b>Credits First Year</b>   |            |             | <b>119</b>   |

|                    |   | Presented  | Module Code | Credit Value |
|--------------------|---|------------|-------------|--------------|
| <b>Second Year</b> |   |            |             |              |
|                    | <b>Compulsory modules:</b>                                    |            |             |              |
|                    | 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           |
|                    | <b>Select one or both of the following modules:</b>           |            |             |              |
|                    | Animal Production IIIA  | Semester 1 | SAP3311     | 12           |
|                    | Plant Production IIIA   | Semester 1 | SPP3311     | 12           |
|                    | <b>Credits Second Year</b>                                    |            |             | <b>118</b>   |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |   |            |             |              |
|                    | <b>Compulsory modules:</b>                                    |            |             |              |
|                    | 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           |
|                    | <b>Select one or both of the following modules:</b>           |            |             |              |
|                    | Animal Production IIIB  | Semester 2 | SAP3322     | 12           |
|                    | Plant Production IIIB   | Semester 2 | SPP3322     | 12           |
|                    | <b>Credits Third Year</b>                                     |            |             | <b>118</b>   |
|                    | <b>Total Credits</b>  |            |             | <b>379</b>   |

♦ 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 |
|-------------------|----------------------------|------------|--------------------|--------------|
| <b>First Year</b> |                            |            |                    |              |
|                   | <b>Compulsory modules:</b> |            |                    |              |
|                   | 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            |

|                    |  | <b>Presented</b>         | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|--------------------------|--------------------|---------------------|
|                    | Computer Skills 1                        | Semester 1 or Semester 2 | CCP1111<br>CCP1112 | 5                   |
|                    | <b>Credit First Year</b>                 |                          |                    | <b>119</b>          |
|                    |  |                          |                    |                     |
|                    |  | <b>Presented</b>         | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                          |                    |                     |
|                    | <b>Compulsory modules:</b>               |                          |                    |                     |
|                    | 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                   |
|                    | <b>Credits Second Year</b>               |                          |                    | <b>125</b>          |
|                    |  |                          |                    |                     |
|                    |  | <b>Presented</b>         | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |  |                          |                    |                     |
|                    | <b>Compulsory modules:</b>               |                          |                    |                     |
|                    | Chemistry Industry Practical ♦           | Year                     | CIP2110            | 60                  |
|                    | Chemical Project ♦                       | Year                     | CJP3110            | 60                  |
|                    | <b>Credits Third Year</b>                |                          |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                     |                          |                    | <b>364</b>          |

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

### **PRE-REQUISITE TABLE**

| <b>MODULE</b>                               | <b>PRE-REQUISITE</b>  |
|---|---|
| Analytical Chemistry 2 (ACC2002)            | Analytical Chemistry 1 (ACC1001)<br>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 |
|-------------------|----------------------------|--------------------------|--------------------|--------------|
| <b>First Year</b> |                            |                          |                    |              |
|                   | <b>Compulsory modules:</b> |                          |                    |              |
|                   | 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<br>ITC1002 | 5            |
|                   | <b>Credit First Year</b>   |                          |                    | <b>122</b>   |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>               |            |             |              |
|                    | 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            |
|                    | <b>Credits Second Year</b>               |            |             | <b>127</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>               |            |             |              |
|                    | Chemistry Industry Practical ♦           | Year       | CIP2000     | 60           |
|                    | Chemical Project ♦                       | Year       | CJP3000     | 60           |
|                    | <b>Credits Third Year</b>                |            |             | <b>120</b>   |
|                    | <b>Total Credits</b>                     |            |             | <b>369</b>   |

♦ 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 |
|--------------------|--|------------|-------------|--------------|
| <b>First Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>                   |            |             |              |
|                    | 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           |
|                    | <b>Credits First Year</b>                    |            |             | <b>120</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>                   |            |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b>                   |            |             | <b>120</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|                    | <b>Compulsory modules:</b>                   |            |             |              |
|                    | Chemical Process Technology Practice ♦       | Semester 2 | GPP3102     | 60           |
|                    | Chemical Process Technology III ♦            | Semester 2 | GPT3102     | 20           |

|  |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-------------------------------------|------------------|--------------------|---------------------|
|  | Process Chemistry III ♦             | Semester 1       | CPI3011            | 20                  |
|  | Chemical Process Technology Lab III | Semester 1       | GPL3101            | 20                  |
|  | <b>Credits Third Year</b>           |                  |                    | <b>120</b>          |
|  | <b>Total Credits</b>                |                  |                    | <b>360</b>          |

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

### **PRE-REQUISITE TABLE**

| <b>MODULE</b>  | <b>PRE-REQUISITE</b>                                   |
|--|--|
| 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 |
|---|--|------------|-------------|--------------|
| <b>First Year</b>   |  |            |             |              |
|   | <b>Compulsory modules:</b>                 |            |             |              |
|   | 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           |
|   | <b>Credits First Year</b>                  |            |             | <b>109</b>   |
|   |  |            |             |              |
|   |  | Presented  | Module Code | Credit Value |
| <b>Second Year (Three months structured practical at George Campus)</b> |  |            |             |              |
|   | <b>Compulsory modules:</b>                 |            |             |              |
|   | Forest Practice I                          | Semester 1 | FPA1121     | 60           |
|   | Forest Practice II                         | Semester 2 | FPA2312     | 60           |
|   | Organisational Effectiveness I             | Semester 1 | FWS1211     | 10           |
|   | <b>Credits Second Year</b>                 |            |             | <b>130</b>   |
|   |  |            |             |              |
|   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>   |  |            |             |              |
|   | <b>Compulsory modules:</b>                 |            |             |              |
|   | 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            |

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

♦ 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 1<sup>st</sup> 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 2<sup>nd</sup> time, can only score a maximum of 50% if they pass a 2<sup>nd</sup> 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 |
|-------------------|----------------------------------|------------|-------------|--------------|
| <b>First Year</b> |                                  |            |             |              |
|                   | <b>Compulsory modules:</b>       |            |             |              |
|                   | 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           |
|                   | <b>Credits First Year</b>        |            |             | <b>120</b>   |

|                    |                                   | Presented  | Module Code | Credit Value |
|--------------------|-----------------------------------|------------|-------------|--------------|
| <b>Second Year</b> |                                   |            |             |              |
|                    | <b>Compulsory modules:</b>        |            |             |              |
|                    | Forest Practice I                 | Semester 1 | FPA1131     | 60           |
|                    | Forest Practice II                | Semester 2 | FPA2222     | 60           |
|                    | <b>Credits Second Year</b>        |            |             | <b>120</b>   |
|                    |                                   |            |             |              |
|                    |                                   | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |                                   |            |             |              |
|                    | <b>Compulsory modules:</b>        |            |             |              |
|                    | 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           |
|                    | <b>Credits Third Year</b>         |            |             | <b>120</b>   |
|                    | <b>Total Credits</b>              |            |             | <b>360</b>   |

♦ 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**

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
| <b>First Year</b>  |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                   |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits First Year</b>                                    |                  |                    | <b>120</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                   |                  |                    |                     |
|                    | Game Ranch Economics II                                      | Semester 1       | GER2311            | 15                  |
|                    | Game Ranch Economics III                                     | Semester 2       | GER3412            | 15                  |
|                    | Game Utilization I<br><u>or</u><br>Game Lodge Management I   | Semester 1       | GGU1311            | 15                  |
|                    |  | Semester 1       | GLM1311            | 15                  |
|                    | Game Utilization II<br><u>or</u><br>Game Lodge Management II | Semester 2       | GGU2412            | 15                  |
|                    |  | Semester 2       | GLM2412            | 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                  |
|                    | <b>Credits Second Year</b>                                   |                  |                    | <b>120</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                   |                  |                    |                     |
|                    | Game Ranch Application I                                     | Year             | GRA1011            | 60                  |
|                    | Game Ranch Application II                                    | Semester 2       | GRA2012            | 60                  |
|                    | <b>Credits Third Year</b>                                    |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>   |                  |                    | <b>360</b>          |

**PRE-REQUISITE TABLE**

| <b>MODULES</b>                      | <b>PRE-REQUISITES</b>               |
|-------------------------------------|-------------------------------------|
| 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 |
|--------------------|-----------------------------|------------|-------------|--------------|
| <b>First Year</b>  |                             |            |             |              |
|                    | <b>Compulsory modules:</b>  |            |             |              |
|                    | 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           |
|                    | <b>Credits First Year</b>   |            |             | <b>123</b>   |
|                    |                             |            |             |              |
|                    |                             | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |                             |            |             |              |
|                    | <b>Compulsory modules:</b>  |            |             |              |
|                    | 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 |
|-------------------|--|------------|-------------|--------------|
|                   | <b>Sub-total</b>                           |            |             | <b>87</b>    |
|                   | <b>Select one of the following groups:</b> |            |             |              |
| <b>A</b>          | Game Utilisation I                         | Semester 1 | GGU1511     | 15           |
|                   | Game Utilisation II                        | Semester 2 | GGU2512     | 15           |
|                   | <b>OR</b>                                  |            |             |              |
| <b>B</b>          | Game Lodge Management I                    | Semester 1 | GLM1511     | 15           |
|                   | Game Lodge Management II                   | Semester 2 | GLM2512     | 15           |
|                   | <b>Credits Second Year</b>                 |            |             | <b>117</b>   |
|                   |  |            |             |              |
|                   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>                 |            |             |              |
|                   | Game Ranch Application I                   | Semester 1 | GRA1511     | 60           |
|                   | Game Ranch Application II                  | Semester 2 | GRA2512     | 60           |
|                   | <b>Credits Third Year</b>                  |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>                       |            |             | <b>360</b>   |

♦ 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**

|                    |  | <b>Presented</b>         | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|--------------------------|--------------------|---------------------|
| <b>First Year</b>  |  |                          |                    |                     |
|                    | <b>Compulsory modules:</b>                                 |                          |                    |                     |
|                    | 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                  |
|                    | <b>Credits First Year</b>                                  |                          |                    | <b>120</b>          |
|                    |  |                          |                    |                     |
|                    |  | <b>Presented</b>         | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                          |                    |                     |
|                    | <b>Compulsory modules:</b>                                 |                          |                    |                     |
|                    | 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<br><b>or</b><br>Game Lodge Management I | Semester 1<br>Semester 1 | GGU1001<br>GLM1001 | 15<br>15            |

|                   |                            | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|-------------------|----------------------------|------------------|--------------------|---------------------|
|                   | Game Utilisation II        | Semester 2       | GGU2002            | 15                  |
|                   | <b>or</b>                  |                  |                    |                     |
|                   | 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                  |
|                   | <b>Credits Second Year</b> |                  |                    | <b>120</b>          |
|                   |                            |                  |                    |                     |
|                   |                            | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b> |                            |                  |                    |                     |
|                   | <b>Compulsory modules:</b> |                  |                    |                     |
|                   | Game Ranch Application I   | Year             | GRA1001            | 60                  |
|                   | Game Ranch Application II  | Semester 2       | GRA2002            | 60                  |
|                   | <b>Credits Third Year</b>  |                  |                    | <b>120</b>          |
|                   | <b>Total Credits</b>       |                  |                    | <b>360</b>          |

**PRE-REQUISITE TABLE**

| <b>MODULES</b>                      | <b>PRE-REQUISITES</b>               |
|-------------------------------------|-------------------------------------|
| 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 |
|-------------------|----------------------------|------------|-------------|--------------|
| <b>First Year</b> |                            |            |             |              |
|                   | <b>Compulsory modules:</b> |            |             |              |
|                   | 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           |



|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | 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                  |
|                    | <b>Credits First Year</b>                                    |                  |                    | <b>120</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                   |                  |                    |                     |
|                    | 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<br><b>or</b><br>Game Lodge Management I   | Semester 1       | GUG1001<br>GLG1001 | 15                  |
|                    | Game Utilisation II<br><b>or</b><br>Game Lodge Management II | Semester 2       | GUG2002<br>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                  |
|                    | <b>Credits Second Year</b>                                   |                  |                    | <b>120</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                                   |                  |                    |                     |
|                    | Game Ranch Application I                                     | Year             | GAR1001            | 60                  |
|                    | Game Ranch Application II                                    | Semester 2       | GAR2002            | 60                  |
|                    | <b>Credits Third Year</b>                                    |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>   |                  |                    | <b>372</b>          |

**PRE-REQUISITE TABLE**

| <b>MODULES</b>                     | <b>PRE-REQUISITES</b>             |
|------------------------------------|-----------------------------------|
| 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**

|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-------------------------------------|------------------|--------------------|---------------------|
| <b>First Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits First Year</b>           |                  |                    | <b>126</b>          |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Second Year</b>          |                  |                    | <b>114</b>          |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | Nature Conservation Applications I  | Semester 1       | NAP1111            | 60                  |
|                    | Nature Conservation Applications II | Semester 2       | NAP2112            | 60                  |
|                    | <b>Credits Third Year</b>           |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                |                  |                    | <b>360</b>          |

♦ 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 |
|-------------------|----------------------------------|------------|-------------|--------------|
| <b>First Year</b> |                                  |            |             |              |
|                   | <b>Compulsory modules:</b>       |            |             |              |
|                   | 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           |

|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-------------------------------------|------------------|--------------------|---------------------|
|                    | Resource Management I               | Semester 1       | NRM1121            | 10                  |
|                    | Plant Studies I                     | Semester 1       | NPS1121            | 12                  |
|                    | <b>Credits First Year</b>           |                  |                    | <b>118</b>          |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Second Year</b>          |                  |                    | <b>124</b>          |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | Nature Conservation Applications I  | Semester 1       | NCP1111            | 60                  |
|                    | Nature Conservation Applications II | Semester 2       | NCP2112            | 60                  |
|                    | <b>Credits Third Year</b>           |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                |                  |                    | <b>362</b>          |

♦ 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 2<sup>nd</sup> year of study, they must consult the relevant module pre-requisites and co-requisites as listed below:

**PRE-REQUISITE TABLE**

| MODULE   | PRE-REQUISITE   |
|--|---|
| <b><i>All 1st year 2nd semester modules</i></b>  | 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)<br>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 |
|---|--|--------------------------|--------------------|--------------|
| <b>First Year – Semester 1</b>  |  |                          |                    |              |
|   | <b>Compulsory modules:</b>                             |                          |                    |              |
|   | Analytical Chemistry I                                 | Semester 1               | ACC1001            | 24           |
|   | Computer Skills I                                      | Semester 1 or Semester 2 | CCP1111<br>CCP1112 | 5            |
|   | General Chemistry I                                    | Semester 1               | GCC1001            | 16           |
|   | Physics I  | Semester 1               | MFS1201            | 7            |
|   | Mathematics I  | Semester 1 or Semester 2 | WIS1111<br>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 |
| <b>First Year – Semester 2</b>  |  |                          |                    |              |
|   | <b>Compulsory modules:</b>                             |                          |                    |              |
|   | <b>Organic Chemistry II (mother module)</b>            |                          | <b>CHO22M2</b>     |              |
|   | 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           |
|   | <b>Polymer Technology II Practical (mother module)</b> |                          | <b>PPP2001</b>     |              |
|   | Polymer Technology II Practical – Rubber               | Semester 2               | PPP2212            | 5            |
|   | Polymer Technology II Practical – Plastics             | Semester 2               | PPP2222            | 5            |
|   | <b>Polymer Technology II (mother module)</b>           |                          | <b>PPT2001</b>     |              |
|   | Polymer Technology II – Rubber                         | Semester 2               | PPT2212            | 5            |
|   | Polymer Technology II – Plastics                       | Semester 2               | PPT2222            | 5            |
|   |  |                          |                    |              |

|                    |   | Presented  | Module Code    | Credit Value |
|--------------------|---|------------|----------------|--------------|
|                    | <b>Polymer Raw Materials II Practical (mother module)</b> |            | <b>WPP2112</b> |              |
|                    | Polymer Raw Materials II Practical – Rubber               | Semester 2 | WPP2122        | 5            |
|                    | Polymer Raw Materials II Practical – Plastics             | Semester 2 | WPP2132        | 5            |
|                    | <b>Polymer Raw Materials II (mother module)</b>           |            | <b>WPT2112</b> |              |
|                    | Polymer Raw Materials II – Rubber                         | Semester 2 | WPT2122        | 5            |
|                    | Polymer Raw Materials II – Plastics                       | Semester 2 | WPT2132        | 5            |
|                    | <b>Credits First Year</b>                                 |            |                | <b>129</b>   |
|                    |   |            |                |              |
|                    |   | Presented  | Module Code    | Credit Value |
| <b>Second Year</b> |   |            |                |              |
|                    | <b>Compulsory modules:</b>                                |            |                |              |
|                    | 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            |
|                    | <b>Polymer Technology III Practical (mother module) ♦</b> |            | <b>PPP3001</b> |              |
|                    | Polymer Technology III Practical – Rubber                 | Semester 1 | PPP3211        | 4            |
|                    | Polymer Technology III Practical – Plastics               | Semester 1 | PPP3221        | 4            |
|                    | <b>Polymer Technology III (mother module) ♦</b>           |            | <b>PPT3001</b> |              |
|                    | 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            |
|                    | <b>Credits Second Year</b>                                |            |                | <b>110</b>   |
|                    |   |            |                |              |
|                    |   | Presented  | Module Code    | Credit Value |
| <b>Third Year</b>  |   |            |                |              |
|                    | <b>Compulsory module:</b>                                 |            |                |              |
|                    | Polymer Production Practice                               | Year       | CPP3110        | 120          |
|                    | <b>Total Credits</b>                                      |            |                | <b>359</b>   |

♦ 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 2<sup>nd</sup> year of study, they must consult the relevant module pre-requisites and co-requisites as listed below:

**PRE-REQUISITE TABLE**

| MODULE   | PRE-REQUISITE   |
|--|---|
| <b>All 1st year 2nd semester modules</b>   | 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 |
|---|--|--------------------------|--------------------|--------------|
| <b>First Year – Semester 1</b>  |  |                          |                    |              |
|   | <b>Compulsory modules:</b>                 |                          |                    |              |
|   | Analytical Chemistry I                     | Semester 1               | CHA1001            | 24           |
|   | Computer Skills I                          | Semester 1 or Semester 2 | ITC1001<br>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 |
| <b>First Year – Semester 2</b>  |  |                          |                    |              |
|   | <b>Compulsory modules:</b>                 |                          |                    |              |
|   | <b>Organic Chemistry II</b>                |                          |                    |              |
|   | 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           |
|   | <b>Polymer Technology II Practical</b>     |                          |                    |              |
|   | Polymer Technology II Practical – Rubber   | Semester 2               | CPP2002            | 5            |
|   | Polymer Technology II Practical – Plastics | Semester 2               | CPP2012            | 5            |
|   | <b>Polymer Technology II</b>               |                          |                    |              |
|   | Polymer Technology II – Rubber             | Semester 2               | CPT2002            | 5            |
|   | Polymer Technology II – Plastics           | Semester 2               | CPT2012            | 5            |
|   |  |                          |                    |              |

|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|---|------------------|--------------------|---------------------|
|                    | <b>Polymer Raw Materials II Practical</b>     |                  |                    |                     |
|                    | Polymer Raw Materials II Practical – Rubber   | Semester 2       | CWP2002            | 5                   |
|                    | Polymer Raw Materials II Practical – Plastics | Semester 2       | CWP2012            | 5                   |
|                    | <b>Polymer Raw Materials II</b>               |                  |                    |                     |
|                    | Polymer Raw Materials II – Rubber             | Semester 2       | CWP2022            | 5                   |
|                    | Polymer Raw Materials II – Plastics           | Semester 2       | CWP2032            | 5                   |
|                    | <b>Credits First Year</b>                     |                  |                    | <b>132</b>          |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |   |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                    |                  |                    |                     |
|                    | 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                   |
|                    | <b>Polymer Technology III Practical ♦</b>     |                  |                    |                     |
|                    | Polymer Technology III Practical – Rubber     | Semester 1       | CPP3001            | 4                   |
|                    | Polymer Technology III Practical – Plastics   | Semester 1       | CPP3011            | 4                   |
|                    | <b>Polymer Technology III ♦</b>               |                  |                    |                     |
|                    | 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                   |
|                    | <b>Credits Second Year</b>                    |                  |                    | <b>110</b>          |
|                    |   |                  |                    |                     |
|                    |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |   |                  |                    |                     |
|                    | <b>Compulsory module:</b>                     |                  |                    |                     |
|                    | Polymer Production Practice                   | Year             | CPP3000            | 120                 |
|                    | <b>Total Credits</b>                          |                  |                    | <b>362</b>          |

♦ 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**

|   |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|---|---|------------------|--------------------|---------------------|
| <b>First Year</b>   |   |                  |                    |                     |
|   | <b>Compulsory modules:</b>                          |                  |                    |                     |
|   | 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                  |
|   | <b>Credits First Year</b>                           |                  |                    | <b>105</b>          |
|   |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> (Three months structured practical at George Campus) |   |                  |                    |                     |
|   | <b>Compulsory modules:</b>                          |                  |                    |                     |
|   | Organisational Effectiveness                        | Semester 1       | FWS1211            | 10                  |
|   | Wood Technology Practice                            | Year             | FWT2110            | 60                  |
|   | <b>Credits Second Year</b>                          |                  |                    | <b>70</b>           |
|   |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>   |   |                  |                    |                     |
|   | <b>Compulsory modules:</b>                          |                  |                    |                     |
|   | 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                  |
|   | <b>Credits Third Year</b>                           |                  |                    | <b>121</b>          |
|   | <b>Total Credits</b>                                |                  |                    | <b>296</b>          |

♦ 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 1<sup>st</sup> 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 2<sup>nd</sup> time, can only score a maximum of 50% if they pass a 2<sup>nd</sup> 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**

|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|-------------------------------------|------------------|--------------------|---------------------|
| <b>First Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits First Year</b>           |                  |                    | <b>122</b>          |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | Wood Technology Practice I          | Semester 1       | FWT1001            | 60                  |
|                    | Wood Technology Practice II         | Semester 2       | FWT2002            | 60                  |
|                    | <b>Credits Second Year</b>          |                  |                    | <b>120</b>          |
|                    |                                     |                  |                    |                     |
|                    |                                     | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b>  |                                     |                  |                    |                     |
|                    | <b>Compulsory modules:</b>          |                  |                    |                     |
|                    | 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                  |
|                    | <b>Credits Third Year</b>           |                  |                    | <b>120</b>          |
|                    | <b>Total Credits</b>                |                  |                    | <b>296</b>          |

♦ 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 |
|------------------|----------------------------------|------------|-------------|--------------|
| <b>Full-time</b> |                                  |            |             |              |
|                  | <b>Compulsory modules:</b>       |            |             |              |
|                  | 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           |



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

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

**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 3<sup>rd</sup> year and at least 240 credits on Nelson Mandela University 2<sup>nd</sup> 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>  |            |             |              |
| <b>A</b>          | <b>Botany 1</b>   |            |             |              |
|                   | 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>B</b>          | <b>Chemistry 1 (Note that if Chemistry 1 is selected, then you must register for Mathematics Special 1 and Physics Special 1)</b> |            |             |              |
|                   | Chemistry General   | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic   | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic   | Semester 2 | CHO101      | 6            |
|                   | <b>Mathematics Special 1</b>  |            |             |              |
|                   | Mathematics Special 101   | Semester 1 | MATA101     | 8            |
|                   | Mathematics Special 102   | Semester 2 | MATA102     | 8            |
|                   | <b>Physics Special 1</b>  |            |             |              |
|                   | Mechanics and Thermodynamics  | Semester 1 | FBB101      | 7            |
|                   | Electricity, Optics and Atomics   | Semester 2 | FBB102      | 7            |
| <b>C</b>          | <b>Geography I</b>  |            |             |              |
|                   | 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            |
| <b>D</b> | <b>Geology I</b>  |            |             |              |
|          | 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            |
| <b>E</b> | <b>Mathematics I</b>  |            |             |              |
|          | Mathematics 1A  | Semester 1 | MATH111     | 16           |
|          | Mathematics 1b  | Semester 2 | MATH112     | 16           |
| <b>F</b> | <b>Applied Mathematics I</b>                                |            |             |              |
|          | 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>G</b> | <b>Computer Science I (if Applied Mathematics selected)</b> |            |             |              |
|          | 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            |
|          | <b>Computer Science I</b>                                   |            |             |              |
|          | 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            |
| <b>H</b> | <b>Physics I</b>  |            |             |              |
|          | Mechanics and Thermodynamics                                | Semester 1 | F101        | 15           |
|          | Electricity, Magnetism and Optics                           | Semester 2 | F102        | 15           |
| <b>I</b> | <b>Statistics I</b>   |            |             |              |
|          | Statistics Probability and Distribution Theory              | Semester 1 | STAT101     | 15           |
|          | Introduction to Statistical Inference                       | Semester 2 | STAT102     | 15           |
| <b>J</b> | <b>Zoology 1</b>  |            |             |              |
|          | 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            |
|          | <b>Credits First Year</b>                                   |            |             | <b>128</b>   |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Select three of the following groups corresponding to the modules selected in the first year:</b>                                     |            |             |              |
| <b>A</b>           | <b>Botany 2</b>  |            |             |              |
|                    | 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>B</b>           | <b>Biochemistry 2</b>  |            |             |              |
|                    | Introductory Biochemistry and Genetics   | Semester 1 | BC251       | 20           |
|                    | Metabolism   | Semester 2 | BC252       | 20           |
| <b>C</b>           | <b>Microbiology 2</b>  |            |             |              |
|                    | Introductory Microbiology and Control of Micro-organisms   | Semester 1 | BM211       | 20           |
|                    | Medical Microbiology   | Semester 2 | BM212       | 20           |
| <b>D</b>           | <b>Chemistry 2</b>   |            |             |              |
|                    | Chemistry Analytical   | Semester 1 | CHA201      | 9            |
|                    | Chemistry Inorganic  | Semester 1 | CHI201      | 7            |
|                    | Chemistry Organic  | Semester 2 | CHO201      | 12           |
|                    | Chemistry Physical   | Year       | CHP203      | 12           |
| <b>E</b>           | <b>Computer Science II</b>   |            |             |              |
|                    | <b>The following modules are compulsory for Computer Science majors:</b>   |            |             |              |
|                    | 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            |
|                    | <b>The following additional modules are available as optional electives, and are of primary interest to Computer Science non-majors:</b> |            |             |              |
| <b>F</b>           | <b>Computer Science II</b>   |            |             |              |
|                    | Web Systems 2.1  | Semester 1 | WRWS201     | 8            |
|                    | Web Systems 2.2  | Semester 2 | WRWS202     | 8            |
| <b>G</b>           | <b>Geography II</b>  |            |             |              |
|                    | 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           |
| <b>H</b>           | <b>Geology II</b>  |            |             |              |
|                    | Palaeontology  | Semester 1 | GGL201      | 10           |

|                   |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|-------------------|---|------------------|--------------------|---------------------|
|                   | Structural Geology  | Semester 1       | GGL202             | 10                  |
|                   | Mineralogy  | Semester 2       | GGL203             | 10                  |
|                   | Sedimentary Petrology   | Semester 2       | GGL204             | 10                  |
| <b>I</b>          | <b>Mathematics II</b>   |                  |                    |                     |
|                   | Multivariable and Vector Calculus   | Semester 1       | MATH211            | 20                  |
|                   | Linear Algebra  | Semester 2       | MATH203            | 10                  |
|                   | Real Analysis   | Semester 2       | MATH214            | 10                  |
| <b>J</b>          | <b>Applied Mathematics II</b>   |                  |                    |                     |
|                   | 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>K</b>          | <b>Statistics II</b>  |                  |                    |                     |
|                   | Theory of Distribution  | Semester 1       | STAT201            | 20                  |
|                   | Regression Analysis and Advanced Regression Topics  | Semester 2       | STAT203            | 20                  |
| <b>L</b>          | <b>Physics II</b>   |                  |                    |                     |
|                   | Optics AC Theory and Thermodynamics   | Semester 1       | F210               | 20                  |
|                   | Mechanics, Modern and Nuclear Physics   | Semester 2       | F212               | 20                  |
| <b>M</b>          | <b>Zoology 2</b>  |                  |                    |                     |
|                   | 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                  |
| <b>N</b>          | <b>Physiology 2</b>   |                  |                    |                     |
|                   | Principles of Human Physiology and Control Systems  | Semester 1       | BSP211             | 20                  |
|                   | Human Systemic Physiology   | Semester 2       | BSP212             | 20                  |
|                   | <b>Credits Second Year</b>  |                  |                    | <b>120/130</b>      |
|                   |   |                  |                    |                     |
|                   |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b> |   |                  |                    |                     |
|                   | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |                  |                    |                     |
| <b>A</b>          | <b>Botany III ♦</b>   |                  |                    |                     |
|                   | 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>B</b> | <b>Biochemistry III ♦</b>  |            |             |              |
|          | Advanced Protein Technology  | Semester 1 | BC321       | 30           |
|          | Integrated Biochemistry  | Semester 2 | BC322       | 30           |
| <b>C</b> | <b>Microbiology III ♦</b>  |            |             |              |
|          | Bacteriology, Microbial Ecology, Virology and Mycology                       | Semester 1 | BM331       | 30           |
|          | Gene Manipulation, Industrial Microbiology and Biotechnology                 | Semester 2 | BM332       | 30           |
| <b>D</b> | <b>Chemistry III ♦</b>   |            |             |              |
|          | Chemistry Inorganic  | Year       | CHI303      | 20           |
|          | Chemistry Organic  | Semester 1 | CHO303      | 20           |
|          | Chemistry Physical   | Year       | CHP303      | 20           |
| <b>E</b> | <b>Computer Science III ♦</b>  |            |             |              |
|          | <b>The following modules are compulsory for Computer Science majors:</b>     |            |             |              |
|          | 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            |
|          | <b>The following additional modules are available as optional electives:</b> |            |             |              |
| <b>F</b> | Multimedia Systems 3.1   | Semester 1 | WRMS301     | 10           |
|          | Multimedia Systems 3.2   | Semester 2 | WRMS302     | 10           |
| <b>G</b> | <b>Geography III ♦</b>   |            |             |              |
|          | 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           |
| <b>H</b> | <b>Geology III ♦</b>   |            |             |              |
|          | 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           |
| <b>I</b> | <b>Mathematics III ♦</b>   |            |             |              |
|          | 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           |
| <b>J</b> | <b>Applied Mathematics III ♦</b>   |            |             |              |
|          | Partial Differential Equations   | Semester 1 | MAPM311     | 15           |

|          |   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|----------|---|------------------|--------------------|---------------------|
|          | Finite Difference Methods               | Semester 1       | MAPM312            | 15                  |
|          | Non-linear Optimisation                 | Semester 2       | MAPM313            | 15                  |
|          | Dynamical Systems                       | Semester 2       | MAPM314            | 15                  |
| <b>K</b> | <b>Statistics III ♦</b>                 |                  |                    |                     |
|          | 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                  |
| <b>L</b> | <b>Physics III ♦</b>                    |                  |                    |                     |
|          | Electrodynamics and Quantum Mechanics   | Semester 1       | F310               | 30                  |
|          | Crystallography and Solid State Physics | Semester 2       | F321               | 30                  |
| <b>M</b> | <b>Zoology III ♦</b>                    |                  |                    |                     |
|          | 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                  |
| <b>N</b> | <b>Physiology III</b>                   |                  |                    |                     |
|          | Integrated Human Physiology I           | Semester 1       | BSP311             | 30                  |
|          | Integrated Human Physiology II          | Semester 2       | BSP312             | 30                  |
|          | <b>Credits Third Year</b>               |                  |                    | <b>124</b>          |
|          | <b>Total Credits</b>                    |                  |                    | <b>368</b>          |

**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,<br>CHOV202, CHPV200 |              | FFV1X1, FBBV1X1,<br>FBBV1X2, FBBVX12 |
|  | CHIV300, CHOV300,<br>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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>  |            |             |              |
| <b>A</b>          | <b>Botany 1</b>   |            |             |              |
|                   | 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>B</b>          | <b>Chemistry 1 (Note that if Chemistry 1 is selected, then you must register for Mathematics Special 1 and Physics Special 1)</b> |            |             |              |
|                   | Chemistry General   | Semester 1 | CHGV101     | 15           |
|                   | Chemistry Inorganic   | Semester 2 | CHIV100     | 9            |
|                   | Chemistry Organic   | Semester 2 | CHOV102     | 6            |
|                   | <b>Mathematics Special 1</b>  |            |             |              |
|                   | Mathematics Special 101   | Semester 1 | MATS101     | 8            |
|                   | Mathematics Special 102   | Semester 2 | MATS102     | 8            |
|                   | <b>Physics Special 1</b>  |            |             |              |
|                   | Mechanics and Thermodynamics  | Semester 1 | FBBV101     | 7            |
|                   | Electricity, Optics and Atomics   | Semester 2 | FBBV102     | 7            |
| <b>C</b>          | <b>Geography I</b>  |            |             |              |
|                   | 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            |
| <b>D</b>          | <b>Geology I</b>  |            |             |              |
|                   | 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>E</b>          | <b>Mathematics I</b>  |            |             |              |
|                   | Mathematics 1A  | Semester 1 | MATT101     | 16           |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
|                    | Mathematics 1b   | Semester 2 | MATT102     | 16           |
| <b>F</b>           | <b>Applied Mathematics I</b>   |            |             |              |
|                    | 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>G</b>           | <b>Computer Science I (if Applied Mathematics selected)</b>  |            |             |              |
|                    | 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            |
|                    | <b>Computer Science I</b>  |            |             |              |
|                    | 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            |
| <b>H</b>           | <b>Physics I</b>   |            |             |              |
|                    | Mechanics and Thermodynamics   | Semester 1 | FVV101      | 15           |
|                    | Electricity, Magnetism and Optics  | Semester 2 | FVV102      | 15           |
| <b>I</b>           | <b>Statistics I</b>  |            |             |              |
|                    | Statistics Probability and Distribution Theory   | Semester 1 | STAS101     | 15           |
|                    | Introduction to Statistical Inference  | Semester 2 | STAS102     | 15           |
| <b>J</b>           | <b>Zoology 1</b>   |            |             |              |
|                    | 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            |
|                    | <b>Credits First Year</b>  |            |             | <b>128</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Select three of the following groups corresponding to the modules selected in the first year:</b> |            |             |              |
| <b>A</b>           | <b>Botany 2</b>  |            |             |              |
|                    | 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>B</b> | <b>Biochemistry 2</b>  |            |             |              |
|          | Introductory Biochemistry and Genetics   | Semester 1 | BCV201      | 20           |
|          | Metabolism   | Semester 2 | BCV202      | 20           |
| <b>C</b> | <b>Microbiology 2</b>  |            |             |              |
|          | Introductory Microbiology and Control of Micro-organisms   | Semester 1 | BMV201      | 20           |
|          | Medical Microbiology   | Semester 2 | BMV202      | 20           |
| <b>D</b> | <b>Chemistry 2</b>   |            |             |              |
|          | Chemistry Analytical   | Semester 1 | CHAV201     | 9            |
|          | Chemistry Inorganic  | Semester 1 | CHIV201     | 7            |
|          | Chemistry Organic  | Semester 2 | CHOV202     | 12           |
|          | Chemistry Physical   | Year       | CHPV200     | 12           |
| <b>E</b> | <b>Computer Science II</b>   |            |             |              |
|          | <b>The following modules are compulsory for Computer Science majors:</b>   |            |             |              |
|          | 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            |
| <b>F</b> | <b>The following additional modules are available as optional electives, and are of primary interest to Computer Science non-majors:</b> |            |             |              |
|          | Web Systems 2.1  | Semester 1 | WRWV201     | 8            |
|          | Web Systems 2.2  | Semester 2 | WRWV202     | 8            |
| <b>G</b> | <b>Geography II</b>  |            |             |              |
|          | 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           |
| <b>H</b> | <b>Geology II</b>  |            |             |              |
|          | Palaeontology  | Semester 1 | GGLV201     | 10           |
|          | Structural Geology   | Semester 1 | GGLV211     | 10           |
|          | Mineralogy   | Semester 2 | GGLV202     | 10           |
|          | Sedimentary Petrology  | Semester 2 | GGLV212     | 10           |
| <b>I</b> | <b>Mathematics II</b>  |            |             |              |
|          | Multivariable and Vector Calculus  | Semester 1 | MATT201     | 20           |
|          | Linear Algebra   | Semester 2 | MATT212     | 10           |
|          | Real Analysis  | Semester 2 | MATT202     | 10           |
| <b>J</b> | <b>Applied Mathematics II</b>  |            |             |              |
|          | 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             |
| <b>K</b>          | <b>Statistics II</b>  |            |             |                |
|                   | Theory of Distribution  | Semester 1 | STAS201     | 20             |
|                   | Regression Analysis and Advanced Regression Topics  | Semester 2 | STAS202     | 20             |
| <b>L</b>          | <b>Physics II</b>   |            |             |                |
|                   | Optics AC Theory and Thermodynamics   | Semester 1 | FVV201      | 20             |
|                   | Mechanics, Modern and Nuclear Physics   | Semester 2 | FVV202      | 20             |
| <b>M</b>          | <b>Zoology 2</b>  |            |             |                |
|                   | 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             |
| <b>N</b>          | <b>Physiology 2</b>   |            |             |                |
|                   | Principles of Human Physiology and Control Systems  | Semester 1 | BSPD211     | 20             |
|                   | Human Systemic Physiology   | Semester 2 | BSPD212     | 20             |
|                   | <b>Credits Second Year</b>  |            |             | <b>120/130</b> |
|                   |   |            |             |                |
|                   |   | Presented  | Module Code | Credit Value   |
| <b>Third Year</b> |   |            |             |                |
|                   | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |                |
| <b>A</b>          | <b>Botany III ♦</b>   |            |             |                |
|                   | 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>B</b>          | <b>Biochemistry III ♦</b>   |            |             |                |
|                   | Advanced Protein Technology   | Semester 1 | BCV301      | 30             |
|                   | Integrated Biochemistry   | Semester 2 | BCV302      | 30             |
| <b>C</b>          | <b>Microbiology III ♦</b>   |            |             |                |
|                   | Bacteriology, Microbial Ecology, Virology and Mycology  | Semester 1 | BMV301      | 30             |
|                   | Gene Manipulation, Industrial Microbiology and Biotechnology  | Semester 2 | BMV302      | 30             |
| <b>D</b>          | <b>Chemistry III ♦</b>  |            |             |                |
|                   | Chemistry Inorganic   | Year       | CHIV300     | 20             |
|                   | Chemistry Organic   | Semester 1 | CHOV300     | 20             |

|          |  | Presented  | Module Code | Credit Value |
|----------|--|------------|-------------|--------------|
|          | Chemistry Physical   | Year       | CHPV300     | 20           |
| <b>E</b> | <b>Computer Science III ♦</b>  |            |             |              |
|          | <b>The following modules are compulsory for Computer Science majors:</b>     |            |             |              |
|          | 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            |
|          | <b>The following additional modules are available as optional electives:</b> |            |             |              |
| <b>F</b> | Multimedia Systems 3.1   | Semester 1 | WRMV301     | 10           |
|          | Multimedia Systems 3.2   | Semester 2 | WRMV302     | 10           |
| <b>G</b> | <b>Geography III ♦</b>   |            |             |              |
|          | 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           |
| <b>H</b> | <b>Geology III ♦</b>   |            |             |              |
|          | 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           |
| <b>I</b> | <b>Mathematics III ♦</b>   |            |             |              |
|          | 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           |
| <b>J</b> | <b>Applied Mathematics III ♦</b>   |            |             |              |
|          | 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           |
| <b>K</b> | <b>Statistics III ♦</b>  |            |             |              |
|          | 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 |
|----------|---|------------|-------------|--------------|
| <b>L</b> | <b>Physics III ♦</b>                    |            |             |              |
|          | Electrodynamics and Quantum Mechanics   | Semester 1 | FVV301      | 30           |
|          | Crystallography and Solid State Physics | Semester 2 | FVV302      | 30           |
| <b>M</b> | <b>Zoology III ♦</b>                    |            |             |              |
|          | 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           |
| <b>N</b> | <b>Physiology III</b>                   |            |             |              |
|          | Integrated Human Physiology I           | Semester 1 | BSPD301     | 30           |
|          | Integrated Human Physiology II          | Semester 2 | BSPD302     | 30           |
|          | <b>Credits Third Year</b>               |            |             | <b>124</b>   |
|          | <b>Total Credits</b>                    |            |             | <b>368</b>   |

**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 |
|-------------------|--|------------|-------------|--------------|
| <b>First Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>             |            |             |              |
|                   | <b>Botany 1</b>                        |            |             |              |
|                   | 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</b>                     |            |             |              |
|                   | Chemistry General                      | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic                    | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic                      | Semester 2 | CHO101      | 6            |
|                   | <b>Computer Science 1</b>              |            |             |              |
|                   | Computing Fundamentals                 | Semester 1 | WRFC101     | 8            |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
|                    | <b>Mathematics Special 1</b>                             |            |             |              |
|                    | Mathematics Special 101                                  | Semester 1 | MATA101     | 8            |
|                    | Mathematics Special 102                                  | Semester 2 | MATA102     | 8            |
|                    | <b>Physics Special 1</b>                                 |            |             |              |
|                    | Mechanics and Thermodynamics                             | Semester 1 | FBB101      | 7            |
|                    | Electricity, Optics and Atomics                          | Semester 2 | FBB102      | 7            |
|                    | <b>Zoology 1</b>   |            |             |              |
|                    | 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            |
|                    | <b>Credits First Year</b>                                |            |             | <b>128</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Select three of the following groups:</b>             |            |             |              |
| <b>A</b>           | <b>Biochemistry 2</b>                                    |            |             |              |
|                    | Introductory Biochemistry and Genetics                   | Semester 1 | BC251       | 20           |
|                    | Metabolism   | Semester 2 | BC252       | 20           |
| <b>B</b>           | <b>Botany 2</b>  |            |             |              |
|                    | 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>C</b>           | <b>Chemistry 2</b>                                       |            |             |              |
|                    | Chemistry Analytical                                     | Semester 1 | CHA201      | 9            |
|                    | Chemistry Inorganic                                      | Semester 1 | CHI201      | 7            |
|                    | Chemistry Organic  | Semester 2 | CHO201      | 12           |
|                    | Chemistry Physical                                       | Year       | CHP203      | 12           |
| <b>D</b>           | <b>Microbiology 2</b>                                    |            |             |              |
|                    | Introductory Microbiology and Control of Micro-organisms | Semester 1 | BM211       | 20           |
|                    | Medical Microbiology                                     | Semester 2 | BM212       | 20           |
| <b>E</b>           | <b>Physiology 2</b>                                      |            |             |              |
|                    | Principles of Human Physiology and Control Systems       | Semester 1 | BSP211      | 20           |
|                    | Human Systemic Physiology                                | Semester 2 | BSP212      | 20           |
| <b>F</b>           | <b>Zoology 2</b>   |            |             |              |
|                    | Comparative Vertebrate Anatomy                           | Semester 1 | ZOO211      | 10           |

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

♦ 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 |
|-------------------|--|------------|-------------|--------------|
| <b>First Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>             |            |             |              |
|                   | <b>Botany 1</b>                        |            |             |              |
|                   | 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</b>                     |            |             |              |
|                   | Chemistry General                      | Semester 1 | CHGV101     | 15           |
|                   | Chemistry Inorganic                    | Semester 2 | CHIV100     | 9            |
|                   | Chemistry Organic                      | Semester 2 | CHOV102     | 6            |
|                   | <b>Computer Science 1</b>              |            |             |              |
|                   | Computing Fundamentals                 | Semester 1 | WRFV101     | 8            |
|                   | <b>Mathematics Special 1</b>           |            |             |              |
|                   | Mathematics Special 101                | Semester 1 | MATS101     | 8            |
|                   | Mathematics Special 102                | Semester 2 | MATS102     | 8            |
|                   | <b>Physics Special 1</b>               |            |             |              |
|                   | Mechanics and Thermodynamics           | Semester 1 | FBBV101     | 7            |
|                   | Electricity, Optics and Atomics        | Semester 2 | FBBV102     | 7            |
|                   | <b>Zoology 1</b>                       |            |             |              |
|                   | 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            |
|                   | <b>Credits First Year</b>              |            |             | <b>128</b>   |

|                    |   | Presented  | Module Code | Credit Value |
|--------------------|---|------------|-------------|--------------|
| <b>Second Year</b> |   |            |             |              |
|                    | <b>Select three of the following groups:</b>  |            |             |              |
| <b>A</b>           | <b>Biochemistry 2</b>   |            |             |              |
|                    | Introductory Biochemistry and Genetics  | Semester 1 | BCV201      | 20           |
|                    | Metabolism  | Semester 2 | BCV202      | 20           |
| <b>B</b>           | <b>Botany 2</b>   |            |             |              |
|                    | 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>C</b>           | <b>Chemistry 2</b>  |            |             |              |
|                    | Chemistry Analytical  | Semester 1 | CHAV201     | 9            |
|                    | Chemistry Inorganic   | Semester 1 | CHIV201     | 7            |
|                    | Chemistry Organic   | Semester 2 | CHOV202     | 12           |
|                    | Chemistry Physical  | Year       | CHPV200     | 12           |
| <b>D</b>           | <b>Microbiology 2</b>   |            |             |              |
|                    | Introductory Microbiology and Control of Micro-organisms  | Semester 1 | BMV201      | 20           |
|                    | Medical Microbiology  | Semester 2 | BMV202      | 20           |
| <b>E</b>           | <b>Physiology 2</b>   |            |             |              |
|                    | Principles of Human Physiology and Control Systems  | Semester 1 | BSPD211     | 20           |
|                    | Human Systemic Physiology   | Semester 2 | BSPD212     | 20           |
| <b>F</b>           | <b>Zoology 2</b>  |            |             |              |
|                    | 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           |
|                    | <b>Credits Second Year</b>  |            |             | <b>120</b>   |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |   |            |             |              |
|                    | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
|                    | <b>Biochemistry 3 ♦</b>   |            |             |              |
|                    | Advanced Protein Technology   | Semester 1 | BCV301      | 30           |
|                    | Integrated Biochemistry   | Semester 2 | BCV302      | 30           |
|                    | <b>Chemistry 3 ♦</b>  |            |             |              |
|                    | Chemistry Inorganic   | Year       | CHIV300     | 20           |

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

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                              |            |             |              |
|                   | <b>Botany I</b>   |            |             |              |
|                   | 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>Computer Science I</b>                               |            |             |              |
|                   | Computing Fundamentals                                  | Semester 1 | WRFC101     | 8            |
|                   | <b>Zoology I</b>  |            |             |              |
|                   | 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            |
|                   | <b>Select either Group A or Group B:</b>                |            |             |              |
| <b>A</b>          | <b>Geography I</b>                                      |            |             |              |
|                   | 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            |
|                   | <b>Geology I</b>  |            |             |              |
|                   | 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>B</b>           | <b>Chemistry I</b>   |            |             |                |
|                    | Chemistry General  | Semester 1 | CHG101      | 15             |
|                    | Chemistry Inorganic  | Semester 2 | CHI101      | 9              |
|                    | Chemistry Organic  | Semester 2 | CHO101      | 6              |
|                    | <b>Mathematics Special I</b>   |            |             |                |
|                    | Mathematics Special  | Semester 1 | MATA101     | 8              |
|                    | Mathematics Special  | Semester 2 | MATA102     | 8              |
|                    | <b>Physics Special I</b>   |            |             |                |
|                    | Mechanics and Thermodynamics   | Semester 1 | FBB101      | 7              |
|                    | Electricity, Optics and Atomics  | Semester 2 | FBB102      | 7              |
|                    | <b>Credits First Year</b>  |            |             | <b>128/129</b> |
|                    |  |            |             |                |
|                    |  | Presented  | Module Code | Credit Value   |
| <b>Second Year</b> |  |            |             |                |
|                    | <b>Compulsory modules:</b>   |            |             |                |
|                    | <b>Botany II</b>   |            |             |                |
|                    | 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>Zoology II</b>  |            |             |                |
|                    | 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             |
|                    | <b>Select one of the following groups corresponding to the modules selected in the first year:</b> |            |             |                |
| <b>A</b>           | <b>Chemistry II</b>  |            |             |                |
|                    | Chemistry Analytical   | Semester 1 | CHA201      | 9              |
|                    | Chemistry Inorganic  | Semester 1 | CHI201      | 7              |
|                    | Chemistry Physical   | Year       | CHP203      | 12             |
|                    | Chemistry Organic  | Semester 2 | CHO201      | 12             |
| <b>B</b>           | <b>Geography II</b>  |            |             |                |
|                    | 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             |
| <b>C</b>           | <b>Geology II</b>  |            |             |                |
|                    | Palaeontology  | Semester 1 | GGL201      | 10             |

|                   |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|-------------------|--|------------------|--------------------|---------------------|
|                   | Structural Geology                         | Semester 1       | GGL202             | 10                  |
|                   | Mineralogy                                 | Semester 2       | GGL203             | 10                  |
|                   | Sedimentary Petrology                      | Semester 2       | GGL204             | 10                  |
|                   | <b>Credits Second Year</b>                 |                  |                    | <b>120</b>          |
|                   |  |                  |                    |                     |
|                   |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Third Year</b> |  |                  |                    |                     |
|                   | <b>Compulsory modules:</b>                 |                  |                    |                     |
|                   | <b>Botany III ♦</b>                        |                  |                    |                     |
|                   | 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                  |
|                   | <b>Zoology III ♦</b>                       |                  |                    |                     |
|                   | 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                  |
|                   | <b>Credits Third Year</b>                  |                  |                    | <b>120</b>          |
|                   | <b>Total Credits</b>                       |                  |                    | <b>368</b>          |

♦ 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 |
|-------------------|--|------------|-------------|--------------|
| <b>First Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>             |            |             |              |
|                   | <b>Botany I</b>                        |            |             |              |
|                   | 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>Computer Science I</b>              |            |             |              |
|                   | Computing Fundamentals                 | Semester 1 | WRFV101     | 8            |
|                   | <b>Zoology I</b>                       |            |             |              |
|                   | 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              |
| <b>Select either Group A or Group B:</b> |   |            |             |                |
| <b>A</b>                                 | <b>Geography I</b>                                      |            |             |                |
|  | 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              |
|  | <b>Geology I</b>  |            |             |                |
|  | 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>B</b>                                 | <b>Chemistry I</b>                                      |            |             |                |
|  | Chemistry General                                       | Semester 1 | CHGV101     | 15             |
|  | Chemistry Inorganic                                     | Semester 2 | CHIV100     | 9              |
|  | Chemistry Organic                                       | Semester 2 | CHOV102     | 6              |
|  | <b>Mathematics Special I</b>                            |            |             |                |
|  | Mathematics Special                                     | Semester 1 | MATS101     | 8              |
|  | Mathematics Special                                     | Semester 2 | MATS102     | 8              |
|  | <b>Physics Special I</b>                                |            |             |                |
|  | Mechanics and Thermodynamics                            | Semester 1 | FBBV101     | 7              |
|  | Electricity, Optics and Atomics                         | Semester 2 | FBBV102     | 7              |
|  | <b>Credits First Year</b>                               |            |             | <b>128/129</b> |
|  |   |            |             |                |
|  |   | Presented  | Module Code | Credit Value   |
| <b>Second Year</b>                       |   |            |             |                |
|  | <b>Compulsory modules:</b>                              |            |             |                |
|  | <b>Botany II</b>  |            |             |                |
|  | 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</b>                                       |            |             |                |
|  | 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           |
|                   | <b>Select one of the following groups corresponding to the modules selected in the first year:</b> |            |             |              |
| <b>A</b>          | <b>Chemistry II</b>  |            |             |              |
|                   | Chemistry Analytical   | Semester 1 | CHAV201     | 9            |
|                   | Chemistry Inorganic  | Semester 1 | CHIV201     | 7            |
|                   | Chemistry Physical   | Year       | CHPV200     | 12           |
|                   | Chemistry Organic  | Semester 2 | CHOV202     | 12           |
| <b>B</b>          | <b>Geography II</b>  |            |             |              |
|                   | 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           |
| <b>C</b>          | <b>Geology II</b>  |            |             |              |
|                   | Palaeontology  | Semester 1 | GGLV201     | 10           |
|                   | Structural Geology   | Semester 1 | GGLV211     | 10           |
|                   | Mineralogy   | Semester 2 | GGLV202     | 10           |
|                   | Sedimentary Petrology  | Semester 2 | GGLV212     | 10           |
|                   | <b>Credits Second Year</b>   |            |             | <b>120</b>   |
|                   |  |            |             |              |
|                   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>   |            |             |              |
|                   | <b>Botany III ♦</b>  |            |             |              |
|                   | 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>Zoology III ♦</b>   |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>  |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>   |            |             | <b>368</b>   |

♦ 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   |
|-------------------|---|------------|-------------|----------------|
| <b>First Year</b> |   |            |             |                |
|                   | <b>Compulsory modules:</b>                                  |            |             |                |
|                   | <b>Mathematics I</b>  |            |             |                |
|                   | Mathematics 1A  | Semester 1 | MATH111     | 16             |
|                   | Mathematics 1B  | Semester 2 | MATH112     | 16             |
|                   | <b>Select three of the following groups:</b>                |            |             |                |
| <b>A</b>          | <b>Applied Mathematics I</b>                                |            |             |                |
|                   | 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>B</b>          | <b>Computer Science I (if Applied Mathematics selected)</b> |            |             |                |
|                   | 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              |
| <b>C</b>          | <b>Computer Science I</b>                                   |            |             |                |
|                   | 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              |
| <b>D</b>          | <b>Physics I</b>  |            |             |                |
|                   | Mechanics and Thermodynamics                                | Semester 1 | F101        | 15             |
|                   | Electricity, Magnetism and Optics                           | Semester 2 | F102        | 15             |
| <b>E</b>          | <b>Statistics I</b>   |            |             |                |
|                   | Probability and Distribution Theory                         | Semester 1 | STAT101     | 15             |
|                   | Introduction to Statistical Inference                       | Semester 2 | STAT102     | 15             |
|                   | <b>Credits First Year</b>                                   |            |             | <b>124/126</b> |

|                    |   | Presented  | Module Code | Credit Value   |
|--------------------|---|------------|-------------|----------------|
| <b>Second Year</b> |   |            |             |                |
|                    | <b>Select three of the following groups corresponding to the modules selected in the first year:</b>                                      |            |             |                |
| <b>A</b>           | <b>Computer Science II</b>  |            |             |                |
|                    | The following modules are <b>compulsory for Computer Science majors:</b>  |            |             |                |
|                    | 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 <b>optional electives</b> , 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>B</b>           | <b>Applied Mathematics II</b>   |            |             |                |
|                    | 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>C</b>           | <b>Mathematics II</b>   |            |             |                |
|                    | Multivariable and Vector Calculus   | Semester 1 | MATH211     | 20             |
|                    | Linear Algebra  | Semester 2 | MATH203     | 10             |
|                    | Real Analysis   | Semester 2 | MATH214     | 10             |
| <b>D</b>           | <b>Physics II</b>   |            |             |                |
|                    | Optics, AC Theory and Thermodynamics  | Semester 1 | F210        | 20             |
|                    | Mechanics, Modern and Nuclear Physics   | Semester 2 | F212        | 20             |
| <b>E</b>           | <b>Statistics II</b>  |            |             |                |
|                    | Theory of Distribution  | Semester 1 | STAT201     | 20             |
|                    | Regression Analysis and Advanced Regression Topics  | Semester 2 | STAT203     | 20             |
|                    | <b>Credits Second Year</b>  |            |             | <b>120/130</b> |

|                   |   | Presented  | Module Code | Credit Value |
|-------------------|---|------------|-------------|--------------|
| <b>Third Year</b> |   |            |             |              |
|                   | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
| <b>A</b>          | <b>Computer Science III ♦</b>   |            |             |              |
|                   | The following modules are <b>compulsory for Computer Science majors:</b>                              |            |             |              |
|                   | 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 <b>optional electives:</b>                          |            |             |              |
|                   | Multimedia Systems 3.1  | Semester 1 | WRMS301     | 10           |
|                   | Multimedia Systems 3.2  | Semester 2 | WRMS302     | 10           |
| <b>B</b>          | <b>Applied Mathematics III ♦</b>  |            |             |              |
|                   | 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>C</b>          | <b>Mathematics III ♦</b>  |            |             |              |
|                   | 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           |
| <b>D</b>          | <b>Physics III ♦</b>  |            |             |              |
|                   | Electrodynamics and Quantum Mechanics   | Semester 1 | F310        | 30           |
|                   | Crystallography and Solid State Physics   | Semester 2 | F321        | 30           |
| <b>E</b>          | <b>Statistics III ♦</b>   |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>   |            |             | <b>124</b>   |
|                   | <b>Total Credits</b>  |            |             | <b>368</b>   |

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

| Choosing the combination: |   |
|---------------------------|---|
| <b>Year 1:</b>            | Applied Mathematics 1, Computer Science 1, Mathematics 1 and Mathematical Statistics 1.   |
| <b>Year 2:</b>            | Applied Mathematics 2, Mathematics 2 and Mathematical Statistics 2.   |
| <b>Year 3:</b>            | Applied Mathematics 3 and Mathematical Statistics 3 leads to a career in <b>Industrial Mathematics</b> 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"> <li>• Optimise and manage factory production.</li> <li>• Design and test products.</li> <li>• Ensure quality control and customer service procedure.</li> <li>• Strategic planning.</li> <li>• Risk management.</li> <li>• Perform statistical analyses.</li> </ul>  |
| Choosing the combination: |   |
| <b>Year 1:</b>            | Applied Mathematics 1, Computer Science 1, Mathematics1 and (Mathematical Statistics 1or Physics 1).  |
| <b>Year 2:</b>            | Applied Mathematics 2, Computer Science 2, Mathematics 2.   |
| <b>Year 3:</b>            | Applied Mathematics 3 and Computer Science 3 leads to a career in <b>Computational Mathematics</b> . 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"> <li>• Parallel processes and parallel algorithms.</li> <li>• Numerical analysis and complexity.</li> <li>• Artificial intelligence and neural networks.</li> <li>• Optimization and non-linear programming.</li> <li>• Numerical solutions to PDE's and large scale computations.</li> <li>• Mathematical problems too complex for paper/pencil solutions.</li> <li>• Coding and Cryptography.</li> <li>• Computational geometry.</li> </ul>   |
| Choosing the combination: |   |
| <b>Year 1:</b>            | Applied Mathematics 1, Mathematics 1, Mathematical Statistics1, Physics and Computer Fundamentals.  |
| <b>Year 2:</b>            | Applied Mathematics 2, Physics 2 and the modules MATH202, 203 and STAT201.  |
| <b>Year 3:</b>            | Applied Mathematics 3 and Physics 3 leads to a career in <b>Computational Physics</b> . <b>Computational physics</b> is the study and implementation of numerical algorithms in order to solve problems in physics for which a quantitative theory already exists.  |

|                                  |   |
|----------------------------------|---|
| <b>Choosing the combination:</b> |   |
|                                  | 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. |
|                                  | <b>Applications of computational physics</b><br>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.  |
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.   |
| <b>Year 2:</b>                   | Physics 2, Computer Science 2 (and 40 credits from Applied Mathematics 2 and Mathematics 2).  |
| <b>Year 3:</b>                   | 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.   |
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.   |
| <b>Year 2:</b>                   | Computer Science 2, Mathematics 2 (and 40 credits from Applied Mathematics 2 and Physics 2).  |
| <b>Year 3:</b>                   | 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, 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                                  |            |             |              |
|                   | <b>Mathematics I</b>  |            |             |              |
|                   | Mathematics 1A  | Semester 1 | MATT101     | 16           |
|                   | Mathematics 1b  | Semester 2 | MATT102     | 16           |
|                   | <b>Select three of the following groups:</b>                |            |             |              |
| <b>A</b>          | <b>Applied Mathematics I</b>                                |            |             |              |
|                   | 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>B</b>          | <b>Computer Science I (if Applied Mathematics selected)</b> |            |             |              |
|                   | 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            |
| <b>C</b>          | <b>Computer Science I</b>                                   |            |             |              |
|                   | 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            |
| <b>D</b>          | <b>Physics I</b>  |            |             |              |
|                   | Mechanics and Thermodynamics                                | Semester 1 | FVV101      | 15           |
|                   | Electricity, Magnetism and Optics                           | Semester 2 | FVV102      | 15           |
| <b>E</b>          | <b>Statistics I</b>   |            |             |              |
|                   | Probability and Distribution Theory                         | Semester 1 | STAS101     | 15           |
|                   | Introduction to Statistical Inference                       | Semester 2 | STAS102     | 15           |

|                    |   | Presented  | Module Code | Credit Value   |
|--------------------|---|------------|-------------|----------------|
|                    | <b>Credits First Year</b>   |            |             | <b>124/126</b> |
|                    |   |            |             |                |
|                    |   | Presented  | Module Code | Credit Value   |
| <b>Second Year</b> |   |            |             |                |
|                    | <b>Select three of the following groups corresponding to the modules selected in the first year:</b>                                      |            |             |                |
| <b>A</b>           | <b>Computer Science II</b>  |            |             |                |
|                    | The following modules are <b>compulsory for Computer Science majors</b> :   |            |             |                |
|                    | 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 <b>optional electives</b> , 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>B</b>           | <b>Applied Mathematics II</b>   |            |             |                |
|                    | 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             |
| <b>C</b>           | <b>Mathematics II</b>   |            |             |                |
|                    | Multivariable and Vector Calculus   | Semester 1 | MATT201     | 20             |
|                    | Linear Algebra  | Semester 2 | MATT212     | 10             |
|                    | Real Analysis   | Semester 2 | MATT202     | 10             |
| <b>D</b>           | <b>Physics II</b>   |            |             |                |
|                    | Optics, AC Theory and Thermodynamics  | Semester 1 | FVV201      | 20             |
|                    | Mechanics, Modern and Nuclear Physics   | Semester 2 | FVV202      | 20             |
| <b>E</b>           | <b>Statistics II</b>  |            |             |                |
|                    | Theory of Distribution  | Semester 1 | STAS201     | 20             |
|                    | Regression Analysis and Advanced Regression Topics  | Semester 2 | STAS202     | 20             |
|                    | <b>Credits Second Year</b>  |            |             | <b>120/130</b> |



|                   |   | Presented  | Module Code | Credit Value |
|-------------------|---|------------|-------------|--------------|
| <b>Third Year</b> |   |            |             |              |
|                   | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
| <b>A</b>          | <b>Computer Science III ♦</b>   |            |             |              |
|                   | The following modules are <b>compulsory for Computer Science majors</b> :                             |            |             |              |
|                   | 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 <b>optional electives</b> :                         |            |             |              |
|                   | Multimedia Systems 3.1  | Semester 1 | WRMV301     | 10           |
|                   | Multimedia Systems 3.2  | Semester 2 | WRMV302     | 10           |
| <b>B</b>          | <b>Applied Mathematics III ♦</b>  |            |             |              |
|                   | 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           |
| <b>C</b>          | <b>Mathematics III ♦</b>  |            |             |              |
|                   | 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           |
| <b>D</b>          | <b>Physics III ♦</b>  |            |             |              |
|                   | Electrodynamics and Quantum Mechanics   | Semester 1 | FVV301      | 30           |
|                   | Crystallography and Solid State Physics   | Semester 2 | FVV302      | 30           |
| <b>E</b>          | <b>Statistics III ♦</b>   |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>   |            |             | <b>124</b>   |
|                   | <b>Total Credits</b>  |            |             | <b>368</b>   |

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

|                                  |   |
|----------------------------------|---|
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Computer Science 1, Mathematics 1 and Mathematical Statistics 1.   |
| <b>Year 2:</b>                   | Applied Mathematics 2, Mathematics 2 and Mathematical Statistics 2.   |
| <b>Year 3:</b>                   | Applied Mathematics 3 and Mathematical Statistics 3 leads to a career in <b>Industrial Mathematics</b> 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"> <li>• Optimise and manage factory production.</li> <li>• Design and test products.</li> <li>• Ensure quality control and customer service procedure.</li> <li>• Strategic planning.</li> <li>• Risk management.</li> <li>• Perform statistical analyses.</li> </ul>  |
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Computer Science 1, Mathematics1 and (Mathematical Statistics 1or Physics 1).  |
| <b>Year 2:</b>                   | Applied Mathematics 2, Computer Science 2, Mathematics 2.   |
| <b>Year 3:</b>                   | Applied Mathematics 3 and Computer Science 3 leads to a career in <b>Computational Mathematics</b> . 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"> <li>• Parallel processes and parallel algorithms.</li> <li>• Numerical analysis and complexity.</li> <li>• Artificial intelligence and neural networks.</li> <li>• Optimization and non-linear programming.</li> <li>• Numerical solutions to PDE's and large scale computations.</li> <li>• Mathematical problems too complex for paper/pencil solutions.</li> <li>• Coding and Cryptography.</li> <li>• Computational geometry.</li> </ul>   |
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Mathematics 1, Mathematical Statistics1, Physics and Computer Fundamentals.  |
| <b>Year 2:</b>                   | Applied Mathematics 2, Physics 2 and the modules MATT211, 203 and STAS201.  |
| <b>Year 3:</b>                   | Applied Mathematics 3 and Physics 3 leads to a career in <b>Computational Physics</b> . <b>Computational physics</b> is the study and implementation of numerical algorithms in order to solve problems in physics for which a quantitative theory already exists.  |

|                                  |   |
|----------------------------------|---|
| <b>Choosing the combination:</b> |   |
|                                  | 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. |
|                                  | <b>Applications of computational physics</b><br>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.  |
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.   |
| <b>Year 2:</b>                   | Physics 2, Computer Science 2 (and 40 credits from Applied Mathematics 2 and Mathematics 2).  |
| <b>Year 3:</b>                   | 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.   |
| <b>Choosing the combination:</b> |   |
| <b>Year 1:</b>                   | Applied Mathematics 1, Computer Science 1, Mathematics 1 and Physics 1.   |
| <b>Year 2:</b>                   | Computer Science 2, Mathematics 2 (and 40 credits from Applied Mathematics 2 and Physics 2).  |
| <b>Year 3:</b>                   | 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory module:</b>                               |            |             |              |
|                   | <b>Computer Science I</b>                               |            |             |              |
|                   | Computing Fundamentals                                  | Semester 1 | WRFC101     | 8            |
|                   | <b>Select four of the following groups:</b>             |            |             |              |
| <b>A</b>          | <b>Botany I</b>   |            |             |              |
|                   | 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>B</b>          | <b>Chemistry I</b>                                      |            |             |              |
|                   | Chemistry General                                       | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic                                     | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic                                       | Semester 2 | CHO101      | 6            |
| <b>C</b>          | <b>Geography I</b>                                      |            |             |              |
|                   | 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            |
| <b>D</b>          | <b>Geology I</b>  |            |             |              |
|                   | 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            |
| <b>E</b>          | <b>Mathematics Special I</b>                            |            |             |              |
|                   | Mathematics Special 101                                 | Semester 1 | MATA101     | 8            |

|                    |  | Presented  | Module Code | Credit Value   |
|--------------------|--|------------|-------------|----------------|
|                    | Mathematics Special 102  | Semester 2 | MATA102     | 8              |
| <b>F</b>           | <b>Physics Special I</b>   |            |             |                |
|                    | Mechanics and Thermodynamics   | Semester 1 | FBB101      | 7              |
|                    | Electricity, Optics and Atomics  | Semester 2 | FBB102      | 7              |
| <b>G</b>           | <b>Zoology I</b>   |            |             |                |
|                    | 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              |
|                    | <b>Credits First Year</b>  |            |             | <b>128/129</b> |
|                    |  |            |             |                |
|                    |  | Presented  | Module Code | Credit Value   |
| <b>Second Year</b> |  |            |             |                |
|                    | <b>Select three of the following groups corresponding to the modules selected in the first year:</b> |            |             |                |
| <b>A</b>           | <b>Botany II</b>   |            |             |                |
|                    | 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>Select either B1 or B2:</b>   |            |             |                |
| <b>B1</b>          | <b>Chemistry II</b>  |            |             |                |
|                    | Chemistry Analytical   | Semester 1 | CHA201      | 9              |
|                    | Chemistry Inorganic  | Semester 1 | CHI201      | 7              |
|                    | Chemistry Physical   | Year       | CHP203      | 12             |
|                    | Chemistry Organic  | Semester 2 | CHO201      | 12             |
| <b>B2</b>          | <b>Geography II</b>  |            |             |                |
|                    | 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             |
| <b>C</b>           | <b>Geology II</b>  |            |             |                |
|                    | Palaeontology  | Semester 1 | GGL201      | 10             |
|                    | Structural Geology   | Semester 1 | GGL202      | 10             |
|                    | Mineralogy   | Semester 2 | GGL203      | 10             |
|                    | Sedimentary Petrology  | Semester 2 | GGL204      | 10             |
| <b>D</b>           | <b>Zoology II</b>  |            |             |                |
|                    | 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           |
|                   | <b>Credits Second Year</b>  |            |             | <b>120</b>   |
|                   |   | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |   |            |             |              |
|                   | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
| <b>A</b>          | <b>Botany III ♦</b>   |            |             |              |
|                   | 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>Select either B1 or B2:</b>  |            |             |              |
| <b>B1</b>         | <b>Chemistry III</b>  |            |             |              |
|                   | Chemistry Inorganic   | Year       | CHI303      | 20           |
|                   | Chemistry Organic   | Semester 1 | CHO303      | 20           |
|                   | Chemistry Physical  | Year       | CHP303      | 20           |
| <b>B2</b>         | <b>Geography III ♦</b>  |            |             |              |
|                   | 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           |
| <b>C</b>          | <b>Geology III ♦</b>  |            |             |              |
|                   | 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           |
| <b>D</b>          | <b>Zoology III ♦</b>  |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>   |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>  |            |             | <b>368</b>   |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory module:</b>                               |            |             |              |
|                   | <b>Computer Science I</b>                               |            |             |              |
|                   | Computing Fundamentals                                  | Semester 1 | WRFV101     | 8            |
|                   | <b>Select four of the following groups:</b>             |            |             |              |
| <b>A</b>          | <b>Botany I</b>   |            |             |              |
|                   | 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>B</b>          | <b>Chemistry I</b>                                      |            |             |              |
|                   | Chemistry General                                       | Semester 1 | CHGV101     | 15           |
|                   | Chemistry Inorganic                                     | Semester 2 | CHIV100     | 9            |
|                   | Chemistry Organic                                       | Semester 2 | CHOV102     | 6            |
| <b>C</b>          | <b>Geography I</b>                                      |            |             |              |
|                   | 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            |
| <b>D</b>          | <b>Geology I</b>  |            |             |              |
|                   | 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>E</b>          | <b>Mathematics Special I</b>                            |            |             |              |
|                   | Mathematics Special 101                                 | Semester 1 | MATS101     | 8            |
|                   | Mathematics Special 102                                 | Semester 2 | MATS102     | 8            |
| <b>F</b>          | <b>Physics Special I</b>                                |            |             |              |
|                   | Mechanics and Thermodynamics                            | Semester 1 | FBBV101     | 7            |
|                   | Electricity, Optics and Atomics                         | Semester 2 | FBBV102     | 7            |
|                   |   |            |             |              |

|                    |  | Presented  | Module Code | Credit Value   |
|--------------------|--|------------|-------------|----------------|
| <b>G</b>           | <b>Zoology I</b>   |            |             |                |
|                    | 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              |
|                    | <b>Credits First Year</b>  |            |             | <b>128/129</b> |
|                    |  |            |             |                |
|                    |  | Presented  | Module Code | Credit Value   |
| <b>Second Year</b> |  |            |             |                |
|                    | <b>Select three of the following groups corresponding to the modules selected in the first year:</b> |            |             |                |
| <b>A</b>           | <b>Botany II</b>   |            |             |                |
|                    | 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>Select either B1 or B2:</b>   |            |             |                |
| <b>B1</b>          | <b>Chemistry II</b>  |            |             |                |
|                    | Chemistry Analytical   | Semester 1 | CHAV201     | 9              |
|                    | Chemistry Inorganic  | Semester 1 | CHIV201     | 7              |
|                    | Chemistry Physical   | Year       | CHPV200     | 12             |
|                    | Chemistry Organic  | Semester 2 | CHOV202     | 12             |
| <b>B2</b>          | <b>Geography II</b>  |            |             |                |
|                    | 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             |
| <b>C</b>           | <b>Geology II</b>  |            |             |                |
|                    | Palaeontology  | Semester 1 | GGLV201     | 10             |
|                    | Structural Geology   | Semester 1 | GGLV211     | 10             |
|                    | Mineralogy   | Semester 2 | GGLV202     | 10             |
|                    | Sedimentary Petrology  | Semester 2 | GGLV212     | 10             |
| <b>D</b>           | <b>Zoology II</b>  |            |             |                |
|                    | 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             |
|                    | <b>Credits Second Year</b>   |            |             | <b>120</b>     |

|                   |   | Presented  | Module Code | Credit Value |
|-------------------|---|------------|-------------|--------------|
| <b>Third Year</b> |   |            |             |              |
|                   | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
| <b>A</b>          | <b>Botany III ♦</b>   |            |             |              |
|                   | 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           |
|                   | <b>Select either B1 or B2:</b>  |            |             |              |
| <b>B1</b>         | <b>Chemistry III</b>  |            |             |              |
|                   | Chemistry Inorganic   | Year       | CHIV300     | 20           |
|                   | Chemistry Organic   | Semester 1 | CHOV300     | 20           |
|                   | Chemistry Physical  | Year       | CHPV300     | 20           |
| <b>B2</b>         | <b>Geography III ♦</b>  |            |             |              |
|                   | 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           |
| <b>C</b>          | <b>Geology III ♦</b>  |            |             |              |
|                   | 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           |
| <b>D</b>          | <b>Zoology III ♦</b>  |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>   |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>  |            |             | <b>368</b>   |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                              |            |             |              |
|                   | <b>Computer Science I</b>                               |            |             |              |
|                   | Computing Fundamentals                                  | Semester 1 | WRFC101     | 8            |
|                   | <b>Geography I</b>                                      |            |             |              |
|                   | 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            |
|                   | <b>Geology I</b>  |            |             |              |
|                   | 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            |
|                   | <b>Select either Group A or Group B:</b>                |            |             |              |
| <b>A</b>          | <b>Chemistry I</b>                                      |            |             |              |
|                   | Chemistry General                                       | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic                                     | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic                                       | Semester 2 | CHO101      | 6            |
|                   | <b>Mathematics Special</b>                              |            |             |              |
|                   | Mathematics Special 101                                 | Semester 1 | MATA101     | 8            |
|                   | Mathematics Special 102                                 | Semester 2 | MATA102     | 8            |
|                   | <b>Physics Special I</b>                                |            |             |              |
|                   | Mechanics and Thermodynamics                            | Semester 1 | FBB101      | 7            |
|                   | Electricity, Optics and Atomics                         | Semester 2 | FBB102      | 7            |
|                   |   |            |             |              |

|                    |  | Presented  | Module Code | Credit Value   |
|--------------------|--|------------|-------------|----------------|
| <b>B</b>           | <b>Botany I</b>                            |            |             |                |
|                    | 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>Zoology I</b>                           |            |             |                |
|                    | 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              |
|                    | <b>Credits First Year</b>                  |            |             | <b>128/129</b> |
|                    |  |            |             |                |
|                    |  | Presented  | Module Code | Credit Value   |
| <b>Second Year</b> |  |            |             |                |
|                    | <b>Compulsory modules:</b>                 |            |             |                |
|                    | <b>Geography II</b>                        |            |             |                |
|                    | 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             |
|                    | <b>Geology II</b>                          |            |             |                |
|                    | Palaeontology                              | Semester 1 | GGL201      | 10             |
|                    | Structural Geology                         | Semester 1 | GGL202      | 10             |
|                    | Mineralogy                                 | Semester 2 | GGL203      | 10             |
|                    | Sedimentary Petrology                      | Semester 2 | GGL204      | 10             |
|                    | <b>Select one of the following groups:</b> |            |             |                |
| <b>A</b>           | <b>Botany II</b>                           |            |             |                |
|                    | 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>B</b>           | <b>Zoology II</b>                          |            |             |                |
|                    | 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             |
|                    | <b>Credits Second Year</b>                 |            |             | <b>120</b>     |

|                   |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|-------------------|--|------------------|--------------------|---------------------|
| <b>Third Year</b> |  |                  |                    |                     |
|                   | <b>Compulsory modules:</b>             |                  |                    |                     |
|                   | <b>Geography III ♦</b>                 |                  |                    |                     |
|                   | 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                  |
|                   | <b>Geology III ♦</b>                   |                  |                    |                     |
|                   | 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                  |
|                   | <b>Credits Third Year</b>              |                  |                    | <b>120</b>          |
|                   | <b>Total Credits</b>                   |                  |                    | <b>368</b>          |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                              |            |             |              |
|                   | <b>Computer Science I</b>                               |            |             |              |
|                   | Computing Fundamentals                                  | Semester 1 | WRFV101     | 8            |
|                   | <b>Geography I</b>                                      |            |             |              |
|                   | 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            |
|                   | <b>Geology I</b>  |            |             |              |
|                   | Introduction to Earth                                   | Semester 1 | GGLV101     | 7            |



|  |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|--|------------------|--------------------|---------------------|
|  | Mineralogy and Petrology               | Semester 1       | GGLV111            | 8                   |
|  | Physical Geology                       | Semester 2       | GGLV102            | 7                   |
|  | Structural and Economic Geology        | Semester 2       | GGLV112            | 8                   |
| <b>Select either Group A or Group B:</b> |  |                  |                    |                     |
| <b>A</b>                                 | <b>Chemistry I</b>                     |                  |                    |                     |
|  | Chemistry General                      | Semester 1       | CHGV101            | 15                  |
|  | Chemistry Inorganic                    | Semester 2       | CHIV100            | 9                   |
|  | Chemistry Organic                      | Semester 2       | CHOV102            | 6                   |
|  | <b>Mathematics Special</b>             |                  |                    |                     |
|  | Mathematics Special 101                | Semester 1       | MATS101            | 8                   |
|  | Mathematics Special 102                | Semester 2       | MATS102            | 8                   |
|  | <b>Physics Special I</b>               |                  |                    |                     |
|  | Mechanics and Thermodynamics           | Semester 1       | FBBV101            | 7                   |
|  | Electricity, Optics and Atomics        | Semester 2       | FBBV102            | 7                   |
| <b>B</b>                                 | <b>Botany I</b>                        |                  |                    |                     |
|  | 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>Zoology I</b>                       |                  |                    |                     |
|  | 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                   |
|  | <b>Credits First Year</b>              |                  |                    | <b>128/129</b>      |
|  |  |                  |                    |                     |
|  |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b>                       |  |                  |                    |                     |
|  | <b>Compulsory modules:</b>             |                  |                    |                     |
|  | <b>Geography II</b>                    |                  |                    |                     |
|  | 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                  |
|  | <b>Geology II</b>                      |                  |                    |                     |
|  | 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 |
|-------------------|--|------------|-------------|--------------|
|                   | <b>Select one of the following groups:</b> |            |             |              |
| <b>A</b>          | <b>Botany II</b>                           |            |             |              |
|                   | 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>B</b>          | <b>Zoology II</b>                          |            |             |              |
|                   | 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           |
|                   | <b>Credits Second Year</b>                 |            |             | <b>120</b>   |
|                   |  |            |             |              |
|                   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>                 |            |             |              |
|                   | <b>Geography III ♦</b>                     |            |             |              |
|                   | 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           |
|                   | <b>Geology III ♦</b>                       |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>                  |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>                       |            |             | <b>368</b>   |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                  |            |             |              |
|                   | <b>Chemistry I</b>                          |            |             |              |
|                   | Chemistry General                           | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic                         | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic                           | Semester 2 | CHO101      | 6            |
|                   | <b>Computer Science I</b>                   |            |             |              |
|                   | Computing Fundamentals 1.1                  | Semester 1 | WRFC101     | 8            |
|                   | <b>Human Movement Science</b>               |            |             |              |
|                   | 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            |
|                   | <b>Mathematics Special I</b>                |            |             |              |
|                   | Mathematics Special 101                     | Semester 1 | MATA101     | 8            |
|                   | Mathematics Special 102                     | Semester 2 | MATA102     | 8            |
|                   | <b>Select two of the following modules:</b> |            |             |              |
|                   | <b>Human Movement Science I</b>             |            |             |              |
|                   | Athletics (Field)                           | Term 2     | HMS116      | 5            |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | 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                   |
|                    | <b>Credits First Year</b>                          |                  |                    | <b>128</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                         |                  |                    |                     |
|                    | <b>Biochemistry II</b>                             |                  |                    |                     |
|                    | Introductory Biochemistry and Genetics             | Semester 1       | BC251              | 20                  |
|                    | Metabolism   | Semester 2       | BC252              | 20                  |
|                    | <b>Physiology II</b>                               |                  |                    |                     |
|                    | Principles of Human Physiology and Control Systems | Semester 1       | BSP211             | 20                  |
|                    | Human Systemic Physiology                          | Semester 2       | BSP212             | 20                  |
|                    | <b>Human Movement Science 2</b>                    |                  |                    |                     |
|                    | 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                   |
|                    | <b>Select one of the following modules:</b>        |                  |                    |                     |
|                    | <b>Human Movement Science II</b>                   |                  |                    |                     |
|                    | Exercise Science Practice Specialisation           | Year             | HMS359             | 16                  |
|                    | Sport Specialisation                               | Year             | HMS360             | 16                  |
|                    | <b>Credits Second Year</b>                         |                  |                    | <b>128</b>          |
|                    |  |                  |                    |                     |

|                   |                                     | Presented  | Module Code | Credit Value |
|-------------------|-------------------------------------|------------|-------------|--------------|
| <b>Third Year</b> |                                     |            |             |              |
|                   | <b>Select A1 or A2</b>              |            |             |              |
| <b>A1</b>         | <b>Biochemistry III ♦</b>           |            |             |              |
|                   | Advanced Protein Technology         | Semester 1 | BC321       | 30           |
|                   | Integrated Biochemistry             | Semester 2 | BC322       | 30           |
| <b>A2</b>         | <b>Physiology III</b>               |            |             |              |
|                   | Integrated Human Physiology I       | Semester 1 | BSP311      | 30           |
|                   | Integrated Human Physiology II      | Semester 2 | BSP312      | 30           |
|                   | <b>Compulsory modules:</b>          |            |             |              |
|                   | <b>Human Movement Science III ♦</b> |            |             |              |
|                   | 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            |
|                   | <b>Credits Third Year</b>           |            |             | <b>116</b>   |
|                   | <b>Total Credits</b>                |            |             | <b>372</b>   |

♦ 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, 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 |
|-------------------|----------------------------|------------|-------------|--------------|
| <b>First Year</b> |                            |            |             |              |
|                   | <b>Compulsory modules:</b> |            |             |              |
|                   | <b>Chemistry I</b>         |            |             |              |
|                   | Chemistry General          | Semester 1 | CHGV101     | 15           |
|                   | Chemistry Inorganic        | Semester 2 | CHIV100     | 9            |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | Chemistry Organic                                  | Semester 2       | CHOV102            | 6                   |
|                    | <b>Computer Science I</b>                          |                  |                    |                     |
|                    | Computing Fundamentals 1.1                         | Semester 1       | WRFV101            | 8                   |
|                    | <b>Human Movement Science</b>                      |                  |                    |                     |
|                    | 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                   |
|                    | <b>Mathematics Special I</b>                       |                  |                    |                     |
|                    | Mathematics Special 101                            | Semester 1       | MATS101            | 8                   |
|                    | Mathematics Special 102                            | Semester 2       | MATS102            | 8                   |
|                    | <b>Select one of the following modules:</b>        |                  |                    |                     |
|                    | <b>Human Movement Science I</b>                    |                  |                    |                     |
|                    | Aquatics   | Semester 1       | HMSV153            | 10                  |
|                    | Athletics  | Semester 2       | HMSV154            | 10                  |
|                    | Implement Sports                                   | Semester 1       | HMSV155            | 10                  |
|                    | Team Sports  | Semester 2       | HMSV156            | 10                  |
|                    | <b>Credits First Year</b>                          |                  |                    | <b>128</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>                         |                  |                    |                     |
|                    | <b>Biochemistry II</b>                             |                  |                    |                     |
|                    | Introductory Biochemistry and Genetics             | Semester 1       | BCV201             | 20                  |
|                    | Metabolism   | Semester 2       | BCV202             | 20                  |
|                    | <b>Physiology II</b>                               |                  |                    |                     |
|                    | Principles of Human Physiology and Control Systems | Semester 1       | BSPD211            | 20                  |
|                    | Human Systemic Physiology                          | Semester 2       | BSPD212            | 20                  |
|                    | <b>Human Movement Science 2</b>                    |                  |                    |                     |
|                    | 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                   |
|                    | <b>Select one of the following modules:</b>        |                  |                    |                     |
|                    |  |                  |                    |                     |



|                   |  | Presented  | Module Code | Credit Value   |
|-------------------|--|------------|-------------|----------------|
|                   | <b>Human Movement Science II</b>         |            |             |                |
|                   | Exercise Science Practice Specialisation | Year       | HMSV390     | 16             |
|                   | Coaching Science Specialisation          | Year       | HMSV300     | 20             |
|                   | <b>Credits Second Year</b>               |            |             | <b>128/132</b> |
|                   |  |            |             |                |
|                   |  | Presented  | Module Code | Credit Value   |
| <b>Third Year</b> |  |            |             |                |
|                   | <b>Select A1 or A2</b>                   |            |             |                |
| <b>A1</b>         | <b>Biochemistry III ♦</b>                |            |             |                |
|                   | Advanced Protein Technology              | Semester 1 | BCV301      | 30             |
|                   | Integrated Biochemistry                  | Semester 2 | BCV302      | 30             |
| <b>A2</b>         | <b>Physiology III</b>                    |            |             |                |
|                   | Integrated Human Physiology I            | Semester 1 | BSPD301     | 30             |
|                   | Integrated Human Physiology II           | Semester 2 | BSPD302     | 30             |
|                   | <b>Compulsory modules:</b>               |            |             |                |
|                   | <b>Human Movement Science III ♦</b>      |            |             |                |
|                   | 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              |
|                   | <b>Credits Third Year</b>                |            |             | <b>108</b>     |
|                   | <b>Total Credits</b>                     |            |             | <b>364/368</b> |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>  |            |             |              |
|                   | <b>Computer Science I</b>   |            |             |              |
|                   | 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. |            |             |              |
|                   | <b>Mathematics Special I</b>  |            |             |              |
|                   | Mathematics Special A1  | Semester 1 | MATA101     | 8            |
|                   | Mathematics Special A2  | Semester 2 | MATA102     | 8            |
|                   | <b>Statistics I</b>   |            |             |              |
|                   | Financial Mathematics   | Semester 1 | STAE101     | 12           |

|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------|--|------------------|--------------------|---------------------|
|                    | Business Statistics  | Semester 2       | STAE102            | 12                  |
|                    | <b>Business Management I</b>   |                  |                    |                     |
|                    | Introduction to Business Management and Entrepreneurship             | Semester 1       | EB101              | 12                  |
|                    | <b>Select any of the following modules to a total of 36 credits:</b> |                  |                    |                     |
| <b>A</b>           | <b>Applied Mathematics I</b>   |                  |                    |                     |
|                    | Graph Theory   | Semester 1       | MAPM111            | 8                   |
|                    | Mathematical Modelling   | Semester 1       | MAPM112            | 8                   |
| <b>B</b>           | <b>Business Management I</b>   |                  |                    |                     |
|                    | Introduction to Business Functions                                   | Semester 2       | EB102              | 12                  |
| <b>C</b>           | <b>Economics I</b>   |                  |                    |                     |
|                    | Introduction to Microeconomics                                       | Semester 1       | EC101              | 12                  |
|                    | Introduction to Macroeconomics                                       | Semester 2       | EC102              | 12                  |
| <b>D</b>           | <b>Accounting I</b>  |                  |                    |                     |
|                    | Accounting 1A  | Semester 1       | R101               | 10                  |
|                    | Accounting 1B  | Semester 2       | R102               | 14                  |
|                    | Or<br>General Accounting 1B  | Semester 2       | RG102              | 14                  |
|                    | <b>OR</b>  |                  |                    |                     |
|                    | Business Accounting 1A   | Semester 1       | RNC111             | 12                  |
|                    | Business Accounting 1B   | Semester 2       | RNC112             | 12                  |
|                    | <b>Credits First Year</b>  |                  |                    | <b>120</b>          |
|                    |  |                  |                    |                     |
|                    |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
| <b>Second Year</b> |  |                  |                    |                     |
|                    | <b>Compulsory modules:</b>   |                  |                    |                     |
|                    | <b>Computer Science II</b>   |                  |                    |                     |
|                    | 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                   |
|                    | <b>Web Systems II</b>  |                  |                    |                     |
|                    | Web Systems 2.1  | Semester 1       | WRWS201            | 8                   |
|                    | Web Systems 2.2  | Semester 2       | WRWS202            | 8                   |
|                    | <b>Mathematics Special II</b>  |                  |                    |                     |
|                    | Mathematics Special B1   | Semester 1       | MATB101            | 8                   |
|                    | Mathematics Special B2   | Semester 2       | MATB102            | 8                   |
|                    |  |                  |                    |                     |

|  |  | Presented  | Module Code | Credit Value |
|--|--|------------|-------------|--------------|
| <b>Select any of the following modules to a total of 48 credits:</b> |  |            |             |              |
| <b>A</b>   | <b>Computer Science II</b>                         |            |             |              |
|  | Business Process Modelling                         | Semester 1 | WRBP201     | 6            |
|  | Computer Architecture and Networks 2.2             | Semester 2 | WRC202      | 6            |
| <b>B</b>   | <b>Statistics II</b>                               |            |             |              |
|  | Probability, Distributors Theory and Estimation    | Semester 1 | STAT202     | 20           |
|  | Regression Analysis and Advanced Regression Topics | Semester 2 | STAT203     | 20           |
| <b>C</b>   | <b>Accounting II/General Accounting II</b>         |            |             |              |
|  | Accounting 2A                                      | Semester 1 | R201        | 14           |
|  | Accounting 2B                                      | Semester 2 | R202        | 14           |
|  | <b>OR</b>  |            |             |              |
|  | General Accounting 2A                              | Semester 1 | RG201       | 14           |
|  | General Accounting 2B                              | Semester 2 | RG202       | 14           |
| <b>D</b>   | <b>Management II</b>                               |            |             |              |
|  | Marketing Management                               | Semester 1 | EBM201      | 14           |
|  | Logistics/Purchasing Management                    | Semester 2 | EBM202      | 14           |
| <b>E</b>   | <b>Economics II</b>                                |            |             |              |
|  | Macroeconomics                                     | Semester 1 | EC201       | 14           |
|  | Microeconomics                                     | Semester 2 | EC202       | 14           |
|  | <b>Credits Second Year</b>                         |            |             | <b>120</b>   |
|  |  |            |             |              |
|  |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |  |            |             |              |
|  | <b>Compulsory modules:</b>                         |            |             |              |
|  | <b>Computer Science III ♦</b>                      |            |             |              |
|  | 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            |
|  | <b>Multimedia Systems III ♦</b>                    |            |             |              |
|  | Multimedia Systems 3.1                             | Semester 1 | WRMS301     | 10           |
|  | Multimedia Systems 3.2                             | Semester 2 | WRMS302     | 10           |
|  | <b>Management Information Systems III ♦</b>        |            |             |              |
|  | Management Information Systems 3.1                 | Semester 1 | WRB301      | 8            |
|  | Management Information Systems 3.2                 | Semester 2 | WRB302      | 8            |
| <b>Select any of the following modules to a total of 31 credits:</b> |  |            |             |              |
|  |  |            |             |              |

|          |  | Presented  | Module Code | Credit Value |
|----------|--|------------|-------------|--------------|
| <b>A</b> | <b>Computer Science III ♦</b>            |            |             |              |
|          | 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>B</b> | <b>Statistics III</b>                    |            |             |              |
|          | 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           |
| <b>C</b> | <b>Business Management III</b>           |            |             |              |
|          | Financial Management                     | Semester 1 | EBM301      | 24           |
|          | General and Strategic Management         | Semester 2 | EBM302      | 24           |
| <b>D</b> | <b>Economics III</b>                     |            |             |              |
|          | 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           |
|          | <b>Credits Third Year</b>                |            |             | <b>120</b>   |
|          | <b>Total Credits</b>                     |            |             | <b>360</b>   |

**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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>  |            |             |              |
|                   | <b>Computer Science I</b>   |            |             |              |
|                   | 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. |            |             |              |
|                   | <b>Mathematics Special I</b>  |            |             |              |
|                   | Mathematics Special A1  | Semester 1 | MATS101     | 8            |
|                   | Mathematics Special A2  | Semester 2 | MATS102     | 8            |
|                   | <b>Statistics I</b>   |            |             |              |
|                   | Financial Mathematics   | Semester 1 | STAV101     | 12           |
|                   | Business Statistics   | Semester 2 | STAV102     | 12           |
|                   | <b>Business Management I</b>  |            |             |              |
|                   | Introduction to Business Management and Entrepreneurship                                | Semester 1 | EB121       | 12           |
|                   | <b>Select any of the following modules to a total of 36 credits:</b>                    |            |             |              |
|                   |   |            |             |              |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
| <b>A</b>           | <b>Applied Mathematics I</b>   |            |             |              |
|                    | Graph Theory   | Semester 1 | MAPV101     | 8            |
|                    | Mathematical Modelling   | Semester 1 | MAPV111     | 8            |
| <b>B</b>           | <b>Business Management I</b>   |            |             |              |
|                    | Introduction to Business Functions                                   | Semester 2 | EB122       | 12           |
| <b>C</b>           | <b>Economics I</b>   |            |             |              |
|                    | Introduction to Microeconomics                                       | Semester 1 | ECC101      | 12           |
|                    | Introduction to Macroeconomics                                       | Semester 2 | ECC102      | 12           |
| <b>D</b>           | <b>Accounting I</b>  |            |             |              |
|                    | Accounting 1A  | Semester 1 | R101        | 10           |
|                    | Accounting 1B  | Semester 2 | R102        | 14           |
|                    | Or<br>General Accounting 1B  | Semester 2 | RG102       | 14           |
|                    | <b>OR</b>  |            |             |              |
|                    | Business Accounting 1A   | Semester 1 | RNC111      | 12           |
|                    | Business Accounting 1B   | Semester 2 | RNC112      | 12           |
|                    | <b>Credits First Year</b>  |            |             | <b>120</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Compulsory modules:</b>   |            |             |              |
|                    | <b>Computer Science II</b>   |            |             |              |
|                    | 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            |
|                    | <b>Web Systems II</b>  |            |             |              |
|                    | Web Systems 2.1  | Semester 1 | WRWV201     | 8            |
|                    | Web Systems 2.2  | Semester 2 | WRWV202     | 8            |
|                    | <b>Mathematics Special II</b>  |            |             |              |
|                    | Mathematics Special B1   | Semester 1 | MATB111     | 8            |
|                    | Mathematics Special B2   | Semester 2 | MATB112     | 8            |
|                    | <b>Select any of the following modules to a total of 48 credits:</b> |            |             |              |
| <b>A</b>           | <b>Computer Science II</b>   |            |             |              |
|                    | Business Process Modelling   | Semester 1 | WRBP211     | 6            |
|                    | Computer Architecture and Networks 2.2                               | Semester 2 | WRCV202     | 6            |
| <b>B</b>           | <b>Statistics II</b>   |            |             |              |
|                    | Probability, Distributors Theory and Estimation                      | Semester 1 | STAS211     | 20           |

|                   |  | Presented  | Module Code | Credit Value |
|-------------------|--|------------|-------------|--------------|
|                   | Regression Analysis and Advanced Regression Topics                   | Semester 2 | STAS202     | 20           |
| <b>C</b>          | <b>Accounting II/General Accounting II</b>                           |            |             |              |
|                   | Accounting 2A  | Semester 1 | RV201       | 14           |
|                   | Accounting 2B  | Semester 2 | RV202       | 14           |
|                   | <b>OR</b>  |            |             |              |
|                   | General Accounting 2A  | Semester 1 | RGV201      | 14           |
|                   | General Accounting 2B  | Semester 2 | RGV202      | 14           |
| <b>D</b>          | <b>Management II</b>   |            |             |              |
|                   | Marketing Management   | Semester 1 | EBMV201     | 14           |
|                   | Logistics/Purchasing Management                                      | Semester 2 | EBMV202     | 14           |
| <b>E</b>          | <b>Economics II</b>  |            |             |              |
|                   | Macroeconomics   | Semester 1 | ECC201      | 14           |
|                   | Microeconomics   | Semester 2 | ECC202      | 14           |
|                   | <b>Credits Second Year</b>   |            |             | <b>120</b>   |
|                   |  |            |             |              |
|                   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Compulsory modules:</b>   |            |             |              |
|                   | <b>Computer Science III ♦</b>  |            |             |              |
|                   | 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            |
|                   | <b>Multimedia Systems III ♦</b>                                      |            |             |              |
|                   | Multimedia Systems 3.1   | Semester 1 | WRMV301     | 10           |
|                   | Multimedia Systems 3.2   | Semester 2 | WRMV302     | 10           |
|                   | <b>Management Information Systems III ♦</b>                          |            |             |              |
|                   | Management Information Systems 3.1                                   | Semester 1 | WRBV301     | 8            |
|                   | Management Information Systems 3.2                                   | Semester 2 | WRBV302     | 8            |
|                   | <b>Select any of the following modules to a total of 31 credits:</b> |            |             |              |
| <b>A</b>          | <b>Computer Science III ♦</b>  |            |             |              |
|                   | 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>B</b>          | <b>Statistics III</b>  |            |             |              |
|                   | Non-Parametric Statistical Procedures                                | Semester 1 | STAS311     | 10           |
|                   | Special Topics in Statistics   | Semester 1 | STAS321     | 6            |



|          |                                  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|----------|----------------------------------|------------------|--------------------|---------------------|
|          | 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                  |
| <b>C</b> | <b>Business Management III</b>   |                  |                    |                     |
|          | Financial Management             | Semester 1       | EBMV301            | 24                  |
|          | General and Strategic Management | Semester 2       | EBMV302            | 24                  |
| <b>D</b> | <b>Economics III</b>             |                  |                    |                     |
|          | 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                  |
|          | <b>Credits Third Year</b>        |                  |                    | <b>120</b>          |
|          | <b>Total Credits</b>             |                  |                    | <b>360</b>          |

**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 |
|-------------------|----------------------------|------------|-------------|--------------|
| <b>First Year</b> |                            |            |             |              |
|                   | <b>Compulsory modules:</b> |            |             |              |
|                   | <b>Chemistry I</b>         |            |             |              |
|                   | Chemistry General          | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic        | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic          | Semester 2 | CHO101      | 6            |

|                    |  | Presented  | Module Code | Credit Value |
|--------------------|--|------------|-------------|--------------|
|                    | <b>Physics I</b>                             |            |             |              |
|                    | Mechanics and Thermodynamics                 | Semester 1 | F101        | 15           |
|                    | Electricity, Magnetism and Optics            | Semester 2 | F102        | 15           |
|                    | <b>Applied Mathematics I</b>                 |            |             |              |
|                    | Graph Theory                                 | Semester 1 | MAPM111     | 8            |
|                    | Mathematical Modelling                       | Semester 1 | MAPM112     | 8            |
|                    | Mechanics                                    | Semester 2 | MAPM113     | 8            |
|                    | Numerical Methods 1                          | Semester 2 | MAPM114     | 8            |
|                    | <b>Mathematics I</b>                         |            |             |              |
|                    | Mathematics 1A                               | Semester 1 | MATH111     | 16           |
|                    | Mathematics 1B                               | Semester 2 | MATH112     | 16           |
|                    | <b>Computer Science I</b>                    |            |             |              |
|                    | Computing Fundamentals 1.1                   | Semester 1 | WRFC101     | 8            |
|                    | <b>Credits First Year</b>                    |            |             | <b>132</b>   |
|                    |  |            |             |              |
|                    |  | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |  |            |             |              |
|                    | <b>Select three of the following groups:</b> |            |             |              |
| <b>A</b>           | <b>Applied Mathematics II</b>                |            |             |              |
|                    | 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>B</b>           | <b>Chemistry II</b>                          |            |             |              |
|                    | Chemistry Analytical                         | Semester 1 | CHA201      | 9            |
|                    | Chemistry Inorganic                          | Semester 1 | CHI201      | 7            |
|                    | Chemistry Organic                            | Semester 2 | CHO201      | 12           |
|                    | Chemistry Physical                           | Year       | CHP203      | 12           |
| <b>C</b>           | <b>Physics II</b>                            |            |             |              |
|                    | Optics and Thermodynamics                    | Semester 1 | F210        | 20           |
|                    | Mechanics, Modern and Nuclear Physics        | Semester 2 | F212        | 20           |
| <b>D</b>           | <b>Mathematics II</b>                        |            |             |              |
|                    | Multivariable and Vector Calculus            | Semester 1 | MATH211     | 20           |
|                    | Linear Algebra                               | Semester 2 | MATH203     | 10           |
|                    | Real Analysis                                | Semester 2 | MATH214     | 10           |
|                    | <b>Credits Second Year</b>                   |            |             | <b>120</b>   |

|                   |  | Presented  | Module Code | Credit Value |
|-------------------|--|------------|-------------|--------------|
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Select two of the following majors corresponding to the modules offered in the previous year:</b> |            |             |              |
| <b>A</b>          | <b>Applied Mathematics III ♦</b>   |            |             |              |
|                   | 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>B</b>          | <b>Chemistry III ♦</b>   |            |             |              |
|                   | Chemistry Inorganic  | Year       | CHI303      | 20           |
|                   | Chemistry Organic  | Semester 1 | CHO303      | 20           |
|                   | Chemistry Physical   | Year       | CHP303      | 20           |
| <b>C</b>          | <b>Physics III ♦</b>   |            |             |              |
|                   | Electrodynamics and Quantum Mechanics  | Semester 1 | F310        | 30           |
|                   | Crystallography and Solid State Physics  | Semester 2 | F321        | 30           |
| <b>D</b>          | <b>Mathematics III</b>   |            |             |              |
|                   | 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           |
|                   | <b>Credits Third Year</b>  |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>   |            |             | <b>372</b>   |

♦ 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 |
|-------------------|---|------------|-------------|--------------|
| <b>First Year</b> |   |            |             |              |
|                   | <b>Compulsory modules:</b>                        |            |             |              |
| <b>A</b>          | <b>Chemistry 1</b>                                |            |             |              |
|                   | Chemistry General                                 | Semester 1 | CHG101      | 15           |
|                   | Chemistry Inorganic                               | Semester 2 | CHI101      | 9            |
|                   | Chemistry Organic                                 | Semester 2 | CHO101      | 6            |
| <b>B</b>          | <b>Computer Science and Information Systems 1</b> |            |             |              |
|                   | 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            |
| <b>C</b>          | <b>Mathematics 1</b>                              |            |             |              |
|                   | Mathematics 1A                                    | Semester 1 | MATH111     | 16           |
|                   | Mathematics 1B                                    | Semester 2 | MATH112     | 16           |
| <b>D</b>          | <b>Physics 1</b>                                  |            |             |              |
|                   | Mechanics and Thermo-dynamics                     | Semester 1 | F101        | 15           |
|                   | Electricity, Magnetism and Optics                 | Semester 2 | F102        | 15           |
|                   | <b>Credits First Year</b>                         |            |             | <b>124</b>   |

|                    |   | Presented  | Module Code | Credit Value |
|--------------------|---|------------|-------------|--------------|
| <b>Second Year</b> |   |            |             |              |
|                    | <b>Compulsory modules:</b>  |            |             |              |
| <b>A</b>           | <b>Chemistry 2</b>  |            |             |              |
|                    | Chemistry Analytical  | Semester 1 | CHA201      | 10           |
|                    | Chemistry Inorganic   | Semester 1 | CHI201      | 10           |
|                    | Chemistry Organic   | Semester 2 | CHO201      | 10           |
|                    | Chemistry Physical  | Year       | CHP203      | 10           |
| <b>B</b>           | <b>Mathematics 2</b>  |            |             |              |
|                    | Multivariable and Vector Calculus   | Semester 1 | MATH211     | 20           |
|                    | Linear Algebra  | Semester 2 | MATH203     | 10           |
|                    | Real Analysis   | Semester 2 | MATH214     | 10           |
| <b>C</b>           | <b>Physics 2</b>  |            |             |              |
|                    | Optic, AC Theory and Thermodynamics   | Semester 1 | F210        | 20           |
|                    | Mechanics, Modern and Nuclear Physics   | Semester 2 | F212        | 20           |
|                    | <b>Credits Second Year</b>  |            |             | <b>120</b>   |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Third Year</b>  |   |            |             |              |
|                    | <b>Select two of the following majors corresponding to the modules selected in the previous year:</b> |            |             |              |
| <b>A</b>           | <b>Chemistry 3 ♦</b>  |            |             |              |
|                    | Chemistry Inorganic   | Year       | CHI303      | 20           |
|                    | Chemistry Organic   | Semester 1 | CHO303      | 20           |
|                    | Chemistry Physical  | Year       | CHP303      | 20           |
| <b>B</b>           | <b>Mathematics 3 ♦</b>  |            |             |              |
|                    | 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           |
| <b>C</b>           | <b>Physics 3 ♦</b>  |            |             |              |
|                    | Electrodynamics and Quantum Mechanics   | Semester 1 | F310        | 30           |
|                    | Crystallography and Solid State Physics   | Semester 2 | F321        | 30           |
|                    | <b>Credits Third Year</b>   |            |             | <b>120</b>   |
|                    | <b>Total Credits</b>  |            |             | <b>364</b>   |

♦ 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, CHO202, CHPV200 |                | FFV1X1, FBBV1X1, FBBV1X2, FBBVX12 |
|  | CHIV300, CHO300, CHPV300          |                | FVV201, FVV202                    |

**DURATION**

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

**CURRICULUM**

|                    |   | Presented  | Module Code | Credit Value |
|--------------------|---|------------|-------------|--------------|
| <b>First Year</b>  |   |            |             |              |
|                    | <b>Compulsory modules:</b>                        |            |             |              |
| <b>A</b>           | <b>Chemistry 1</b>                                |            |             |              |
|                    | Chemistry General                                 | Semester 1 | CHGV101     | 15           |
|                    | Chemistry Inorganic                               | Semester 2 | CHIV100     | 9            |
|                    | Chemistry Organic                                 | Semester 2 | CHOV102     | 6            |
| <b>B</b>           | <b>Computer Science and Information Systems 1</b> |            |             |              |
|                    | 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            |
| <b>C</b>           | <b>Mathematics 1</b>                              |            |             |              |
|                    | Mathematics 1A                                    | Semester 1 | MATT101     | 16           |
|                    | Mathematics 1B                                    | Semester 2 | MATT102     | 16           |
| <b>D</b>           | <b>Physics 1</b>                                  |            |             |              |
|                    | Mechanics and Thermo-dynamics                     | Semester 1 | FVV101      | 15           |
|                    | Electricity, Magnetism and Optics                 | Semester 2 | FVV102      | 15           |
|                    | <b>Credit First Year</b>                          |            |             | <b>124</b>   |
|                    |   |            |             |              |
|                    |   | Presented  | Module Code | Credit Value |
| <b>Second Year</b> |   |            |             |              |
| <b>A</b>           | <b>Chemistry 2</b>                                |            |             |              |
|                    | 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>B</b>          | <b>Mathematics 2</b>   |            |             |              |
|                   | Multivariable and Vector Calculus                              | Semester 1 | MATT201     | 20           |
|                   | Real Analysis  | Semester 2 | MATT202     | 10           |
|                   | Linear Algebra   | Semester 2 | MATT212     | 10           |
| <b>C</b>          | <b>Physics 2</b>   |            |             |              |
|                   | Optic, AC Theory and Thermodynamics                            | Semester 1 | FVV201      | 20           |
|                   | Mechanics, Modern & Nuclear Physics                            | Semester 2 | FVV202      | 20           |
|                   | <b>Credits Second Year</b>                                     |            |             | <b>120</b>   |
|                   |  |            |             |              |
|                   |  | Presented  | Module Code | Credit Value |
| <b>Third Year</b> |  |            |             |              |
|                   | <b>Choose two majors (60 credits each) from the following:</b> |            |             |              |
| <b>A</b>          | <b>Chemistry 3 ♦</b>   |            |             |              |
|                   | Chemistry Inorganic  | Year       | CHIV300     | 20           |
|                   | Chemistry Organic  | Semester 1 | CHOV300     | 20           |
|                   | Chemistry Physical   | Year       | CHPV300     | 20           |
| <b>B</b>          | <b>Mathematics 3 ♦</b>   |            |             |              |
|                   | 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           |
| <b>D</b>          | <b>Physics 3 ♦</b>   |            |             |              |
|                   | Electrodynamics and Quantum Mechanics                          | Semester 1 | FVV301      | 30           |
|                   | Crystallography and Solid State Physics                        | Semester 2 | FVV302      | 30           |
|                   | <b>Credits Third Year</b>                                      |            |             | <b>120</b>   |
|                   | <b>Total Credits</b>   |            |             | <b>364</b>   |

♦ 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 |
|------------------|--------------------------------------|-----------|-------------|--------------|
| <b>Full-time</b> |                                      |           |             |              |
|                  | <b>Compulsory modules:</b>           |           |             |              |
|                  | Financial Management IV ♦            | Year      | AGM4110     | 30           |
|                  | Strategic Management IV ♦            | Year      | ASM4110     | 30           |
|                  | Leadership development II ♦          | Year      | ALD2110     | 30           |
|                  | <b>Select one of the following:</b>  |           |             |              |
|                  | Animal Production IV (Option) ♦      | Year      | AAP4110     | 30           |
|                  | Or<br>Plant Production IV (Option) ♦ | Year      | APP4110     | 30           |
|                  | <b>Total Credits</b>                 |           |             | <b>120</b>   |

|                                     |                                      | Presented | Module Code | Credit Value |
|-------------------------------------|--------------------------------------|-----------|-------------|--------------|
| <b>Block release<br/>First Year</b> |                                      |           |             |              |
|                                     | <b>Compulsory modules:</b>           |           |             |              |
|                                     | Financial Management IV ♦            | Year      | AGM4110     | 30           |
|                                     | Strategic Management IV ♦            | Year      | ASM4110     | 30           |
|                                     | <b>Credits First Year</b>            |           |             | <b>60</b>    |
|                                     |                                      |           |             |              |
|                                     |                                      | Presented | Module Code | Credit Value |
| <b>Second Year</b>                  |                                      |           |             |              |
|                                     | <b>Compulsory modules:</b>           |           |             |              |
|                                     | Animal Production IV (Option) ♦      | Year      | AAP4110     | 30           |
|                                     | Or<br>Plant Production IV (Option) ♦ | Year      | APP4110     | 30           |
|                                     | Leadership development II ♦          | Year      | ALD2110     | 30           |
|                                     | <b>Credits Second Year</b>           |           |             | <b>60</b>    |

♦ 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 |
|------------------|---|-----------|-------------|--------------|
| <b>Full-time</b> |   |           |             |              |
|                  | <b>Compulsory modules:</b>                  |           |             |              |
|                  | Financial Management Agriculture IV         | Year      | SFB4110     | 30           |
|                  | Leadership Development II                   | Year      | SLD2110     | 30           |
|                  | Strategic Management: Agriculture IV        | Year      | SSB4110     | 30           |
|                  | <b>Select one of the following modules:</b> |           |             |              |
|                  | Animal Production IV                        | Year      | SAP4110     | 30           |
|                  | Plant Production IV                         | Year      | SPP4110     | 30           |
|                  | <b>Total Credits</b>                        |           |             | <b>120</b>   |

**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***

|                                |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--------------------------------|--|------------------|--------------------|---------------------|
| <b>Full-time and Part-time</b> |  |                  |                    |                     |
|                                | <b>Compulsory modules:</b>                               |                  |                    |                     |
|                                | Chemistry Project (Special topic and research project) ♦ | Year             | CMP4110            | 24                  |
|                                | <b>Analytical Chemistry IV ♦</b>                         |                  | <b>CHA4120</b>     |                     |
|                                | 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                   |
|                                | <b>Inorganic Chemistry IV ♦</b>                          |                  | <b>CHI4120</b>     |                     |
|                                | Organometallic Chemistry                                 | Year             | ICC41T1            | 6                   |
|                                | Homogeneous Catalysis                                    | Year             | ICC42T1            | 6                   |
|                                | Bio-inorganic Chemistry                                  | Year             | ICC43T1            | 6                   |
|                                | Inorganic Practical Project                              | Year             | ICC41P1            | 6                   |
|                                | <b>Organic Chemistry IV ♦</b>                            |                  | <b>CHO4120</b>     |                     |
|                                | Advanced Topics in Organic Chemistry                     | Year             | OCC41T1            | 14                  |
|                                | Organic Practical Project                                | Year             | OCC41P1            | 6                   |
|                                | Heterocycles and Natural Products                        | Year             | OCC4101            | 4                   |
|                                | <b>Physical Chemistry IV ♦</b>                           |                  | <b>CPC4120</b>     |                     |
|                                | Advanced Kinetics  | Year             | PCC41T1            | 8                   |
|                                | Surface Chemistry  | Year             | PCC43T1            | 10                  |
|                                | Physical Practical Project                               | Year             | PCC41P1            | 6                   |
|                                | Research Methodology *                                   | Year             | CRM4111            | 15                  |
|                                | <b>Total Credits</b>                                     |                  |                    | <b>135</b>          |

♦ 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 |
|--------------------------------|---|-----------|-------------|--------------|
| <b>Full-time and Part-time</b> |   |           |             |              |
|                                | <b>Select one of the following modules:</b>   |           |             |              |
|                                | Forest Engineering Practice IV *              | Year      | FEP4110     | 30           |
|                                | Forest Management IV *                        | Year      | FMN4110     | 30           |
|                                | Silviculture IV *                             | Year      | FSI4110     | 30           |
|                                | <b>Select three of the following modules:</b> |           |             |              |
|                                | 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           |
|                                | <b>Total Credits</b>                          |           |             | <b>120</b>   |

\*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 |
|-----------------------------|--------------------------------------|-----------|-------------|--------------|
| <b>Part-time First Year</b> |                                      |           |             |              |
|                             | <b>Compulsory modules:</b>           |           |             |              |
|                             | Research Methodology ♦               | Year      | GMR4410     | 12           |
|                             | Game Ranch Management IV ♦           | Year      | GRM4410     | 36           |
|                             | Game Science IV ♦                    | Year      | GRS4410     | 36           |
|                             | <b>Credits First Year</b>            |           |             | <b>84</b>    |
|                             |                                      |           |             |              |
|                             |                                      | Presented | Module Code | Credit Value |
| <b>Second Year</b>          |                                      |           |             |              |
|                             | <b>Compulsory modules:</b>           |           |             |              |
|                             | Game Ranch Economics IV ♦            | Year      | GER4410     | 18           |
|                             | Game Ranch Strategic Management IV ♦ | Year      | GSM4410     | 18           |
|                             | <b>Credits Second Year</b>           |           |             | <b>36</b>    |
|                             | <b>Total Credits</b>                 |           |             | <b>120</b>   |
|                             |                                      |           |             |              |
|                             |                                      | Presented | Module Code | Credit Value |
| <b>Full-time First Year</b> |                                      |           |             |              |
|                             | Research Methodology ♦               | Year      | GMR4410     | 12           |
|                             | Game Ranch Management IV ♦           | Year      | GRM4410     | 36           |
|                             | Game Science IV ♦                    | Year      | GRS4410     | 36           |

|  |                                      | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|--------------------------------------|------------------|--------------------|---------------------|
|  | Game Ranch Economics IV ♦            | Year             | GER4410            | 18                  |
|  | Game Ranch Strategic Management IV ♦ | Year             | GSM4410            | 18                  |
|  | <b>Total Credits</b>                 |                  |                    | <b>120</b>          |

♦ 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 |
|------------------|------------------------------------|-----------|-------------|--------------|
| <b>Full-time</b> |                                    |           |             |              |
|                  | <b>Compulsory modules:</b>         |           |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>               |           |             | <b>120</b>   |

**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 |
|------------------|---|-----------|-------------|--------------|
| <b>Full-time</b> |   |           |             |              |
|                  | <b>Compulsory modules:</b>                  |           |             |              |
|                  | Conservation Management I                   | Year      | NCM1110     | 12           |
|                  | Research Methodology I                      | Year      | NRE1110     | 12           |
|                  | Resource Management IV                      | Year      | NRS4110     | 36           |
|                  | Plant Studies IV                            | Year      | NPS4110     | 36           |
|                  | <b>Sub-total</b>                            |           |             | <b>96</b>    |
|                  | <b>Select two of the following modules:</b> |           |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>                        |           |             | <b>120</b>   |

**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 |
|--------------------------------|---|-----------|-------------|--------------|
| <b>Full-time and Part-time</b> |   |           |             |              |
|                                | <b>Select one of the following modules:</b>     |           |             |              |
|                                | Panel Board Production IV * (F-t students only) | Year      | FPB4110     | 30           |
|                                | Timber Processing IV *                          | Year      | FTP4210     | 30           |
|                                | Timber Seasoning IV *                           | Year      | FTS4110     | 30           |
|                                | <b>Select three of the following modules:</b>   |           |             |              |
|                                | 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           |

|  |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|--|------------------|--------------------|---------------------|
|  | Production Engineering: Industrial III | Year             | FPI3110            | 30                  |
|  | Timber Structures IV                   | Year             | FHS4110            | 30                  |
|  | <b>Total Credits</b>                   |                  |                    | <b>120</b>          |

**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**

|                            |  | <b>Presented*</b> | <b>Module Code</b> | <b>Credit Value</b> |
|----------------------------|--|-------------------|--------------------|---------------------|
| <b>Full-time/Part-time</b> |  |                   |                    |                     |
|                            | <b>Compulsory modules:</b>   |                   |                    |                     |
|                            | 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                  |
|                            | <b>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):</b>  |                   |                    |                     |
|                            | 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 <b>must</b> be approved by the HoD of Computing Sciences, subject to the condition that it should complement the other modules in the programme. <b>Approval is dependent upon submission of request on appropriate form available in the Department.</b> |                   |                    | 22                  |
|                            | <b>Total Credits</b>   | <b>Minimum</b>    |                    | <b>120</b>          |

\* 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 |
|------------------|--|-------------|-------------|--------------|
| <b>Full-time</b> |  |             |             |              |
|                  | <b>Compulsory modules:</b>   |             |             |              |
|                  | 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           |
|                  | <b>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):</b> |             |             |              |
|                  | Business Process Re-engineering  | Semester 2* | WHBV402     | 11           |
|                  | Software Engineering   | Semester 2* | WHSV402     | 11           |
|                  | <i>Capita Selecta</i>  | Semester 1* | WHZV401     | 11           |

|  |                                   | <b>Presented*</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|-------------------|--------------------|---------------------|
|  | 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                  |
|  | <b>Total Credits</b>              |                   |                    | <b>121</b>          |

\* 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**

|                  |   | <b>Presented*</b> | <b>Module Code</b> | <b>Credit Value</b> |
|------------------|---|-------------------|--------------------|---------------------|
| <b>Full-time</b> |   |                   |                    |                     |
|                  | <b>Compulsory modules:</b>  |                   |                    |                     |
|                  | 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                  |
|                  | <b>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):</b> |                   |                    |                     |
|                  | 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                  |
|                  | <b>Total Credits</b>  |                   |                    | <b>120</b>          |

\* 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 |
|------------------|---|-------------|-------------|--------------|
| <b>Full-time</b> |   |             |             |              |
|                  | <b>Compulsory modules:</b>  |             |             |              |
|                  | 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           |
|                  | <b>Elective modules - select one of the following modules:</b>                  |             |             |              |
|                  | 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           |
|  | <b>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):</b> |             |             |              |
|  | 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           |
|  | <b>Total Credits</b>   |             |             | <b>121</b>   |

\* 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 |
|------------------|---|------------|-------------|--------------|
| <b>Full-time</b> |   |            |             |              |
|                  | <b>Compulsory modules:</b>                    |            |             |              |
|                  | Honours Project                               | Year       | STAT400     | 30           |
|                  | Multi-variate Statistical Methods             | Semester 1 | STAT401     | 24           |
|                  | <b>Select three of the following modules:</b> |            |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>                          |            |             | <b>120</b>   |

## 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 |
|------------------|----------------------------|-----------|-------------|--------------|
| <b>Full-time</b> |                            |           |             |              |
|                  | <b>Compulsory modules:</b> |           |             |              |
|                  | Finite Element Methods     | Year      | MAPM411     | 24           |
|                  | Project                    | Year      | MAPM420     | 30           |
|                  | Biomathematics             | Year      | MAPM421     | 24           |
|                  |                            |           |             |              |

|  |   | Presented | Module Code | Credit Value |
|--|---|-----------|-------------|--------------|
|  | <b>Select two of the following modules:</b> |           |             |              |
|  | 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           |
|  | <b>Total Credits</b>                        |           |             | <b>126</b>   |

**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 |
|------------------|---|------------|-------------|--------------|
| <b>Full-time</b> |   |            |             |              |
|                  | <b>Compulsory modules:</b>                  |            |             |              |
|                  | 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           |
|                  | <b>Sub-total</b>                            |            |             | <b>96</b>    |
|                  | <b>Select two of the following modules:</b> |            |             |              |
|                  | 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           |
|  | <b>Total Credits</b> |           |             | <b>120</b>   |

**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 |
|------------------|----------------------------|------------|-------------|--------------|
| <b>Full-time</b> |                            |            |             |              |
|                  | <b>Compulsory modules:</b> |            |             |              |
|                  | 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            |
|                  | <b>Total Credits</b>       |            |             | <b>120</b>   |

**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 |
|------------------|--|-----------|-------------|--------------|
| <b>Full-time</b> |  |           |             |              |
|                  | <b>Compulsory modules:</b>                 |           |             |              |
|                  | Analytical Methods                         | Year      | CHA420      | 22           |
|                  | General Theory A                           | Year      | CHG420      | 22           |
|                  | General Theory B                           | Year      | CHG430      | 22           |
|                  | <b>Sub-total</b>                           |           |             | <b>66</b>    |
|                  | <b>Select one of the following groups:</b> |           |             |              |
| <b>A</b>         | <b>Inorganic Theory</b>                    |           |             |              |
|                  | Inorganic Theory                           | Year      | CHI420      | 22           |
|                  | Analytical/Inorganic Practical/Project     | Year      | CHI430      | 32           |
| <b>B</b>         | <b>Organic Theory</b>                      |           |             |              |
|                  | Organic Theory                             | Year      | CHO420      | 22           |
|                  | Organic Practical/Project                  | Year      | CHO430      | 32           |
| <b>C</b>         | <b>Physical / Polymer Theory</b>           |           |             |              |
|                  | Physical / Polymer Theory                  | Year      | CHP420      | 22           |
|                  | Physical / Polymer Practical/Project       | Year      | CHP430      | 32           |
|                  | <b>Total Credits</b>                       |           |             | <b>120</b>   |

**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 |
|------------------|--|------------|-------------|--------------|
| <b>Full-time</b> |  |            |             |              |
|                  | <b>Compulsory modules:</b>             |            |             |              |
|                  | Information Systems Project Management | Semester 1 | WHVV401     | 11           |
|                  | Treatise on the project                | Year       | WHPV400     | 32           |

|  |   | Presented      | Module Code | Credit Value |
|--|---|----------------|-------------|--------------|
|  | <b>Select elective modules comprising 77 credits, with at least 44 credits chosen from Set A, and at most 33 credits chosen from Set B.</b>   |                |             |              |
|  | <b>Set A (select at least 44 credits)<br/>(not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):</b>  |                |             |              |
|  | 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           |
|  | <b>Set B (select at most 33 credits)<br/>(not all modules will necessarily be presented every year; presentation thereof will be determined by student numbers and staff availability):</b>   |                |             |              |
|  | 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 <b>must</b> be approved by the HoD of Computing Science, subject to the condition that it should complement the other modules in the programme. <b>Approval is dependent upon submission of request on appropriate form available in the Department.</b> |                |             | 22           |
|  | <b>Total Credits</b>  | <b>Minimum</b> |             | <b>120</b>   |

\* 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 |
|------------------|--|-----------|-------------|--------------|
| <b>Full-time</b> |  |           |             |              |
|                  | <b>Compulsory modules:</b>                           |           |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>                                 |           |             | <b>120</b>   |

**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 |
|--------------------|--|-----------|-------------|--------------|
| <b>Full-time</b>   |  |           |             |              |
|                    | <b>Compulsory modules:</b>             |           |             |              |
|                    | 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            |
|                    | <b>Total Credits</b>                   |           |             | <b>120</b>   |
|                    |  |           |             |              |
|                    |  | Presented | Module Code | Credit Value |
| <b>Part-time</b>   |  |           |             |              |
| <b>First Year</b>  |  |           |             |              |
|                    | Formulatory Statistical Methodologies  | Year      | CHFV430     | 12           |
|                    | Technology of Formulations             | Year      | CHFV440     | 24           |
|                    | Formulation Science                    | Year      | CHFV450     | 15           |
|                    | <b>Credits First Year</b>              |           |             | <b>51</b>    |
|                    |  |           |             |              |
|                    |  | Presented | Module Code | Credit Value |
| <b>Second Year</b> |  |           |             |              |
|                    | 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            |
|                    | <b>Credits Second Year</b>             |           |             | <b>69</b>    |
|                    | <b>Total Credits</b>                   |           |             | <b>120</b>   |

**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 |
|------------------|--|-----------|-------------|--------------|
| <b>Full-time</b> |  |           |             |              |
|                  | <b>Compulsory modules:</b>   |           |             |              |
|                  | Cartography  | Term 1    | GISV421     | 24           |
|                  | Remote Sensing   | Term 3    | GISV422     | 24           |
|                  | Geographical Information Systems   | Term 2    | GISV431     | 24           |
|                  | Research Project   | Term 4    | GISV412     | 30           |
|                  | <b>Select one of the following:</b>  |           |             |              |
|                  | Environmental Impact Studies<br><b>OR</b><br>Any other module in The School of Environmental Sciences with credit value not less than 24 | Term 4    | GENV400     | 24           |
|                  | <b>Total Credits</b>   |           |             | <b>126</b>   |

**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 |
|------------------|----------------------------|------------|-------------|--------------|
| <b>Full-time</b> |                            |            |             |              |
|                  | <b>Compulsory modules:</b> |            |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>       |            |             | <b>120</b>   |



**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 |
|------------------|---|------------|-------------|--------------|
| <b>Full-time</b> |   |            |             |              |
|                  | <b>Compulsory modules:</b>                    |            |             |              |
|                  | Honours Project                               | Year       | STAT400     | 30           |
|                  | Multi-variate Statistical Methods             | Semester 1 | STAT401     | 24           |
|                  | <b>Select three of the following modules:</b> |            |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>                          |            |             | <b>120</b>   |

**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 |
|------------------|---|-----------|-------------|--------------|
| <b>Full-time</b> |   |           |             |              |
|                  | <b>Compulsory modules:</b>                  |           |             |              |
|                  | Project                                     | Year      | MATH430     | 30           |
|                  | Functional Analysis                         | Year      | MATH440     | 24           |
|                  | Topology                                    | Year      | MATH450     | 24           |
|                  | Abstract Algebra                            | Year      | MATH460     | 24           |
|                  | <b>Select one of the following modules:</b> |           |             |              |
|                  | Modern Applied Algebra                      | Year      | MATH420     | 24           |
|                  | Capita Selecta                              | Year      | MATH470     | 24           |
|                  | Measure and Integration Theory              | Year      | MATH480     | 24           |
|                  | <b>Total Credits</b>                        |           |             | <b>126</b>   |

**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 |
|------------------|----------------------------|-----------|-------------|--------------|
| <b>Full-time</b> |                            |           |             |              |
|                  | <b>Compulsory modules:</b> |           |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>       |           |             | <b>120</b>   |

**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 |
|------------------|---|------------|-------------|--------------|
| <b>Full-time</b> |   |            |             |              |
|                  | <b>Compulsory modules:</b>                  |            |             |              |
|                  | Quantum Mechanics                           | Semester 1 | F411        | 22           |
|                  | Statistical Mechanics and Thermodynamics    | Semester 2 | F412        | 22           |
|                  | Electrodynamics                             | Semester 1 | F421        | 22           |
|                  | Practical                                   | Year       | F410        | 32           |
|                  | <b>Sub-total</b>                            |            |             | <b>98</b>    |
|                  | <b>Select one of the following modules:</b> |            |             |              |

|  |   | 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           |
|  | <b>Total Credits</b>                        |           |             | <b>120</b>   |

**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 |
|------------------|---------------------------------|------------|-------------|--------------|
| <b>Full-time</b> |                                 |            |             |              |
|                  | <b>Compulsory modules:</b>      |            |             |              |
|                  | 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           |
|                  | <b>Total Credits</b>            |            |             | <b>120</b>   |

**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 |
|------------------|--|------------|-------------|--------------|
| <b>Full-time</b> |  |            |             |              |
|                  | <b>Compulsory modules:</b>                   |            |             |              |
|                  | Data Skills                                  | Year       | ZOOV410     | 21           |
|                  | Research Competencies                        | Year       | ZOOV420     | 35           |
|                  | <b>Sub-total</b>                             |            |             | <b>56</b>    |
|                  | <b>Select four of the following modules:</b> |            |             |              |
|                  | Sustaining Exploited Marine Resources        | Semester 1 | ZOOV401     | 16           |

|                  |  | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|------------------|--|------------------|--------------------|---------------------|
| <b>Full-time</b> |  |                  |                    |                     |
|                  | 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                  |
|                  | <b>Total Credits</b>                             |                  |                    | <b>120</b>          |

## 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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 |
|--------------------------------|--|-----------|-------------|--------------|
| <b>Full-time and Part-time</b> |  |           |             |              |
|                                | <b>Compulsory modules:</b>   |           |             |              |
|                                | Research Project   | Year      | MRP5110     | 60           |
|                                | Technopreneurship  | Year      | MTP5120     | 10           |
|                                | <b>Sub-total</b>   |           |             | <b>70</b>    |
|                                | <b>Select five of the following modules:</b>                           |           |             |              |
|                                | 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           |
|                                | <b>Total Credits</b>   |           |             | <b>120</b>   |

\*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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|------------------|---|------------|-------------|--------------|
| <b>Full-time</b> |   |            |             |              |
|                  | <b>Select one of the following groups A – C:</b>          |            |             |              |
| <b>A</b>         | <b>Nanophysics</b>  |            |             |              |
|                  | 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>B</b>         | <b>Nanobiomedical</b>                                     |            |             |              |
|                  | 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 |
|----------|---|------------|-------------|--------------|
| <b>C</b> | <b>Nanochemistry</b>                                      |            |             |              |
|          | 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            |
|          | <b>Total Credits</b>                                      |            |             | <b>180</b>   |

**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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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**

|  |                                   | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>         |                  |                    |                     |
|  | 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 |
|--|-----------------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>         |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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 |
|--|-----------------------------|-----------|-------------|--------------|
|  | <b>Compulsory module:</b>   |           |             |              |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | 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**

|  |                             | <b>Presented</b> | <b>Module Code</b> | <b>Credit Value</b> |
|--|-----------------------------|------------------|--------------------|---------------------|
|  | <b>Compulsory module:</b>   |                  |                    |                     |
|  | Research project and thesis | Year             | ZOOV600            | 360                 |



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