



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

Yearbook

2023/24

Think in other terms

FACULTIES AND TEACHING DEPARTMENTS

Faculty of Applied Science

Department of Applied Biology and Biochemistry

Department of Applied Chemistry

Department of Applied Mathematics

Department of Applied Physics

Department of Computer Science

Department of Informatics and Analytics

Department of Radiography

Department of Statistics and Operations Research

Department of Sports Science and Coaching

FACULTIES

FACULTY OF APPLIED SCIENCE

Dean

Prof P Nyamugure, BSc in Applied Mathematics, MSc in Operations Research, PGDHE, Doctor of Philosophy in Operations Research

Senior Assistant Registrar

Mr W D Magagula, MSc in Disaster Management (UFS), Advanced Diploma Advanced Diploma in Disaster Management (UFS), Diploma in Development & Disaster Management (NUST), BSc in Education - Administration/Policy Making (UZ), Secondary School Teachers Certificate (GTC)

Chief Technician,

Mr Spencer Kanjera, BEng Hons Electronic Engineering, Cisco CyberOps Certification

Chief Secretary

Ms N Gumede,

MSc in Development Studies (NUST), BSc (Hons) in Development Studies (LSU), Certificate in Systemic Counseling (NUST), Higher Diploma in Business and Accounting Studies (IBAS), Office Bookkeeping and Accounts (PITMAN), Audio Typing Diploma (PITMAN), Advanced Typewriting (PITMAN), Office Practice (PITMAN)

Technicians,

Mr Benjamini Muwadzuri, Bcom Honours in Information Systems(GZU),NC in Computer Systems(Byo Poly)

Mrs E Gezi, Bachelor of Science Honours Degree Computer Science,Master of Sciences Information Systems Post Graduate Diploma In Teaching

Mrs Sichelesile Moyo, Bachelor of commerce honours Degree in information systems Great zimbabwe University 2019

FACULTY REGULATIONS

UNDERGRADUATE DEGREE PROGRAMMES

1.0 PREAMBLE

- 1.1 These regulations should be read in conjunction with the General Academic Regulations for Undergraduate Degrees hereinafter referred to as the General Regulations.
- 1.2 These regulations are in respect of programmes for the degrees offered in the Faculty of Applied Science listed in Section 4.2 below.

2. BACHELOR OF SCIENCE HONOURS DEGREE

The appropriate degree shall be awarded to a student who has successfully completed an approved Programme in accordance with these regulations.

3. DEFINITION OF TERMS

3.1 SEMESTER

A semester shall normally comprise 15 weeks, 12 weeks of which shall be assigned to teaching, 1 week to revision and 2 weeks to examinations.

3.2 MODULE

A module is defined in the General Regulations as a separately examinable portion of a programme. In these Regulations the word 'module' without an adjective, shall refer to a portion consisting of four hours of formal instruction a week for a semester. Not more than three, but normally at least two, of those hours shall be lectures. This definition is extended by the introduction of the terms module, supporting module, co-requisite module, double module, Half module, prerequisite module and industrial training module. The Departmental Board responsible for a subject may designate, in the Special Regulations for that subject, certain modules as core modules and other modules as supporting modules.

Core modules are modules which are considered to be essential for qualification in a particular subject while supporting modules are modules which are considered to give the student all the relevant interdisciplinary knowledge for studying the core modules.

- 3.2.1 A double module may consist of either eight hours of formal instruction a week for a semester or of four hours of formal instruction a week for the two consecutive semesters of an Academic Year. In the former case not more than six, and normally, at least four of those hours shall be lectures, while in the latter

case, not more than three and, normally, at least two of those hours shall be lectures.

- 3.2.2** A half module shall consist of two hours of formal instruction a week for a semester.
- 3.2.3** A project module is a module in which a student is required to carry out, under the direction and supervision of a member of the academic staff, private studies or investigations related to a particular topic within a subject. In the Special Regulations for the subject of which it forms a portion, each project module shall be assigned a weighting based on the amount of time it occupies compared with a module. Weighting shall be in multiples of half modules.
- 3.2.4** An industrial training module is a module in which a student is required to work for a specified institution for a period of not less than four months and not more than ten months in one Academic Year. The student shall work under the direction and supervision of a member of the academic staff and delegated members of the specified institution for that period.
- 3.2.5** A prerequisite module for a particular module is one that the relevant Departmental Board requires a student to pass prior to the start of the Academic Year in which he/she intends to study the particular module. A co-requisite module, for a particular module, is one which the relevant Departmental Board requires a student to take at the same time as, or at an earlier time than that module. Passing a co-requisite module cannot be made a condition for passing a module.
- 3.2.6** A practical module is a module in which a student is required to carry out, under the supervision of members of the academic staff, a set number of prescribed laboratory experiments.

(Through these regulations two half modules are equivalent to a module and a double module is equivalent to two modules).

3.3. PART

A Part is essentially a year of study. In the Special Regulations for each subject, each module shall be designated as a Part I, II, III or IV module, with the Part corresponding approximately to the level of maturity required for study of the module.

3.4 FULL TIME STUDY

In each year, other than the Industrial Attachment period, in order to be regarded as a full-time student, a student shall register for and attend a minimum of 12 modules.

In those years a full time student shall receive between 24 and 30 hours of formal instruction a week. During industrial attachment a student may register for failed modules which he/she is eligible to resist.

4. ENTRY REGULATIONS

4.1 In order to qualify for normal entry to a Bachelor of Science Honours Degree Programme in the Faculty of Applied Science, a prospective student must satisfy the Entry Regulations specified in the General Regulations and in so doing, must also meet the following Faculty Requirements:-

4.1.1 Having obtained a Pass at 'A' level in at least two of the following subjects or their recognized equivalents:-

Biology, Chemistry, Mathematics, Physics, Computer Science, Physical Science and:-

4.1.2 Have obtained a Pass at 'O' level or 'A' level in a third subject chosen from those listed in Section 3.1.1. and

4.1.3 Have obtained a Pass in at least five 'O' level subjects including Mathematics and English

NOTE: There are restrictions on the combinations of certain subjects. See 3.1.4 of the General Academic Regulations.

4.2 While the above requirements apply to entry to the Faculty as a whole, the following specific qualifications, or their recognized equivalents, are NORMALLY required by the indicated subjects for entry to first year studies in that subject:-

BSc Degree in Applied Biology & Biochemistry - 'A' level Biology and Chemistry plus any other science subject at "A" Level;

BSc Degree in Biotechnology - at least two science subject passes at 'A' Level in Biology and Chemistry.

Applied Chemistry - 'A' Level Chemistry and either 'A' level Mathematics or 'A' level Physics

Computer Science - 'A' level Mathematics and Physics or 'A' level Mathematics and Computer Studies & any Science subject

Informatics - 'A' level Mathematics and any other Science or Commercial subject

Applied Mathematics- 'A' level Mathematics and any other 'A' level Science subject or Geography

Applied Physics - 'A' level Physics and 'A' level Mathematics
Radiography - 'A' level Physics and either 'A' level Biology or 'A' level Chemistry or Mathematics

Earth Sciences - 'A' level Physics and 'A' level Mathematics

Sports Science and Coaching - 'A' level Biology and either 'A' level Chemistry, Geography, Computer Science, Physics, or Mathematics;

Statistics and Operations Research - 'A' level Mathematics and any other 'A' level Science or Commercial subject

Informatics - 'A' level Mathematics and Physics or 'A' level Mathematics and Computer Studies & any Science subject

4.3. Entry to all programmes in Applied Science is competitive and in many cases the holding of the minimum requirements shall not ensure admission.

All applicants satisfying departmental requirements shall not ensure admission. All applicants satisfying departmental requirements compete on the basis of the overall points obtained from the 'A' level grades or points in the subjects listed in

4.2. In case of equal overall points preference shall be given to higher points in the core subjects.

3.4 Special Entry

In addition to the Special Entry requirements as provided in the general regulations, the following are the Faculty requirements:

3.4.1 Special Entry Requirements into Part I

Higher National Diploma (HND) holders in a subject related to the intended subject of study at NUST and with a minimum of Grade C at 'A' level or an equivalent qualification in the subject of intended study may be admitted into Part I of that intended subject.

This shall include diplomas from;

- a) Teachers colleges;
- b) Polytechnic colleges;
- c) Technical colleges;
- d) Any other equivalent institution.

- 3.4.2 Applicants who have obtained a first degree at NUST or any other recognised institutions in an appropriate science subject.
- 3.4.3 Special Entry Requirements into Part II
- 3.4.4 Holders of HND or equivalent in the subject of intended study, e.g. Computer Science, with at least 2 years work experience.
- 3.4.5 Holders of degrees with enough subject content to fulfil first year requirements of the subject of intended study from a registered institution (transcripts must be provided for the determination of content studied).

Examples are those who studied one of the following subject combinations and wish to do one of the other subjects in the combination;

Mathematics/Physics/Computer Science, Biology/Chemistry/Environmental Science

3.5 **Sponsored Candidates**

Applicants with HND diplomas related to their subject of intended study with teaching and/or technical experience at tertiary institutions who are sponsored (or Sponsorship supported or sourced) by their institutions may be admitted into Part I or Part II provided they meet the requirements as outlined in sections 1 and 2 above. Subject to interviews, their experience may also determine their admission into the appropriate part (Part I or Part II) of the intended subject of study.

Candidates applying for entry into Part I and Part II under sections 1, 2 and 3 may be subjected to an interview/test.

4. **STRUCTURE OF DEGREE PROGRAMMES AND SELECTION OF MODULES**

4.1 Except in the case of special entry when a lesser period may be allowed, the Bachelor of Science Honours Degree Programme requires full time study over a period of four years. Normally a student shall be required to complete the programme in not more than five years from the date of the first registration for the programme.

4.2 Bachelor of Science Honours Programmes in the Faculty of Applied Science are offered in the following subjects areas:-

Applied Biology and Biochemistry

Biotechnology

Applied Chemistry
Applied Mathematics
Applied Physics
Radiography
Earth Sciences
Operations Research and Statistics
Computer Science Radiography
Informatics
Sports Science and Coaching

In Special Regulations for each of these Departments there shall be a list of modules available for a programme in that subject. This list shall include all supporting modules for the Programme, including those taught by other Departments. The list shall contain at least 12 Part I modules; at least 12 Part II modules; a Part III industrial training module lasting two semesters, or a Part III industrial training module lasting one semester and at least 6 Part III modules taught during the first semester; at least 12 Part IV modules.

At each of Parts I, II, III (if appropriate) and IV, at least 50% of those modules shall be core modules.

- 4.3 A Bachelor of Science Honours Programme in a particular subject shall consist of either an industrial training module of 2 Semesters and at least 36 other modules or an industrial training module of 1 semester duration and 42 other modules. The modules are to be chosen from those listed in the Special Regulations for that subject, including all core modules listed for that subject.
- 4.4 Normally, in any year of the Programme, a student shall study 12 modules at least 4 of which are core modules in his or her chosen subject.
- 4.5 In the second and subsequent years a student may study modules whose prerequisites he/she has satisfied, subject to the conditions in Section 4.2.
- 4.6 A student shall study an industrial training module.
- 4.7 In Part IV of a Bachelor of Science Honours Degree Programme a student must take at least one project module examined by a dissertation, the weighting of that module being that of 2 modules but not more than 6 modules.

4.8 When a student needs no more than 6 modules to complete the Degree Programme and he/she has already completed four years of full time study he/she may study the remaining module in a further part-time year.

4.9 **SELECTION OF MODULES**

4.9.1 For each Part II or higher level module all pre-requisites and co-requisites that apply to that module shall be listed in the Special Regulations for the relevant subject. A student shall not be admitted to a module unless he/she has passed all pre-requisites for that module prior to the start of the Academic Year in which he/she intends to study that module.

4.9.2 Subject to the restrictions imposed by 4.9.3 a student may, in the second and subsequent years, study module(s) whose pre-requisites he/she has satisfied, including approved modules offered by other departments. These modules from other departments may be additional modules or may replace up to a total, during the entire programme, of at most six modules from the list of his/her chosen subject.

Note that it may be possible to allocate weightings different from one, half and two to a module from another Faculty. The weighting shall depend on the structure of the module, although normally a module shall only be approved if it is fully compatible with these regulations.

4.9.3 A student's selection of a module for a degree programme is subject to the approval of the Dean of Science and the Chairperson of all relevant departments and to the following conditions:-

4.9.3.1 The student must satisfy the entry requirements for the subjects from which other modules are taken.

4.9.3.2 The module combination is feasible in terms of the timetable.

4.9.3.3 The student must not be enrolled for more than eight modules at any time during a semester.

4.9.3.4 The chosen modules shall enable the student to complete the Programme in as close to the minimum period of four years as is possible.

4.9.3.5 Each module is taken in the year corresponding to the Part to which it is assigned or in a later year.

4.9.3.6 The total weighting of project modules in the Programme does not exceed six modules.

5.0 ASSESSMENT OF CANDIDATES

5.1 Modules other than Industrial Training Modules, Practical Modules and Project Modules:-

5.1.1. Each module shall be assessed by coursework assessment and a formal examination.

5.1.2 Each formal examination shall be held during an examination period at the end of a semester, normally that of the semester in which the module is completed.

5.1.3 The formal examination for a module shall be of three hours duration while that for a half-module shall be of two hours duration. A double module shall have a four hour formal examination.

5.1.4 Modules may contain a practical component. Where there is a practical component, that component shall be assessed by coursework assessment only and the practical assessment mark shall constitute between 15 and 25 per cent of the overall assessment for that module. The weighting of theory coursework assessment mark to formal examination mark shall conform to the bounds laid down in the General Regulations. However the total contribution from the practical assessment mark and the theory coursework mark shall not exceed 40 per cent of the overall mark for that module.

5.2 Project Modules

The assessment of project modules shall be based on dissertation and oral presentation by the student. Normally a dissertation shall be submitted at the end of the revision period of the semester in which the module is completed.

5.3 Industrial Training Modules

Each Industrial Attachment Module shall be assessed by continuous assessment and by the assessment of a final report, written by the student. The continuous assessment mark shall constitute 50% and the final report mark shall constitute 50% of the overall assessment.

The coursework assessment shall be based on an assessment of the student's professional performance by his supervisors and on reports written by the student at the end of each phase of the Industrial Attachment Module.

The final report shall normally be submitted not later than the end of the month following completion of the industrial training module.

5.4 **PRACTICAL MODULES**

The assessment of practical modules shall be based on the submission of laboratory reports. Students must write the reports in a prescribed manner on each laboratory experiment performed during the semester in which the module is being offered and present the reports to the academic supervisor for grading. Marks obtained from all the laboratory reports shall be used for compiling the final overall mark for the practical module.

6.0 **DETERMINATION OF RESULTS OF MODULES**

The weighting of modules shall be based on the notional study hours (NSH) credit system in which all learning activities of a student of average ability, taking place in and outside scheduled contact sessions, are taken into consideration (1 credit = 10 notional hours). A student must attain a prescribed minimum number of credits to qualify for the award of a degree.

6.1 Modules other than Industrial Training Modules, Practical Modules and Project Modules:

6.1.1 The appropriate Departmental Panel of Examiners shall determine for each coursework and each student a theory Coursework Assessment mark, a practical assessment mark (where appropriate), a formal examination mark, an overall theory mark and an overall mark for the module and shall determine whether the student has passed or failed the module. The Departmental Panel shall submit the overall theory mark, the practical assessment mark, the overall mark and the results to the Faculty Board of Examiners.

6.1.2 To pass a module that has both theory and a practical component a student must obtain an overall mark of at least 50%, and a practical assessment mark of at least 40%.

6.1.3 To pass a module a student must obtain at least 35% in the Final Examination and achieve an aggregate of at least 50%.

6.2 **Project Modules**

For each project module the appropriate Departmental Panel of Examiners shall determine, for each student, an overall mark and whether the student has passed or failed the module. The Departmental Panel shall submit the mark and the results to the Faculty Board of Examiners.

6.3 **Industrial Training Modules**

6.3.1 For each Industrial Attachment Module the appropriate Departmental Panel of Examiners shall determine, for each student, a coursework assessment mark,

a final report mark, an overall mark and whether the student has passed or failed the module. The Departmental Panel shall submit these marks and the result to the Faculty Board of Examiners.

- 6.3.2 To pass an Industrial Attachment Module a student must obtain an overall Mark of at least 50%, a continuous assessment mark of at least 50%, a mark of at least 50% in the assessment of the final report and oral assessment.

6.4 **PRACTICAL MODULES**

To pass a practical module a student must obtain a final overall mark of at least 50%. The overall mark for the module shall be determined solely from the marks obtained for the written laboratory reports submitted during the period of the module.

7.0 **REPEATING OF MODULES**

- 7.1 A student may repeat only a module that he/she fails except that if a student is allowed to repeat Part I and is unable to register for sufficient modules to be regarded as a full-time student, he/she may repeat one or more of the Part I modules previously passed, provided that he/she is registered for all Part I modules that he/she failed. Normally a student shall only be allowed to repeat a module once.
- 7.2. If a student fails a module but passes the practical assessment for that module, he/she may, when repeating that module, be exempted by the relevant Departmental Board from attending the practical component of the module and allowed to rewrite the formal examinations at an appropriate time.

Where a student is so exempted, the practical assessment mark for the Module shall be carried forward to the assessment of the repeated module.

- 7.3 If a student fails a practical module of the Part, he/she shall be required to repeat the module at an appropriate time as recommended by the Departmental Board.
- 7.4 A student may be allowed to repeat the industrial training module if he/she has failed the module but has obtained at least 40% in the overall mark for that module. If he/she has passed the continuous assessment, then in repeating the module he/she shall only be required to submit a new version of his/her final report. In that case the coursework assessment mark shall be the assessment of the repeated module.

8. PROCEEDING AND DISCONTINUING

- 8.1 Each Degree Programme is divided into parts which are, essentially, years of study. In each Part, a student shall normally study at least 12 modules, at least 6 in each semester.
- 8.2 In order to proceed from Part I to Part II a student must have:
- 8.2.1 Passed all Part I registered modules and all practical modules as appropriate, and pass on aggregate, or
- 8.2.2 Passed at least all Part 1 modules including at least 4 Part II core Modules and all practical modules as appropriate, in his/her chosen subject and satisfied the pre-requisites for at least 6 Part II core modules.
- 8.3 A student who, in the first year, passes at least 50 % of the modules but is not permitted to proceed to Part II may be permitted to repeat Part I. In repeating Part I a student may, for each module that he/she failed, either repeat that module or an alternative Part I module and may study any Part II module whose pre-requisites he/she has satisfied.
- 8.4 A student who fails a practical module in his/her chosen subject (if appropriate) shall not be permitted to proceed to Part II. He/she shall be required to repeat any failed practical module during the long vacation.
- 8.4.1 A student who obtains less than 50% in the overall mark for the repeated practical module shall be required to discontinue.
- 8.5 In order to proceed from Part II to Part III a student must have:
- 8.5.1 Passed all Part II registered modules and all full practical modules in his/her chosen subject if appropriate, and pass on aggregate or;
- 8.5.2 Passed at least 17 modules including each Part I core module and at least 4 Part II core modules and full practical modules if appropriate, in his/her chosen subject.
- 8.5.3 Satisfied the pre-requisites for at least 4 Part III modules if appropriate, or at least 6 Part IV modules, in his/her chosen subject.
- 8.6 A student who, having been permitted to proceed to Part II, but not permitted to Industrial Attachment (Part III) module at the end of the following year may be permitted to repeat Part II.
- 8.7 A student who fails any practical module in his/her chosen subject if appropriate, in Part II shall not be permitted to proceed to Part III. He/she may be allowed to repeat the failed practical module during the long vacation.

- 8.7.1 A student who obtains less than 50% in the overall mark for the repeated practical module shall be required to discontinue.
- 8.8 In order to proceed from Part III to Part IV a student must have passed her continuous assessment component of his/her Industrial Attachment module and obtained an overall mark of at least 50% in the Industrial Attachment Module.
- 8.9 A student who obtains less than 40% in the overall mark for an Industrial Attachment Module shall be required to discontinue.
- 8.10 The required period for the completion of a programme should be 8 years.
- 8.11 A student whose progress is delayed by failure in pre-requisite modules may be permitted to repeat the pre-requisite modules as a part-time student. If the modules are passed at the next sitting the student shall be allowed to resume his/her full-time studies and the repeat year shall not count towards the five years. Otherwise he/she shall be required to discontinue.

9. **AWARDING OF A DEGREE AND CLASSIFICATION OF THAT DEGREE**

- 9.1 To be eligible for the award of a Bachelor of Science Honours Degree a student must:
- 9.1.1 Pass each module listed for his/her chosen subject.
- 9.1.2 Pass all Part I modules, all Part II modules, all practical modules if appropriate, the Part III Industrial Training Module and all Part IV modules, including a project module.
- 9.1.3 Pass the modules constituting his/her programme on aggregate. The modules constituting his/her programme shall be the core modules and such other modules which combine with them to make a total of 30 modules and a 1-year Industrial Training Module.
- 9.1.5 Each Departmental Board shall, having recommended that a student has passed his/her programme, recommend the division in which he/she has passed that Programme. In classifying the pass the Board shall consider the weighted aggregate mark for all Part II modules, the industrial attachment module and all Part III modules if appropriate, and all Part IV Modules.
- 9.2 Modules shall be weighted as follows :-
- | | |
|------------|---|
| Part II - | 30% of the weighted aggregate mark. |
| Part III - | 20% of the weighted aggregate mark of the Industrial attachment module, |

IV - 50% of the weighted aggregate mark.

10.3 The Bachelor of Science Honours Degree Certificate and the student's transcript shall record that the student has been awarded the Bachelor of Science Honours Degree, with the subject of specialization enclosed in parentheses, and the classification accorded to the Degree.

11. **NOTIFICATION OF RESULTS**

A list of results shall be published in accordance with Section 16 of the General Regulations.

12. **SPECIAL REGULATIONS FOR EACH DEPARTMENT**

(see Special Regulations)

GENERAL ACADEMIC REGULATIONS FOR HIGHER DOCTORAL DEGREES

(EFFECTIVE FROM 2018)

1. **APPLICATION OF THESE REGULATIONS**

1.1 The Senate shall be the final authority for the interpretation of these regulations.

1.2 The Senate reserves the right to alter, amend, cancel, suspend or replace any of these regulations.

1.3 The Senate has the power to exempt any candidate from any of the regulations.

2. **DEFINITION OF TERMS**

In these regulations, the following terms shall be used as described:

This University: means the National University of Science and Technology and its predecessors and shall include an associated or affiliated institution to this University.

Published: means material printed in a referred periodical or journal, or as a pamphlet or as a book.

Graduate of this University: means a person who has been awarded a Bachelors or Masters or Doctoral degree of the University.

3. **DEGREES OFFERED BY THE UNIVERSITY**

3.1 The National University of Science and Technology awards the following higher doctorate degree:

Doctor of Science (D Sc)

3.2 This degree is the highest academic award of the National University of Science and Technology and is only awarded to persons who have published work of an exceptionally high standard, which would earn them authoritative standing in the field of research that forms the basis of the application for consideration.

4. ELIGIBILITY OF APPLICANT

4.1 An applicant must have published work of an exceptionally high standard that would confer authoritative standing in the discipline in which the application is located and the particular field or fields of research on which the application is based.

4.2 An applicant must be a graduate of this University or another university in the tenth or a subsequent year after the date of the award of the applicant's first degree or its equivalent.

4.3 An applicant who is not a graduate of this University shall, in addition to being a graduate of another university, have been employed by this University for a period of not less than five years and have been engaged in research, relevant to the application, in association with this University.

4.4 Eligibility for this specific degree:

The following is intended as a general guide:

An applicant for the D Sc degree would normally have conducted and published in the Sciences. Without derogating from the generality of the term Sciences, the D Sc degree would normally be awarded to successful applicants from the disciplines in Science, Agricultural Science, Engineering, Health Sciences and Veterinary Science.

5. APPLICATION FOR CONSIDERATION

5.1 An eligible applicant may make an application at any time for the appropriate Degree. Such an applicant shall submit with the application the following:

- 5.1.1 A full curriculum vitae;
- 5.1.2 An academic justification of the basis of their application; and
- 5.1.3 The academic evidence substantiating their application for the appropriate degree. Such evidence shall consist of published works, containing original contributions to the advancement of knowledge in the appropriate field or discipline.
- 5.2 Where work is submitted that is not in the applicant's sole name, the applicant shall indicate the extent of his/her contribution in terms of initiation, direction and conduct of the work.
- 5.3 An applicant shall indicate what part, if any, of the work including joint work submitted in support of the application has been submitted for the Award of a Degree in this or another university by the applicant or by a co-author.
- 5.4 The application shall be submitted to the office of the Registrar.

6. PROCESSING OF THE APPLICATION

- 6.1 Upon submitting the application the applicant shall be registered as a candidate for the award of the designated degree and shall pay the prescribed application fee.
- 6.2 Upon receipt of an application for the award of the degree, the application including all the supporting evidence shall be submitted to the Higher Degrees Committee of the Faculty responsible for the discipline in which the application is based. Such Higher Degrees Committee shall, having made a preliminary consideration of the application, transmit it for consideration to an appropriate Department of the Faculty.
- 6.3 The Departmental Board of the Department charged by the Faculty Higher Degrees Committee to consider the application shall make recommendations as to the merits of the application to the Faculty Higher Degrees Committee. The Departmental Board concerned shall submit with its recommendations, a list of persons it recommends as external and internal assessors.
- 6.4 Upon receipt of the resolution of the Departmental Board the Faculty Higher Degrees Committee shall consider the application and recommendations of the Departmental Board and shall make recommendations on the merits of the application and on the list of persons recommended as assessors. The Higher Degrees Committee may, at its discretion, make further recommendations on the list of assessors.
- 6.5 The resolution of the Department, the Department's list of persons recommended as assessors, the recommendations of the Faculty Higher Degrees Committee on the application and that Committee's recommendations on the list of assessors shall be transmitted via the Registrar to the Senate.

- 6.6 The Senate shall determine whether the application merits submission to assessors.
- 6.7 Having determined that an application merits submission to assessors Senate shall appoint the assessors.
- 6.8 In the event that the Higher Degrees Committee of the Faculty or the Departmental Board to which the matter is assigned do not consider that the application has been made to the appropriate Faculty or Department, they shall transmit the application and the supporting evidence with their reasons for declining to consider the application to the Registrar for re-assignment to an appropriate Faculty and Department, provided that Senate may determine that the matter shall be considered by a particular Faculty and/or Department.

7. REGISTRATION

If the application is approved by Senate, the candidate shall be informed of the acceptance of the application for consideration for the appropriate degree and shall be registered upon payment of the prescribed registration fee as a candidate for the award of the appropriate degree.

8. ASSESSMENT OF A CANDIDATE

- 8.1 After registration, as prescribed in Section 6, as a candidate for the appropriate degree, the assessment of the evidence submitted by the candidate shall be made by three (3) assessors, appointed in accordance with Section 5 of these regulations, provided that at least two (2) of the assessors shall be external assessors and, normally, at least one (1) shall be an internal assessor.
- 8.2 The assessors shall each submit a formal written report on the application and its merits to the Registrar. Such report shall contain a recommendation as to whether or not the candidate should be awarded the appropriate degree.

9. DETERMINATION OF THE RESULT

- 9.1 The Senate shall appoint a Board of Examiners, or delegate the responsibility to the Academic Committee, to consider the application in conjunction with the assessors' reports.
- 9.2 The Board of Examiners shall report to the Academic Committee its recommendations together with all the relevant documents availed to it.
- 9.3 The Senate shall determine whether or not the candidate should be awarded a higher doctorate degree.

10. AWARD OF THE DEGREE

A higher doctorate degree of the National University of Science and Technology shall be awarded without classification.

11. PUBLICATION OF THE RESULT

The Registrar shall notify the candidate of the result of the application as decided by Senate.

12. APPEAL AGAINST PUBLISHED RESULT

The decision of the Senate shall be final and no appeal against the published result shall be considered.

13. AWARD OF A DEGREE CERTIFICATE OF THE NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

13.1 The award of a degree Certificate of the National University of Science and Technology shall be subject to approval by the University Council.

13.2 A successful applicant for such an award will be entitled to receive a formal certificate of the University, bearing the seal of the University and signed by the Vice-Chancellor and the Registrar, confirming the award.

13.3 If, subsequent to the award of a degree to a candidate, it is discovered that there were gross irregularities and impropriety involved in the award the University Council, on the recommendation of the Senate, reserves the right to withdraw the award and cancel the certificate.

13.4 Once a Degree Certificate has been issued as the original, no duplicate of the same certificate shall be provided. Instead, the student shall be issued with a letter, signed by the Registrar, confirming that the candidate was awarded the degree of the National University of Science and Technology and was issued with an original and authentic degree certificate. A prescribed fee shall be levied for this service.

14 DEPARTMENTS

14.1 DEPARTMENT OF APPLIED BIOLOGY AND BIOCHEMISTRY

Lecturer and Chairperson

Professor J. Mbanga, BSc (Hons), MSc (UZ), PGDHE (NUST)

Associate Professor

A.H. Siwela, AssocDipAppBiol, BAppSc (RMIT Aus); MPhil (UZ); PhD (NUST)

Senior Lecturers

Dr Hilda Nyati, BSc (Hons) (UZ); MSc (WAGENINGEN), PhD (RMIT Aus), PGDE ZOU, Q.A. (Part I & II) City & Guilds, UK, PGDHE (NUST)

Dr Norah Basopo, BSc (UZ); GradDipToxicol, MAppSc (RMIT Aus), PhD NUST, PGDHE (NUST)

Lecturers

Dr Nancy Nleya BSc Applied Biology & Biochemistry, MSc Applied Microbiology & Biotechnology, Ph.D. Animal Health, PGDHE

Dr Angela Makuvise BSc Applied Biology & Biochemistry, MSc Applied Microbiology & Biotechnology, Ph.D. Biology

Ms Sanele Michelle Mnkandla BSc Biochemistry, MSc Biochemistry

Ms Sanele Loraine Rabi BSc Applied Biology & Biochemistry, MSc Applied Microbiology and Biotechnology

Dr Linly Banda Ndebele BSc Applied Biology & Biochemistry, MSc Applied Microbiology and Biotechnology, Ph.D Molecular Biology and Biotechnology

Mr N Mangoma BSc Applied Biology & Biochemistry, MSc Applied Microbiology and Biotechnology, PGDHE

Dr E Zumbika BSc Applied Biology & Biochemistry, MSc Biotechnology and Biochemistry, Ph.D. Medicine

Prof J Mbanga BSc (Hons) Biological Sciences, MSc Biotechnology, PGDHE, Ph.D. Medical Microbiology

Ms A Dube BSc Applied Biology & Biochemistry, MSc Applied Microbiology and Biotechnology

Ms. Yvonne O. Nyararai ND Biological Techniques, Btech Biotechnology, MSc Applied Microbiology and Biotechnology, Dip. Project Management

Research Fellows

Madeline Sibula, BSc (Hons) (NUST), MSc, (NUST)

Anita Dube, BSc (Hons) (NUST), MSc, (NUST)

Sanele Mnkandla, BSc (Hons) (KZN) SA, MSc, (UKZN), SA

Acting Chief Technician

Charles Kudzayi Chimhamhiwa BSc Applied Biology & Biochemistry, MSc Operations Research

Senior Technicians

N. Dube, BSc (Hons) (NUST)

Makhosazana Nyathi, BSc, UZ, MSc, (NUST)

UNDERGRADUATE PROGRAMME REGULATIONS SUMMARY

PROGRAMME: BSC (HONS) DEGREE IN APPLIED BIOLOGY & BIOCHEMISTRY

YEAR	MODULES		CREDITS
	CODE	TITLE	
I	SBB1101	Man and the Environment	10
	SBB1103	Cell Biology	10
	SBB1105	Plant Physiology	10
	SCS1100	Introduction to computers	12
	SCH1116	Organic Chemistry	10
	SMA1112	Preparatory Mathematics	10
	SBB1204	Genetics	10
	SBB1206	Animal physiology	10
	SBB 1207	General Microbiology	10
	SCH 1217	General Chemistry	10
	SCS1200	Data Processing and Data Systems	10
	CTL 1101	Conflict Transformation and Leadership	10
	SBB2101	Biochemistry: Chemistry of Biomolecules	12
II	SBB2102	Biochemistry : Metabolic Processes I	12
	SBB 2104	Introduction to Enzymology & Immunology	10
	SBB2107	Food Chemistry	12
	SBB 2105	General Microbiology II	10
	SBB 2109	Principles of Fermentation Technology	10
	SBB2203	Analytical Biochemistry	12
	SBB2211	Principles of Quality Assurance	10
	SBB2214	Molecular Genetics and Biotechnology	12
	SORS2210	Applied Statistics for Biological Sciences	10
	SCH 2108	Principles of Process Engineering	10
III	SBB 3001	Industrial Attachment	120
IV	SBB4101	Advanced Biochemistry and Molecular Physiology	12
	SBB4103	Principles of Nutrition	12

	SBB4106	Food Technology I: Non alcoholic Fermentations	12
	SBB4109	Advanced Applied Microbiology	12
	SBB4111	Biochemistry: Metabolic Processes II	12
	SBB4202	Enzyme Biotechnology	12
	SBB4204	Advanced Cell Biology	12
	SBB4207	Food Technology II: Alcoholic Fermentations	12
	SBB4208	Biotechnology of Pharmaceutical Products	12
	SBB 4010	Research Project	24
		Cumulative total	506

2. BSc (Hons) Degree in Biotechnology

YEAR	MODULES		Credits
	CODE	TITLE	
I	SBT1101	Principles of Microbiology	10
	SBT1102	Animal & Plant Physiology	10
	SBB1103	Cell Biology	10
	SCS1100	Information Technology and Computer Applications	10
	SCH1116	Organic Chemistry	10
	ILI 1108	Communication Theory & Practice	10
	SBT1202	Introduction to Biotechnology	10
	SBT 1201	Chemistry of Biomolecules	10
	SBT 1203	Biophysics & Instrumentation	10

	SBB1204	Genetics	10
	SCH 1217	General Chemistry	10
	CTL 1201	Conflict Transformation and Leadership	10
	SBB2109	Principles of Fermentation Technology	12
II	SBB2104	Introduction to Enzymology& Immunology	12
	SBT2101	Molecular Genetics	12
	SBT 2102	Bacteriology and Mycology	12
	SBT 2103	Virology	10
	SBT 2104	Molecular Cell Biology	10
	SBB2211	Principles of Quality Assurance	10
	SCH 2218	Principles of Process Engineering	10
	SBT 2201	Research Methods and Statistics	10
	SBT 2202	Introduction to Analytical Biotechnology	12
	SBT 2203	Introduction to Recombinant DNA Technology	12
	SBT 2204	Biotechnology Regulation & Biosafety	10
III	SBT 3000	Industrial Attachment	120
IV	SBT 4010	Final Year Project	24
	SBT 4101	Bioinformatics	12
	SBT 4102	Business & Biotechnology	12
	SBT 4103	Plant Biotechnology	12
	SBT 4104	Molecular Systematics	12
	SBT 4105	Animal Biotechnology	12
	ELECTIVES (CHOOSE 4)		

	SBT 4201	Fundamentals of Environmental Microbiology	12
	SBT4202	Bioremediation	12
	SBT4203	Biotechnology for Biofuels and Bioenergy	12
	SBT4204	Enzyme Biotechnology	12
	SBT4205	Biotechnology & Pharmaceuticals	12
	SBT4206	Medical Biotechnology	12
	SBT4207	Industrial Biotechnology	12
	SBT4208	Plant Pathology	12
	SBT 4209	Advanced Plant Biotechnology	12
		Cumulative total	504

MASTERS DEGREE PROGRAMME

Master of Science In Applied Microbiology and Biotechnology

Year	MODULE		CREDITS
	CODE	TITLE	
I	SBB5101	Microbial Genetics	23
	SBB5102	Recombinant DNA Technology	23
	SBB5111	Environmental Microbiology	23
	SBB5211	Entrepreneurship Skills	23
	SBB5212	Analytical Biotechnology and Bioinformatics	23
		Electives (Choose 1)	
	SBB5209	Plant Biotechnology	23
	SBB5213	Medical Microbiology & Biotechnology	23
	SBB5204	Advanced Food Microbiology	23
II		ELECTIVES (CHOOSE 2)	

Think in other terms

	SBB6110	Industrial Biotechnology	23
	SBB6111	Immunology	23
	SBB6114	Environmental Biotechnology	23
	SBB6115	Plant Pathology	23
	SBB6117	Virology	23
	SBB6118	Advanced Plant Biotechnology	23
	SBB6010	Research Project	120
		Cumulative Total	304

14.2 DEPARTMENT OF APPLIED CHEMISTRY

Senior Lecturer and Chairperson

Dr B. N. Yalala, PhD (Wits, SA), MSc (UWC, SA), BSc (Hons) (NUST, Z'bwe), QA Cert (City & Guilds), PGDHE (NUST, Z'bwe)

Academic Staff

Professor S. Sibanda, PhD (King's College, London, UK), BSc (Hons) (CNAAB), CEd

Senior lecturers

D. Dube, MBA (NUST, Z'bwe), MSc (Higher Institute of Chemical Technology, Bulgaria), CEd (UCE, Z'bwe)

Dr P. Ncube, PhD (University of Johannesburg, SA), MSc (University of Leeds, UK), BSc (Hons) UZ, Z'bwe), PGDHE (NUST, Z'bwe)

Dr E. Dube, PhD (Rhodes, SA), MSc (KwaZulu-Natal, SA), BSc (Hons) MSU, Z'bwe), PGDTE, (MSU, Z'bwe), ND Applied Chemical Technology, (Bulawayo Poly, Z'bwe)

Dr A. Maringa, PhD (Rhodes, SA), MSc (Wits, SA), BSc (Hons) (NUST, Z'bwe), PGDHE (NUST, Z'bwe)

Lecturers

Dr A. Ndiripo, PhD (Stellenbosch, SA), MSc (Stellenbosch, SA), BSc (Hons) (NUST, Z'bwe)

Dr B. Nyoni, PhD (Nelson Mandela, SA), MEng. (NWU, SA), BEng (NUST, Z'bwe)

Dr M. Moyo, PhD (Vaal, SA), MTech (Vaal, SA), BSc (Hons) (NUST, Z'bwe)

Q. Ngulube, MSc (Uppsala, Se), BSc (Hons) (NUST, Z'bwe)

Staff Development Fellows

S. Mlilo, BSc (NUST, Z'bwe), PGDHE (NUST, Z'bwe)

Chief Technician

C.Mpofu, BSc Chemistry/Physics (UZ, Z'bwe), City & Guilds QA Certificate

Senior Technicians

E. Bere, , MSc (BUSE, Z'bwe), BSc (Hons) (NUST, Z'bwe), PGDE (NUST, Z'bwe)

P. Nyama, BSc (ZOU, Z'bwe), BSc (Special Honours)(NUST, Z'bwe), HND (Hre Polytechnic, Z'bwe), City & Guilds

D. Nyama, BSc (General with Education (MSU) in collaboration with UZ, Z'bwe)

PROGRAMME SUMMARY

BSC DEGREE IN APPLIED CHEMISTRY

BSc (Hon)Degree in Applied Chemistry

YEAR	MODULE		CREDITS
	CODE	TITLE	
I	SCH 1101	Inorganic Chemistry I	10
	SCS 1101	Introduction to Computer	10
	SCH 1102	Science. Organic Chemistry I	10
	ILI 1105	Communication Skills	10

	SPH 1106	Modern Physics for Chemists	10
	SMA 1111	Mathematics for Science I	10
	SCS 1200	Database Concepts & Data Processing	10
	SCH 1201	Inorganic Chemistry II	10
	SCH 1202	Organic Chemistry II	10
	SCH 1206	Analytical Chemistry I	10
	SPH 1209	Engineering Materials	10
	SMA 1211	Mathematics for Science II	10
	TOTAL		120
II	SCH 2104	Physical Chemistry I	10
	SCH 2106	Analytical Chemistry II	10
	SCH 2107	Polymer Science I	10
	SCH 2108	Transport Phenomena	10
	SORS 2110	Introduction to Applied Statistics	10
	SCH 2114	Industrial Inorganic Chemistry I	10
	SCH 2202	Synthetic Methods in Organic Chemistry	10
	SCH 2204	Physical Chemistry II	10
	SCG 2207	Polymer Science II	10
	SCH 2208	Unit Operations	10
	SCH 2211	Quality Assurance Management & Control	10
	SCH 2215	Industrial Organic Chemistry I	10
	TOTAL		120
III	SCH 3001	INDUSTRIAL ATTACHMENT	120
IV	SCH 4106	Application of Analytical Chemistry	10
	SCH 4108	Chemical Engineering Plant Design	10
	SCH 4114	Industrial Inorganic Chemistry II	10
	SCH 4115	Industrial Organic Chemistry II	10
	SCH 4110	Project Development & Management	10
	SCH 4010	Research Project	20
	SCH 4208	Reactor Technology	10

	SCH 4214	Industrial Inorganic Chemistry III	10
	SCH 4215	Industrial Organic Chemistry III	10
	SCH 4202	Heterocyclic Chemistry	10
	SCH 4010	Research Project	10
	TOTAL		120
	GRAND TOTAL		480

MASTERS DEGREE PROGRAMME SUMMARY

PROGRAMME: MSc in APPLIED ANALYTICAL CHEMISTRY

Part	MODULE		CREDITS
	CODE	TITLE	
I	SCH 5101	Laboratory Management & Research Methods	18
	SCH 5104	Advanced Sampling and Sample Preparation	18
	SCH 5110	Classical Analysis and Chemometrics	18
	SCH 5114	Electrochemical Methods	18
	SCH 5215	Separation Methods	18
	SCH 5216	Thermal and Radiochemical Methods	18
	SCH 5217	Spectroscopic Methods	18
	SCH 5218	Advanced Chemical Instrumentation	18
	SCH 6122	Environmental Analysis and Green Chemistry	18

	SCH 6130	Chemical Sensors and Biosensors	18
	SCH 6140	Pharmaceutical and Clinical Analysis	18
	SCH 6150	Intellectual Property Rights and Entrepreneurship	18
	SCH 6200	Project	90
		Cumulative Total	306

14.3 DEPARTMENT OF APPLIED MATHEMATICS

Chairman of Department

Dr Sarudzai P. Showa, PhD Applied Mathematics, NUST, MSc Mathematics, UZ, BSc Hons Mathematics, MSU.

Senior Lecturer

Dr Farikayi K. Mutasa, MSc Industrial Mathematics, NUST, BSc Hons Applied Mathematics, NUST, Postgrad Dip in Higher Education, NUST.

Dr Mlamuli Dhlamini, Bsc Hons in Applied Mathematics and MSc industrial mathematics NUST, PhD Applied Mathematics UKZN.

Dr Tinashe B. Gashirai, MSc Applied Mathematical Modelling, NUST, BSc Hons Applied Mathematics, NUST.

Lecturers

Ms Nomatter Chiduku, MSc Industrial Mathematics, NUST, BSc Hons Applied Mathematics, NUST, Postgrad Dip in Higher Education, NUST.

Mr Simbarashe Chipindirwi, MSc Mathematical Biochemistry, Lethbridge, MSc Mathematics, UZ, BSc Hons Applied Mathematics, NUST.

Mr Harmon Ncube, Bsc Honours in Applied mathematics and MSc Applied mathematical modeling NUST.

Mrs Martina Mthombeni, BSc in Applied Mathematics, MSc in Applied Mathematical Modelling,

Post Graduate Diploma in Higher and Tertiary Education, NUST

Mr Thabani Gwebu, Bsc Honours in Applied mathematics and MSc Applied mathematical modeling NUST.

Mr Taurai Mademutsa, MSc Applied Mathematical Modelling, NUST, BSc Hons Applied Mathematics, NUST.

Mr Nimrod Moyo Tinashe B. Gashirai, MSc Applied Mathematical Modelling, NUST, BSc Hons Applied Mathematics, NUST.

Senior Technician

Peter Chiguvare, MSc Information Systems, NUST, MSc Operations Research, NUST, BSc Hons Computer Science, NUST, Microtech City and Guilds I and II, HND Computer Science, ZFETC, ND Computer Science, NID Information Processing.

Secretary

Ms Mvuto, Bachelor of Science Honours Degree In Records And Archives Management, Higher National Diploma in Office Management, National Diploma in Secretarial Studies , National Certificate in Secretarial Studies

UNDERGRADUATE PROGRAMME SUMMARY

BACHELOR OF SCIENCE HONOURS DEGREE IN APPLIED MATHEMATICS

YEAR	MODULES		CREDITS
	CODE	TITLE	
I	SMA1101	CALCULUS	12
	SMA1102	LINEAR ALGEBRA	12
	SMA1103	DISCRETE MATHEMATICS	12
	SCS1101	INTRODUCTION TO COMPUTER SCIENCE	12
	SPH1101	MECHANICS	12
	IL1108	COMMUNICATION THEORY AND PRACTISE	12
	SMA1201	CALCULUS OF SEVERAL VARIABLES	12
	SMA1202	REAL ANALYSIS	12

	SMA1204	ORDINARY DIFFERENTIAL EQUATIONS	12
	SORS1201	APPLIED STATISTICS	12
	SCS 1206	VISUAL BASIC PROGRAMMING CONCEPTS AND DEVELOPMENT	12
	SMA1209	COMPUTER PACKAGES IN MATHEMATICS	12
II	SMA2102	ADVANCED LINEAR ALGEBRA	12
	SMA2103	THEORETICAL MATHEMATICS	12
	SORS2103	PROBABILITY THEORY	12
	CBU2115	ENTREPRENEURSHIP	12
	SMA2109	RESEARCH METHODS IN MATHEMATICS	12
	SMA2201	COMPLEX ANALYSIS	12
	SMA2204	PARTIAL DIFFERENTIAL EQUATIONS	12
	SMA2206	NUMERICAL ANALYSIS	12
	SORS2206	SURVEY METHODS	12
	SMA2209	MATHEMATICAL MODELLING	12
SORS2203	OPTIMISATION	12	
III	SMA3010	INDUSTRIAL ATTACHMENT	120
IV	SMA4103	FLUID MECHANICS	12
	SMA4112	MODERN ALGEBRA	12
	SMA4135	DYNAMICAL SYSTEMS	12
	SMA4162	NUMERICAL METHODS FOR DIFFERENTIAL EQUATIONS	12
	SORS4106	EXPERIMENTAL DESIGN AND MULTIPLE REGRESSION	12
	SMA4211	FUNCTIONAL ANALYSIS	12
	SMA4236	CONTROL THEORY	12
	SMA4241	FINANCIAL MATHEMATICS	12
	SORS4207	MULTIVARIATE ANALYSIS	12
	SMA4010	PROJECT	36
		TOTAL	516

3. SERVICE MODULES

	MODULES	Credits
	SMA1111 Mathematics for Science I	10
	SMA1112 Preparatory Mathematics	10
	SMA1211 Mathematics for Science II	10
	SMA1116 Engineering Mathematics IA	10
	SMA1216 Engineering Mathematics IB	10
	SMA2116 Engineering Mathematics II	10
	SMA2217 Engineering Mathematics III	10
	SMA3116 Engineering Mathematics IV	10

MASTERS DEGREE PROGRAMME SUMMARY

Master of Science Degree in Applied Mathematical Modelling

Part	Modules		Credits
	Code	Title	
I	SMA5111	Advanced Functional Analysis	25
	*SMA5131	Continuum Mechanics	25
	*SMA5141	Integral Equations	25
	*SMA5151	Variational Calculus	25
	SMA5161	Numerical Solution of Ordinary Differential Equations	25
	SMA5181	Stochastic Differential Equations	25
	SMA5191	Introduction To Mathematical Modelling	25
	SMA5211	Advanced Dynamical Systems	25
	*SMA5221	Forecasting	25
	*SMA5241	Perturbation Methods	25
	SMA5251	Industrial Statistics	25

	*SMA5261	Numerical Solution of Partial Differential Equations	25
	SMA5281	Financial Mathematics	25
	SMA5291	Mathematical Epidemiology	25
II	SMA5010	Dissertation	125
	TOTAL CREDITS		375

14.4 DEPARTMENT OF APPLIED PHYSICS

CHAIRPERSON

Prof G G Nyambuya, PhD (NUST) MSc NWU (RSA), BSc (Hons) UZ

Professors

Prof J Gwamuri, PhD Eng, Michigan Technological University, Houghton, Michigan, USA 2016, MSc Physics, NUST, Zimbabwe, 2004, BSc Physics, ISP Enrique J Varona, Cuba, 1996

SENIOR LECTURERS

Dr P Baricholo, PhD(NUST), MPhil (NUST), BSc Physics Education & Astronomy (Cuba)

Dr B Manzunzu, PhD (Witwatersrand, SA), MSc Geophysics (NUST), BSc (Hons) Physics (UZ)

LECTURERS

Mr R T Mashingaidze, MSc Geophysics (NUST), BSc (Hons) Applied Physics (NUST)

Mr C Chuma, MSc Geophysics (NUST), BSc (Hons) Applied Physics, (NUST PGDHE (NUST), Post Graduate Diploma in Remote Sensing (ARCSSTEE, OAU, Nigeria)

Mr Z Zulu, MSc Material Physics (MSU), BSc (Hons) Applied Physics (NUST), PGDHE (NUST)

Mrs T Thatha, MSc Medical Physics (NUST), MBA (NUST), BSc (Hons) Applied Physics (NUST)

Mr T Ndlovu, MSc Geophysics (NUST), BSc (Hons) Applied Physics (NUST)

Mr N Sibanda, MSc Medical Physics (NUST), BSc (Hons) Applied Physics (NUST)

RESEARCH FELLOW

Mr M Gumbo, MSc Geophysics (NUST), BSc (Hons) Applied Physics (NUST)

CHIEF TECHNICIAN

Mr C Dzingai, MBA (NUST), BSc (Hons) Applied Physics (NUST)

Mr H Manuel, BSc (Hons) Applied Physics (NUST)

TECHNICIANS

Mr W Chirume, BSc (Hons) Applied Physics (NUST)

Mr J Dongo, BSc (Hons) Applied Physics (NUST)

SECRETARY

Mrs P C Muriwo, MSc in Human Resource Management (Lupane State University), BCom (Hons) Human Resource Management (NUST), HND Office Management (Bulawayo Polytechnic)

UNDERGRADUATE DEGREE PROGRAM SUMMARY

BSC (HONS) DEGREE IN APPLIED PHYSICS

Part	Module Code	Module Title	Credits
I	SPH 1101	Mechanics and Relativity	12
	SPH1104	Modern Physics	12
	SPH1105	Electricity and Magnetism	12
	SMA1101	Calculus	12
	SMA1102	Linear Algebra	12
	SPH 1114	Thermal Physics I	12
	ILI1105	Communication Skills	12
	SCS1100	Information Technology and Computer Applications	12
	SPH 1201	Waves and Optics	12
	SMA 1201	Calculus of several variables	12

	SCS 1211	Programming and programme Design for Physicists	12
	SMA 1204	Ordinary Differential Equations	12
			144
II	SPH 2104	Thermal Physics II	12
	SPH 2101	Quantum Mechanics	12
	SPH 2107	Electronics	12
	SPH 2115	Research Methodology	12
	SPH 2103	Classical Mechanics	12
	TEE 2112	Microprocessors	12
	SPH 2202	Solid State Physics	12
	SPH 2203	Instrumentation Physics	12
	SPH 2205	Atomic Physics	12
	SPH2207	Project Management	12
	SMA 2201	Complex Analysis	12
	SMA 2204	Partial Differential Equations	12
	CBU2115	Entrepreneurship and Innovation	12
			156
III	SPH 3010	Industrial Attachment	120
IV	SPH 4111	Statistical Mechanics	12
	SPH 4105	Nuclear Physics and Applications	12
	SPH 4106	Electromagnetics and Antennas	12
	SPH4125	Renewable Energy Technology	12
		Elective I	12
	SPH 4206	Instrumentation and Control Technology	12
	SPH 4205	Laser Theory and Applications	12
	SPH 4214	Material Science	12
		Elective II	12
SPH 4010	Project	24	
			132
Total programme Credits			552

Elective I

Part	Module Code	Module Title	Credits
IV	SPH 4120	Geophysics I	12
	SPH 4110	Optical Fibre Communications I	12
	SPH 4160	Medical Physics I	12
	SPH 4170	Applied Optics I	12

	SPH 4180	Plasma Physics I	12
	SPH 4190	Astronomy and Astrophysics I	12

Elective II

Part	Module Code	Module Title	Credits
IV	SPH 4220	Geophysics II	12
	SPH 4210	Optical Fibre Communications II	12
	SPH 4260	Medical Physics II	12
	SPH 4270	Applied Optics II	12
	SPH 4280	Plasma Physics II	12
	SPH 4290	Astronomy and Astrophysics II	12

SERVICE MODULES

Part	Module Code	Module Title	Credits
I	SPH 1106	MODERN PHYSICS FOR CHEMISTS	12
	SPH 1209	ENGINEERING MATERIALS	12

BSC HONOURS DEGREE IN EARTH SCIENCES

Year	Module		CREDITS
	Code	Title	
I	SPH 1101	Mechanics and Relativity	12
	SES 1101	Introduction to Earth Systems Science	12
	SPH1107	Electric Circuits and instruments	12
	SMA1101	Calculus	12
	ILI1105	Communication and Skills	12
	SPH 1201	Waves and Optics	12
	SMA 1201	Calculus of Several Variables	12
	SES1202	Physical Geology	12
	SCS 1212	Computer Applications and Programming	12
	SMA 1204	Ordinary Differential Equations	12
	SES 1203	Geochemistry	10
			132
II	SORS 2106	Probability Theory	12

	SES 2101	Geotectonics and Geohazards	12
	SES 2105	Electromagnetism	12
	SES 2103	Elements of Geomorphology	12
	SES 2104	Surveying I	12
	SES 2201	Soil Physics	12
	SES 2202	Theory of Seismology	12
	SES 2203	Elements of Meteorology	12
	SES 2204	Surveying II	12
	SMA 2204	Partial Differential Equations	12
	CBU2115	Entrepreneurship and Innovation	12
			132
III	SES 3106	Petrology	12
	SES 3101	Remote Sensing	12
	SES 3102	Potential Field Exploration Methods	12
	SES 3103	Research Methods	12
	SES 3105	Electrical and Electromagnetic Exploration Methods	12
	SES 3104	Principles of Surface and Groundwater Hydrology	12
	SES3200	Industrial attachment	48
			120
IV	SES 4101	Seismic Exploration Methods	12
	SES 4102	Borehole Logging Techniques	12
	SES 4103	Groundwater Modelling and Management	12
	SES 4104	Geographical Information Systems	12
	SES 4105	Structural Geology	12
	SES 4202	Climate Dynamics	12
	SES 4201	Environmental Geoscience and Impact Assessment	12
	SES 4203	Geotechnical Investigations	12
	SES 4204	Quality Assurance and Project Management	12
	SES 4205	Time Series Analysis and Signal Processing	12
	SES 4010	Research Project	48
		Total credits for Programme	480

MASTERS DEGREE PROGRAMME SUMMARY

MASTER OF SCIENCE DEGREE IN GEOPHYSICS

Part	Module		Credits
	CODE	Title	
I	MAPH5131	Seismic Theory And Fundamentals	25
	MAPH 5132	Time Series Analysis And Inverse Theory	25
	MAPH 5133	Structural Geology	25
	MAPH 5134	Global Tectonics	25
	MAPH 5236	Geophysical Inverse Theory	25
	MAPH 5237	Geoelectric and Em Methods	25
	MAPH 5238	Gravity and Magnetic Exploration	25
	MAPH 5239	Refraction And Reflection Seismology	25
II	MAPH 61XX	Elective I	25
	MAPH 61XX	Elective II	25
	MAPH 6040	Research Project	150
			400
	ELECTIVES		
	MAPH 6140	Seismic Hazard Assessment	25
	MAPH 6122	Remote Sensing I	25
	MAPH 6141	Remote Sensing li	25
	MAPH 6123	Reservoir Geophysics 18	25
	MAPH 6140	Seismic Hazard Assessment	25
	MAPH 6122	Remote Sensing I	25
	MAPH 6121	Hydrology And Contaminant Processes	25
		400	

MASTERS OF SCIENCE DEGREE IN MEDICAL PHYSICS

PART	MODULE		CREDITS
	CODE	TITLE	
I	MAPH 5113	Human Anatomy and Physiology	25

	MAPH 5114	Physics and Biology of Ionising Radiations	25
	MAPH 5115	Medical Imaging	25
	MAPH 5116	Radiotherapy Physics	25
	MAPH 5220	Safety and Quality Management	25
	MAPH 5221	Physics of Non-ionising Radiation	25
	MAPH 5222	Medical Electronics and Instrumentation	25
	MAPH5225	Nuclear Medicine	25
			200
II	MAPH 6000	Clinical practice	100
	MAPH 6010	Research Project	100
			200

MASTERS OF SCIENCE DEGREE IN LASERS AND OPTICS

	Module Code and Title	Credits
Year I	MAPH 5131 Mathematical Methods	25
	MAPH 5071 Advanced Quantum Mechanics	25
	MAPH 5031 Physical and Geometrical Optics	25
	MAPH 5112 Seminar and Laboratory Work	25
	MAPH 6033 Fibre Optics and Non Linear Optics	25
	MAPH 5032 Physics and Technology of Lasers	25
	MAPH 6036 Optical Communication	25
	MAPH 5112 Seminar and Laboratory Work	25

Year II	MAPH 6092 Optical Instrumentation and Measurement Elective module	25 25
	MAPH 6112 Research Project	150
Total credits		400

Elective	Credits
MAPH 6040 Optical Technology	25
MAPH 6035 Optical Properties of Materials	25
MAPH 6034 Laser Spectroscopy	25
MAPH 6037 Industrial Applications of Optics	25
MAPH 5072 Quantum Electrodynamics	25
MAPH 5113 Computer Applications and Interfacing	25

14.5 DEPARTMENT OF RADIOGRAPHY

Chairperson

Mrs S Nleya, MSc in Radiography (Radiotherapy) (Canterbury Christ Church University College, UK), DRC(T), (COR,UK), ZFETC, (Byo Polytechnic)

Senior Lecturers

Dr L Sibanda, PhD, MTech in Radiography (RSA), BSc (Gen) (UZ), BSc (Hons) in Radiography (NUST).

Dr J Tityiwe, PhD (UK), MSc in Radiography (UK), DDR (UZ), PGDHE (NUST), FETC (Harare Polytechnic) , CMU (Burwin, Canada)

Ms E F Maguranyanga, MSc Interprofessional Health and Community Studies (Radiography) (University of Kent at Canterbury, UK), MBA (NUST), HDCR, TDCR, DCR (R) (COR, London), HTD (Zimbabwe)

Lecturers

Mr S Gunda, BSc (Hons) in Radiography (NUST), MSc in Radiography (NUST), MSc in Medical Ultrasound (NUST)

Mr M Makonese, BSc Special (Hons) in Radiography (NUST), MSc in Medical Ultrasound (NUST)

Ms G Makonese, BSc (Hons) in Radiography (Diagnostic) (Birmingham City University, UK), MSc in Diagnostic Imaging (Sheffield Hallam University, UK)

Mr K Ndlovu, BSc (Hons) in Radiography (NUST), MSc in Medical Ultrasound (NUST)

Mrs J Mavondo, BSc Special (Hons) in Radiography (NUST), MSc in Radiography (NUST)

Secretary

Mrs P C Muriwo, MSc Human Resource Management (Lupane State University), BCom (Hons) Human Resource Management (NUST), HND Office Management (Bulawayo Polytechnic)

UNDERGRADUATE PROGRAMME SUMMARY

BACHELOR OF SCIENCE HONOURS DEGREE IN RADIOGRAPHY (DIAGNOSTIC)

	MODULE NAME	CREDITS		
		MBKS	NON MKBS	TOTAL
LEVEL I		98	20	118
SRA 1110	Anatomy, Physiology & Pathology I	10		10
SRA1103	Principles of Radiation Treatment & Imaging Sciences	8		8
SRA1102	Professionalism, Health & Safety	8		8
SPH 1104	Modern Physics	10		10
SMA 1111	Mathematics for Science I		10	

ILI 1105	Communication Skills		10	
SPH 1205	Instrumentation Physics	10		10
SRA 1210	Anatomy, Physiology & Pathology II	10		10
SRA 1202	Principles of Psychology and Sociology	8		8
SCS1212	Computer Applications and Programming	10		10
SRA1216	Radiobiology & Radiation Protection	8		8
SRA 1001	Clinical Practice I	16		16
LEVEL II		112	32	144
SRA 2106	Imaging Sciences and Equipment	20		20
SRA 2108	Physics of Radiation Science		12	
SRA 2109	Imaging of the Skeletal System	16		16
SRA 2111	Imaging of the Respiratory and Cardiovascular System	16		16
SORS 2110	Introduction to Applied Statistics		10	
SMA 1211	Mathematics for Science II		10	

Think in other terms

SRA 2201	Imaging of the Urinary and Reproductive Systems	16		16
SRA 2202	Imaging of the Digestive System	10		10
SRA 2208	Imaging of the Neuro-endocrine System	16		16
SRA 2001	Clinical Practice II	18		18
LEVEL III		110	16	126
SRA 3110	Research Methods	10		10
SRA 3102	Ultrasound I	16		16
SRA 3116	Computed Tomography Imaging	14		14
SRA 3117	Interventional Procedures	10		10
SRA 3210	Nuclear Medicine	14		14
SRA 3216	Radiography Practice & Different User Groups	12		12
SRA 3213	Magnetic Resonance Imaging	14		14
SRA3001	Clinical Practice III	20		20
	ELECTIVES			

*SRA 3214	Image Reporting		16	
*SRA 3215	Ultrasound II		16	
LEVEL IV		104	26	130
SRA 4102	Applied Psychology and Sociology	10		10
SRA 4103	Accident & Emergency Imaging		14	
CBU4109	Entrepreneurship		12	
SRA 4212	Quality Management	12		12
SRA 4215	Specialised Imaging Modalities	10		10
SRA 4010	Research Project	24		24
SRA 4001	Clinical Practice IV	48		48
	TOTAL CREDITS	424	94	518

MASTERS DEGREE PROGRAMME SUMMARY

MASTER OF SCIENCE DEGREE IN MEDICAL ULTRASOUND

Part	MODULE		CREDITS
	CODE	TITLE	
Part I	SRU 5101	Ultrasound Physics and Instrumentation	25
	SRU 5102	Ethics and Professional Practice in Ultrasound	25
	SRU 5103	Pelvic and Obstetrics Ultrasound I	25
	SRU 5000	Medical Ultrasound Clinical Practice I	25
	SRU 5202	Research in Healthcare	25
	SRU 5204	Upper Abdomen Ultrasound	25
	SRU 5203	Pelvic and Obstetrics Ultrasound II	25
	SRU 5205	Vascular, Musculoskeletal and Small Parts Ultrasound	25
			200
Part II	SRU6111	Entrepreneurship and Quality Management	25
	SRU 6100	Medical Ultrasound Clinical Practice	100
	SMU 6010	Research Project	75
			200
Total credits for programme			400

MASTER OF SCIENCE DEGREE IN RADIOGRAPHY

PART	MODULE		CREDITS
	CODE	TITLE	
1	SRA 5101	Radiobiology and Radiation Protection	25
	SRA 5102	Research in Health Care	25
	SRA 5103	Applied Psychology and Sociology	25

	SRA 5104	Clinical Practice I	25
	SRA 5205	Management in Health Care	25
	SRA 5210	Clinical Practice II	25
		Elective I	25
		Elective II	25
	Electives		
	SRA 5206	Diagnostic Radiography I*	25
	SRA 5207	Radiotherapy and Oncology I*	25
	SRA 5208	Diagnostic Radiography II*	25
	SRA 5209	Radiotherapy and Oncology II*	25
2	SRA 6010	Research Project	100
Total credits for program			300

14.6 DEPARTMENT OF COMPUTER SCIENCE

Chairperson
Mr Sibangiso Ngwenya, <i>Post Graduate Diploma in Higher Education (PGDHE) 2010, MSc in Computer Science, NUST, Z'bwe, 2008, Bsc (Hons) Mathematics and Computer Science, Jose Varona University, Cuba (1996); Certificate in Research Methods, UB, 2012.</i>
Lecturers
Dr Sindiso Mpenyu Nleya <i>Post Graduate Diploma in Higher Education (PGDHE) 2010, BSc (Hons) App. Physics 2003, MSc in Computer Science 2007, NUST, Z'bwe), PhD in Computer Science (UCT) 2016</i>
Mrs Samkeliso Suku Dube, <i>Post Graduate Diploma in Higher Education (PGDHE) NUST 2011; MSc in Computer Science NUST 2009; BSc (Hons) in Computer Science, NUST 2007</i>
Mr Khesani Richard Chilumani, <i>Post Graduate Diploma in Higher Education (PGDHE), NUST 2010; MSc in Computer Science, NUST 2008; BSc. (Hons.) in Computer Science, NUST 2005.</i>

<p>Mrs Siqabukile Ndlovu,, Post Graduate Diploma in Higher Education(PDGHE) 2014, MSc in Computer Science (2013); BSc. (Hons.) in Computer Science NUST' (2008), HND, Computer Studies (HEXCO)</p> <p>Mr Wellington Mapenduka, MSc in Computer Science NUST (2013), BSc Computer Science (University of Zimbabwe).</p> <p>Miss Tsitsi Zengeya, MSc in Computer Science, NUST (2017); BSc Computer Science Bindura University of Science and Technology (2008),</p> <p>Mrs Namatirai Marabada, MSc in Computer Science, NUST, (2009), Bsc (Hons) Degree in Computer Science(2006); Higher National Diploma in Computer Studies (2004)</p> <p>Mr Joseph Mutengeni A Higher National Diploma in Computer Science Studies from Bulawayo Poly Technique (2004), A Bachelor of Science (Hons) Degree in Computer Science, NUST, (2009) and a Masters degree in Computer Science, NUST, (2013)</p>

BACHELOR OF SCIENCE HONOURS DEGREE IN COMPUTER SCIENCE

PART	MODULE		TOTAL CREDITS
	CODE	TITLE	
I	SCS 1101	Introduction to Computer Science and Programming* [SCS1100 Introduction to Information Technology and Computer Applications]	10
	SCS1111	Principles of Programming Languages	10
	SPH1105	Electricity and Magnetism	10

	SCS 1103	Operating Systems Concepts	10
	SMA 1101	Calculus 1	10
	SMA1102	Linear Algebra	10
	SCS1112	Fundamentals of Digital Electronics	10
	SCS 1210	Discrete Mathematics	10
	SCS1216	Computer Architecture and Organization	10
	SCS1217	Data Structures and Algorithms	10
	SCS1215	Ethics and Professionalism	
	SCS1213	Database Systems	10
	SCS1214	Software Engineering	10
II	SCS2111	Data Communications and Computer Networks	10
	SCS2114	Web Development	10
	SCS2108	Object Oriented Software Concepts and Development	10
	SCS 2104	Structured System Analysis and Design	10
	SORS2107	Applied Statistics for Computing	10
	SCS2108	Object Oriented Software Concepts and Development	10
	SCS 2201	Software Design Methodology	10
	SCS 2203	Advanced Mathematical Structures for Computing	10
	SCS2214	Group Project	10

	SCS2110	Research Methods	10
	SCS2209	Computational Modelling	10
	SCS2211	Software Project Management	10
III	SCS 3000	Industrial Attachment	120
IV	SCS 4101	Artificial Intelligence	10
	SCS 4112	Theory of Computation	10
	SCS 4110	Information Systems Security and Auditing	10
	SCS 4108	Simulation and Modelling	10
	SCS 4111	Enterprise Architecture Programming	10
	SCS 4000	Research Project:	20
	SCS4203	Computer Graphics	10
	SCS4214	Expert Systems and Decision Support Systems	10
	SCI 4201	Digital Forensics	10
	SCS 4215	Enterprise Database Management	10
	SCS 4212	Parallel and Distributed Systems	10

Think in other terms

	TOTAL	480
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MASTER OF SCIENCE IN COMPUTER SCIENCE

PROGRAMME: MSc DEGREE IN COMPUTER SCIENCE

PART	MODULE		CREDITS
	CODE	TITLE	
1	SCS 5107	Advanced Enterprise Architecture Programming	24
	SCS 5110	Computational Discrete Mathematics	24
	SCS 5109	Advanced Database & Data Mining	24
	SCS	Elective I	24
	SCIS 5205	Research Methods	24
2	SCS 5208	Evolutionary Computing and Parallel Distributed Parallel Processing	24
	SCS 5210	Simulation and Modelling	24
	SCS	Elective II	24
	SCS 6201	Dissertation	110
	TOTAL		302

Elective I	SCS5103 Pattern Recognition and Image Processing	24
	SCS5111 Interactive Computer Graphics	24
	SCS 5112 Ontology Engineering	24
Elective II	SCS 5211 Digital Signal Processing	24
	SCS 5211 Software Methodology	24

14.7 DEPARTMENT OF INFORMATICS AND ANALYTICS

Chairperson

Mr Khulekani Sibanda, MSc in Computer Science, NUST(2011), Z'bwe; BSc(hons), NUST(2008); Post Graduate Diploma in Higher Education(PDGHE)(2012), NUST

Senior lecturers

Dr Sibonile Moyo, PhD in Computer Science, UNISA, (2020); MSc in Computer Science, NUST, Z'bwe (2005); Further Teacher's Education Certificate, Byo Poly (2000); BSc Gen.UZ (1991).

Professor Sibusisiwe Dube PhD Information Systems University of Cape Town 2021, MSc Computer Science NUST 2007 BSc Information Systems MIDLANDS State University 2003

Lecturers

Dr Phillip Nyoni, PhD Information Systems, North-West University(2020); MCom in Information Systems, North-West University 2015; BSc. (Hons) Information Science, NUST 2010

Mrs Mary Dzinomwa, MSc Information Systems, NUST (2019); Bsc (Hons) Computer Science, NUST (2017); ND Computer Systems, Byo Poly (2012)

Mrs Belinda Ndlovu , MSc Information Systems , NUST, Z'bwe, (2017) ;BSc. (Hons) Computer Science, NUST, Z'bwe, (2013); Post Graduate Diploma in Higher Education (PGDHE), NUST, Z'bwe, 2019 ;

Mr. Smart Ncube,MSc Information Systems, NUST(2017); BSc Hons Computer Science, NUST (2008).

Mrs Catherine Chivasa, MSc Information Systems, NUST (2021); BSc(Hons) Computer Science, NUST(2018)

Mr. Washington Marabada, MSc Information Systems,NUST(2015);BSc (Hons) Computer Science NUST, (2009);Diploma in Micro Computer Technology, CITY & GUILDS, (2001)

Senior Secretary

Ms S Charakupa

Technician

B Guvava

Bachelor of Science Honours in Informatics

PROGRAMME SUMMARY

Module	Credits
Level I	
SIA1101 Information Management Concepts	10
SIA1102 Electronic Commerce	10
SIA1103 Database Systems	10
SCS1101 Introduction to Computer Science and Programming	10
SMA1101 Calculus	10
SMA1102 Linear Algebra	10

ILI1105 Communication Skills	10
SIA1201 Business Information Systems and Applications	10
SIA1202 Data Mining and Warehousing	10
SIA1203 Data Visualisation and Reporting	10
SIA1204 Programming Concepts and Development using Python	10
SORS1201 Applied Statistics	10
SCS1210 Discrete Mathematics	10
Total	130
Level II	
SIA2101 Research Methods	10
SIA2103 Data Analysis and Simulation	10
SA2104 Application Development	10
SIA2105 Statistical Programming	10
SIA2108 Technopreneurship	10
SCS2111 Data Communications and Computer Networks	10
SIA2201 Decision Support Systems	10
SIA2202 Parallel and Distributed Processing	10
SIA2204 Information Security and Auditing	10
SIA2205 Data Science Project Management	10
SIA2206 Data Analytics	10
SIA2214 Group Project	10
Total	120
Level III	

Think in other terms

SIA3000 Industrial Attachement	120
Level IV	
SIA4000 Research Project	20
SIA4101 Bioinformatics	10
SIA4102 Health Informatics I	10
SIA4103 Policy Informatics I	10
SIA4104 Geo-Informatics I	10
SCS4101 Artificial Intelligence	10
SIA4201 Digital Forensics	10
SIA4202 Health Informatics II	10
SIA4203 Policy Informatics II	10
SIA 4204 Geo-Informatics II	10
SCS4215 Enterprise Data Management	10
Total	120

MASTERS DEGREE PROGRAMME

Master of Science in Information Systems

Module	Credits
Level I	
SIIS5102 Enterprise Database Systems	18
SIIS5103 Electronic Commerce	18
SIIS5104 Information Systems Strategy	18
SIIS5105 Financial and Management Accounting	18

SIIS5106 Data Analytics and Visualisation	18
SIIS5202 ICT Project Management	18
SIIS5203 Business Intelligence Systems	18
SIIS4204 Information System Security & Auditing	18
SIIS5205 Research Methods	18
SIIS5206 Emerging Technologies and Innovation	18
Level II	
SIIS6101 Dissertation	90
Total	270

Master of Science in Big Data Analytics

Module	Credits
Level I	
SIDS5101 Big Data Analytics	25
SIDS5102 Programming for Data Science	25
SIDS5104 Big Data Science Research Methods	25
SORS5104 Computational Statistics	25
SMA5191 Introduction to Mathematical Modelling	15
SIDS5201 Big Data Project Management	25
SIDS5202 Machine Learning	25
SIDS5203 Big Data Visualisation	25
SIDS5204 Big Data Science Project	25
Level II	

SIDS6101 Dissertation	110
Total	325

14.8 DEPARTMENT OF STATISTICS AND OPERATIONS RESEARCH

Chairperson

Dr P Mdlongwa, PGDHE(NUST), Bsc Hon Mathematics (MSU), MSc in Operations Research (NUST), PhD in Statistics (BIUST, Botswana)

Senior Lecturers

A. Masache. MSc. Operations Research (NUST), BSc. Hons., Applied Mathematics(NUST)

Mr. H. Nare, BSc. Hons., Applied Mathematics(NUST), Msc. Operations Research(NUST), Post Graduate Diploma in Higher Education(NUST)

Dr. D. Mwembe, MSc. Operations Research (NUST), BSc. Special Hons., Operations Research and Statistics (NUST), BSc.(Gen) in Statistics and Mathematics (UZ), PhD in Statistics (NUST)

Dr C.N. Mupondo, DipEd, Bsc Hon Mathematics (MSU), MSc in Operations Research (NUST), MSc in Financial Engineering (NUST), PhD in Statistics (NUST)

Mr A . Nyoni, BSc Hons Operations Research and Statistics (NUST), MSc Operations Research and Statistics (NUST)

Mr T Tawanda, BSc Hons Operations Research and Statistics (NUST), MSc in Operations Research and Statistics (NUST)

Mrs P.N. Chiguvare, Bsc Hons Applied Maths (NUST), Msc in Operation Research and Statistics (NUST), Dipolma in Training Skills

Mrs H. Moyo, BSc Hons in Operations Research and Statistics (NUST), MSc in Operations Research and Statistics (NUST), PGDSTE (NUST)

Dr. D. Mwembe, MSc. Operations Research (NUST), BSc. Special Hons., Operations Research and Statistics (NUST), BSc.(Gen) in Statistics and Mathematics (UZ), PhD in Statistics (NUST)

Mr. P. Mlilo, MSc. In Biometry (University Reading , U.K), BSc Hons (UZ), BSc Hons in Agric(West Indies St Augustine, Trinidad and Tobago).

Dr C.N. Mupondo, DipEd, Bsc Hon Mathematics (MSU), MSc in Operations Research (NUST), MSc in Financial Engineering (NUST), PhD in Statistics (NUST)

Dr D Pavolo BEng Mechanical Engineering (UZ), MEng Manufacturing Systems and Operations Management (NUST), MSc Operations Research (NUST), PhD in Applied Statistics (University of the Free State, South Africa)

Mr F. Chimire, BSc Hons in Statistics and Financial Mathematics (BUSE), MSc Data Science and Informatics (UZ), Certificate in Project Management, Monitoring and Evaluation (Catholic University)

Miss E.T. Nyakujipa, BSc Hons in Operations Research and Statistics (NUST), MSc in Big Data Analytics (CUT)

Mr M Chirume, BSc Hons in Operations Research and Statistics (NUST), MSc in Operations Research and Statistics (NUST),

Mr C N Ncube, BCom in Business Management, MCom in Strategic Management and Corporate Governance (MSU), Zimbabwe Institute of Management Train the Trainer Level 1 Certificate

Senior Secretary

Mrs S. Thenga, BComm. Human Resources Management (Lupane, 2016), MSc Strategic Communication(NUST)

PROGRAMME SUMMARY

Bachelor of Science Honours in Operations Research and Statistics

YEAR	MODULE		CREDITS
	CODE	TITLE	
I		SEMESTER 1	
	SMA1101	Calculus	10
	SMA1102	Linear Algebra	10
	SCS 1101	Introduction to Computer Science	12
	SORS 1101	Introduction to Operations Research	10
	SORS 1102	Operations Management	10
	SORS1103	Introduction to Statistics	10
		SEMESTER 2	
	SMA 1201	Calculus of Several Variables	10

	SMA 1204	Ordinary Differential Equations	10	
	SCS 1201	Programming and Program Design	12	
	SORS 1201	Applied Statistics	10	
	SCS 1203	Business Information Systems	12	
	ILI 1105	Communication Skills	10	
		SEMESTER 1		
II	SORS 2106	Monitoring and Evaluation	10	
	SORS 2101	Time Series Analysis	10	
	SORS 2102	Computer Packages	10	
	SORS 2103	Probability Theory	10	
	SORS 2104	Operations Research Techniques	10	
	SORS 2105	Linear Programming	10	
			SEMESTER 2	
	SMA 2206	Numerical Analysis	10	
	SORS 2202	Design and Analysis of Experiments	10	
	SORS 2203	Optimisation	10	
	SORS 2204	Queuing Models	10	
	SORS 2205	Simulation	10	
	SORS 2206	Survey Methods	10	
III	SORS 3010	Industrial Attachment Continuous Assessment Industrial Attachment Report	120	
		SEMESTER 1		
IV	SORS 4101	Decision Analysis	10	
	SORS 4102	Statistical Inference	10	
	SORS 4103	Stochastic Processes	10	
	SORS 4104	Econometrics	10	
	SORS 4105	Case Studies In Operations Research	10	
	SORS 4010	Project		
			SEMESTER 2	
	SORS 4207	Multivariate Analysis	10	
		Elective I	10	
		Elective II	10	
		Elective III	10	
		Elective IV	10	
	SORS4010	Project	20	
SMA4241	Financial Mathematics			

	SMA4213	Graph Theory	
	SORS 4201	Dynamic Programming and Stochastic Control	10
	SORS 4202	Global Optimisation	10
	SORS 4204	Advanced Probability Theory	10
	SORS 4205	Non-linear Programming	10
	SORS4205	Statistical Quality control	10
		Total credits	

BACHELOR OF SCIENCE HONOURS DEGREE IN BUSINESS ANALYTICS

YEA R	MODULE		CREDITS
	CODE	TITLE	
I		SEMESTER 1	
	SMA1101	Calculus	10
	SMA1102	Linear Algebra	10
	SCS 1101	Introduction to Computer Science	12
	SORS 1101	Introduction to Operations Research	10
	SORS 1102	Operations Management	10
	SORS1103	Introduction to Statistics	10
		SEMESTER 2	
	SBA 1201	Introduction To Linear Programming	10
	SMA 1204	Ordinary Differential Equations	10
	SBA 1203	Introduction to Business Management	10
	SBA 1205	Network Models	10
	SCI 1201	Business Information Systems	12
	ILI 1105	Communication Skills	10
	SEMESTER 1		
II	SORS 2106	Monitoring and Evaluation	10
	SBA 2101	Integer Linear Programming	10
	SBA 2102	Inventory Control and Management	10
	SORS 2103	Probability Theory	10
	SBA 2104	Financial Operations Research	10
	SBA 2103	Big Data and Data Mining	10

		SEMESTER 2	
	SBA 2201	Design and Risk Analysis	10
	SORS 2202	Design and Analysis of Experiments	10
	SBA 2204	Stochastic Optimisation	10
	SBA 2203	Simulation and Queuing Models	10
	SBA 2202	Scheduling	10
	SCS 2205	Expert Systems and Machine Learning	10
III	SBA 3000	Work Related Learning	120
		SEMESTER 1	
	SBA 4101	Non-Linear Optimization and Dynamic Programming	10
	SORS 4102	Statistical Inference	10
	SORS 4103	Stochastic Processes	10
	SBA 4102	Algorithms and Heuristics	10
	SBA 4105	Case Studies In Business Analytics	10
	SORS 4010	Project	
		SEMESTER 2	
	SBA 4201	Non-Linear Optimization and Dynamic Programming	10
	SBA 4202	Transportation and Logistics	10
	SBA 4203	Time Series and Forecasting	10
	SMA 4241	Financial Mathematics I	12
	SORS4208	Statistical Quality Control and Reliability	10
	SORS4010	Project	20
		Electives	
	SMA4241	Financial Mathematics	
	SMA4213	Graph Theory	
	SORS 4201	Dynamic Programming and Stochastic Control	10
	SORS 4202	Global Optimisation	10
	SORS 4204	Advanced Probability Theory	10
	SORS 4205	Non-linear Programming	10
	SORS4205	Statistical Quality control	10
		Total credits	
IV			

MASTER OF SCIENCE DEGREE IN OPERATIONS RESEARCH AND STATISTICS

PART	MODULE		CREDITS
	CODE	TITLE	
I		SEMESTER 1	
	SORS 5101	Operations Management	20
	SORS 5102	Stochastic Modelling	20
	SORS 5103	Industrial Statistics	20
		SEMESTER II	
	SORS 5201	Operations Research Techniques for Management	20
	SORS 5202	Simulation Modelling	20
	SORS 5206	Entrepreneurship Skills	20
II		SEMESTER 1	
	SORS 6101	Applications of Quantitative Analysis	20
	SORS 6102	Forecasting	20
		Elective I	20
		Electives(Choose 1)	
	SORS 6103	Financial Modelling	
	SORS 6104	Advanced Optimization Theory and Applications for Management	
		SEMESTER II	
	SORS 6093	Dissertation	90
		Elective I	20
	Elective II	20	
		Electives (Choose 2)	
	SORS 6201	Business Management and Consultancy Skills	20
	SORS 6202	Network Optimisation	20
	SORS 6203	Supply Chain Management	20
	SORS 6204	Scheduling	20
		Total Credits	310

14.9 DEPARTMENT OF SPORT SCIENCE AND COACHING

Chairperson

Dr D Makaza, , DPhil (UKZN, SA) ; MPhil (NUST, Zim); BED (UZ, Zim); BSc (ZOU, Zim); Dip ED (UZ,Zim)

Senior lecturers

M. P. D. Gundani, MSc (Zim/NSA, Bulgaria); B Tech (SA)

E. M. Tapera, MPhil (Zim); BED (Zim)

Dr D. Makaza, DPhil (SA) ; MPhil (Zim); BED (Zim); BSc (Zim)

Lecturers

S. H. Rutsate, MSc (Belgium); MSc (Zim/NSA, Bulgaria), BA (Rhodes, SA)

Dr. J. S. Sibindi, Dphil (UJ,SA); MPhil (NUST,Zim); BSc (Zim)

K. Dlamini, MSc Sports Science(UKZN,SA) BSc Sports Science and Coaching (NUST); Dip Educ (Zim)

M. Banda, MSc. (Stellenbosch,SA); BSc Sports Science and Coaching (Zim), BSc PE and Sport (Zim)

Mrs. P. Masaga, MSc (UKZN,SA), BSc (NUST,Zim), PGDE (ZOU,Zim)

Mrs. N. Moyo, MSc (NUST,Zim), BSc (NUST,Zim)

Technician

Mr. T. Khumalo, BSc (NUST,Zim)

Demonstrators

Mr. C. Matawu, BSc (NUST,Zim)

Mr. T. Weale, BSc (NUST,Zim)

Senior Secretary

Mrs N. Phiri, BComm (NUST,Zim), Dip (Zim)

UNDERGRADUATE PROGRAMME SUMMMARY

Bachelor of Science Honours Degree in Sport Science and Coaching

YEAR	Module		Credits
	Code	Title	
I	SSC1128	Principles of Biochemistry	12
	SSC1126	Athletics	12
	SSC1127	Gymnastics	12
	SSC1107	Principles of Human Anatomy	12
	SSC1108	Principles of Human Physiology	12
	SCS1100	Computer Applications(Service Module)	12
	ILI1108	Communication Skills (Service Module)	12
	SSC1205	Functional Anatomy	12
	SSC1204	Sports Coaching Concepts	12
	SSC1222	Introduction to Psychology	12
	SSC1230	Fundamentals of Motor Learning Concepts	12
	SSC1231	Human Exercise Physiology	12
	SCS1200	Data Concepts and Data Processing (Service Module)	12
	CTL1101	Conflict, Transformation And Leadership	12
		Total Credits	144
II	SSC2106	Sports Psychology	12
	SSC2107	Theory and Methodology of Coaching	
	SORS2110	Introduction to Applied Statistics	12
	SSC2104	Biomechanics	12
	SSC2232	Tests, Measurement and Evaluation in Sport	12

	SSC2230	Research Methodology in Sports Science	12
	SSC2221	Strength and Conditioning	12
	CBU2216	Project Management (Service Module)	12
	SSC2228	Swimming	12
	SSC2225	Football Studies	12
	Total Credits		144
III	SSC3102	Health, Leisure, Exercise and Sports Recreation	12
	SSC3103	Laboratory Techniques in Sport Science	12
	SSC3104	Sports Management	12
	CBU2115	Entrepreneurship	12
	SSC3119	Rugby	12
III	SSC3001	Internship Program	60
	Total Credits		132
IV	SSC4106	Applied Sports Psychology	12
	SSC4010	Project (weighting of Three modules)	24
	SSC4131	Applied Exercise Physiology and Biochemistry	12
	SSC4104	Nutrition and Sports Nutrition	12
	SSC4102	Sports Biokinetics	12
	SSC4233	Applied Statistics in Sports Science	12
	SSC4208	Basic Law, Sports Law and Diplomacy	12
	SSC4204	AApplied Biomechanics	12
		Total Credits	
	Maximum Credits		540

MSC DEGREE IN SPORTS SCIENCE AND COACHING

	Modules		Credits
Yr 1	SSC511	Physiology and Biochemistry of Physical Activity	18
	SSC5112	Sports Psychology and Motor Learning	18
	SSC5113	Research Methods for Exercise Sciences	18
	SSC 5114	Biomechanics of Human Movement	18
	SSC 5115	Laboratory and Field Techniques in Sports Science	18
	SSC5221	Nutrition for Exercise and Health	18
	SSC 5222	Sports Performance Analysis	18
	SSC 5223	Long Term Athlete Development	18
	SSC5224	Strength and Conditioning	18
	SSC5225	Sports Medicine and Kinesiotherapy	18
Yr II	SSC6010	Research Project	90

	TOTAL MBKs credits	180
	Total credits	270