



ΠΑΜΙΘΙΑ  
UNIVERSITY  
OF SCIENCE  
AND TECHNOLOGY

YEARBOOK 2023

# PART 5

FACULTY OF HEALTH,  
NATURAL RESOURCES  
AND APPLIED SCIENCES

(**Note:** The final interpretation of all regulations in this Yearbook for the *Faculty of Health, Natural Resources and Applied Sciences* shall be vested in Council).

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## CONTENTS

### FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

**CODE 7**

	Page
Note .....	2
Contact Details .....	3
Staff .....	6

### UNDERGRADUATE PROGRAMMES

#### SCHOOL OF HEALTH SCIENCES

<b>Department of Clinical Health Sciences</b> .....	<b>10</b>
Bachelor of Medical Laboratory Science (Revised) (Phased in 2017).....	10
Bachelor of Emergency Medical Care .....	13
<b>Department of Preventative Health Sciences</b> .....	<b>16</b>
Bachelor of Environmental Health Sciences.....	16
Bachelor of Science in Health Information Systems Management (Old Programme) .....	19
Bachelor of Science in Health Information Systems Management (Revised - Phasing in from 2022)..	22
Bachelor of Human Nutrition.....	25

#### SCHOOL OF NATURAL AND APPLIED SCIENCES

<b>Department of Mathematics, Statistics and Actuarial Science</b> .....	<b>28</b>
Bachelor of Science in Applied Mathematics and Statistics (Revised - Phased in 2022) .....	28
Bachelor of Science in Applied Mathematics and Statistics (Old Programme phasing out from 2022) .....	31
<b>Department of Biology, Chemistry and Physics</b> .....	<b>33</b>
Bachelor of Science (Biology, Chemistry, Physics, Mathematics).....	33

#### SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

<b>Department of Agricultural Sciences and Agribusiness</b> .....	<b>37</b>
Bachelor of Science in Agriculture .....	37
Bachelor of Agriculture (Old Programme Phasing out from 2020) .....	41
Bachelor of Science in Horticulture .....	45
<b>Department of Natural Resource Sciences</b> .....	<b>48</b>
Bachelor of Natural Resource Management (Revised Programme) .....	48
Bachelor of Natural Resource Management in Nature Conservation (Old Curriculum -Phasing out until 2024).....	51

### POSTGRADUATE PROGRAMMES

#### SCHOOL OF HEALTH SCIENCES

<b>Department of Clinical Health Sciences</b> .....	<b>53</b>
Bachelor of Emergency Medical Care Honours .....	53
Master of Health Sciences (Phased in 2017). .....	54
Doctor of Philosophy in Health Sciences (Phased in 2021). .....	56
<b>Department of Preventative Health Sciences</b> .....	<b>59</b>
Bachelor of Science Honours in Health Information Systems Management .....	59

#### SCHOOL OF NATURAL AND APPLIED SCIENCES

<b>Department of Biology, Chemistry and Physics</b> .....	<b>61</b>
Postgraduate Diploma in Applied Radiation Science and Technology (Phased in 2016).....	61
Bachelor of Science Honours (Biology, Chemistry, Physics, Mathematics).....	63
Master of Science in Natural and Applied Sciences (Phased in 2021). .....	66
<b>Department of Mathematics, Statistics and Actuarial Science</b> .....	<b>68</b>
Bachelor of Science Honours in Applied Mathematics (Revised - Phased in 2022).....	68
Bachelor of Science Honours in Applied Mathematics (Phased out from 2022).....	69
Master of Science in Applied Mathematics (Phased in 2016).....	70

Bachelor of Science Honours in Applied Statistics (Revised - Phased in 2022).....	72
Bachelor of Science Honours in Applied Statistics (Phased out from 2022).....	73
Master of Science in Applied Statistics (Phased in 2016). ....	74
Doctor of Philosophy in Mathematics (Phased in 2021) .....	76
Doctor of Philosophy in Statistics (Phased in 2022).....	79

**SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES**

<b>Department of Agricultural Sciences and Agribusiness</b> .....	<b>82</b>
Bachelor of Science in Agriculture Honours .....	82
Master of Agribusiness Management (Revised Programme).....	84
Master of Agribusiness Management (Old Curriculum – Phasing out until 2023).....	86

<b>Department of Natural Resource Sciences</b> .....	<b>88</b>
Bachelor of Natural Resource Management Honours (Phasing in 2021) .....	88
Master of Natural Resource Management. ....	90
Doctor of Philosophy in Natural Resource Sciences (Phasing out 2020). ....	92

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: **Mrs Clarence Ntesa**, M.Sc.: Env. Sci. & Tech. (UNESCO), B.Tech. (Nat. Cons.) (PoN), ND. Agric (UNAM)

: **Associate Professor Ben Strohbach**, PhD.: Veg. Ecol. (GER) (HAM), M.Sc.: Botany (Potch), B.Sc.:Hons., B.Sc (Potch)

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**UNDERGRADUATE PROGRAMMES**

**SCHOOL OF HEALTH SCIENCES**

**DEPARTMENT OF CLINICAL HEALTH SCIENCES**

**QUALIFICATIONS OFFERED**

Bachelor of Medical Laboratory Sciences (Revised Programme) (Phased in 2017)	08BMLS
Bachelor of Emergency Medical Care	07BOMC

**BACHELOR OF MEDICAL LABORATORY SCIENCES** **08BMLS**  
**(Revised - Phased in 2017)**

**NQF Level: 8**

**NQF Credits: 511**

**NQF Qualification ID: Q0991**

**Description**

The Bachelor of Medical Laboratory Sciences is a professional degree, designed for registration at level 8 of the National Qualifications Framework (NQF). The programme demands a high level of theoretical and practical engagement, as well as intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major cognate area of learning, i.e. Medical Laboratory Science. The programme further equips students with cognitive and intellectual skills, key transferable skills and professional, technical and practical skills that would enable them to apply principles and techniques in the routine and specialised analysis of biological specimens and other substances. Students will also be capacitated to organise laboratory operations in clinical diagnostic laboratories in accordance with Good Laboratory Practice (GLP). Students will be able to integrate laboratory tests and results with pathophysiological conditions and conduct supervised research based on sound scientific principles. Overall, the programme aims to produce highly flexible and well-trained graduates who are able to adapt to a changing environment and comply with statutory requirements in relation to quality, ethics and safety.

Successful completion of the Bachelor of Medical Laboratory Sciences and the industry examination will enable graduates to register with the Health Professions Council of Namibia (HPCNA).

**Admission Criteria**

In addition to meeting the University's minimum admission requirements as outlined in the general rules, candidates must have a total of 18 points on the evaluation scale for Physical Science, Mathematics and Biology, in a combination of symbols on NSSC Higher or Ordinary Level or both. No symbol for any one or more of the subjects may be lower than a "C" on Ordinary Level or a 4 on Higher Level. Candidates must further have obtained at least a "D" on Ordinary Level for English.

For candidates seeking admission with NSSCO/NSSCAS results, requirements are as follows: in addition to meeting the University's minimum admission requirements as spelt out in the general rules, candidates must have a minimum of 24 points in Mathematics, Chemistry, Biology and Physics on Ordinary Level or Advanced Subsidiary level (NSSCO/AS), provided that no symbol must be below a "B" on Ordinary Level or a "D" on Advanced Subsidiary Level. Candidates must further have obtained at least an "E" on Ordinary level in English.

Students who meet the above admission requirements will be subjected to a selection process using ranking of results for Biology, Physical Science or Physics and Chemistry and Mathematics.

**Articulation Arrangements**

The transfer of credits will be dealt with according to NUST rules and regulations on Recognition of Prior Learning. These provide for course by course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of this programme will under normal circumstances be able to pursue further studies in Medical Laboratory Science, or a related cognate area of learning, at NQF Level 9.

**Mode of Delivery**

This programme will be offered on the full-time mode of study in accordance with NUST rules and regulations.

**Requirements for Qualification Award**

The Bachelor of Medical Laboratory Sciences designed for registration at NQF level 8, will be awarded to a student credited with a minimum of 511 NQF credits, this total includes the courses making up the 465 cognitive credits and then the core institutional courses which is 46 credits. In addition, students must meet the administrative and financial requirements as spelt out in Part 1 of NUST Yearbook.

**Teaching and learning strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional and/or technical competencies. Thus, the programme focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, software demonstration, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Learning activities outside the classroom will include three components of Work Integrated Learning (WIL). Students will rotate within the semester through clinical laboratories (e.g. Namibian Institute of Pathology and Namibian Blood Transfusion Services) and will be incorporated into the routine diagnostic laboratory and will learn by doing.

### Assessment Strategies

Students will be assessed through continuous and summative assessment. These assessments will focus on the achievement of qualification outcomes and take the form of problem-solving exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations). The use of validating end of term assessments may be minimised in order to free students' intellectual capacity for broader cognitive development. Assessment by means of tests and/or examinations will, therefore, be restricted to situations where it is necessary to establish that a previous specific performance can be repeated or a specific skill can be transferred. In accordance with NUST policy on diversified continuous assessment, each course will have a minimum of six assessment events. Courses that are assessed using a combination of continuous assessment and a final end-of-term examination must have at least three assessments.

In this programme, all courses will be assessed using a combination of continuous assessment and an end-of-semester examination in the ratio 60% (continuous assessment) and 40% (examination).

Assessment of the Work Integrated Learning components will be dealt with by means of close cooperation between WIL clinical instructors and NUST academics by means of a work manual in which students have to report on their activities in the simulation laboratory and/or work place and signed-off by the instructors. The mini-thesis will be assessed in accordance with NUST rules for studies at honours level.

### Transition Arrangements

The Bachelor of Biomedical Sciences (old curriculum) will be phased out systematically until 2022 with minimum disruption to existing students' learning progression. The last intake of 1st year students for the out-phasing programme (old curriculum) was in January 2016.

Students who were registered in 2016 for the 1st year of the old curriculum, and who do not meet the rules for progression to the 2nd year at the end of 2016, will be required to change their registration to the revised programme (revised curriculum), and will be granted credits on a course-by-course basis in accordance with information in Table 1, below. Similarly, students who are registered in 2016 for the 1st year of the old curriculum, and who meet the minimum requirements for progression to the 2nd year at the end of 2016, will also be required to transition to the revised programme (revised curriculum), but will be required to do Cell and Molecular Biology. Such students, will be exempted from the newly introduced English communication courses, and Information Competence, but will have to meet all other requirements of the revised programme (revised curriculum). Such arrangements will be done in consultation with office of the Registrar to ensure that students do not lose credits.

Students who were registered in 2016 for the 2nd, 3rd or 4th year of the old curriculum will be required to complete their studies, based on the requirements of the old curriculum.

The revised Bachelor of Medical Laboratory Sciences (revised curriculum) has taken effect from January 2017 with the implementation of the 1st and 2nd years. The revised programme will be fully implemented by 2019. Courses will only be offered based on the new/revised syllabi in 2017 (1st and 2nd year), 2018 (3rd year), and 2019 (4th year). Students who fail any of the courses on the old curriculum will be required to repeat such courses based on the syllabi of new/revised corresponding courses (please refer to Table 2, below, for information on the new/revised corresponding courses to be done, if courses on the old curriculum are failed).

The deadline for complete phasing out of the Bachelor of Biomedical Sciences (old curriculum) is 2022 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

## CURRICULUM

### YEAR 1

#### Semester 1

Course Title	Course Code	Prerequisite	NQF Level	NQF Credit
Human Anatomy and Physiology 1A	HPY511S	None	5	12
Introduction to Medical Laboratory Science	IML511S	None	5	12
Health Science Chemistry	HSC511S	None	5	10
Health Science Physics	HSP511S	None	5	10
Health Science Statistics	HSS511S	None	5	10
Computer User Skills	CUS411S	None	4	10
Principles of English Language Use	PLU411S	None	4	NCB

#### Semester 2

English in Practice	EPR511S	Principles of English Language Use	5	NCB
Information Competence	ICT521S	None	5	10
Human Anatomy and Physiology 1B	HPY521S	Human Anatomy and Physiology 1A	5	12
Immunology	IMY521S	Human Anatomy and Physiology 1A	5	12
Biochemistry	BIO521S	Health Science Chemistry	5	10
Cell and Molecular Biology	CMB521S	Human Anatomy and Physiology 1A	5	12

**YEAR 2**

**Semester 3**

English for Academic Purposes	EAP511S	English in Practice	5	14
Medical Microbiology 2A	MMB611S	Human Anatomy and Physiology 1B	6	13
		Introduction to Medical Laboratory Science		
Haematology 2A	HAM611S	Human Anatomy and Physiology 1B	6	10
		Immunology		
Clinical Chemistry 2A	CLC611S	Biochemistry	6	12
		Introduction to Medical Laboratory Science		
Anatomical Pathology 2A	ANP611S	Human Anatomy and Physiology 1A	6	14
		Human Anatomy and Physiology 1B		
		Cell and Molecular Biology		

**Semester 4**

Medical Microbiology 2B	MMB621S	Medical Microbiology 2A	6	12
Haematology 2B	HAM621S	Haematology 2A	6	12
Clinical Chemistry 2B	CLC621S	Clinical Chemistry 2A	6	12
Anatomical Pathology 2B	ANP621S	Anatomical Pathology 2A	6	12
Immunohaematology	IMH621S	Human Anatomy and Physiology 1A	6	10
		Human Anatomy and Physiology 1B		
Molecular Diagnostics	MOD621S	Biochemistry and Cell and Molecular Biology	6	10

**YEAR 3**

**Semester 5**

Sustainability and Development	SYD611S	None	7	12
Medical Microbiology 3	MMB711S	Medical Microbiology 2B	7	12
Haematology 3	HAM711S	Haematology 2B	7	12
Clinical Chemistry 3	CLC711S	Clinical Chemistry 2B	7	12
Medical Laboratory Management	MLM711S	Introduction to Medical Laboratory Science	7	14

**Semester 6**

Research Methodology	RMA821S	Health Science Statistics	8	12
Work Integrated Learning 3 (WIL 3)	WLB721S	Medical Microbiology 3	7	50
		Clinical Chemistry 3		
		Haematology 3		
		Molecular Diagnostics		
		Anatomical Pathology 2B		

**YEAR 4**

**Semester 7**

Integrated Clinical Pathology	ICP811S	Work Integrated Learning 3 (WIL 3)	8	14
Work Integrated Learning 4A (WIL 4A)	WLB811S	Work Integrated Learning 3 (WIL 3)	7	50

**Semester 8**

Mini-Thesis	MTB811S	Research Methodology	8	30
Work Integrated Learning 4B (WIL 4B)	WLB821S	Work Integrated Learning 4A (WIL 4A)	8	40

### Description

The Bachelor of Emergency Medical Care is a three-year full-time programme that is registered at a NQF level 7. Designed to provide students with a systematic and coherent introduction to the broad knowledge, principles, concepts and problem-solving techniques of emergency medical care. The programme will enable students to acquire cognitive/intellectual skills, practical/clinical skills, and key transferable skills for a career in the profession of emergency medical care. Graduates of this programme will be able to competently integrate and apply theoretical principles and practical clinical procedures and techniques to independently provide emergency medical care to injured and/or ill patients in urban, peri-urban and rural areas within the scope of practice stipulated by the Health Professions Council of Namibia (HPCNA).

The programme allows for an early exit with a Diploma in Emergency Medical Care after successful completion of the second year of study. Students who exit with a Diploma will be able to find employment in industry as mid-level emergency care practitioners and will be eligible to register with the HPCNA as Emergency Care Technicians (ECT's). Successful completion of the Bachelor of Emergency Medical Care degree will enable registration with the HPCNA as an Advanced Life Support (ALS) Practitioner, while graduates will be able to find employment in more senior positions, typically as ALS practitioners (Paramedics).

### Admission Requirements

Candidates may be considered for admission to this programme, if they meet the General Admission Requirements of the Namibia University of Science and Technology (GI2.1 in Part 1 of the NUST Yearbook), and comply with the additional requirements below (old curriculum)::

- A minimum "E" symbol in English as a Second Language at NSSC Ordinary Level or a 4 on Higher Level;
- A minimum "D" symbol in Mathematics and Biology, or Physical Science, at NSSC Ordinary Level or 4 on Higher Level.

For candidates seeking admission with NSSCO/NSSCAS results requirements are as follows: in addition to meeting the University's minimum admission requirements as spelt out in the general rules, candidates must have a minimum of 18 points in Mathematics, Biology AND EITHER Physics OR Chemistry on NSSC Ordinary Level or Advanced Subsidiary level (NSSCO/AS), provided that no symbol must be below "B" on Ordinary Level or a "D" on Advanced Subsidiary Level. Candidates must further have obtained at least an "E" on Ordinary level in English. Candidates will also be required to go through a 3 day selection process involving a written test, medical and physical fitness tests.

Mature age candidates will be considered provided they meet the requirements and pass the mature age entrance examinations of the Namibia University of Science and Technology (GI2.2 in Part 1 of the NUST Yearbook). Students are required to obtain a minimum final score of at least **60%** in the language proficiency test and **50%** in the mathematics proficiency test.

The final selection of candidates to this programme shall follow a three-step process as indicated below:

**Step 1:** Applicants, who meet or surpass the minimum admission requirements, as stated above, will be shortlisted based on academic merit. Such candidates shall receive an invitation and information package for the selection assessments of the second stage (Step Two).

**Step 2:** Candidates are to be assessed in terms of their physical, medical fitness/abilities and phobias, and will be required to do a short-written placement test as well. Based on the outcome of these assessments, a shortlist shall be compiled and successful candidates will be invited to participate in a selection interview (Step Three).

**Step 3:** Candidates shall undergo an interview by the programme staff after which the final selection for admission shall be made. The results of the Selection Committee are final and no discussion or correspondence will be entered into.

If the final Grade 12 results of candidates, who were selected provisionally, do not meet the minimum requirements, then admission to the programme will be withheld.

Holders of the National Higher Certificate in Emergency Medical Care may be considered for admission to this programme provided they are registered with the Health Professions Council of Namibia as Emergency Care Technicians. These candidates, if admitted, will be granted credits for the following courses:

- Language in Practice (Principles of English Language Use)
- Computer User Skills
- Basic Science
- Pre-hospital Emergency Medical Care I
- Human Anatomy and Physiology
- Clinical Practice I
- Basic Medical Rescue
- Clinical Practice II
- Primary Health Care and HIV/AIDS

Holders of the National Higher Certificate in Emergency Medical Care will not be awarded with the new Diploma in Emergency Care. Emergency Care Technicians (National Higher Certificate) and Critical Care Assistants (CCA's) are eligible to apply for Recognition of Prior Learning (RPL) as established by the programme.

### **Mode of Delivery**

This programme will be delivered on the full-time mode of study in accordance with NUST rules.

### **Requirements for Qualification Award**

The Bachelor of Emergency Medical Care will be awarded to candidates credited with a minimum of 388 NQF credits while the Diploma in Emergency Medical Care (Level 6) will be awarded to candidates credited with a minimum of 259 NQF credits. In addition, students should meet the administrative and financial requirements as set out in Part 1 of the Namibia University of Science and Technology Yearbook.

### **Progression Rules**

Students will only have three opportunities to pass the following courses; Emergency Medical Care I, Clinical Practice I, Emergency Medical Care II, Clinical Practice II, Emergency Medical Care III, and Clinical Practice III; due to the limited number of available sites for clinical placement (Work Integrated Learning), and due to advice in placement of students by the HPCNA, particularly pertaining to the ratio of student to lecturer in all practical classes. This will ensure that students are awarded a fair opportunity to complete the programme successfully whilst adhering to the HPCNA requirements in terms of students to lecturer ratios in theoretical and practical classes.

### **Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies.

Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, online lectures, practical projects, tutorials, case studies, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed. In addition, courses will be facilitated and can be assessed through the MyNUST e-learning platform, where relevant course materials will also be made available to students. The teaching and learning strategies for this programme are designed not only to equip students with the necessary knowledge and expertise in emergency medical care, but also to enable them to present and communicate academic and professional work effectively, conduct research, retrieve information efficiently and effectively, plan effectively, and independently evaluate processes and results.

### **Assessment strategies**

Learning and assessment will be integrated throughout the programme. All the courses in the main cognate area of learning will be assessed by means of continuous assessment only. Assessments will focus on the achievement of course and qualification outcomes and may take the form of problem solving exercises, individual/group assignments and presentations, case studies, policy briefs, practicum workbooks, objectively structured clinical evaluations (OSCE), simulated patient scenarios, tutorials and questioning through tests.

Lecturing staff shall discuss assessments of the various courses at monthly programme meetings and together with this, course content and any assessments shall be passed through the course moderator in order to ensure quality and fairness of assessments whilst ensuring students are not over-assessed or under-assessed.

Assessment of both cognitive and psychometric capabilities shall be performed through the various assessment methods as discussed above. In accordance with NUST policy on continuous assessment, each course will have a minimum of four assessment events.

Clinical Practice shall be assessed using the practicum workbook and a portfolio of evidence. In order for a student to be considered for a pass they must obtain the minimum notional hours for the relevant course. The practicum workbook and the portfolio of evidence shall carry a mark weight that, together, shall total 100% of the course mark.

**CURRICULUM**

**Year 1**

**Semester 1**

**Course Title**

Principles of English Language in Use

**Course Code**

PLU411S

**Prerequisite**

None

Computer User Skills

CUS411S

None

Basic Science

BSC410S

None

**Semester 2**

English in Practice

EPR511S

Principles of English Language Use

Information Competence

ICT521S

None

Basic Mathematics

BMS411S

None

**Year Courses**

Emergency Medical Care I

EMC501Y

None

Human Anatomy and Physiology

HAP501Y

None

Primary Health Care and HIV/AIDS

PHC501Y

None

Clinical Practice I

CPR501Y

None

**Year 2**

**Semester 1**

English for Academic Purposes

EAP511S

English in Practice

Medical Rescue 1A

MRS511S

None

Pathophysiology

PPH611S

Human Anatomy and Physiology

**Semester 2**

Medical Law and Ethics

MLE512S

None

Medical Rescue 1B

MRS521S

Medical Rescue 1A

**Year Courses**

Emergency Medical Care II

EMC601Y

Emergency Medical Care I, Human Anatomy and Physiology, Clinical Practice I

Pharmacology

PHA601Y

Emergency Medical Care I, Human Anatomy and Physiology

Clinical Practice II

CPR601Y

Emergency Medical Care I, Clinical Practice I

**Year 3**

**Semester 1**

Sustainability and Development

SYD611S

None

**Semester 2**

Emergency Medical Service Administration EMS612S

Emergency Medical Care II

**Year Courses**

Emergency Medical Care III

EMC701Y

Emergency Medical Care II and Clinical Practice II, Pharmacology

Clinical Practice III

CPR701Y

Emergency Medical Care II, Clinical Practice II, Pharmacology

ICU and Critical Care Transport

ICU701Y

Emergency Medical Care II, Clinical Practice II, Pharmacology

#### DEPARTMENT OF PREVENTATIVE HEALTH SCIENCES

Bachelor of Environmental Health Sciences (Revised Programme) (Phased in 2019)	08BOHS
Bachelor of Science in Health Information Systems Management (old Programme)	07BHIS
Bachelor of Science in Health Information Systems Management (New Programme) (Phased in 2022)	07BSHM
Bachelor of Human Nutrition	08BOHN

#### BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES (Phased in 2017)

08BOHS

NQF Level: 8

NQF Credits: 517

NQF Qualification ID: Q0310

#### Description

The Bachelor of Environmental Health Sciences is a professional degree, designed for registration at level 8 on the National Qualifications Framework (NQF). The programme demands a high level of theoretical practical and field work engagement. It also requires intellectual independence which aims at deepened, comprehensive and systematic expertise in the major cognate area of learning, i.e. Environmental Health.

The current Bachelor of Environmental Health Sciences programme was reviewed in order to ensure full compliance with the NUST Curriculum Framework and requirements of the NQF. The curriculum review is needed to ensure that students attain all the core competencies to practice in different industries, and are equipped to deal with public health needs in a dynamic health system.

#### Admission Criteria

Candidates may be admitted to this programme if they meet the General Admission Requirements of the University. In addition, candidates must have a minimum of 15 points in Physical Science, Mathematics and Biology at NSSC (H or O), provided that no symbol must be below "C" on Ordinary Level.

For the candidates seeking admission with NSSCO/NSSCAS results, requirements are as follows: in addition to meeting the University's minimum admission requirements as outlined in the general rules, candidates must have a minimum of 20 points in Mathematics, Chemistry, Biology and Physics on NSSC Ordinary Level or Advanced Subsidiary level (NSSCO/AS), provided that no symbol must be below "C" on Ordinary Level or a "D" on Advanced Subsidiary Level. Candidates must further have obtained at least an "E" on Ordinary level in English. Candidates might also be required to go through a selection process involving a written test.

#### Articulation Arrangements

The transfer of credits will be dealt with according to the University's rules and regulations on Recognition of Prior Learning. These provide for course by course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of this programme will under normal circumstances be able to pursue further studies in Environmental Health Sciences, or a related cognate area of learning, at NQF Level 9.

#### Mode of Delivery

The Bachelor of Environmental Health Sciences will be offered on the full-time mode in accordance with NUST rules and procedures.

#### Requirements for Qualification Award

The Bachelor of Environmental Health Sciences, designed for registration at NQF level 8, will be awarded to students credited with a minimum of 517 NQF credits. All the courses are compulsory and in addition, students must meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

#### Teaching and Learning Strategies

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the programme focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills. This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, field trips, software demonstration, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Learning activities outside the classroom will include two semesters of Work Integrated Learning at various institutions such as the Ministry of Health and External Services, Municipalities, Abattoirs, Nampont, Namwater, food processing industries, food storage industries, mining companies, etc., to enable students to apply learnt competencies and conduct research of an applied nature (to be published in a Mini-thesis). The department will identify industry supervisors who will work hand in hand with the department in training and supervising the students learning activities during Work Integrated Learning.



The Work Integrated Learning experiences should be documented throughout the placement period, reports on the students' performance will be provided outlining activities covered during WIL. At the end of the attachment, students need to provide a detailed written report that will be presented to a panel of evaluators who will determine the mark to be awarded to the student. This mark contributes towards the final semester mark for the course. External moderators will moderate the portfolios for both semesters. Work Integrated Learning (Part 1) includes Meat Hygiene practicals and Environmental Health Services. Work Integrated Learning (Part 2) includes Environmental Health Services while students are required at the same time to carry out their research activities.

### Assessment strategies

Students will be assessed through continuous and summative assessments. These assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations). The use of validating end of term assessments may be minimised in order to free students' intellectual capacity for broader cognitive development.

Assessment by means of tests and/or examinations will, therefore, be restricted to situations where it is necessary to establish that a previous specific performance can be repeated or a specific skill can be transferred. In accordance with the NUST policy on diversified continuous assessment, each course will have a minimum of six assessment events. Courses that are assessed using a combination of continuous assessment and a final end-of-term examination must have at least three assessments. All courses will be assessed using a combination of continuous assessment and an end-of-semester examination in the ratio 60% (continuous assessment) and 40% (examination).

Assessment of the Work Integrated Learning components will be dealt with by means of close cooperation between industry assessors and NUST academics by means of a work manual in which students have to report on their activities in the work place and signed off by the assessors. The mini-thesis will be assessed in accordance with the University's rules for studies at postgraduate level.

## CURRICULUM

### Year 1

#### Semester 1

Course		Prerequisite	NQF Levels	NQF Credits
<b>Title</b>	<b>Code</b>	None		
Principles of English Language Use	PLU411S	None		
Computer User Skills	CUS411S	None	4	10
Health Science Physics	HSP511S	None	5	10
Health Science Chemistry	HSC511S	None	5	10
Health Science Statistics	HSS511S	None	5	10
Anatomy and Physiology	AAP511S	None		

#### Semester 2

Information Competence	ICT521S	None		
English in Practice	EPR511S	Principles of English Language Use		
Water and Sanitation	WAS512S	None	5	12
Microbiology and Parasitology	MAP512S	None	5	12
Community Health Promotion	CHP521S	None	5	12
Housing and Health	HAH521S	None	5	12

### Year 2

#### Semester 3

English for Academic Purposes	EAP511S	English in Practice		
Waste Management	WSM611S	Water and Sanitation	6	12
Occupational Health and Safety 2A	OHS611S	Health Science Physics and Anatomy and Physiology	6	12
Food and Meat Hygiene 2A	FMH611S	Microbiology and Parasitology Health Science Chemistry	6	12
Epidemiology 2A	EPD611S	Health Science Statistics Anatomy and Physiology	6	12
Public Health Legislation 2A	PHL611S	Community Health Promotion	6	12

**Semester 4**

Occupational Health and Safety 2B	OHS612S	Occupational Health and Safety 2A	6	12
Food and Meat Hygiene 2B	FMH612S	Food and Meat Hygiene 2A	6	12
Epidemiology 2B	EPD612S	Epidemiology 2A	6	12
Public Health Legislation 2B	PHL612S	Public Health Legislation 2A	6	12
Air Pollution and Noise	APN612S	Waste Management	6	12

**Year 3**

**Semester 5**

Sustainability and Development	SYD611S	None	7	13
Occupational Health and Safety 3	OHS711S	Occupational Health and Safety 2B	7	13
Food and Meat Hygiene 3	FMH711S	Food and Meat Hygiene 2B	7	13
Epidemiology 3	EPD711S	Epidemiology 2B	7	13
Health Management Practice 3	HMP711S	Public Health Legislation 2B	7	13
Environmental Pollution and Safety	EPS711S	Air Pollution and Noise	7	13

**Semester 6**

Work Integrated Learning (Part 1)	EWL712S	All courses up to Semester 5	7	60
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**Year 4**

**Semester 7**

Occupational Health and Safety 4	OHS811S	Occupational Health and Safety 3	8	14
Food and Meat Hygiene 4	FMH811S	Food and Meat Hygiene 3	8	14
Research Methodology	RMA811S	Epidemiology 3	8	14
Health Management Practice 4	HMP811S	Health Management Practice 3	8	14
Environmental Quality Management	EQM811S	Environmental Pollution and Safety	8	14

**Semester 8**

Work Integrated Learning (Part 2)	EWL812S	All courses up to Semester 7	8	36
Mini-Thesis	EMT812S	Research Methodology	8	30

**BACHELOR OF SCIENCE IN HEALTH INFORMATION SYSTEMS MANAGEMENT**  
**(Phased in 2016) - (Phasing out from 2022) (Old Programme)**

**07BHIS**

**NQF Level: 7**

**NQF Credits: 374**

**NQF Qualification ID: Q0891**

**Description**

The Bachelor of Science in Health Information Systems Management is designed for registration at Level 7 on the NQF. The programme demands a high level of theoretical and practical engagement, intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major cognate area of learning, i.e. Health Information Systems and Management.

**Admission Requirements**

Candidates may be admitted to this programme if they meet the General Admission Requirements of the University (GI2.1 in Part 1 of the NUST Yearbook). In addition, candidates must have a minimum of 15 points in Physical Science, Mathematics and Biology at NSSC (H or O), provided that no symbol must be below "D" on Ordinary Level.

For candidates seeking admission with NSSCO/NSSCAS results requirements are as follows: in addition to meeting the University's minimum admission requirements as spelt out in the general rules, candidates must have a minimum of 20 points in Mathematics, Chemistry, Biology and Physics on NSSC Ordinary Level or Advanced Subsidiary level (NSSCO/AS), provided that no symbol must be below "C" on Ordinary Level or a "D" on Advanced Subsidiary Level. Candidates must further have obtained at least an "E" on Ordinary level in English.

**Articulation Arrangements**

The transfer of credits will be dealt with according to the University's rules and regulations on Recognition of Prior Learning. These provide for course by course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of this programme will, under normal circumstances, be able to pursue further studies in health information management, health informatics, public health or a related cognate area of learning, at NQF Level 8.

**Mode of Delivery**

The Bachelor of Sciences in Health Information Systems Management will be offered on a full-time mode of study. Permission will be sought in the future subject to the approval of the Executive Committee, to deliver the programme on flexible modes such as Block release, distance learning, and E-learning in accordance with University's rules and procedures.

**Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the programme focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, field trips, software demonstration, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Learning activities outside the classroom will include two semesters of Work Integrated Learning at various institutions such as the Ministry of Health, Hospitals, Clinics, Health insurance companies, Health care settings in private sector, Telecom Namibia, HIS consulting companies, etc. to enable students to apply learnt competencies. Students will be required to sign an agreement form provided by the department in collaboration with the organisation offering the placement. The department will identify and appoint an industry supervisor who will work hand in hand with the department.

The agreement will cover all the departments that the student should cover. The Work Integrated Learning experiences should be documented throughout the placement period, reports on the students' performance will be provided outlining activities covered during WIL. At the end of the attachment, students need to provide a detailed written report that will be presented to a panel of evaluators who will determine the mark to be awarded to the student. This mark contributes towards the final semester mark for the course. External moderators are moderating the portfolios for both semesters. Work Integrated Learning (Part 1) includes Health Information Management in health care delivery and Database Management & Analytics for HISM professionals' lab. Work Integrated Learning (Part 2) includes Health Information Management Services while students are required at the same time to carry out their research activities.

**Assessment Strategies**

Students will be assessed through continuous and summative assessment. These assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual/group assignments and presentations, casestudies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations). The use of validating end of term assessments may be minimised in order to free students' intellectual capacity for broader cognitive development. Assessment by means of tests and/or examinations will, therefore, be restricted to situations where it is necessary to establish that a previous specific performance can be repeated or a specific skill can be transferred. In accordance with the University's policy on diversified continuous assessment, each course will have a minimum of six assessment events. Courses that are assessed using a combination of continuous assessment and a final end-of-term examination must have at least three assessments.

All courses will be assessed using a combination of continuous assessment and an end-of-semester examination in the ratio 60% (continuous assessment) and 40% (examination).

Assessment of the Work Integrated Learning components will be dealt with by means of close cooperation between industry assessors and NUST academics by means of a work manual in which students have to report on their activities in the work place and signed off by the assessors.

## CURRICULUM

### Year 1

#### Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
PLU411S	Principles of English Language Use	None	4	NCB
CUS411S	Computer User Skills	None	4	10
HSP511S	Health Sciences Physics	None	5	10
HSC511S	Health Sciences Chemistry	None	5	10
HSS511S	Health Sciences Statistics	None	5	10
AAP511S	Anatomy and Physiology	None	5	12

#### Semester 2

ICT521S	Information Competence	None	5	10
EPR511S	English in Practice	Principles of English Language Use	5	NCB
CHP521S	Community Health Promotion	or Language in Practice A None	5	12
BPP521S	Basic Pathophysiology	None	5	12
BME521S	Biomedical Ethics	None	5	12
IHI521S	Introduction to Health Informatics	None	5	12

### Year 2

#### Semester 3

EAP511S	English for Academic Purposes	English in Practice or Language in Practice B	5	14
HIT611S	Health Information Technology	Introduction to Health Informatics	6	12
EPD611S	Epidemiology 2A	Health Statistics; Anatomy and Physiology	6	12
PHS611S	Policy in Health Information Systems	Biomedical Ethics	6	12
MTD611S	Medical Terminologies and Disease Nomenclature	Basic Pathophysiology	6	12

#### Semester 4

EHR621S	Electronic Health Records	Introduction to Health Informatics	6	12
ICD621S	International Classification of Disease Nomenclature	Medical Terminologies and Disease	6	12
EPD612S	Epidemiology 2B	Epidemiology 2A	6	12
HIM621S	Health Information Management	Health Information Technology	6	12

### Year 3

#### Semester 5

EPD711S	Epidemiology 3	Epidemiology 2B	7	13
PHM711S	Principles of Health Management	None	7	13
SYD611S	Sustainability and Development	None	6	12
PHP721S	Public Health Practice	Epidemiology 3	7	13

**Plus TWO of the following elective courses:**

BSD721S	Biostatistics and Demography	None	7	13
LHM721S	Legislations of Health Information	None	7	13
FMS721S	Management	None	7	13
	Financial Management in Health Services			

**Semester 6**

WIH711S	Work Integrated Learning (Part 1)		7	
WIH721S	Work Integrated Learning (Part 2)			

**NQF Level:**

**NQF Credits: 374**

**NQF Qualification ID: Q2333**

### **Description**

The Bachelor of Science in Health Information Systems Management is designed for registration at Level 7 on the NQF. The programme demands a high level of theoretical and practical engagement, intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major cognate area of learning, i.e. Health Information Systems and Management.

### **Admission Requirements**

Candidates may be admitted to this programme if they meet the General Admission Requirements of the University (GI2.1 in Part 1 of the NUST Yearbook). In addition, candidates must have a minimum of 15 points in Physical Science, Mathematics and Biology at NSSC (H or O), provided that no symbol must be below "D" on Ordinary Level.

For candidates seeking admission with NSSCO/NSSCAS results requirements are as follows: in addition to meeting the University's minimum admission requirements as spelt out in the general rules, candidates must have a minimum of 20 points in Mathematics, Chemistry, Biology and Physics on NSSC Ordinary Level or Advanced Subsidiary level (NSSCO/AS), provided that no symbol must be below "C" on Ordinary Level or a "D" on Advanced Subsidiary Level. Candidates must further have obtained at least an "E" on Ordinary level in English.

### **Articulation Arrangements**

The transfer of credits will be dealt with according to the University's rules and regulations on Recognition of Prior Learning. These provide for course by course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of this programme will, under normal circumstances, be able to pursue further studies in health information management, health informatics, public health or a related cognate area of learning, at NQF Level 8.

### **Mode of Delivery**

The Bachelor of Sciences in Health Information Systems Management will be offered on a full-time mode of study. Permission will be sought in the future subject to the approval of the Executive Committee, to deliver the programme on flexible modes such as Block release, distance learning, and E-learning in accordance with University's rules and procedures.

### **Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the programme focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, field trips, software demonstration, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Learning activities outside the classroom will include two semesters of Work Integrated Learning at various institutions such as the Ministry of Health, Hospitals, Clinics, Health insurance companies, Health care settings in private sector, Telecom Namibia, HIS consulting companies, etc. to enable students to apply learnt competencies. Students will be required to sign an agreement form provided by the department in collaboration with the organisation offering the placement. The department will identify and appoint an industry supervisor who will work hand in hand with the department.

The agreement will cover all the departments that the student should cover. The Work Integrated Learning experiences should be documented throughout the placement period, reports on the students' performance will be provided outlining activities covered during WIL. At the end of the attachment, students need to provide a detailed written report that will be presented to a panel of evaluators who will determine the mark to be awarded to the student. This mark contributes towards the final semester mark for the course. External moderators are moderating the portfolios for both semesters. Work Integrated Learning (Part 1) includes Health Information Management in health care delivery and Database Management & Analytics for HISM professionals' lab. Work Integrated Learning (Part 2) includes Health Information Management Services while students are required at the same time to carry out their research activities.

### **Assessment Strategies**

Students will be assessed through continuous and summative assessment. These assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual/group assignments and presentations, case

studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/ or examinations). The use of validating end of term assessments may be minimised in order to free students' intellectual capacity for broader cognitive development. Assessment by means of tests and/or examinations will, therefore, be restricted to situations where it is necessary to establish that a previous specific performance can be repeated or a specific skill can be transferred. In accordance with the University's policy on diversified continuous assessment, each course will have a minimum of six assessment events. Courses that are assessed using a combination of continuous assessment and a final end-of-term examination must have at least three assessments. All courses will be assessed using a combination of continuous assessment and an end-of-semester examination in the ratio 60% (continuous assessment) and 40% (examination).

Assessment of the Work Integrated Learning components will be dealt with by means of close cooperation between industry assessors and NUST academics by means of a work manual in which students have to report on their activities in the work place and signed off by the assessors.

## CURRICULUM

### Year 1

#### Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
PLU411S	Principles of English Language Use	None	4	NCB
CUS411S	Computer User Skills	None	4	10
HSP511S	Health Sciences Physics	None	5	10
HSC511S	Health Sciences Chemistry	None	5	10
HSS511S	Health Sciences Statistics	None	5	10
AAP511S	Anatomy and Physiology	None	5	12

#### Semester 2

ICT521S	Information Competence	None	5	10
EPR511S	English in Practice	Principles of English Language Use	5	NCB
CHP521S	Community Health Promotion	None	5	12
BPP521S	Basic Pathophysiology	None	5	12
LET521S	Legislation and Ethics in Health Information Management	None	5	12
FOH521S	Foundations of Health Information Management	None	5	12

### Year 2

#### Semester 3

EAP511S	English for Academic Purposes	English in Practice	5	14
HIN611S	Health Informatics and Technologies	Foundations of Health Information Management	6	12
EPD611S	Epidemiology 2A	Health Statistics and Anatomy and Physiology	6	12
PHM611S	Principles and Practices of Health Management		6	12
MTH611S	Medical Terminologies for Health Information Management	Basic Pathophysiology	6	12

#### Semester 4

ICD611S	International Classification of Disease 1A	Medical Terminologies for Health Information Management	6	12
HDS621S	Healthcare Delivery Systems		6	12
EPD612S	Epidemiology 2B	Epidemiology 2A	6	12
HDM621S	Health Database Management	Health Informatics and Technologies	6	12
SYD611S	Sustainability and Development			

### Year 3

#### Semester 5

EPD711S	Epidemiology 3	Epidemiology 2B	7	13
ICD622S	International Classification of Disease 1B	International Classification of Disease 1A	7	13
QMI711S	Quality Management and Improvement In Health Care	None	6	12
ISP711S	Information Security and Privacy in Healthcare		7	13

**Plus ONE of the following elective courses:**

BSD721S	Biostatistics and Demography	None	7	13
PMH711S	Project Management for Healthcare	None	7	13

**Semester 6**

WHL721S	Work Integrated Learning (HIS)	All courses up to Semester 4	7	
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**Description**

The Bachelor of Human Nutrition is designed to provide students with a comprehensive knowledge of human nutrition, the related biosciences and their application to the maintenance of human health in public health domains as well as the prevention and management of disease. The programme enables students to apply their knowledge of nutrition and holistic approaches to contribute to the alleviation of malnutrition and nutrition-related morbidity and mortality in Namibia. Students will be capacitated with relevant knowledge and skills in foundational cognate areas including food chemistry, human anatomy and physiology, microbiology, biochemistry, food security, etc., and be able to apply this knowledge in understanding the role of diet in health maintenance and illness prevention. The programme, further aims to produce graduates who can deliver quality nutritional services within a wide range of settings including public health, health education or health promotion, the food industry, and other areas of nutrition.

On completion, graduates who intend to practice as Nutritionists will be eligible to register with the Health Professions Council (HPCNA) of Namibia. After registration with HPCNA, they may be able to find employment in both public and private sector, municipalities, research institutions, other health related institutions, as well as teaching/training institutions.

**Criteria for Admission**

Candidates may be admitted to this programme if they meet the General Admission Requirements of NUST (G12.1 in Part 1 of the NUST Yearbook). In addition, candidates must have a minimum of 15 points in Physical Science, Mathematics and Biology at NSSC (H or O), provided that no symbol must be below “C” on Ordinary Level.

For candidates seeking admission with NSSCO/NSSCAS results requirements are as follows: in addition to meeting the University’s minimum admission requirements as spelt out in the general rules, candidates must have a minimum of 20 points in Mathematics, Chemistry, Biology and Physics on NSSC Ordinary Level or Advanced Subsidiary level (NSSCO/AS), provided that no symbol must be below “C” on Ordinary Level or a “D” on Advanced Subsidiary Level. Candidates must further have obtained at least an “E” on Ordinary level in English.

Mature age candidates will be considered provided they meet the requirements and pass the mature age entrance examinations of NUST (G12.2 in the Prospectus/Year Book) – with a minimum of 50% in both English and Mathematics.

**Articulation Arrangements**

The transfer of credits will be dealt with according to NUST’s rules and regulations on Recognition of Prior Learning. These provide for course by course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of this programme will under normal circumstances be able to pursue further studies in Human Nutrition, or a related cognate area of learning, at NQF Level 9.

**Mode of Delivery**

The Bachelor of Human Nutrition will be offered on a full-time mode of study. Flexible modes such as Block release, Distance learning and E-learning may be used to deliver the programme in the future in accordance with NUST rules and procedures.

**Requirements for Qualification Award**

The Bachelor of Human Nutrition will be awarded to students credited with a minimum of 482 NQF credits. In addition, students must meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

**Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the programme focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, using a blended mode with e-learning and other technologies, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, field trips, software demonstration, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Learning activities outside the classroom will include one semester of WIL at various institutions such as the Ministry of Health and Social Sciences, Hospitals, Clinics, Health care settings in private sectors, Food service industry, Non-Governmental Organisations, Municipalities, etc. to enable students to apply learnt competencies. Students will be required to sign an agreement form provided by the department in collaboration with the organisation offering the placement. The department will identify an industry supervisor

who will work hand in hand with the department. The WIL experiences should be documented throughout the placement period, reports on the students' performance will be provided outlining activities covered during WIL. At the end of the attachment, students need to provide a detailed written report that will be presented to a panel of evaluators who will determine the mark to be awarded to the student. This mark contributes towards the final semester mark for the course. External moderators will moderate the submitted WIL portfolios. WIL includes clinical nutrition, food service management and community nutrition.

### Assessment Strategies

Students will be assessed through continuous and summative assessment. These assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/ or examinations). Assessment by means of tests and/or examinations will be used in situations where it is necessary to establish that a previous specific performance can be repeated or a specific skill can be transferred. In accordance with NUST's policy on diversified continuous assessment, each course will have a minimum of four assessment events. Courses that are assessed using a combination of continuous assessment and a final end-of-term examination must have at least three assessments.

All courses will be assessed using a combination of continuous assessment and an end-of-semester examination in the ratio 60% (continuous assessment) and 40% (examination).

Assessment of the WIL components will be dealt with by means of close cooperation between industry assessors and NUST academics by means of a work manual in which students have to report on their activities in the work place and signed off by the assessors.

### Transition Arrangements

This is a new programme which does not replace any existing programme(s). Transition arrangements are, therefore, not applicable.

## CURRICULUM

Year 1		Prerequisite	NQF Level	NQF Credit
Semester 1	Course Title			
PLU411S	Principles of English Language Use	None		
CUS411S	Computer User Skills	None		
HSP511S	Health Sciences Physics	None	5	10
HSC511S	Health Sciences Chemistry	None	5	10
HSS511S	Health Sciences Statistics	None	5	10
AAP511S	Anatomy and Physiology	None	5	12
<b>Semester 2</b>				
ICT521S	Information Competence	None		
EPR511S	English in Practice	Principles of English Language Use		
CHP521S	Community Health Promotion	None	5	12
IBC521S	Introduction to Biochemistry	Health Science Chemistry	5	10
IFN521S	Introduction to Foods, Nutrition and Health	None	5	10
GEP521S	Gastro-intestinal and Endocrine Physiology	None	5	10
<b>Year 2</b>				
<b>Semester 3</b>				
EAP511S	English for Academic Purposes	English in Practice	6	12
MIB611S	Microbiology	None	6	12
FSN611S	Food Security and Nutrition	None		
EPD611S	Epidemiology 2A	Health Statistics and Anatomy Physiology	6	12
NTL611S	Nutrition through the Life Cycle	Introduction to Foods, Nutrition and Health	6	12

**Semester 4**

FCH621S	Food Chemistry	Introduction to Biochemistry	6	12
EPD612S	Epidemiology 2B	Epidemiology 2A	6	12
MCN621S	Maternal and Early Childhood Nutrition	Nutrition through the Life Cycle	6	12
FCA621S	Food Composition and Analysis	Introduction to Biochemistry	6	12
FSS621S	Food Service Systems	None	6	12

**Year 3**

**Semester 5**

SYD611S	Sustainability and Development	None	7	13
EPD711S	Epidemiology 3	Epidemiology 2B	7	13
PHM711S	Principles of Health Management	None	7	13
HNT711S	Human Nutrition 1	None	7	13
PHC711S	Principles of Primary Health Care Nutrition	None	7	13

**Semester 6**

FPC721S	Food Processing and Preservation	None	7	14
HTN721S	Human Nutrition 2	Human Nutrition 1	7	14
NNA721S	Nutrition Anthropology	None	7	14
RMD821S	Research Methodology	Epidemiology 3	8	14

**Year 4**

**Semester 7**

CAN811S	Computer Applications in Nutrition	None	8	14
NIE811S	Nutrition in Emergencies	None	8	14
CNN811S	Community Nutrition	None	8	14
PCN811S	Primary Care Nutrition for HIV/AIDS and Communicable Diseases	None	8	14
NCA811S	Nutraceuticals and Alternative Nutritional Remedies	Food Chemistry	8	14

**Semester 8**

MTN821S	Mini-thesis	Research Methodology	8	30
WLN821S	Work Integrated Learning	All courses up to Semester 7	8	36

**SCHOOL OF NATURAL AND APPLIED SCIENCES  
DEPARTMENT OF MATHEMATICS, STATISTICS AND ACTUARIAL SCIENCE**

**QUALIFICATIONS OFFERED**

Bachelor of Science in Applied Mathematics and Statistics (Revised – Phasing in from 2022)	07BSAM
Bachelor of Science in Applied Mathematics and Statistics (Phasing out from 2022)	07BAMS

**BACHELOR OF SCIENCE IN APPLIED MATHEMATICS AND STATISTICS  
(Revised - Phasing in from 2022)** **07BSAM**

**NQF Level: 7**

**NQF Credits: 414**

**NQF Qualification ID:Q0724**

**Description**

The Bachelor of Science in Applied Mathematics and Statistics provides a systematic and coherent introduction to the knowledge, principles, concepts, data, theories and problem-solving techniques of the Applied Mathematics and Applied Statistics discipline. The programme will enable students to acquire cognitive/intellectual skills, practical skills and key transferable skills and to apply these skills in solving Applied Mathematics and Statistics problems facing the public and private sectors, as well as the overall economy. It will equip students with skills to use mathematical and statistical tools to evaluate and analyse scientific information, and as such develop awareness and relevance of Mathematics and Statistics in the workplace and in the society.

**Admission Requirements**

In addition to the general admission requirements of the University as stated in G12.1 a candidate should have obtained a minimum of (i) B symbol in NSSC Ordinary Level Mathematics or (ii) E symbol in NSSC Advanced Subsidiary Level Mathematics. Candidates that obtained a C symbol in (the old) NSSC Ordinary Level Mathematics will be required to sit for an entrance test in Mathematics.

**Modes of Study**

This programme will be offered on the full time and part-time modes of study in accordance with NUST rules and regulations.

**CURRICULUM**

<b>Year 1</b>				
<b>Semester 1</b>	<b>Course</b>	<b>Prerequisite(s)</b>	<b>NQF</b>	<b>NQF</b>
<b>Course</b>	<b>Code</b>		<b>Level</b>	<b>Credits</b>
<b>Title</b>	<b>Code</b>		<b>Level</b>	<b>Credits</b>
Algebra and Trigonometry	AAT501S	None	5	12
Mathematical Structures	MAS501S	None	5	12
Introduction to Applied Statistics	IAS501S	None	5	12
Probability Theory 1	PBT501S	None	5	12
Computer User Skills	CUS411S	None	4	10
Principles of English Language Use	PLU411S	None	4	NCB
<b>Semester 2</b>				
Calculus 1	CLS502S	Algebra & Trig	5	12
Linear Algebra 1	LIA502S	Algebra & Trig	5	12
Financial Mathematics 1	FIM502S	None	5	12
Statistical Inference 1	SIN502S	None	5	12
English in Practice	EPR511S	Principles of English Language Use	5	NCB
Basic Science	BSC410S	None	4	8
<b>Year 2</b>				
<b>Semester 3</b>				
Probability Theory 2	PBT602S	Probability Theory 1 and Calculus 2 as Co-requisite	6	12
Calculus 2	CLS601S	Calculus 1	6	12
Linear Algebra 2	LIA601S	Linear Algebra 1	6	12
Financial Mathematics 2	FIM601S	Financial Mathematics 1	6	12
English for Academic Purposes	EAP511S	EPR511S and LIP411S	5	14
Information Competence	ICT521S	None	5	10

**Semester 4**

Mathematical Programming	MAP602S	Linear Algebra 1	6	12
Applied Mathematical and Statistical Computing	AMS602S	Computer User Skills	6	12
Regression Analysis & ANOVA	RAA602S	Statistical Inference 1	6	12
Statistical Inference 2	SIN601S	Statistical Inference 1 and Probability Theory 2	6	12
Ordinary Differential Equations	ODE602S	Calculus 2	6	12
Demography	DEM602S	None	6	12

**Year 3**

**Semester 5**

Real Analysis	RAN701S	Calculus 2	7	12
Numerical Methods 1	NUM701S	Ordinary Differential Equations	7	12
Time Series Analysis	TSA701S	Introduction to Applied Stats	7	12
Survey Methods and Sampling Techniques	SMS701S	Introduction to Applied Stats	7	12
Mathematical Modelling 1	MMO701S	Ordinary Differential Equations	7	12
Work Integrated Learning (WIL)	WIL701S	All courses up to Semester 4	7	12

**Semester 6**

Mathematical Modelling 2	MMO702S	Mathematical Modelling 1	7	12
Design and Analysis of Experiments	DAE702S	Regression Analysis & ANOVA	7	12
Sustainability and Development	SYD610S	None	6	12

Numerical Methods 2	NUM702S	Numerical Methods 1	7	12
Complex Analysis	CAN702S	Real Analysis	7	12

**Plus ONE of the following Elective courses:**

Mechanics	MCS702S	Ordinary Differential Equations	7	12
Applied Econometric Modelling	AEM702S	Regression Analysis & ANOVA	7	12

**Transitional Arrangements**

The changes between the current curriculum and this revised curriculum are minimal. The Bachelor of Science in Applied Mathematics and Statistics (old curriculum) will phase out at the end of 2021 with minimal disruption to existing students' learning progression. The last intake of 1st year students for the out-phasing programme (old curriculum) in January 2021. Students who are registered in 2021 for the 1st and 2nd year of the out-phasing programme (old curriculum), and who fail more than 50% of the courses at the end of the year 2021, will be required to change their registration to the new programme and will be granted credits on a course-by-course basis in accordance with information in Table 15.1 below. Students who are registered for the 1st and 2nd year of the out-phasing programme (Old curriculum) and who meet all requirements to progress to 2nd and 3rd year respectively will also be required to transit to the revised curriculum in 2022. Students who are registered for the 3rd year of the old curriculum in 2021 but could not meet the requirements at the end of 2021 for the award of the degree will be required to transit to the revised curriculum and credits will be granted on a course-by-course basis.

The revised Bachelor of Science in Applied Mathematics and Statistics (New curriculum) will take effect from January 2022 with concurrent implementation of 1st, 2nd and 3rd year. Students who are admitted to the examination but fail any of the courses on the old curriculum will only be granted two opportunities to pass such courses in accordance with the NUST's general rules. Students who fail any of the courses on the old curriculum will be required to repeat the failed courses based on syllabi of new/ revised corresponding courses. Please refer to Table 15.2, below, for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

The deadline for complete phasing out of the Bachelor of Science in Applied Mathematics and Statistics (old curriculum) is 2022 after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum.

**Table 1: Courses to be credited**

Course Code	Bachelor of Science in Applied Mathematics and Statistics (Old Courses)	Course Code	Bachelor of Science in Applied Mathematics and Statistics (New/Revised Equivalent Courses)
LIA502S	Linear Algebra1	LIA502S	Linear Algebra1
FIM502SS	Financial Mathematics 1	FIM502SS	Financial Mathematics 1
CLS502S	Calculus 1	CLS502S	Calculus 1
SIN502S	Statistical Inference 1	SIN502S	Statistical Inference 1
CUS411S	Computer User Skills	CUS411S	Computer User Skills
EAP511S	English For Academic Purposes	EAP511S	English For Academic Purposes
LIA601S	Linear Algebra 2	LIA601S	Linear Algebra 2
FIM602S	Financial Mathematics 2	FIM602S	Financial Mathematics 2
ODE602S	Ordinary Differential Equations	ODE602S	Ordinary Differential Equations
DEM602S	Demography	DEM602S	Demography
RAN701S	Real Analysis	RAN701S	Real Analysis
NUM701S	Numerical Methods 1	NUM701S	Numerical Methods 1
NUM702S	Numerical Methods 2	NUM702S	Numerical Methods 2
CAN702S	Complex Analysis	CAN702S	Complex Analysis
MCS702S	Mechanics	MCS702S	Mechanics
TSA701S	Time Series Analysis	TSA701S	Time Series Analysis
DAE702S	Design and Analysis of Experiments	DAE702S	Design and Analysis of Experiments
AEM702S	Applied Econometric Modelling	AEM702S	Applied Econometric Modelling

**Table 2: Corresponding Courses (to be completed if courses on the old curriculum are failed) - (Please note that this is not a credit table)**

Course Code	Bachelor of Science in Applied Mathematics and Statistics (Old courses)	Course Code	Bachelor of Science in Applied Mathematics and Statistics (Corresponding new/revised Courses to be done, if failed)
SAT501S	Sets, Algebra and Trigonometry	TBA	Algebra and Trigonometry
MAS501S	Mathematical Structures	MAS501S	Mathematical Structures
IAS501S	Introduction to Applied Statistics	IAS501S	Introduction to Applied Statistics
CLS502S	Calculus 1	CLS502S	Calculus 1
LIA 502S	Linear Algebra 1	LIA 502S	Linear Algebra 1
FIM502S	Financial Mathematics 1	FIM502S	Financial Mathematics 1
PBT501S	Probability Theory 1	PBT501S	Probability Theory 1
ODE602S	Ordinary Differential Equations	ODE602S	Ordinary Differential Equations
LIA601S	Linear Algebra 2	LIA601S	Linear Algebra 2
AMS602S	Applied Mathematical & Statistical Computing	AMS602S	Applied Mathematical & Statistical Computing
MAP602S	Mathematical Programming	MAP602S	Mathematical Programming
RAA602S	Regression Analysis and ANOVA	RAA602S	Regression Analysis & ANOVA
SIN502SS	Statistical Inference 1	SIN502SS	Statistical Inference 1
MMO701SS	Mathematical Modelling 1	MMO701SS	Mathematical Modelling 1
RAN701S	Real Analysis	RAN701S	Real Analysis
NUM701S	Numerical Methods 1	NUM701S	Numerical Methods 1
CAN702S	Complex Analysis	CAN702S	Complex Analysis
SIN601S	Statistical Inference 2	SIN601S	Statistical Inference 2
MMO702S	Mathematical Modelling 2	MMO702S	Mathematical Modelling 2
DEM602S	Demography	DEM602S	Demography
SMS701S	Survey Methods and Sampling Techniques	SMS701S	Survey Methods and Sampling Techniques
FIM601S	Financial Mathematics 2	FIM601S	Financial Mathematics 2
NUM702S	Numerical Methods 2	NUM702S	Numerical Methods 2
MCS702S	Mechanics	MCS702S	Mechanics
TSA701S	Time Series Analysis	TSA701S	Time Series Analysis
DAE702S	Design and Analysis of Experiments	DAE702S	Design and Analysis of Experiments
AEM702S	Applied Econometric Modelling	AEM702S	Applied Econometric Modelling
CLS601S	Calculus 2	CLS601S	Calculus 2
PBT602S	Probability Theory 2	PBT602S	Probability Theory 2
WIL701S	Work integrated Learning (WIL)	WIL701S	Work Integrated Learning (WIL)

**NQF Level: 7**

**NQF Credits: 414**

**NQF Qualification ID: Q0724**

**Description**

The Bachelor of Science in Applied Mathematics and Statistics provides a systematic and coherent introduction to the knowledge, principles, concepts, data, theories and problem-solving techniques of the Applied Mathematics and Applied Statistics discipline. The programme will enable students to acquire cognitive/intellectual skills, practical skills and key transferable skills and to apply these skills in solving Applied Mathematics and Statistics problems facing the public and private sectors, as well as the overall economy.

**Admission Requirements**

In addition to the general admission requirements of the University as stated in G12.1 a candidate should have obtained a minimum of (i) B symbol in NSSC Ordinary Level Mathematics. Candidates that obtained a C symbol in NSSC Ordinary Level Mathematics will be required to sit for an entrance test in Mathematics.

**Modes of Study**

The programme will run in the full-time and part-time modes.

**CURRICULUM**

**Year 1**

**Semester 1**

Course Code	Course Title	Prerequisite(s)	NQF Level	NQF Credits
SAT501S	Set, Algebra and Trigonometry	None	5	12
MAS501S	Mathematical Structures	None	5	12
IAS501S	Introduction to Applied Statistics	None	5	12
PBT501S	Probability Theory 1	None	5	12
CUS411S	Computer User Skills	None	4	10
PLU411S	Principles of English Language Use	None	4	NCB
<b>Semester 2</b>				
CLS502S	Calculus 1	Algebra & Trig	5	12
LIA502S	Linear Algebra 1	Algebra & Trig	5	12
FIM502S	Financial Mathematics 1	None	5	12
SIN502S	Statistical Inference 1	None	5	12
EPR511S	English in Practice	Principles of English Language Use	5	NCB
BSC410S	Basic Science	None	4	8

**Year 2**

**Semester 3**

PBT601S	Probability Theory 2	Probability Theory 1 & CLS601S as co-prerequisite	6	12
CLS601S	Calculus 2	Calculus 1	6	12
LIA601S	Linear Algebra 2	Linear Algebra 1	6	12
FIM601S	Financial Mathematics 2	Financial Mathematics 1	6	12
EAP511S	English for Academic Purposes	EPR511S and LIP411S	5	14
ICT521S	Information Competence	None	5	10

**Semester 4**

MAP602S	Mathematical Programming	Linear Algebra 1	6	12
AMS602S	Applied Mathematical and Statistical	Computer User Skills	6	12
RAA602S	Computing Regression Analysis & ANOVA	Statistical Inference 1	6	12

SIN602S	Statistical Inference 2	Statistical Inference 1 & Probability Theory 2	6	12
ODE602S	Ordinary Differential Equations	Calculus 1	6	12
DEM602S	Demography	None	6	12
<b>Year 3</b>				
<b>Semester 5</b>				
RAN701S	Real Analysis	Calculus 2	7	12
NUM701S	Numerical Methods 1	Ordinary Differential Equations	7	12
TSA701S	Time Series Analysis	Introduction to Applied Stats	7	12
SMS701S	Survey Methods and Sampling Techniques	Introduction to Applied Stats	7	12
MMO701S	Mathematical Modelling 1	Ordinary Differential Equations	7	12
WIL701S	Work Integrated Learning (WIL)	All courses up to Semester 4	7	12
<b>Semester 6</b>				
MMO702S	Mathematical Modelling 2	Mathematical Modelling 1	7	12
DAE702S	Design and Analysis of Experiments	Regression Analysis & ANOVA	7	12
SYD611S	Sustainability and Development	None	6	12
NUM702S	Numerical Methods 2	Numerical Methods 1	7	12
CAN702S	Complex Analysis	Real Analysis	7	12
MCS702S	<b>Plus ONE of the following Elective courses:</b> Mechanics	Ordinary Differential Equations	7	12
AEM702S	Applied Econometric Modelling	Regression Analysis & ANOVA	7	12



**DEPARTMENT OF BIOLOGY, CHEMISTRY AND PHYSICS**

**Code 75**

**QUALIFICATIONS OFFERED**

Bachelor of Science

07BOSC

**BACHELOR OF SCIENCE**

**07BOSC**

**NQF Level: 7**

**NQF Credits: 370**

**NQF Qualification ID: Q0723**

**Description**

The Bachelor of Science is a single major degree programme, requiring students to minor in a second subject/cognate area, that aims at providing students with a coherent and systematic introduction to the broad knowledge, theories, principles, concepts and problem-solving techniques in the sub-field of natural sciences. The programme will enable students to acquire cognitive, problem-solving and key transferable skills necessary for addressing a wide range of pressing challenges in relation to Science, Technology, Engineering and Mathematics (STEM) in the current Namibian market and economy. This science degree provides a platform for developing scientific literacy and for building-up essential scientific knowledge and skills for lifelong learning in STEM. Additionally, the programme is designed to enable students to apply knowledge of the natural sciences to real life situations and appreciate the relationship between science and other disciplines. The programme structure facilitates exposure of students to a variety of disciplines, at least initially, but ultimately requiring specialisation in the final year in a major complemented by a component of Work Integrated Learning (WIL).

**Admission Requirements**

In addition to meeting the University's General Admission Requirements (GI2.1 in Part 1 of the NUST Yearbook), candidates must have either;

A total of 15 points on the evaluation scale for Physical Science, Mathematics and Biology, in a combination of symbols on NSSC Higher or Ordinary Level or both. No symbol for any one or more of the subjects may be lower than a "C" on Ordinary Level or a 4 on

Higher Level. Candidates must further have obtained at least an "E" on Ordinary Level for English.

-OR-

A total of 20 points on the NSSCO evaluation scale for Biology, Chemistry, Physics and Mathematics provided no symbol is lower than a "C" for any one of the subjects

-OR-

NSSCAS Certificate with Biology, Chemistry, Physics and Mathematics provided no symbol is lower than a "D" for any one of the subjects.

The Head of Department or his/her nominee may admit candidates who do not have the required minimum symbol for one of the above subjects, provided that such candidates have very strong symbols for the other two subjects and that the total point score for the three subjects is not lower than 15. Such candidates may be required to enroll for a bridging course at the discretion of the department.

**Requirements for Qualification Award**

In the context of this degree, the major and minor combinations will be limited to the following:

Biology major and Chemistry minor, Biology major and Physics minor, Biology major and Mathematics minor, Chemistry major and Biology minor, Chemistry major and Physics minor, Chemistry major and Mathematics minor, Physics major and Biology minor, Physics major and Chemistry minor, Physics major and Mathematics minor, Mathematics major and Biology minor, Mathematics major and Chemistry minor, Mathematics major and Physics minor.

**Transfer Arrangements**

Transfer of credits will be dealt with according to the University's regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

**Special Arrangements**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical/ practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, classroom lectures, guided practical's, group and individual assignments, seminars, practical demonstrations, problem-solving workshops, group projects, class discussions, tutorials, review of on-line resources, and field trips (not all methods will be used in the context of each course). The peculiar teaching and learning strategies of each course can be found in the course specifications/syllabi. The qualification will be offered on a full-time mode of study in accordance with the University's rules and regulations.

This programme also includes Work Integrated Learning (WIL) which integrates work experiences with learning in a way traditional education cannot do.

### Special Assessment Arrangements

The assessment of the student's academic performance will be on the basis of employing assessment methodologies and strategies appropriate to the learning outcomes of the applicable course. Students will be assessed using diversified continuous assessment methods only. The assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual and/or group assignments and presentations, case studies, report and essay writing, application of theories and methods. All courses require a final mark of at least 50% to pass.

### Quality Assurance Requirements

Each course will have one or more examiners and one moderator. Moderators will be identified internally and externally and approved by Senate. The required minimum qualification of the moderator will be at least a Master's degree in a particular major area of study (i.e. Biology, Chemistry, Physics or Mathematics), or the person must be a well-respected expert in the field. Lecturing staff will set and mark tests and/or examinations in accordance with set memorandums. The examinations, memorandums and course outlines will be forwarded to the identified moderators for moderation. This ensures quality and equity of assessments and the qualification as a whole. All exit level courses for this programme, i.e. NQF Level 7, will be externally moderated.

### Transition Arrangements

This is a new qualification that does not replace any existing qualification(s). Transition arrangements are, therefore, not applicable.

## CURRICULUM

### Year 1

#### Semester 1

##### Course Code

##### Course Title

##### Prerequisites

##### NQF Level

##### NQF Credits

PLU411S	Principles of English Language Use	None	4	NCB
CUS411S	Computer User Skills	None	4	10
GNB501S	General Biology 1A	None	5	12
GNC501S	General Chemistry 1A	None	5	12
GNP501S	General Physics 1A	None	5	12
AAT501S	Algebra and Trigonometry	None	5	12

#### Semester 2

EPR511S	English in Practice	Principles of English Language Use	5	NCB
ICT521S	Information Competence	None	5	10
GNB502S	General Biology 1B	General Biology 1A	5	12
GNC502S	General Chemistry 1B	General Chemistry 1A	5	12
GNP502S	General Physics 1B	None	5	12
IAS501S	Introduction to Applied Statistics	None	5	12

### Year 2

#### Semester 3

CLS502S	Calculus/Calculus 1	Algebra and Trigonometry	5	12
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**Plus TWO strands depending on intended major and minor**

#### Biology

CEB601S	Cell Biology	General Biology 1A	6	12
EBD601S	Evolution of Biological Diversity	General Biology 1A	6	12

#### Chemistry

APP601S	Analytical Principles and Practice	General Chemistry 1B	6	12
ORC601S	Organic Chemistry 1	General Chemistry 1B	6	12

#### Physics

EAM601S	Electricity and Magnetism	General Physics 1A	6	12
TPH601S	Thermal Physics	General Physics 1A	6	12

#### Mathematics

LIA502S	Linear Algebra 1	Algebra and Trigonometry	5	12
MAS501S	Mathematical Structures	None	5	12

<b>Semester 4</b>				
EAP511S	English for Academic Purposes	English in Practice	5	14
<b>Plus TWO strands depending on intended major and minor</b>				
<b>Biology</b>				
GEN602S	Genetics	Cell Biology	6	12
PSF602S	Plant Structure and Function	Evolution of Biological Diversity	6	12
<b>Chemistry</b>				
PCH602S	Physical Chemistry	General Chemistry 1B and Calculus	6	12
ICH602S	Inorganic Chemistry	General Chemistry 1B	6	12
<b>Physics</b>				
ECE602S	Electrical Circuits & Electronics	Electricity & Magnetism	6	12
MPH602S	Modern Physics	General Physics 1B	6	12
<b>Mathematics</b>				
ODE602S	Ordinary Differential Equations	Calculus 1	6	12
LIA601S	Linear Algebra 2	Linear Algebra 1	6	12
<b>Compulsory Elective for Biology Major</b>				
PBT501S	Probability Theory 1	None	5	12
<b>Compulsory Elective for Chemistry, Physics, Mathematics Major</b>				
CLS601S	Calculus 2	Calculus 1	6	12
<b>Year 3</b>				
<b>Semester 5</b>				
SYD611S	Sustainability and Development	None	6	12
<b>Plus ONE strand/major (based on programme rules and choices made in previous semesters)</b>				
<b>Biology</b>				
ECO701S	Ecology	General Biology 1B	7	12
ASF701S	Animal Structure and Function	General Biology 1B	7	12
MIB701S	Microbiology	Evolution of Biological Diversity and Genetics	7	12
MAB701S	Marine Biology 3A	Evolution of Biology Diversity	7	12
<b>Chemistry</b>				
OCH701S	Organic Chemistry 2	Organic Chemistry 1	7	12
MSC701S	Molecular Spectroscopy & Chemical Separation Methods	Analytical Principles and Practice	7	12
ACS701S	Applied Colloid and Surface Chemistry	Physical Chemistry	7	12
QCM701S	Quantum Chemistry & Molecular Spectroscopy	Physical Chemistry	7	12
<b>Physics</b>				
MMP701S	Mathematical Methods in Physics	None	7	12
EEN701S	Energy & Environment	Thermal Physics and Electricity and Magnetism	7	12
SSP701S	Solid State Physics	Modern Physics	7	12
GPH701S	Geophysics	Electricity and Magnetism and Modern Physics	7	12
<b>Mathematics</b>				
MAP602S	Mathematical Programming	Linear Algebra 1	6	12
RAN701S	Real Analysis	Calculus 2	7	12
NUM701S	Numerical Methods 1	Ordinary Differential Equations	7	12
MMO701S	Mathematical Modelling 1	Ordinary Differential Equations	7	12
<b>Semester 6</b>				
WIL702S	Work Integrated Learning	All courses up to Semester 4	7	36

**Plus ONE strand/major (based on programme rules and choice made in previous semester)**

**Biology**

BIO702S	Biotechnology	Microbiology	7	12
MAB702S	Marine Biology 3B	Marine Biology 3A	7	12

**Chemistry**

BPP702S	Biochemistry: Biochemical Principles and Practice	Organic Chemistry 2	7	12
ENC702S	Environmental Chemistry	Molecular Spectroscopy and Chemical Separation Methods	7	12

**Physics**

QPH702S	Quantum Physics	Modern Physics	7	12
BPH702S	Biomedical Physics	Modern Physics	7	12

**Mathematics**

NUM702S	Numerical Methods 2	Numerical Methods 1	7	12
MMO702S	Mathematical Modelling 2	Mathematical Modelling 1	7	12

**SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES**

**DEPARTMENT OF AGRICULTURE AND AGRIBUSINESS**

**QUALIFICATIONS OFFERED**

Bachelor of Science in Agriculture	<b>07BAGA</b>
Bachelor of Agriculture (Old Curriculum-Phasing out until 2024)	<b>07BAGR</b>
Bachelor of Horticulture	<b>07BHOR</b>

**BACHELOR OF SCIENCE IN AGRICULTURE**

**07BAGA**

**NQF Credits: 368**

**Description**

The Bachelor of Science in Agriculture provides a systematic and coherent introduction to the knowledge, principles, concepts, data, theories and problem-solving techniques of the agriculture discipline. The programme will enable students to acquire cognitive/ intellectual skills, practical skills and key transferable skills and to apply these skills in solving agricultural related problems that face the Namibian agriculture and commercial/subsistence farming sectors. This programme also intends to provide basic managerial competence through teaching, extension and research, thereby sustaining the agricultural industry, creating new employment opportunities, and contributing to Namibia's economic development. This programme enables students to specialise in Agribusiness Management; or Sustainable Agriculture.

Overall, the Bachelor of Science in Agriculture aims at:

- Equipping students with relevant knowledge, skills and attitudes to contribute to agricultural production and sustainable resource management;
- Providing students with a sound foundation in the fundamental concepts and theories of agriculture; developing the ability of students to analyse agricultural information from a wide range of sources;
- Providing graduates with basic managerial competencies for effective agricultural management, human resources and finances;
- Equipping graduates with the requisite skills to work effectively as individuals and as members of a team; and
- Providing students with opportunities for continued career education.

**Criteria for Admission**

Candidates may be admitted to the Bachelor of Science in Agriculture if they meet the University's General Admission Requirements (GI2.1 in Part 1 of the Yearbook). Candidates must also comply with the following additional requirements:

- A candidate must have done and passed Biology and Mathematics, with a minimum of E-symbol at NSSC/NSSCO or level 4 at NSSCH or an E Symbol at NSSCAS.
- In addition to Biology and Mathematics, the candidate must have done Natural Resource Science related subjects such as; Agriculture, Physical Science, Life Science and Geography.

Candidates who meet the Mature Age Entry requirements of the NUST (GI2.2 in Part 1 of the Yearbook) will also be considered for admission.

Holders of the NUST's Diploma in Agricultural Management (Level 6) will be admitted to the second year of this programme and will get an exemption for the corresponding courses. They will be exempted from Work Integrated Learning (WIL), but are required to fulfil the requirements of their selected strand in order to qualify for the award of the Bachelor of Science in Agriculture.

Candidates must be medically and physically fit for fieldwork, which forms an integral part of the programme.

**Articulation Arrangements**

Transfer of credits will be dealt with according to the NUST's regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

Graduates of the Bachelor of Science in Agriculture will be able to pursue further studies in Agriculture, or a related cognate area of learning, at NQF level 8.

**Mode of Delivery**

The programme will only be offered on the full-time mode of study in accordance with NUST rules.

### **Requirements for Qualification Award**

The Bachelor of Science in Agriculture will be awarded to students credited with a minimum of 368 NQF credits. In addition, students should meet the administrative and financial requirements spelt out in Part 1 of Namibia University of Science and Technology Yearbook.

Students specialise in either Agribusiness Management or Sustainable Agriculture, which are developed in increasing complexity across relevant NQF levels in accordance with NQF principles

### **Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject-specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject-specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical, projects, quizzes, lectures, oral presentations, assignments, excursions, presentation of audio-visual materials, problem-based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

### **Assessment Strategies**

In addition to the general requirements of Senate, the assessment of the student's academic performance will be on the basis of employing assessment methodologies and strategies appropriate to the learning outcomes of the different courses. For the Bachelor of Science in Agriculture, all courses will be assessed using a combination of Continuous Assessment (CA) and an end-of-semester examination. CA and the examination will contribute in a ratio of 60/40 to the Final Mark. In order to be admitted to the examination, a semester mark of at least 40% is required. To obtain a final pass mark, a student must attain at least 50% in a course, subject to a sub-minimum of 40% in the examination. Some courses may use open-book tests/examinations to allow students access to their study materials at the discretion of the examiner.

### **Quality Assurance Requirements**

Each course (please refer to the Detailed Qualification Requirements) will have one or more examiner and one moderator. Moderators will be identified both internally and externally. The required minimum qualification of the moderator should be a Bachelor Honours degree in a related field of studies or the person must be a well-respected expert in the field in more practical areas. Lecturing staff will set and mark tests and/or examinations which will, together with relevant study material of that particular course and other material containing course learning outcomes in the context of the qualification learning outcomes, be forwarded to the moderator for moderation purposes, therefore, ensuring quality of the assessment and the qualification as a whole. All exit level courses for this programme, i.e. courses at NQF level 7, will be externally moderated.

### **Transition Arrangements**

There are significant changes to this programme, thus the Bachelor of Agriculture (old curriculum) will be phased out systematically with minimal disruption to existing students' learning progression. The revised Bachelor of Science in Agriculture will be phased in 2020. The last intake of 1st year students for the Bachelor of Agriculture (old curriculum) programme is the 2019 intake.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who fail more than 50% of the courses at the end of the year, will be required to change their registration to the revised Bachelor of Science in Agriculture programme and will be granted credits on a course-by-course basis in accordance with information in Table 15.1 below. Similarly, students who have completed courses on the out-phasing programme will get credits for the corresponding courses in the new revised programme in accordance with Table 15.1, fulfilling the criteria of the selected strand. Similarly, students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum) and who meet all requirements to progress to the 2nd year of the out-phasing programme in 2020 will be allowed to transition to the revised programme (revised Bachelor of Science in Agriculture).

Students who are registered in 2019 for the 2nd year of the out-phasing programme (old curriculum), and who fail more than 50% of the courses at the end of the year, will be required to change their registration to the revised Bachelor of Science in Agriculture programme, and will be granted credits on a course-by-course basis in accordance with information in Table 15.1. Such students, however, will lose credits for Agricultural Land Management.

Students who are registered in 2019 for the 2nd year of the out-phasing programme (old curriculum) and who meet all requirements to progress to the 3rd year in 2020 will be required to complete their studies based on the requirements of the old curriculum.

The revised Bachelor of Science in Agriculture (revised curriculum) will take effect from January 2020 with concurrent implementation of 1st and 2nd year. Thus, courses will only be offered based on the new/revised syllabi in 2020 (1st and 2nd year), 2021 (3rd year). Students who fail any of the courses on the old curriculum will be required to repeat such courses based on syllabi of new/revised corresponding courses. Please refer to Table 15.2, below, for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

The deadline for complete phasing out of the Bachelor of Agriculture (old curriculum) is 2024 after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum.

**CURRICULUM**

**Year 1**

**Semester 1**

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
PLU411S	Principles of English Language Use	None	4	
CUS411S	Computer User Skills	None	4	10
ITM111S	Introduction to Mathematics	None	5	10
ICA511S	Introduction to Chemistry	None	5	10
IBI511S	Introduction to General Biology	None	5	10
AMC520S	Agricultural Mechanisation	None	5	12

**Semester 2**

EPR511S	English in Practice	Principles of English Language Use, or Language in Practice (LIP411S), or a "B" for IGCSE English as a Second Language	5	
AEM520S	Agricultural Economics	Introduction to Mathematics	5	10
RGE521S	Rangeland Ecology	Introduction to General Biology	5	12
AGS520S	Agricultural Statistics	Introduction to Mathematics	5	10
SSA520S	Soil Science	Introduction to Chemistry	5	12
SCP621S	Sustainable Crop Production	Introduction to General Biology	6	12

**Year 2**

**Semester 3**

ICT521S	Information Competence	None	5	10
EAP511S	English for Academic Purposes	English in Practice	5	14

**Plus THREE of the following Strand Courses depending on Specialisation**

**Sustainable Agriculture Strand:**

SRH611S	Sustainable Small Ruminant Husbandry	Introduction to General Biology	6	12
RRG611S	Rangeland Regeneration	Rangeland Ecology	6	12
SLH611S	Sustainable Large Ruminant Husbandry	Introduction to General Biology	6	12

**Agribusiness Management Strand:**

PPE611S	Principles of Production Economics	Agricultural Economics	6	12
MTA611S	Mathematics for Agribusiness	Introduction to Mathematics	6	12

**Plus ONE of the Strand Elective Course for Students who opt for the Agribusiness Management Strand**

SLH611S	Sustainable Large Ruminant Husbandry	Introduction to General Biology	6	12
SRH611S	Sustainable Small Ruminant Husbandry	Introduction to General Biology	6	12

**Semester 4**

ABM720S	Agribusiness Management	Agricultural Economics	7	12
RME620S	Basic Research Methodology	Agricultural Statistics; Computer User Skills	6	10

**Plus FOUR of the following courses depending on Specialisation**

**Sustainable Agriculture Strand:**

CVA621S	Conservation Agriculture	Soil Science	6	12
GRS621S	GIS and Remote Sensing Applications in Agriculture	None	6	12
ANH620S	Animal Health	Introduction to Chemistry, Introduction to General Biology	6	12
AGX620S	Agricultural Extension	English in Practice	6	12

**Agribusiness Management Strand:**

APT621S	Agroprocessing and Technology Introduction to Chemistry	Introduction to Biology and;	6	12
PAM621S	Principles of Agribusiness Marketing	Agricultural Economics	6	12
BEA621S	Basic Econometrics for Agriculture	Agricultural Statistics	6	12

**Plus ONE of the Strand Elective Courses for Students who opt for the Agribusiness Management Strand**

AGX620S	Agricultural Extension	English in Practice	6	12
IHR512S	Introduction to Human Resources Management			
		None	5	12

**Year 3**

**Semester 5**

WLA710S	Work Integrated Learning (WIL)	All courses of the first four semesters	7	60
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**Semester 6**

SYD611S	Sustainability and Development	None	6	12
APD721S	Agricultural Policy and Rural Development	None	7	12
ENR721S	Environmental and Natural Resource Economics	Agricultural Economics	7	12

**Plus ONE of the following Strand Compulsory courses depending on Specialisation**

**Sustainable Agriculture Strand:**

SNH611S	Sustainable Non-Ruminant Husbandry	Introduction to General Biology	6	12
AGE721S	Agroecology	Rangeland Regeneration	7	12

**Plus ONE of the Strand Elective Course for Students who opt for the Sustainable Agriculture Strand**

SUA721S	Sustainable Urban Agriculture	Sustainable Crop Production	7	12
WRM721S	Water Resource Management	Conservation Agriculture	7	12

**Agribusiness Management Strand:**

FMA712S	Financial Management (Agriculture)	Agricultural Economics	7	12
ECT721S	Economics of Trade	Principles of Agribusiness Marketing	7	12
PJA712S	Project Management	None	7	12



NQF Level: 7

NQF Credits: 372

NQF Qualification ID: Q0480

**Description**

The Bachelor of Agriculture provides a systematic and coherent introduction to the knowledge, principles, concepts, data, theories and problem-solving techniques of the agriculture discipline. The programme will enable students to acquire cognitive/intellectual skills, practical skills and key transferable skills and to apply these skills in solving agricultural related problems that face the Namibian agriculture and commercial/subsistence farming sectors. This programme also intends to provide basic managerial competence through teaching, extension and research, thereby sustaining the agricultural industry, creating new employment opportunities, and contributing to Namibia’s economic development.

Overall, the Bachelor of Agriculture aims at:

- Equipping students with relevant knowledge, skills and attitudes to contribute to agricultural production and sustainable resource management;
- Providing students with a sound foundation in the fundamental concepts and theories of agriculture;
- Developing the ability of students to analyse agricultural information from a wide range of sources;
- Providing graduates with basic managerial competencies for effective agricultural management, human resources and finances;
- Equipping graduates with the requisite skills to work effectively as individuals and as members of a team;
- Providing students with opportunities for continued career education.

**Admission Requirements**

Candidates may be admitted to the Bachelor of Agriculture if they meet the University’s General Admission Requirements (GI2.1 in Part 1 of the NUST Yearbook). Candidates must also comply with the following additional requirements:

- A pass with at least an E-symbol in Mathematics at NSSC Ordinary Level or a 4 at NSSC Higher Level or equivalent;
- Passes with at least an E-symbol in Biology or Science related subjects.

Candidates who meet the Mature Age Entry requirements of the Namibia University of Science and Technology (GI2.2 in Part 1 of the NUST Yearbook) will also be considered for admission.

Holders of the University’s Diploma in Agricultural Management (Level 6) will be admitted to the third year of this programme, and will be exempted from Work Integrated Learning (WIL) in semester 5, but are required to complete the following courses in order to qualify for the award of the Bachelor of Agriculture:

- Animal Health,
- Contemporary Issues,
- Non-ruminant Husbandry
- Agroecology
- Agricultural Land Management,
- Financial Management (Agriculture),
- Food Science and Technology,
- Rural Development Sociology.

Candidates must be medically and physically fit for field work, which forms an integral part of the programme.

**Articulation Arrangements**

Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

Graduates of the Bachelor of Agriculture will be able to pursue further studies in Agriculture, or a related cognate area of learning, at NQF Level 8.

**CURRICULUM**

**Year 1**  
**Semester 1**

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
ICA511S	Introduction to Chemistry	None	5	10
CUS411S	Computer User Skills	None	4	10
ITM111S	Introduction to Mathematics	None	5	10
PLU411S	Principles of English Language Use	None	4	NCB
IBI511S	Introduction to General Biology	None	5	10

## Semester 2

AMC520S	Agricultural Mechanisation	None	5	12
AEM520S	Agricultural Economics	Introduction to Mathematics	5	10
RSC520S	Rangeland Science	Introduction to General Biology	5	12
AGS520S	Agricultural Statistics	Introduction to Mathematics	5	10
SSA520S	Soil Science	Introduction to Chemistry	5	12
EPR511S	English in Practice	Language in Practice/ Principles of English Language Use, or Language in Practice "A", or Module 2, or Exemption	5	NCB

## Year 2

### Semester 3

ICT521S	Information Competence	None	5	10
SRH610S	Small Ruminant Husbandry	Introduction to General Biology	6	12
RMN610S	Rangeland Management	Rangeland Science	6	12
LRH610S	Large Ruminant Husbandry	Introduction to General Biology	6	12
AAG610S	Agronomy	Introduction to General Biology & Soil Science	6	12
EAP511S	English for Academic Purposes	English in Practice	5	14

### Semester 4

ALM621S	Agricultural Land Management	Soil Science	6	12
HCT620S	Horticulture	Introduction to General Biology & Soil Science	6	12
ANH620S	Animal Health	Introduction to Chemistry;	6	12
RME620S	Basic Research Methodology	Introduction to General Biology Agricultural Statistics;	6	10
AGX620S	Agricultural Extension	Computer User Skills English in Practice	6	12
NRH621S	Non-Ruminant Husbandry	Introduction to General Biology	6	12

## Year 3

### Semester 5

WLA710S	Work Integrated Learning (WIL)	All courses of the first four semester's, unless only one course has been failed, for which the student obtained admission to the examination.	7	60
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### Semester 6

CIS610S	Contemporary Issues	None	6	12
AGE721S	Agroecology	Rangeland Science	7	12
ABM720S	Agribusiness Management	Agricultural Economics	7	12
FMA720S	Financial Management (Agriculture)	Agricultural Economics	7	14
FST720S	Food Science and Technology	Introduction to Chemistry	7	12
RDS720S	Rural Development Sociology	None	7	12

## Special Arrangements

### Teaching and Learning Strategies

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical's, projects, quizzes, lectures, oral presentations, assignments, excursions, presentation of audio-visual materials, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

### Assessment Strategies

In addition to the general requirements of Senate, the assessment of the student's academic performance will be on the basis of employing assessment methodologies and strategies appropriate to the learning outcomes of the different courses. For the Bachelor of Agriculture, all courses will be assessed using a combination of Continuous Assessment (CA) and an end-of semester

examination. CA and the examination will contribute in a ratio of 60/40 to the Final Mark. In order to be admitted to the examination, a semester mark of at least 40% is required. To obtain a final pass mark, a student must attain at least 50% in a course, subject to a sub-minimum of 40% in the examination. Some courses may use open book tests/examinations to allow students access to their study materials at the discretion of the examiner.

The Bachelor degree student must also undertake a compulsory component of Work-Integrated Learning (WIL) during which they have to record all duties performed, do a basic research project and present their general duties and research findings. The student is also evaluated in terms of work ethics and attitude by his mentor at the duty station, as well as the tutor from the University. A minimum of 50% is required to pass the basic research project. It is recommended that students should have at least a code 8 driver's license before going on WIL.

### Transition Arrangements

The Bachelor of Agricultural Management (old curriculum), currently offered over 7 semesters, will be phased out systematically until 2020 with minimal disruption to existing students' learning progression. The last intake of 1st year students for the out-phasing programme (old curriculum) was in January 2013. The last intake for the final year of the out-phasing programme (old curriculum), will be in 2018. The last cohort of students, to be registered for the final year in 2018, would have until 2020 to complete the out-phasing programme (old curriculum).

Students who were registered in 2013 for the 1<sup>st</sup> year of the out-phasing programme (old curriculum), and who failed more than 50% of the courses at the end of the year, will be required to change their registration to the new programme and will be granted credits on a course-by-course basis in accordance with information in Table 1 below. Students who were registered in 2013 for the 1<sup>st</sup> year of the out-phasing programme (old curriculum) and who meet all requirements to progress to the 2<sup>nd</sup> year in 2014 will be allowed to transition to the revised programme (new curriculum) but will lose the credits for Basic Accounting 1A.

The revised Bachelor of Agriculture (New curriculum) took effect from January 2014 with the concurrent completion of the 1<sup>st</sup> and 2<sup>nd</sup> year (2014) and the implementation of the 3<sup>rd</sup> year in 2015. Courses will only be offered based on the new/revised syllabi in 2014 (1<sup>st</sup> and 2<sup>nd</sup> year) and 2015 (3<sup>rd</sup> year). Students who are admitted into the examination but fail any of the courses on the old curriculum will only be granted two opportunities to pass such courses in accordance with the University's general rules. Students who fail any of the courses on the old curriculum will be required to repeat the failed courses based on syllabi of new/revised corresponding courses. Please refer to Table 2, below, for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

The deadline for complete phasing out of the Bachelor of Agricultural Management (old curriculum) is 2020 after which students must automatically switch to the new programme and fulfill all requirements based of the new curriculum.

**Table 1: 1<sup>st</sup> Year Courses to be Credited**

Course Code	Bachelor of Agricultural Management(Old Courses)	Course Code	Bachelor of Agriculture (New/Revised Equivalent Courses)
ICA510S	Introduction to Chemistry	ICA511S	Introduction to Chemistry
CUS411S	Computer User Skills	CUS411S	Computer User Skills
ITM111S	Introduction to Mathematics	ITM111S	Introduction to Mathematics
LIP411S	Language in Practice	PLU411S	Principles of English Language Use
IBI510S	Introduction to General Biology	IBI511S	Introduction to General Biology
LBT4003	Agricultural Mechanisation	AMC520S	Agricultural Mechanisation
AEC2100	Agricultural Economics	AEM520S	Agricultural Economics
RSC112S	Rangeland Science	RSC520S	Rangeland Science
ACS220S	Agricultural Statistics	AGS520S	Agricultural Statistics
SSA120S	Soil Science	SSA520S	Soil Science
EPR511S	English in Practice	EPR511S	English in Practice

**Table 2: Corresponding Courses (to be completed if courses on the old curriculum are failed) - (Please note this is not a credit table)**

Course Code	Bachelor of Agricultural Management (Old Courses)	Course Code	Bachelor of Agriculture (Corresponding New/ Re-vised Courses to be Done, if Failed)
ICA510S	Introduction to Chemistry	ICA511S	Introduction to Chemistry
IBI510S	Introduction to General Biology	IBI511S	Introduction to General Biology
LBT4003	Agricultural Mechanisation	AMC520S	Agricultural Mechanisation
AEC2100	Agricultural Economics	AEM520S	Agricultural Economics
RSC112S	Rangeland Science	RSC520S	Rangeland Science
ACS220S	Agricultural Statistics	AGS520S	Agricultural Statistics

SSA120S	Soil Science	SSA520S	Soil Science
SRH2100	Small Ruminant Husbandry	SRH610S	Small Ruminant Husbandry
RMN211S	Rangeland Management	RMN610S	Rangeland Management
LRH2200	Large Ruminant Husbandry	LRH610S	Large Ruminant Husbandry
AAG2100	Agronomy	AAG610S	Agronomy
ALM620S	Agricultural Land Management	ALM621S	Agricultural Land Management
HCT3200	Horticulture	HCT620S	Horticulture
RME410S	Research Methodology (SNRT)	RME620S	Basic Research Methodology
LBT4001	Agricultural Extension	AGX620S	Agricultural Extension
NRH620S	Non-Ruminant Husbandry	NRH621S	Non-Ruminant Animal Husbandry
IAG710S	In-service Training (Research Project)	WLA710S	Work Integrated Learning (WIL)
AGE720S	Agroecology	AGE721S	Agroecology
ABM322S	Agribusiness Management	ABM720S	Agribusiness Management
FMA711A	Financial Management (Agriculture) IV	FMA720S	Financial Management (Agriculture)
FTE610S	Introduction To Food Technology	FST720S	Food Science Technology
RSO610S	Rural Sociology	RDS720S	Rural Development Sociology
MRI321S	Marketing Research and Market Intelligence		None
ACM720S	Agricultural Marketing		None
SAP721S	Sustainable Animal Production		None
SPP721S	Sustainable Plant Production		None
SAM721S	Strategic Agribusiness Management		None

**Please Note:**

- Table 2, above, only highlights new/revised courses in the Bachelor of Agriculture that should be done if courses on the Bachelor of Agricultural Management (old curriculum) are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.
- Courses in the old curriculum that do not have corresponding courses in the new curriculum will be taught until the old curriculum is phased out.
- Institutional Core Courses are included in this programme.

## BACHELOR OF SCIENCE IN HORTICULTURE

07BHOR

NQF Level: 7

NQF Credits: 382

NQF Qualification ID: Q2296

### Description

The Bachelor of Science in Horticulture is primarily designed to provide a systematic and coherent introduction to the knowledge, principles, concepts, theories and problem-solving techniques on production of horticultural crops, management, breeding, protection as well as soil fertility. The programme will enable students to acquire cognitive/intellectual skills (Horticulture), practical skills and key transferable skills and empower them to apply these skills in solving problems that face the Namibian horticultural sector. The Bachelor of Science in Horticulture degree programme aims at equipping students with basic managerial competencies through teaching, excursions and research, thereby sustaining the horticultural industry, increasing the production and use of horticultural and other crops in the country, creating new employment opportunities, and contributing to Namibia's economic development. Further, this programme intends to provide students with the knowledge and skills required to plan, implement, and evaluate projects related to horticultural production, protection and management.

### Admission Criteria

The Bachelor of Science in Horticulture seeks suitably qualified candidates who are capable of benefiting from, contributing to, and successfully completing the programme. In order to be considered for admission to this programme, applicants must meet the General Admission Requirements of NUST (GI2.1 in the NUST General Year Book) and comply with the following additional requirements:

- A pass in Biology or a Science-related subject, with at least an C-symbol at NSSC Ordinary Level;
- A pass in Mathematics with at least a D-symbol, at NSSC Ordinary Level;
- A pass in English with at least an E-symbol, at NSSC Ordinary Level.

Candidates who meet the Mature Age Entry requirements of NUST (GI2.2 in the NUST General Year Book) may be considered but will in addition be required to pass an admission test, compiled by the Department of Agriculture and Natural Resources Sciences.

### Articulation Arrangements

The transfer of credits will be dealt with according to NUST's regulations on Recognition of Prior Learning. These provide for course- by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of the Bachelor of Science in Horticulture will be able to pursue further studies in Horticulture (at Honours), or in a related area of learning, at NQF level 8.

### Mode of Delivery

The programme will only be offered on the full-time mode in line with NUST rules and regulations.

### Requirements for Award of Qualification

The Bachelor of Science in Horticulture will be awarded to candidates credited with a minimum of 382 NQF credits. In addition, students should meet the administrative and financial requirements spelt out in the applicable NUST yearbook. This programme has one major subject/cognate area of learning, Horticulture, which is developed in increasing complexity across relevant NQF levels in accordance with NQF principles.

### Teaching and Learning Strategies

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, *inter alia*, practical, projects, quizzes, lectures, oral presentations, assignments, excursions, presentation of audio- visual materials, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

### Assessment Strategies Examination Requirements

In addition to the general requirements of Senate, the assessment of the student's academic performance will be on the basis of a semester mark and an examination mark. Assessment will be according to the syllabus description for the different courses. A semester mark of 40% is required for admission to the examinations and all courses require a final mark of at least 50% to pass. Continuous Assessment, for both theory and practical will contribute 60% to the final mark except where otherwise stipulated in the course syllabus. A written examination of three hours (one paper) will contribute 40% to the final mark and a subminimum of 40% is required to be admitted to the examination. All courses will require a final mark of at least 50% to pass.

### Work Integrated Learning

The Bachelor degree student must undergo compulsory and credit bearing Work-integrated Learning in the 5<sup>th</sup> semester of the programme. Before deciding on a duty station, students should make sure that the duty station should be able to have activities related to the student topic of the student. A minimum overall pass of 50% is required. A minimum of 40% is required for the research project and general report. It is recommended that students should probably have at least a code 8 driver's license before conducting their Work-integrated Learning.

### Promotion Policy

In addition to the general regulations of Senate, in order to pass, a student will obtain a sub-minimum of 40% to be admissible for examination and obtain an overall final mark of at least 50% per course.

### Quality Assurance Requirements

The Department holds quality delivery of its programmes as a key objective in its implementation strategies. Each course (please refer to the detailed Qualification Requirements) will have one or more examiners and one moderator. Identified moderators can be either internal or external. The required minimum qualification of the moderator will be at least an Honours degree in Horticulture related field, except in the case of technical courses. The moderators must also be knowledgeable individuals who are well-respected experts in the field. Lecturing staff will set and mark tests and/or examinations in accordance with set memoranda. The examinations, memoranda and course outlines will be forwarded to moderators, approved by BoS, for moderation. This ensures quality and equity of assessments and the qualification as a whole. All courses at NQF level 7 in this programme will be externally moderated.

### Transition Arrangements

This is a new programme which does not replace any existing programme, therefore no transition arrangements are required/applicable.

## CURRICULUM

### Year 1

#### Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
CUS411S	Computer User Skills	None	4	10
GNP501S	General Physics 1A	None	5	12
PLU411S	Principles of English Language Use	None	4	NCB
GNB501S	General Biology 1A	None	5	12
ICA511S	Introduction to Chemistry	None	5	10
ITM111S	Introduction to Mathematics	None	5	10

#### Semester 2

EPR511S	English in Practice	Principles of English Language Use, or Language in Practice (LIP411S), or a "B" for IGCSE English as a Second Language	5	NCB
IHR512S	Introduction to Human Resources Management	None	5	12
ICT521S	Information Competence	None	5	10
GNB502S	General Biology 1B	General Biology 1A	5	12
SSA520S	Soil Science	Introduction to Chemistry	5	12
GNP502S	General Physics 1B	General Physics 1A	5	12
AGS520S	Agricultural Statistics	Introduction to Mathematics	5	10

### Year 2

#### Semester 3

PTP610S	Plant Physiology	General Biology 1A & 1B	6	12
PPN610S	Plant Protection	None	6	12
CPN610S	Crop Production	Soil Science	6	12
CEB601S	Cell Biology	General Biology 1A	6	12
EAP511S	English for Academic Purposes	English in Practice	5	14

#### Semester 4

VPP620S	Vegetable Physiology and Production	Crop Production, Plant Physiology	6	12
FPP620S	Fruit Physiology and Production	Crop Production, Plant Physiology	6	12

GEN602S	Genetics	Cell Biology	6	12
RME620S	Basic Research Methodology	Agricultural Statistics, Computer User Skills	6	10
TGL620S	Turf Grass and Landscape Management	Soil Science, Plant Physiology	6	10
AEM520S	Agricultural Economics	Introduction to Mathematics	5	10
<b>Year 3</b>				
<b>Semester 5</b>				
WIH710S	Work Integrated Learning	Vegetable Physiology and Production, Fruit Physiology and Production, Basic Research Methodology	7	60
<b>Semester 6</b>				
CEY720S	Crop Ecophysiology	Plant Physiology	7	12
AVP720S	Applied Vegetable Production	Vegetable Physiology and Production	7	12
ABM720S	Agribusiness Management	Agricultural Economics	7	12
AFP720S	Applied Fruit Production	Fruit Physiology and Production	7	12
PPT720S	Postharvest Physiology and Technology	Vegetable Physiology and Production; and Fruit Physiology and Production	7	12
SYD611S	Sustainability and Development	None	6	12

## DEPARTMENT OF NATURAL RESOURCE SCIENCES

Bachelor of Natural Resource Management (Revised Programme)

07BNRS

Bachelor of Natural Resource Management in Nature Conservation (Old Curriculum -Phasing out until 2024)

07BNTC

## BACHELOR OF NATURAL RESOURCE MANAGEMENT (Revised Programme)

07BNRS

**NQF Credits: 363**

### Description

The Bachelor of Natural Resource Management (NRM) is designed to provide students with a logical introduction to the broad knowledge, principles, concepts, data, theories and problem-solving techniques in the natural resource management sector. The programme will enable students to acquire cognitive/intellectual skills, practical skills and key transferable skills in three broad thematic areas namely NRM Science, NRM Techniques and NRM Management, and to apply these skills in solving conservation related problems that face the Namibian natural resource management sector. This programme aims to improve the effective management of Namibia's natural resources, thus contributing to the sustainable utilisation of Namibia's natural environment.

### Criteria for Admission

Candidates may be admitted to this Programme if they meet the General Admission Requirements of NUST (GI2.1 in the Yearbook on General Information and Regulations, Part 1) and comply with the following additional requirements:

- A pass with at least a “C” symbol at NSSC Ordinary Level in one of the following subjects: Biology, Geography and Agriculture;
- A pass in Mathematics with at least a “D” symbol, at NSSC Ordinary Level;
- A pass in English with at least a “D” symbol, at NSSC Ordinary Level;

Candidates who meet the Mature Age Entry requirements of NUST (GI2.2 in the Yearbook on General Information and Regulations, Part 1) will be considered.

Candidates must be medically fit, since field and physical work form an integral part of this study programme.

### Articulation Arrangements

Transfer of credits will be dealt with according to NUST regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

Graduates of the Bachelor programme will be able to pursue further studies in Natural Resource Management, or a related field, at NQF level 8.

### Mode of Delivery

This programme will only be offered on full-time mode in accordance with NUST rules.

### Requirements for Qualification Award

The Bachelor of Natural Resource Management will be awarded to students credited with a minimum of 363 NQF credits. In addition, students should meet the administrative and financial requirements as defined in the Yearbook of NUST.

### Teaching and Learning Strategies

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject-specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject-specific and/or professional/technical practical skills. This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by students. This facilitation will make use of a variety of appropriate methods that will encourage the use of the latest, innovative technologies available, such as making use of digital library resources, E-learning Support System portal, apt scientific internet resources, the use of cell phone Apps and aerial and photographic imagery for natural resource monitoring, to transfer skills appropriate to each course. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

### Assessment Strategies

In addition to the general requirements of Senate, the assessment of the student's academic performance will be on the basis of a semester mark and examination mark. Assessment will be according to the course specifications for the different courses. A semester mark of 40% is required for admission to the examinations and all courses require a final mark of at least 50% to pass. A ratio of 60:40 Continuous assessments: Formal examination will apply to all courses for the final mark except where stipulated otherwise in the course syllabus. A subminimum of 40% is required to pass the examination.

### Work-Integrated Learning

The Bachelor degree student must undergo compulsory Work-integrated Learning in the fifth semester of the programme. Before deciding on a duty station, he/she should make sure that the activities required by the department will be available. A minimum overall pass of 50% is required. A minimum of 40% is required for the research/monitoring project. It is recommended that students should have at least a code “B” driver's license before going on Work Integrated Learning.



### Quality Assurance Requirements

Each course (please refer to the detailed Qualification Requirements) will have one or more examiners and one moderator. Identified moderators can be either internal or external. The required minimum qualification of the moderator will be at least an Honours degree, except in the case of technical courses. The moderators must also be knowledgeable individuals who are well-respected experts in the field and must be approved by Senate. Lecturing staff will set and mark tests and/or examinations in accordance with set memoranda. The examinations, memoranda and course outlines will be forwarded to moderators for moderation. This ensures the quality and equity of assessments and the qualification as a whole. All level 7 courses for this programme will be moderated externally.

### Transition Arrangements

The Bachelor of Natural Resource Management (Nature Conservation) (old curriculum) will be phased out systematically until 2024, with minimal disruption to existing students' learning progression. The last intake of 1st year students for the out-phasing programme (old curriculum) was in January 2019.

## CURRICULUM

### Year 1

#### Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
CSE511S	Conservation Ecology 1	None	5	11
BNS511S	Biology for Natural Sciences	None	5	10
TNM511S	Techniques for Natural Resource Management	None	5	11
IGD411S	Introduction to Geospatial Data	None	4	8
ITM111S	Introduction to Mathematics	None	5	10
CUS411S	Computer User Skills	None	4	10
PLU411S	Principles of English Language use	None	4	NCB

#### Semester 2

PTS620S	Plant Studies 1	Biology for Natural Sciences	6	11
EEE621S	Environmental Education and Extension	None	6	12
ZLY520S	Zoology 1	None	5	10
LME520S	Leadership and Management for Eco- enterprises	None	5	9
LFN520S	Legal Framework for Natural Resources	None	5	9
WMH620S	Wildlife Monitoring and Handling	None	6	11

### Year 2

#### Semester 3

PTS710S	Plant Studies 2	Plant Studies 1	7	12
WWR711S	Water and Wetland Resources Management	None	7	12
IAS501S	Introduction to Applied Statistics	None	5	12
GES512S	Geographic Information Systems 1	Introduction to Geospatial Data, Computer User Skills	5	12
REM611S	Rangeland Ecology and Management	None	6	12
EPR511S	English in Practice	Principles of English Language use	5	NCB

#### Semester 4

CSE621S	Conservation Ecology 2	Conservation Ecology 1	6	12
ZLY621S	Zoology 2	None	6	11
BRM622S	Basic Research Methods (NRM)	Introduction to Mathematics	6	12
CCP621S	Community Conservation	None	6	12
EAP511S	English for Academic Purposes	English in Practice	5	14

**Semester 5**

WIN710S	Work- Integrated Learning	All courses of the first 4 semesters must have been passed, or at least examination admission obtained. Except for institutional core courses. The HoD may decide on exceptions to the rule.	7	60
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**Semester 6**

BCM721S	Biodiversity Conservation and Management	Rangeland Ecology and Management; Wildlife Monitoring and Handling	7	12
EMP721S	Environmental Management Principles	None	7	12
SYD611S	Sustainability and Development	None	6	12
FMG620S	Financial Management for Natural Resources	Introduction to Mathematics	6	12
CSE721S	Conservation Ecology 3	Conservation Ecology 2	7	12

**BACHELOR OF NATURAL RESOURCE MANAGEMENT IN NATURE CONSERVATION**  
**(Old Curriculum – Phasing out until 2024)**

**07BNTC**

**NQF Level: 7**

**NQF Credits: 372**

**NQF Qualification ID: Q0229**

**Description**

**NATURAL RESOURCE MANAGEMENT**

The Bachelor of Natural Resource Management in Nature Conservation supports students in the field of Natural Resource Management in Nature Conservation to acquire the necessary knowledge, skills and attitudes to ensure the sustainable utilisation of Namibia’s natural resources, with the focus on conservation. This will allow graduates to contribute towards the national economy of Namibia. Graduates will typically be employed in positions such as Natural Resource Managers (middle management positions), Nature Conservationists, Environmental Education Officers, Environmental Practitioners, Research Assistants, Tour Guides, etc.

**Admission Requirements**

Candidates may be admitted to the Bachelor of Natural Resource Management in Nature Conservation if they meet the General Admission Requirements of the University Senate and complies with the following additional requirements:

- A pass in Biology or a Biology-related subject, with at least a “C” symbol at NSSC Ordinary Level;
- A pass in Mathematics with at least an “E” symbol at NSSC Ordinary Level;
- A pass in English with at least a “D” symbol at NSSC Ordinary Level.

Candidates who meet the Mature Age Entry requirements of the Namibia University of Science and Technology (GI2.2 in Part 1 of the NUST Yearbook) will be considered, but may be required to pass an additional admission test, compiled by the Department of Nature Conservation.

Candidates must be medically fit, since field and physical work form an integral part of this study programme.

**Examination Requirements (Bachelor of Natural Resource Management: Nature Conservation)**

In addition to the general requirements of Senate, the assessment of the student’s academic performance will be on the basis of a semester mark and examination mark. Assessment will be according to the syllabus description for the different courses. A semester mark of 40% is required for admission to the examinations and all courses require a final mark of at least 50% to pass. Continuous Assessment, for both theory and practical’s, contributes 60% to the final mark of all Bachelor degree courses presented by Nature Conservation, except where stipulated otherwise in the course syllabus. A written examination of three hours (one paper) contributes 40% to the final mark and a sub minimum of 40% is required. The proportion of overall marks allocated to theory and practicals should correlate with the proportion of time allocated to each.

All core courses will be evaluated according to the evaluation criteria of those Departments.

**Work-integrated Learning**

The Bachelor degree student must undergo compulsory Work-integrated Learning in the fifth semester of the programme. Before deciding on a duty station, he/she should make sure that activities required by the programme will be available. A minimum overall pass of 50% is required. A minimum of 40% is required for the research/monitoring project. It is recommended that students should have at least a code 8 driver’s license before going on Work-integrated Learning.

**CURRICULUM**

**Year 1**

**Semester 1**

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
NCE510S	Nature Conservation Ecology 1	None	5	12
NCB510S	Nature Conservation Biology	None	5	12
BMS411S	Basic Mathematics	None	4	12
PLU411S	Principles for English Language Use	None	4	NCB
BSC410S	Basic Science	None	4	8
CUS411S	Computer User Skills	None	4	10

**Semester 2**

NCE620S	Nature Conservation Ecology 2	Nature Conservation Ecology 1 Basic Mathematics	6	13
PTS620S	Plant Studies 1	Nature Conservation Biology	6	13

ALS520S	Animal Studies 1	Nature Conservation Biology	5	12
NCT420S	Nature Conservation Techniques 1	None	4	12
EPR511S	English in Practice Principles of English Language Use	Language in Practice/	5	NCB
ICT521S	Information Competence	None	5	10
<b>Year 2</b>				
<b>Semester 3</b>				
ALS610S	Animal Studies 2	None	6	13
PTS710S	Plant Studies 2	Plant Studies 1	7	13
AEM610S	Aquatic Ecosystem Management	None	6	13
NRM612S	Natural Resource Management (Nature Conservation) 1 Animal Studies 2	Ecology 1 and 2 Co-requisites: Plant Studies 2	6	13
MTP612S	Management Principles	Nature Conservation Techniques 1	6	9
NCL612S	Nature Conservation Law Enforcement	Language in Practice/ Principles of English Language Use	6	9
<b>Semester 4</b>				
MEE620S	Methodology of Environmental Education	English in Practice	6	13
NCT520S	Nature Conservation Techniques 2	Nature Conservation Techniques 1	5	12
FMN520S	Financial Management (Nature Conservation) Computer User Skills	Basic Mathematics,	5	9
ECD520S	Environmental Conservation Development	None	5	9
BRM620S	Basic Research Methodology (Nature Conservation)	Basic Mathematics, English in Practice, Computer User Skills	6	9
EAP511S	English for Academic Purposes	English in Practice	5	14
<b>Year 3</b>				
<b>Semester 5</b>				
WIN710S	Work-Integrated Learning (Nature Conservation)	All courses of the first 4 semesters must have been passed, or at least examination admission obtained. Exceptions may be approved by the Departmental Board.	7	60
<b>Semester 6</b>				
NRM720S	Natural Resource Management (Nature Conservation) 2	Natural Resource Management (Nature Conservation) 1 and Techniques 2 Co-requisites: Techniques 3	7	13
NCE720S	Nature Conservation Ecology 3	Animal Studies 3 Nature Conservation Ecology 2	7	13
ALS720S	Animal Studies 3	Animal Studies 2	7	13
CIS610S	Contemporary Issues	None	6	12
NCT620S	Nature Conservation Techniques 3	Nature Conservation Techniques 2 Basic Mathematics Computer User Skills	6	13

**SCHOOL OF HEALTH SCIENCES**

**DEPARTMENT OF CLINICAL HEALTH SCIENCES**

**QUALIFICATIONS OFFERED**

Bachelor of Emergency Medical Care Honours (Phased in 2019)	08BMCH
Master of Health Sciences (Phased in 2017)	09MOHS
Doctor of Philosophy in Health Sciences (Phased in 2021)	10DOHS

**BACHELOR OF EMERGENCY MEDICAL CARE HONOURS (Phased in 2019)**

**08BMCH**

**NQF Level: 8**

**NQF Credits: 135**

**NQF Qualification ID: Q1110**

**Description**

The Bachelor of Emergency Medical Care Honours is a postgraduate degree programme that is designed to create an opportunity for further tertiary education in the emergency medical care field which is aligned with the National Development Plan (NDP4) and the NUST strategic Plan (NSP4). Currently there is only the three-year undergraduate programme that is offered at NUST. The programme aims to equip students with comprehensive and systematic knowledge and expertise in this discipline. The programme will enable students to develop their capacity to conduct supervised research of an applied nature as well as appraise existing or new treatment protocols in to develop implementation strategies within the Namibian context. Furthermore, students will be equipped with the relevant knowledge and skills in disaster management, community health paramedicine and clinical care applicable to the emergency medical care setting.

**Admission Criteria**

Candidates will be considered for admission to the Bachelor of Emergency Medical Care Honours programme if they have a Bachelor of Emergency Medical Care (Formerly Bachelor of Pre-hospital Emergency Medical Care) at NQF level 7 (with at least 360 NQF credits) from NUST or an equivalent NQF level qualification from a recognised institution or relevant pre-NQF qualification from a recognised institution worth at least 360 credits.

***NB: Applicants must also be registered with the HPCNA or equivalent registration body, as a Paramedic (Advanced Life Support Practitioner). Proof of Registration must be attached to the Application form.***

**Articulation Arrangements**

Transfer of credits will be dealt with according to the NUST’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the total credits for a qualification.

Students who complete the Bachelor of Emergency Medical Care Honours will ordinarily be able to further studies in Emergency Medical Care, Health Sciences, or a related cognate area of learning at NQF level 9.

**Mode of Delivery**

The Bachelor of Emergency Medical Care Honours will be delivered on a full-time basis with a block release learning and distance learning mode that would be complemented by NUST E-Learning.

**Requirements for Qualification Award**

The Bachelor of Emergency Medical Care Honours will be awarded to candidates credited with a minimum of 120 NQF credits, (all at NQF Level 8). Students are required to complete all compulsory courses (worth 120 credits).

In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

**Transition Arrangements**

This is a new programme which does not replace any existing programme(s). Transition arrangements are, therefore, not applicable.

**CURRICULUM**

**Year 1**

**Semester 1**

<b>Course Code</b>	<b>Course Title</b>	<b>Prerequisite</b>	<b>NQF Level</b>	<b>NQF Credits</b>
RME810S	Research Methodology	None	8	15
CCT811S	Clinical Care Theory 1	None	8	15
CHP811S	Community Health Paramedicine	None	8	15
DMI811S	Disaster and Mass Incident Management	None	8	15

**Semester 2**

EMC821S	Mini-Thesis	Research Methodology		
CCP821S	Clinical Care Practice	Clinical Care Theory 1	8	15
CCT821S	Clinical Care Theory 2	Clinical Theory 1	8	15

**MASTER OF HEALTH SCIENCES**  
**(Phased in 2017)**

**09MOHS**

**NQF Level: 9**

**NQF Credits: 240**

**NQF Qualification ID: Q1107**

**Description**

The Master of Health Sciences is a postgraduate degree programme by full thesis at NQF level 9. It aims at developing skilled individuals with the ability to conceptualise, develop and conduct applied research in the field of Health Sciences. The degree is designed for candidates with Health Sciences background who seek to deepen and enhance competencies in specific area of Health Sciences. The programme builds on previously acquired theoretical and practical knowledge at NQF level 8 and other industrial experiences to investigate and develop innovative ideas and products to solve problems in the field of Health Sciences. Hence, it is designed to enhance critical thinking and applied techniques in order to contribute meaningfully to the advancement of innovative and applied research in Health Sciences for the benefit of the society.

**Admission Criteria**

Candidates may be considered for admission into the Master of Health Sciences if they possess a Bachelor of Environmental Health Sciences, Bachelor of Biomedical Sciences or Bachelor of Emergency Medical Care Honours at NQF Level 8 from the Namibia University of Science and Technology or equivalent qualification from recognised institutions. A four-year tertiary pre- NQF qualification with emphasis in Health Sciences may also be considered. Hence, holders of appropriate qualifications in Health Sciences that meet the requirements will be considered on a case-by-case basis depending on internal capacity.

**Articulation Arrangements**

Successful completion of the Master of Health Sciences programme will provide access to Doctor of Philosophy (PhD) research in Health Sciences or related cognate area of learning at NQF Level 10.

**Mode of Delivery**

The programme is by full thesis (full research) and will be offered through the full-time and part-time modes of study in accordance with the University's rules and regulations.

**Requirements for Qualification Award**

The Master of Health Sciences degree will be awarded to students credited with a minimum of 240 credits (all at NQF Level 9). The thesis will represent the entire body of work to be assessed and must meet the University's requirements as detailed in the rules for postgraduate studies. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the University Yearbook. Students will be required to make oral presentations of their research proposals within the first six (6) months of registration. It will be mandatory for students to attend seminars and workshops prescribed by the department and or the supervisor in order to improve the quality of their theses.

Free text, following the qualification title would be utilised to identify the cognate area of research in which students' research topics might focus. A minimum of two years and a maximum period of four years are required to complete the programme, if registered on the full-time mode. A minimum of three years and a maximum period of six years are required to complete the programme, if registered on the part-time mode.

**Teaching and Learning Strategies**

The teaching and learning strategies are structured in line with the expected learning outcomes at NQF level 9. This is geared towards the acquisition of critical thinking and problem solving skills and competence in applied research in Health Sciences. Hence, students will conduct interactive research work under the guidance of assigned supervisor(s). In general, students will be required to conduct independent research work in accordance with a pre-agreed research plan. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress and other relevant academic issues/milestones are discussed. Academic support will be provided in accordance with the University rules and procedures for postgraduate studies leading to the award of research degrees.

The strategic learning processes include conduction of an in-depth, thorough and relevant literature review geared towards problem solving and societal relevant research. This is essential so as to align research activities to the strategic plan of the institution and that of the country. Students will be encouraged to attend research seminars, workshops and conferences on the recommendation of the Head of Department (HoD) and or the supervisor. Students shall implement the research plan with specific milestones as agreed and signed by both the student and supervisor and endorsed by the HoD. Review of the signed milestone could occur based on valid circumstances from either party. Hence, supervisory guidance and learning activities will include research proposal development using approved format together with plagiarism report, fulfilment of research ethics requirements, implementation of research methodology, data acquisition, data presentation and interpretation processes, report writing and others.

Additional academic support will be provided in accordance with the University rules and procedures for postgraduate studies and ethical issues will be ensured in all required cases.

### Assessment Strategies

Students are required to submit a research proposal within six months for approval by the Postgraduate Studies Committee and then make oral presentation of the proposal. Attendance of prescribed seminars, workshops and conferences shall be compulsory for all students. Students are required to present work-in-progress every six months during research seminars for progress monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of three months for re-approval.

In compliance with the general requirements of Senate of NUST, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work and conduct research investigation independently. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their theses. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their theses before an appropriately constituted committee in accordance with the rules for postgraduate studies at the University. The thesis will be returned to the student for correction before final binding and archiving. Final mark of the thesis will only be released after all corrections have been effected to the satisfaction of the faculty/supervisor.

### Transition Arrangements

This is a new programme and does not replace any existing qualification. Transition arrangements as may be required shall be carried out when the programme is due for revision.

Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
Semester 1 THS911S	Thesis	None	Semester 1 THS911P	Thesis	None
Semester 2 THS912S	Thesis	None	Semester 2 THS912P	Thesis	None
<b>Year 2</b>					
Semester 3 THS913S	Thesis	None	Semester 3 THS913P	Thesis	None
Semester 4 THS914S	Thesis	None	Semester 4 THS914P	Thesis	None
<b>Year 3</b>					
Semester 5 THS915X	Thesis Extension	None	Semester 5 THS915P  Semester 6 THS916P	Thesis	None
<b>Year 4</b>					
			Semester 7 THS917P  Semester 8 THS918P	Thesis	None
<b>Year 5</b>					
			Semester 9 THS919X	Thesis Extension	None

**DOCTOR OF PHILOSOPHY IN HEALTH SCIENCES  
(Phased in 2021)**

**10DOHS**

**NQF Level: 10**

**NQF Credits: 360**

**NQF Qualification ID: TBC**

**Programme Description**

The Doctor of Philosophy (PhD) in Health Sciences programme will be by pure research (full thesis) registrable at NQF level 10. It aims at developing skilled and competent individuals with the ability to conceptualise, develop and conduct applied research in the field of Health Sciences. The programme builds on previously acquired theoretical and practical knowledge at NQF level 9 and other industrial experience of students to investigate and develop innovative ideas and products to solve problems in the field of Health Sciences. The degree is designed for candidates with health sciences background who seek to deepen and enhance competencies in specific areas. The programme will create a critical mass of skilled individuals in the field of Health Sciences that are of great need in the country. The growing sophistication and recent developments in health sciences research require stronger capacity for interdisciplinary research. Consequently, students need to have mastery of their disciplines in order to contribute their expertise in multi-disciplinary fora in education and research. In addition, cutting-edge research is increasingly dependent on collaboration among related disciplines in health sciences.

The hallmark of a research-focused doctoral degree is an individualised programme that supports development of expertise in various fields of Health Sciences with increasing depth in scientific investigation. The end product of a PhD in Health Sciences programme of study is the thesis, an independent research project completed under the guidance of the supervisor that adds new knowledge to the field and prepares the graduate to embark on a scientific career. The PhD degree programme in Health Sciences will provide guidance, training and mentorship for students from various health fields, with the aim of preparing the next generation of health experts and researchers.

Overall, the programme aims to:

- Develop competent individuals with the ability to conduct independent research in Health Sciences;
- Enhance student’s ability to apply previously acquired theoretical and practical knowledge to conduct applied research in Health Sciences;
- Utilize existing competencies in advancement of innovative and applied research in Health Sciences in the country and beyond;
- Use interdisciplinary approaches to solve complex problems in Health research and education.
- Encourage development of Novelty work and or products.

The development of this PhD programme has the support of management of the Department and Faculty, Advisory Board Members, the health fraternity in Namibia, the Ministry of Health and Social Services, Health Professions Council of Namibia and academic peers from similar institutions within the region and in other parts of the world.

**Programme Rationale**

The Namibia University of Science and Technology (NUST) is driven by a vision to become a premier institution of higher learning in Science and Technology training leaders for the new economy. Moreover, NUST is aiming to be world class University. This requires the institution to exhibit all the key characteristics of a credible higher learning institution, including increased outputs in applied research, publication of research results, and dissemination of the same to the public.

There is need to create an avenue for the acquisition of strategic competencies in Health Sciences at PhD level for a large cohort of Health practitioners in Namibia. The need will be fulfilled by this generic PhD in Health Sciences degree. The Namibia University of Science and Technology will be the first higher education institution in Namibia to offer this qualification. The programme will provide an opportunity for NUST graduates in Health Sciences as well as Health practitioners within and outside the country to further develop and advance their careers. It will also address the desire of candidates that seriously aspire to further their career by enrolling for the programme without necessarily having to leave or lose their employment or travel out of the country to achieve this aspiration. This postgraduate training will enable students to acquire knowledge, skills, attitudes and competencies required to enhance expertise and experience to the benefit of health systems and public health in the country.

Graduates will be able to make meaningful contributions to the development of the body of knowledge/expertise in areas of specialisation, and to the development of the national economy. This will lead to value-added economic activity which in turn will contribute to the achievement of national and international development strategies.

The programme is fully aligned with the Namibia University of Science and Technology Strategic Plan, the Curriculum Framework, and the National Qualification Framework (NQF).

**Exit Programme outcomes (Qualification outcomes)**

On completion of the Doctor of Philosophy (PhD) in Health Sciences programme, graduates will be able to:

- Develop, present and demonstrate a deepened, comprehensive and systematic knowledge and expertise in Health Sciences through collection, analysis, interpretation and evaluation of quantitative and/or qualitative data;
- Demonstrate in-depth synthesis of theoretical principles in the subject matter and capacity for independent thinking;
- Present and communicate academic and/or professional work effectively, catering for interdisciplinary industrial and academic audiences;
- Exhibit professional competencies of independent self-guided learning, problem-solving, innovation, process evaluation, responsibility, accountability and general ethics;
- Solve complex health sciences related problems using interdisciplinary approach;
- Produce a thesis that represents an original contribution to the body of knowledge in the area of specialisation within Health Sciences using interdisciplinary approach.



### **Criteria for Admission**

Candidates may be considered for admission into the PhD programme in Health Sciences if in possession of a Masters degree in Health Sciences from NUST, or an equivalent Masters degree in Health Sciences or related fields/sub-fields from recognised institutions subject to approval by NUST Senate. Furthermore, applicants need to provide evidence of having conducted supervised research at this level. The PhD degree in Health Sciences is a highly selective and specialisation-based programme, hence admission will be based on internal capacity for supervision.

Students are admitted into the programme if they obtained a minimum of 65% in their Masters. Conditions such as recognition of prior learning, industry experience, interviews and Faculty motivations can be considered to facilitate entry into the programme if the candidates obtained less than 65% in their Masters.

The Higher Degrees Committee (HDC) will approve the final selection and admission of the candidates in accordance with the regulations as specified by the Rules for Postgraduate Studies of NUST.

### **Mode of delivery**

The programme will be offered on full-time and part-time delivery modes of study through flexible delivery system. However, the duration of studies for full-time and part-time modes of study shall be fulfilled as contained in the NUST Rules and Regulation for Postgraduate Studies.

### **Requirements for Award of the Qualification**

This qualification will be awarded to candidates credited with a minimum of 360 credits (at NQF Level 10). The thesis will represent the entire body of work to be assessed and must meet the University's requirements as detailed in the rules for postgraduate studies. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the University Yearbook.

Free text, following the qualification title (as provided by annexure "B" of the NQF regulation) would be utilised to identify the cognate area of research of the student.

A minimum of three (3) years and a maximum period of five (5) years is required to complete the programme, if registered on the full-time mode. A minimum of six (6) years and a maximum of eight (8) years is required if registered on a part-time mode. Having satisfied the following conditions: submission of yearly progress reports and submission of two published manuscripts and a proof of the third submitted manuscript in accredited approved journals by the Department of Higher Education and Training. The attendance of at least one conference by the PhD student to present his/her study is a mandatory requirement before the final submission of the thesis. The study period may be extended with the approval of Senate.

### **Special Arrangements Teaching, learning strategies**

The HDC, on the recommendation of the Head of Department, will approve the appointment of supervisor(s)/co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant academic issues/milestones are discussed. Academic support will be provided in accordance with the University rules and procedures for postgraduate studies leading to the award of research degrees.

The strategic learning processes include conduction of an in-depth, thorough and relevant literature review in the area of research. This process will ensure alignment to the required knowledge of advanced information retrieval, processing, analysis and synthesis. Students' research ideas and proposals will be geared towards problem solving and societal relevant research. Efforts will be made to develop the ideas in collaboration with industrial partners and stakeholders. This is essential in order to ensure alignment of research activities to the strategic plan of the institution and that of the country.

In addition, students will be required to attend seminars, workshops and conferences within and outside the institution during the course of their studies in order to gain wider exposure in the art of research and research communication.

The supervision will be carried out following developed research plan with specific milestones as required by the Department, agreed and signed by both the student and supervisor. Review of the signed milestone could occur based on valid circumstances from either party. There will be a signed Memorandum of Understanding (MoU) between students, supervisors and the Department to keep record of the students' performance for the duration of the study period. Hence, supervisory guidance and learning activities will include research proposal development using departmental format, research ethics, research methodology, laboratory work activities as required, data acquisition, presentation and interpretation processes, report writing and others.

Additional academic support will be provided in accordance with the University rules and procedures for postgraduate studies and ethical issues will be ensured in all required cases. In summary, students will be required to conduct independent research work under the guidance of a supervisor.

### **Assessment strategies**

Students are required to submit a research proposal after six months for approval by the HDC. It is compulsory that students attend regular research methodology seminars until successful defence and approval of the research proposal. Students are required to present work-in-progress every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of six months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their thesis. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

The constituent panel members for the research presentation and defence for the thesis will include senior internal and external academics, the examiners, the supervisors and experts in the field of research. The responsibilities of the panel will include contributions, provide quality assurance and fairness during the process.

Students will present and defend their thesis before an appropriately constituted committee in accordance with the rules for post-graduate studies at the University. The thesis will be returned to students for correction before final binding and archiving. The final mark will only be released after correction of the thesis.

### Quality Assurance requirements

The final assessment of the thesis will be carried out by qualified academics and relevant health practitioners with Doctoral Degrees. The examiners must be knowledgeable and respected individuals in the field with experience in assessment of postgraduate scientific reports or theses and will be appointed by Senate upon recommendation of the HDC.

### Transition Arrangements

This is a new programme and does not replace any existing programme(s). Transition arrangements are, therefore, not applicable.

### Career Opportunities:

Graduates of this programme will be well-equipped with the competency to conduct independent research work, conceptualise, develop and implement research ideas and communicate research findings effectively. Hence these much-needed skilled individuals will be able to gain employment in the fields of Health and Allied Health Sciences in chosen area. Some areas of career opportunities include:

- Administrators in Hospitals and other Healthcare Facilities
- Healthcare facilities Managers
- Researchers in Health Research Institutes
- Academics at Higher Institutions of Learning
- Research Managers and Administrators
- Private consultants, etc.

Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
Semester 1 DHS101S	Thesis	None	Semester 1 DHS101P	Thesis	None
Semester 2 DHS102S	Thesis	None	Semester 2 DHS102P	Thesis	None
<b>Year 2</b>					
Semester 3 DHS103S	Thesis	None	Semester 3 THS913P	Thesis	None
Semester 4 DHS104S	Thesis	None	Semester 4 DHS104P	Thesis	None
<b>Year 3</b>					
Semester 5 DHS105S	Thesis Extension	None	Semester 5 THS915P	Thesis	None
Semester 6 THS916P	Thesis	None	Semester 6 DHS106S	Thesis	None
<b>Year 4</b>					
Semester 7 DHS107X	Thesis Extension	None	Semester 7 THS917P	Thesis	None
			Semester 8 THS918P		
<b>Year 5</b>					
			Semester 9 THS919X	Thesis Extension	None

DEPARTMENT OF PREVENTATIVE HEALTH SCIENCES

QUALIFICATIONS OFFERED

Bachelor of Science Honours in Health Information Systems Management

08BSHH

BACHELOR OF SCIENCE HONOURS IN HEALTH INFORMATION SYSTEMS MANAGEMENT

08BSHH

NQF Credits: 135

Description

The Bachelor of Science Honours in Health Information Systems Management is a degree programme that demands a high level of theoretical and practical engagement, intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major cognate area of learning, i.e. Health Information Systems Management (HISM). Students will be equipped with advanced cognitive and intellectual skills, key transferable skills and professional/technical/practical skills that would enable them to promote and maintain a healthy environment within working, living and recreational contexts. Graduates will be able to practice professional behaviour within the scope of practice of the Health Information Systems Management, participate in the implementation of the core package of health information in the delivery of health information services as determined by the Ministry of Health and Social Services (MoHSS), and manage required activities in the application of the defined scope of practice. The programme requires the conduct and reporting of supervised research in order to adequately prepare students for entry into the profession. Graduates will be able to function as members of multi-disciplinary and multi-sectorial teams. On successful completion of this programme, graduates may be able to find employment in the public and private sectors, municipalities, research institutions; other health-related institutions, as well as teaching/training institutions. The programme has been endorsed by members of the Programme Advisory Committee (PAC), while academic peers had to be consulted for purposes of international benchmarking.

Admission criteria

Criteria for Admission: Candidates will be considered for admission to the Bachelor of Science Honours in Health Information Systems Management programme if they have a Bachelor in Health Information Systems Management at NQF Level 7 from NUST or an equivalent NQF level (NQF level 7) qualification from a recognized institution or relevant pre-NQF qualification from a recognized institution worth at least 360 credits.

Articulation Arrangements

Transfer of credits will be dealt with according to the NUST's rules and regulations on Recognition of Prior Learning. These provide for course by course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification. Graduates of this programme will under normal circumstances be able to pursue further studies in health information systems management, health informatics, public health or a related cognate area of learning, at NQF Level 9

Mode of Delivery

Mode of Delivery: The Bachelor of Sciences Honours in Health Information Systems Management programme will be offered on a part-time mode of study in accordance with NUST rules. These will be delivered in a flexible delivery mode, utilising block release and complemented with blended learning and e-learning depending on the needs of students and availability of resources.

Requirements for Qualification Award

The Bachelor of Science Honours in Health Information Systems Management will be awarded to students credited with a minimum of 120 NQF credits (all at NQF Level 8). Students must complete four compulsory courses (worth 60 credits) and two elective courses (worth 30 credits) as well as a mini-thesis (worth 30 credits). In addition, students must meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook

Teaching and learning strategies

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject-specific knowledge items and professional/technical competencies. Thus, the programme focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject-specific and/or professional/technical practical skills. This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, field trips, software demonstration, problem-based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed. Depending on the context of each course, the facilitation methods will make use of any of the following: classroom lectures; blended learning approach; tutorials; group and individual assignments; projects; workshops and seminars. The progress of learning embedded in such tasks will be monitored, recorded and assessed. The particular learning strategies of each course can be found in the course specifications/syllabi.

### Assessment strategies

Students will be assessed through continuous and summative assessment. These assessments will focus on the achievement of qualification outcomes and take the form of problem-solving exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests). The use of validating end-of-term assessments may be minimised in order to free students' intellectual capacity for broader cognitive development. Assessment by means of tests will, therefore, be restricted to situations where it is necessary to establish that a previous specific performance can be repeated, or a specific skill can be transferred. In accordance with NUST's policy on diversified continuous assessment, each course will have a minimum of four assessment events, with allowance for supplementary assessment events. All courses will be assessed using a combination of diversified continuous assessment. The Mini-thesis will be assessed in accordance with NUST's rules for studies at postgraduate level.

### Transition arrangements

This is a new programme/qualification that does not replace any existing programme (s) or qualification (s). Transition arrangements are, therefore, not applicable.

## Curriculum

### Year 1

#### Semester 1

##### *Course Title*

Research Methodology	RMH811S
Programming for Medical Informatics	PMI811S
Advanced Medical Coding and Billing	AMC811S
	EHP811S

#### Semester 2

##### *Course Title*

Mini thesis	MHI821S
Information Governance	IGV821S
Applied Telemedicine and mHealth technologies	ATH821S

## SCHOOL OF NATURAL AND APPLIED SCIENCES

### DEPARTMENT OF BIOLOGY, CHEMISTRY AND PHYSICS

#### QUALIFICATIONS OFFERED

Postgraduate Diploma in Applied Radiation Science and Technology (Phased in 2016)	08PGRS
Bachelor of Science Honours (Biology, Chemistry, Physics, Mathematics) (Phased in 2018)	08BOSH
Master of Science in Natural and Applied Sciences (Phased in 2021)	

**POSTGRADUATE DIPLOMA IN APPLIED RADIATION SCIENCE AND TECHNOLOGY** **08PGRS**  
(Phased in 2016)

**NQF Level: 8**

**NQF Credits: 120**

**NQF Qualification ID: Q0890**

#### Description

The Postgraduate Diploma in Applied Radiation Science and Technology is a postgraduate specialisation qualification that aims at consolidating and deepening the knowledge and expertise in the applied radiation science and technology disciplines, and to develop student's capacity to conduct supervised research of an applied nature. The programme is purposefully designed to enable students to evaluate and apply theoretical and practical aspects of radiation science and technology in general, in order to serve the current and future needs of the public and private sectors, like the various ministries, institutes and the mining and mineral processing industries.

The Postgraduate Diploma in Applied Radiation Science and Technology is intended for students with knowledge and understanding on nuclear sciences, the principals involved in the interaction of the different kinds of matter. This programme will also focus on and cover commercial applications, of nuclear techniques in the fields of energy, agriculture and water resource management, biology and medicine, environmental and nuclear waste minimisation and nuclear security.

The proposed programme is fully compliant with requirements of the National Qualifications Framework (NQF) and the NUST Curriculum Framework.

#### Admission Criteria

Candidates will be considered for admission to the Postgraduate Diploma in Applied Radiation Science and Technology programme if they have a Bachelor of Science degree which incorporates physics or chemistry as a major subject. It is strongly recommended that chemistry or physics as a minor subject in the above mentioned Bachelor of Science degree should be at a second year level (NQF Level 6). An equivalent qualification at NQF Level 7 which incorporates one or more of the following disciplines: biology, bio-chemistry, geology and mathematics, will be evaluated on an individual basis at the discretion of the department/ Postgraduate Committee for suitability of admission.

#### Articulation Arrangements

Transfer of credits will be dealt with according to the University's regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. The maximum credit that can be granted is 50 % of the credits for a qualification. Students whom may articulate to a related Bachelor Honours degree, would gain credit for relevant courses passed, for credit recognition in the Postgraduate Diploma in Applied Radiation Science.

Conversely, students who successfully completed this programme may utilise these for credits (course-by-course), if wishing ultimately, to articulate to a related Master's degree at NQF Level 9.

#### Mode of Delivery

This programme will be offered on the part-time with flexible modes of delivery incorporating methodologies such as face to face lectures, block release courses, e-learning and so forth, in accordance with the University's rules and regulations. The programme, however, may be offered via both, full- and part-time modes at a later date if required.

#### Requirements for Qualification Award

The Postgraduate Diploma in Applied Radiation Science and Technology will be awarded to students credited with minimum of 120 NQF credits (all at NQF Level 8). Students are required to complete all compulsory courses (worth 120 credits).

In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

**CURRICULUM**

**Year 1  
Semester 1**

<b>Course Code</b>	<b>Course Title</b>	<b>Prerequisite</b>	<b>NQF Level</b>	<b>NQF Credits</b>
PRR811S	Principles of Radiation and Radioactivity	None	8	15
ANP811S	Applied Nuclear Physics	None	8	15
ANC811S	Applied Nuclear Chemistry	None	8	15
LPR811S	Laboratory Practices 1	None	8	15

**Semester 2**

HPR821S	Health Physics and Radiobiology	Applied Nuclear Physics	8	15
NWM821S	Nuclear Waste Management & the Environment	Applied Nuclear Chemistry Applied Nuclear Physics	8	15
RFN821S	Regulatory Framework & Nuclear Security	Applied Nuclear Chemistry Applied Nuclear Physics	8	15
LPR821S	Laboratory Practices 2	Applied Nuclear Physics, Applied Nuclear Chemistry, Laboratory Practices 1	8	15

**BACHELOR OF SCIENCE HONOURS  
(Phased in 2018)**

**08BOSH**

**NQF Level: 8**

**NQF Credits: 135**

**NQF Qualification ID: Q1064**

**Description**

The Bachelor of Science Honours aims at consolidating and deepening the knowledge and expertise in applied natural science disciplines and to develop student's capacity to conduct supervised research of an applied nature. The programme is purposefully designed to expose students to advanced scientific concepts, theories, tools, and methods. Students will be able to critically evaluate and apply theoretical and practical aspects of natural sciences in general; develop advanced information acquisition and have the skills required to analyse and solve a wide range of pressing challenges and needs in relation to science, technology, engineering and Mathematics (STEM) in the current Namibian market and economy.

This programme provides a platform for developing scientific literacy and for increasing essential scientific knowledge and skills for lifelong learning in STEM. Additionally, the programme is designed to enable students to appreciate the relationship between science and other disciplines. Thus, the programme will enable students to demonstrate deepened, comprehensive and systematic scientific knowledge required to effectively communicate research results in written and oral formats.

In following this programme, students will have had the opportunity to develop such skills, in particular relating to communication, interpersonal skills, learning skills, research skills, numeracy, self-management, use of IT and problem-solving and will have been encouraged to further develop and enhance the full set of skills through a variety of opportunities available outside their curriculum.

**Criteria for Admission**

Candidates will be considered for admission to the Bachelor of Science Honours programme if they have a Bachelor of Science degree (with a major in Biology, or Chemistry or Physics) at NQF Level 7 from NUST. Alternatively, candidates should have an equivalent qualification at NQF level 7 from a recognised institution, worth at least 360 NQF credits, or a pre-NQF Bachelor degree of at least three years duration from a recognised institution with specialisations in Biology, Chemistry or Physics.

***NB: Admission into a specialisation will be based on the major undertaken previously at the undergraduate level (NQF Level 7). Articulation Arrangements***

Transfer of credits will be dealt with according to the NUST's regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

Students who complete the Bachelor of Science Honours programme will be able to pursue further studies in applied natural sciences, or a related cognate area of learning, at NQF level 9.

**Mode of Delivery**

This programme will be offered on the full-time mode of study in accordance with NUST rules and regulations.

**Requirements for Qualification Award**

The Bachelor of Science Honours degree will be awarded to students credited with a minimum of 120 NQF credits (all at NQF Level 8). The programme allows for specialisation in Applied Biology; Biotechnology; Applied Chemistry, and Applied Physics, of which students must complete one core compulsory course (worth 15 credits); three strand compulsory courses (worth 45 credits); two strand elective courses (worth 30 credits); as well as a mini-thesis (worth 30 credits). In addition, students must meet the administrative and financial requirements as stipulated in Part 1 of the NUST Yearbook.

***NB: A specialisation/strand will be offered subject to the number of students enrolled or demand.***

**Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical/ practical skills.

The learning process will be facilitated both inside and outside the classroom, requiring specific tasks to be carried out by the student. Depending on the context of each course, the facilitation methods will make use of any of the following: classroom lectures; guided laboratory classes and practical demonstrations; group and individual assignments and/or projects; seminars and workshops; directed and independent study involving electronic/online resources, textbooks and other study materials; training and practice in the use of IT and software packages; problem-solving workshops or problem-based learning; class discussions; and tutorials. The progress of learning embedded in such tasks will be monitored, recorded and assessed. The particular teaching and learning strategies of each course can be found in the course specifications/syllabi.

**Assessment Strategies**

Students will be assessed through continuous and summative assessment. These assessments will focus on the achievement of competencies and take the form of problem solving exercises (both of a practical and written format), individual/group assignments, oral, audio-visual and poster presentations, computer-based assessments, critical analysis of case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations), peer and self-assessments and dissertations (mini-thesis). In accordance with NUST policy on diversified continuous assessment, each course will have a minimum of six assessment events. Courses that are assessed using a combination of continuous assessment and a final end-of-semester examination must have at least three assessments.

In order to be admitted to the final examination in any course, a minimum semester mark of 40% has to be obtained. This mark is determined by continuous assessment (CA) of a student's achievement by means of tests and/or assignments/seminars/practicals/tutorials. The weighting of the CA types will be assessed in accordance with stipulations in the syllabus of each course.

Where a student misses a continuous assessment or scores below 40% in the overall continuous assessment, the following rule will apply:

- A student can only supplement and/or resubmit a maximum of ONE continuous assessment. Any supplementary continuous assessment will be written at the end of the semester, before the examination component.
- The semester mark and the exam mark will be used in a 60:40 ratio, respectively, to determine the Final Mark. A student will have to obtain a minimum average of 50% as final mark to pass a course, subject to a sub-minimum of 40% in the examination mark.
- The Mini-thesis will be assessed in accordance with NUST's rules for studies at postgraduate level.

### Quality Assurance Requirements

Each course (please refer to the Detailed Qualification Requirements) will have one or more examiner and one moderator. Moderators will be identified both internally and externally. The required minimum qualification of the moderator should be a Master's degree in a related field of study or the person must be a well-respected expert in the field. Lecturing staff will set and mark tests and/or examinations which will, together with relevant study material of that particular course and other material containing course learning outcomes in the context of the qualification learning outcomes, be forwarded to the moderator for moderation purposes, therefore, ensuring quality of the assessment and the qualification as a whole. Courses at this NQF Level 8 will be externally moderated. Moderation of the mini-thesis will be done in accordance with NUST rules for studies at postgraduate level.

### Transition Arrangements

This is a new programme/qualification that does not replace any existing programme/ qualification(s). Transition arrangements are, therefore, not applicable.

## CURRICULUM

### Year 1

#### Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
RME810S	Research Methodology	None	8	15

### *Plus ONE of the following compulsory strands depending on Specialisation*

#### Applied Biology Strand: 08BOSH

EBM811S	Environmental Biology and Aquatic Ecosystem Management	None	8	15
MRT811S	Methods in Recombinant DNA Technology	None	8	15
MSP811S	Microbial Systematics and Processes	None		

#### Biotechnology Strand: 08BSHB

BIO811S	Bioinformatics	None	8	15
MRT811S	Methods in Recombinant DNA Technology	None	8	15
PAB811S	Plant and Animal Biotechnology	None	8	15

#### Applied Chemistry Strand: 08BSHC

AAC811S	Advanced Analytical Methods and Chemometrics	None	8	15
BBC811S	Bioinorganic and Biophysical Chemistry	None	8	15
AOC811S	Advanced Organic Chemistry	None	8	15

#### Applied Physics Strand: 08BSHP

ENP811S	Environmental Physics	None	8	15
AGE811S	Advanced Geophysics	None	8	15
ISP811S	Instrumentation Physics	None	8	15



**Semester 2**

MSH821S	Mini-Thesis	Research Methodology	8	30
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**Plus TWO of the following Strand Elective courses for Strand/Specialisation in Biotechnology (based on demand)**

**Applied Biology Strand: 08BOSH**

AMB821S	Advanced Microbiology	None	8	15
BPM821S	Biosynthetic Pathways and Molecular Biology	None	8	15
ENS821S	Entrepreneurship	None	8	15

**Biotechnology Strand: 08BSHB**

EIM821S	Environmental, Industrial and Medical Biotechnology	None	8	15
BPM821S	Biosynthetic Pathways and Molecular Biology	None	8	15
ENS821S	Entrepreneurship	None	8	15

**Applied Chemistry Strand: 08BSHC**

SAM821S	Synthetic Aspects in Medicinal Chemistry	None	8	15
EPM821S	Environmental Pollution, Monitoring & Remediation	None	8	15
ENS821S	Entrepreneurship	None	8	15

**Applied Physics Strand: 08BSHP**

ASO821S	Astrophysics	None	8	15
MAP821S	Materials Physics	None	8	15
ENS821S	Entrepreneurship	None	8	15

**NQF Credits: 240**

### **Description**

The Master of Science in Natural and Applied Sciences is a postgraduate specialization degree that aims at consolidating and deepening the knowledge and expertise in the Physics, Chemistry and Biology disciplines, and to develop student's capacity to conduct supervised research of an applied nature as well as ensuring sustainable use of natural resources. The programme is purposefully designed to enable students to evaluate and apply natural sciences theories, techniques and models to solve complex societal problems in the specialized Applied areas of Physics, Chemistry and Biology.

### **Admission Criteria**

Candidates will be considered for admission into the Master of Science in Natural and Applied Science programme if they have:

- A minimum of Bachelor of Science in Natural and Applied Sciences Honours with evidence of a supervised research from the Namibia University of Science and Technology, or;
- A four-year Natural and Applied Sciences (or related) degree from any other recognised institutions, or;
- A pre-NQF professional or four-year Bachelor degree, with a professional project or research component from a recognised institution and evaluated as appropriate by the Department, in addition to meeting NUST's General Admission Requirements as stated in the General Rules.

Candidates may be required to attend a pre-selection interview at the discretion of the Higher Degrees Committee to ascertain their competencies for independent research in a specialised area of Natural and Applied Sciences. Additionally, evidence of English language proficiency is required. A cut off mark 60% in the area of specialization is imposed as a minimum requirement.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Postgraduate Studies Committee. These procedures will be fully explained to each prospective student during his or her personal interview for admission into the programme.

### **Articulation Arrangements**

Students who complete the Master of Science in Natural and Applied Sciences programme successfully will be eligible to pursue a Doctor of Philosophy (PhD) research in Natural and Applied Sciences, or a related cognate area of learning, at NQF level 10.

### **Mode of Delivery**

The programme will be offered by research only on full-time and part-time modes of study in accordance with the Namibia University of Science and Technology rules and regulations.

### **Requirements for Qualification Award**

The Master of Science in Natural and Applied Sciences will be awarded to candidates credited with a minimum of 240 NQF credits (all at NQF Level 9). The thesis will represent the entire body of work to be assessed and must meet NUST's requirements as detailed in the rules for postgraduate studies. However, students are required to make oral presentations of their research proposals within the first six months of the programme and several scheduled seminars at the discretion of the supervisors to evaluate their progress and be provided useful feedback towards improving the quality of their theses.

In addition, students should meet the administrative and financial requirements as spelt out in the NUST' Yearbook.

Students have a minimum of two (2) years to a maximum of four (4) years to complete the programme on a fulltime basis while students have a minimum of four (4) years to a maximum of six (6) years to complete the programme on a part-time basis.

### **Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive research activities through supervised and collaborative work with supervisors and peers in order to provide for the development of generic research and intellectual skills in Natural and Applied Sciences and specifically in the proposed areas of specialization in Biology, Chemistry and Physics.

The research activities and facilitation will include in-depth literature review and problem-solving seminars. Students will be encouraged to engage with the industry in Namibia to identify problems solvable by their research contributions and to take advantage of updating their knowledge through conferences and workshops both locally and internationally during the research programme.

The Postgraduate Studies Committee, on the recommendation of the Departmental Postgraduate Research Committee, will appoint supervisor(s) /co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant topics are discussed. Academic support will be provided in accordance with NUST's rules and procedures for postgraduate studies leading to the award of research-based degrees. Students will be expected to attend Seminars and give presentations.

### Assessment Strategies

Students are required to submit a research proposal within six months for approval by the Postgraduate Studies Committee. It is compulsory and mandatory that students attend and present at regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present work-in-progress every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of three months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate professional work ethics to deliver the combination of research, analysis, communication and presentation demanded by their theses. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their theses before an appropriately constituted committee and an External Examiner in accordance with the rules for postgraduate studies at NUST. The theses will be returned to students for correction before final binding and archiving. Final marks will only be released after correction of each thesis and submission of the appropriately bound copies of thesis.

### Transition Arrangements

This is a new programme and so it does not replace any existing NQF registered qualification. Transition arrangements will be developed and applied when the programme is due for revision.

Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
Semester 1 THN911S	Thesis	None	Semester 1 THN911P	Thesis	None
Semester 2 THN912S	Thesis	None	Semester 2 THN912P	Thesis	None
<b>Year 2</b>					
Semester 3 THN913S	Thesis	None	Semester 3 THN913P	Thesis	None
Semester 4 THN914S	Thesis	None	Semester 4 THN914P	Thesis	None
<b>Year 3</b>					
Semester 5 THN915X	Thesis Extension	None	Semester 5 THN915P Semester 6 THN916P	Thesis	None
<b>Year 4</b>					
			Semester 7 THN917P Semester 8 THS918P	Thesis	None
<b>Year 5</b>					
			Semester 9 THN919X	Thesis	None

**QUALIFICATIONS OFFERED**

Bachelor of Science Honours in Applied Mathematics (Revised) (Phased in 2022)	08BSHM
Bachelor of Science Honours in Applied Mathematics (Phasing out from 2022)	08BSMH
Master of Science in Applied Mathematics (Phased in 2016)	09MSAM
Bachelor of Science Honours in Applied Statistics (Revised) (Phased in 2022)	08BSHS
Bachelor of Science Honours in Applied Statistics (Phasing out from 2022)	08BSSH
Master of Science in Applied Statistics (Phased in 2016)	09MSAS
Doctor of Philosophy in Mathematics	10DPSM
Doctor of Philosophy in Statistics	10DPSC

**BACHELOR OF SCIENCE HONOURS IN APPLIED MATHEMATICS** **08BSHM**  
**(Revised - Phased in from 2022)**

**NQF Level: 7**

**NQF Credits:**

**NQF Qualification ID: Q0724**

**Description**

The Bachelor of Science Honours in Applied Mathematics is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and expertise in the mathematics discipline, and to develop student’s capacity to conduct supervised research of an applied nature. The programme is purposefully designed to enable students to evaluate and apply mathematical theories, techniques and models to solve complex mathematical related problems that face the public and private sectors.

**Admission Requirements**

Candidates will be considered for admission into the Bachelor of Science Honours in Applied Mathematics programme if they have the Bachelor of Science in Applied Mathematics and Statistics from the Namibia University of Science and Technology (NUST). Alternatively, candidates should have an equivalent qualification at NQF level 7 in Mathematics or similar cognate area from a recognized institution, worth at least NQF 360 credits. Candidates’ official transcripts will be scrutinised to determine preparedness for the programme.

**CURRICULUM**

<b>Semester 1</b>					
<b>Course Title</b>	<b>Course Code</b>	<b>Prerequisite(s)</b>	<b>NQF Level</b>	<b>NQF Level</b>	
Partial Differential Equations	PDE801S	None	8	15	
Applied Numerical Analysis	ANA801S	None	8	15	
Research Methodology	RME801S	None	8	15	
<b>Plus ONE of the following Electives:</b>					
Advanced Complex Analysis	ACA801S	None	8	15	
Advanced Calculus	ADC801S	None	8	15	
<b>Semester 2</b>					
Applied Operations Research	AOR802S	None	8	15	
Functional Analysis	FAN802S	None	8	15	
Mini-Thesis	MTS802S	Research Methodology	8	15	

**Transition Arrangements**

The current Bachelor of Science Honours in Applied Mathematics will be allowed to continue with the existing curriculum until 2021 (The last intake of the current programme will be January 2021). The current programme (old curriculum) will be completely phased out by the end of 2021 after which students in this category must automatically switch to the revised programme (new curriculum) and fulfil all requirements based on the new curriculum in accordance with the information in Table 15.1 below.

Although some courses have been amended, there are no major changes that would warrant differentiating the Corresponding Courses table from the Credit table.

**Table 1: Corresponding Courses**

<b>CourseCode</b>	<b>Bachelor of Sciences Honours in Applied Mathematics (Old Courses)</b>	<b>Course Code</b>	<b>Bachelor of Sciences Honours in Applied Mathematics (Corresponding New/Revised Courses to be Done/credited)</b>
PDE801S	Partial Differential Equations	PDE801S	Partial Differential Equations
ACA801S	Advanced Complex Analysis	ACA801S	Advanced Complex Analysis
ADC801S	Advanced Calculus	ADC801S	Advanced Calculus
ANA801S	Applied Numerical Analysis	ANA801S	Applied Numerical Analysis
AOR802S	Applied Operations Research	AOR802S	Applied Operations Research
FAN802S	Functional Analysis	FAN802S	Functional Analysis
MTS802S	Mini-Thesis	MTS802S	Mini-Thesis
RME801S	Research Methodology	RME801S	Research Methodology

**BACHELOR OF SCIENCE HONOURS IN APPLIED MATHEMATICS  
(Old Programme - Phased out from 2022)**

**08BSMH**

**NQF Level: 8**

**NQF Credits: 135**

**NQF Qualification ID: Q0710**

**Description**

The Bachelor of Science Honours in Applied Mathematics is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and expertise in the mathematics discipline, and to develop student's capacity to conduct supervised research of an applied nature. The programme is purposefully designed to enable students to evaluate and apply mathematical theories, techniques and models to solve complex mathematical related problems that face the public and private sectors.

**Admission Requirements**

Candidates for the Honours degree would have completed the B.Sc. degree Mathematics or equivalent with a minimum average of 60% in the major subjects. However, the admission to the B.Sc. Honours is competitive.

**CURRICULUM**

**Semester 1**

Course Title	Course Code	Prerequisite(s)	NQF Level	NQF Credits
Partial Differential Equations	PDE801S	None	8	15
Applied Numerical Analysis	ANA801S	None	8	15
Research Methodology	RME801S	None	8	15

**Plus ONE of the following  
Electives:**

Advanced Complex Analysis	ACA801S	None	8	15
Advanced Calculus	ADC801S	None	8	15

**Semester 2**

Applied Operations Research	AOR802S	None	8	15
Functional Analysis	FAN802S	None	8	15
Mini-Thesis	MTS802S	Research Methodology	8	15

**Transition Arrangements**

The current one-year Bachelor of Science Honours in Applied Mathematics will be allowed to continue with the existing curriculum until 2016. The current programme (old curriculum) will be completely phased out by the end of 2016 after which students in this category must automatically switch to the revised programme (new curriculum) and fulfil all requirements based on the new curriculum in accordance with information in Table 1 below:

**Table 1: Corresponding Courses**

Course Code	Bachelor of Sciences in Applied Maths Honours(Old Courses)	Course Code	Bachelor of Sciences Honours in Applied Maths(New/Revised Corresponding Courses to be Done, if Failed)
PDE410S	Partial Differential Equations	PDE801S	Partial Differential Equations
CAN410S	Complex Analysis 2	ACA801S	Advanced Complex Analysis
ADC410S	Advanced Calculus 1	ADC801S	Advanced Calculus
ADC402S	Advanced Calculus 2	ADC801S	Advanced Calculus
ANA410S	Applied Numerical Analysis	ANA801S	Applied Numerical Analysis
MHP420S	Mathematical Programming 3	AOR802S	Applied Operations Research
FAN420S	Functional Analysis	FAN802S	Functional Analysis
RPM420S	Research Project	MTS802S	Mini-Thesis
RMA411S	Research Methodology	N/A	Research Methodology

## MASTER OF SCIENCE IN APPLIED MATHEMATICS

09MSAM

(Phased in 2016)

NQF Level: 9

NQF Credits: 240

NQF Qualification ID: Q0894

### Description

The Master of Science in Applied Mathematics is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and expertise in the Mathematics discipline, and to develop student's capacity to conduct supervised research of an applied nature. The programme is purposefully designed to enable students to evaluate and apply mathematical theories, techniques and models to solve complex mathematical related problems in the specialised areas of Optimisation (including Operations Research), Generalised Fluid Dynamics, Financial Mathematics, Computational Methods, Biomathematics and Mathematical Ecology, that face the public and private sectors.

### Admission Criteria

Candidates will be considered for admission into the Master of Science in Applied Mathematics if they have a minimum of Bachelor of Science in Applied Mathematics Honours from The Namibia University of Science and Technology (NUST) or equivalent qualification in a related discipline from any other recognised institutions. In either case, the candidate should have proven evidence of having conducted supervised research. Evidence of communication proficiency in the English language is required. Candidates may be required to attend a pre-selection interview at the discretion of the Postgraduate Study Committee, to ascertain their competencies for independent research in a specialised area of Applied Mathematics.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Postgraduate Studies Committee. These procedures will be fully explained to each prospective student during their personal interview.

### Articulation Arrangements

Students who complete the Master of Science in Applied Mathematics programme successfully will be able to pursue a Doctor of Philosophy (PhD.) research in Mathematics, or a related cognate area of learning, at NQF Level 10.

### Mode of Delivery

This programme will be offered on the full time and part-time modes of study in accordance with the University's rules and regulations. The delivery mode will also employ the blended learning strategy of the University, which includes the online learning (i.e., E-Learning) facilitation.

### Requirements for Qualification Award

The Master of Science in Applied Mathematics will be awarded to students credited with a minimum of 240 NQF credits (all at NQF Level 9). The thesis will represent the entire body of work to be assessed and must meet the University's requirements as detailed in the rules for postgraduate studies. However, students are required to make oral presentations of their research proposals within the first six months of registering for the programme and attend a number of scheduled seminars at the discretion of the supervisors to evaluate their progress and be provided useful feedback towards improving the quality of their theses.

In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook. Teaching and Learning Strategies

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in interactive research activities through supervised and collaborative work with supervisors and peers in order to provide for the development of generic research and intellectual skills in Applied Mathematics, with respect to the proposed areas of specialisation listed above.

This research activities and facilitation will include in-depth literature review and problem-solving seminars. Students will be encouraged to engage with the industry in Namibia to identify problems solvable by their research contributions, and also to take advantage of updating their knowledge through conferences and workshops both locally and internationally during the research programme.

The Postgraduate Studies Committee, on the recommendation of the Departmental Postgraduate Research Committee, will appoint supervisor(s)/co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant topics are discussed. Academic support will be provided in accordance with the University's rules and procedures for postgraduate studies leading to the award of research degrees.

### Assessment Strategies

Students are required to submit a research proposal within six months for approval by the Postgraduate Studies Committee. It is compulsory that students attend regular research methodology seminars until successful defence and approval of the research proposal. Students are required to present work-in-progress every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of three months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate professional work ethics to deliver the combination of research, analysis, communication and presentation demanded by their theses. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their theses before an appropriate constituted committee and an External Examiner in accordance with the rules for postgraduate studies at the University. Each thesis will be returned to the student for correction, before final binding and archiving. Final mark will only be released after the suggested correction(s) have been implemented in the thesis.

### Transition Arrangements

This is a new programme and does not replace any existing NQF registered qualification. Transition arrangements will be developed and applied when the programme is due for revision.

Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
<b>Semester 1</b>			<b>Semester 1</b>		
TAM911S	Thesis	None	TAM911P	Thesis	None
<b>Semester 2</b>			<b>Semester 2</b>		
TAM912S	Thesis	None	TAM912P	Thesis	None
<b>Year 2</b>					
<b>Semester 3</b>			<b>Semester 3</b>		
TAM913S	Thesis	None	TAM913P	Thesis	None
<b>Semester 4</b>			<b>Semester 4</b>		
TAM914S	Thesis	None	TAM914P	Thesis	None
<b>Year 3</b>					
<b>Semester 5</b>			<b>Semester 5</b>		
TAM915X	Thesis Extension		TAM915P		
			Semester 6		
			TAM916P	Thesis	
<b>Year 4</b>					
			<b>Semester 7</b>		
			TAM917P	Thesis	
			<b>Semester 8</b>		
			TAM918P	Thesis	
<b>Year 5</b>					
			<b>Semester 9</b>		
			TAM919X	Thesis Extension	

**NQF Level: 8**

**NQF Credits: 150**

**NQF Qualification ID: Q2309**

**Description**

The Bachelor of Science Honours in Applied Statistics is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and expertise in the statistics discipline, and to develop student’s capacity to conduct supervised research of an applied nature. The programme is purposefully designed to enable students to evaluate and apply statistical theories, techniques and models to solve complex statistically related problems that face the public and private sectors.

**Admission requirements**

Candidates will be considered for admission into the Bachelor of Science Honours in Applied Statistics programme if they have the Bachelor of Science in Applied Mathematics and Statistics from the Namibia University of Science and Technology. Alternatively, candidates should have an equivalent qualification at NQF level 7 in Statistics or similar cognate area from a recognized institution, worth at least NQF 360 credits. Candidates’ official transcripts will be scrutinized to determine preparedness for the programme.

**CURRICULUM**

**Year 1**

**Semester 1**

Course Title	Course Code	Prerequisite(s)	NQF Level	NQF Credits
Applied Spatial Statistics	ASS801S	None	8	15
Biostatistics	BIO801S	None	8	15
Stochastic Processes	STP801S	None	8	15
Research Methodology	RME801S	None	8	15

**Semester 2**

Multivariate Analysis	MVA802S	None	8	15
Mini-Thesis	MTS802S	Research Methodology	8	30

**Plus ONE of the following Electives:**

Sampling Theory	SAT802S	None	8	15
Statistical Quality Control	SQC801S	None	8	15
Applied Operations Research	AOR802S	None	8	15

**Transition Arrangements**

The Bachelor of Science Honours in Applied Statistics (old curriculum) will be phased out by the end of 2021 with minimal disruption to existing students’ learning progression. The last intake of students for the out-phasing programme (old curriculum) was in January 2021. Students registered in 2021 for the out-phasing programme (old curriculum) who fail any course of the out-phasing curriculum at the end of the year, will be required to change their registration to the revised programme (new curriculum) in 2022.

The Bachelor of Science Honours in Applied Statistics (Revised curriculum) will take effect from January 2022 and will be completely phased in the same year. Courses will only be offered based on the revised syllabi in 2022. Students who fail any of the courses on the old curriculum will be required to repeat the failed courses based on syllabi of revised corresponding courses as detailed in Table 1. The deadline for complete phasing out of the Bachelor of Science Honours in Applied Statistics (old curriculum) is 2021, after which students must automatically switch to the new programme and fulfil all requirements based on the revised curriculum.

**Table 1: Corresponding Courses**

Course Code	Bachelor of Science Honours in Applied Statistics (Old Courses)	Course Code	Bachelor of Science Honours in Applied Statistics (Corresponding New/Revised) Courses to be done)
BIO801S	Biostatistics	BIO801S	Biostatistics
RME801S	Research Methodology	RME801S	Research Methodology
SQC802S	Statistical Quality Control	SQC802S	Statistical Quality Control
STP801S	Stochastic Processes	STP801S	Stochastic Processes
MVA802S	Multivariate Analysis	MVA802S	Multivariate Analysis
MTS802S	Mini-Thesis	MTS802S	Mini-Thesis
AOR802S	Applied Operations Research	AOR802S	Applied Operations Research
SAT802S	Sampling Theory	SAT802S	Sampling Theory
	None	ASS801S	Applied Spatial Statistics
ADC801S	Advanced Calculus	ADC801S	None

**Please Note:**

The following course does not have the corresponding course in the revised curriculum and the department will continue offering this course until 2023:

- Advanced Calculus



**NQF Level: 8**

**NQF Credits: 150**

**NQF Qualification ID: Q0711**

**Description**

The Bachelor of Science Honours in Applied Statistics is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and expertise in the statistics discipline, and to develop student’s capacity to conduct supervised research of an applied nature. The programme is purposefully designed to enable students to evaluate and apply statistical theories, techniques and models to solve complex statistically related problems that face the public and private sectors.

**Admission requirements**

Candidates for the Honours degree would have completed the B.Sc. degree or equivalent with a minimum average of 60 % in the major subjects. However, the admission to the B.Sc. Honours is competitive.

**CURRICULUM**

**Semester 1**

Course Title	Course Code	Prerequisite(s)	NQF Level	NQF Credits
Statistical Quality Control	SQC801S	None	8	15
Stochastic Processes	STP801S	None	8	15
Research Methodology	RME801S	None	8	15
<b>Plus ONE of the following Electives:</b>				
Advanced Calculus	ADC801S	None	8	15
Biostatistics	BIO801S	None	8	15
<b>Semester 2</b>				
Multivariate Analysis	MVA802S	None	8	15
Mini-Thesis	MTS802S	Research Methodology	8	30
<b>Plus ONE of the following Electives:</b>				
Sampling Theory	SAT802S	None	8	15
Applied Operations Research	AOR802S	None	8	15

**Transition Arrangements**

The current one-year Bachelor of Science Honours in Applied Statistics (old curriculum) will be allowed to continue with the existing curriculum until 2016. The current programme (old curriculum) will be completely phased out by the end of 2016 after which students in this category must automatically switch to the revised programme (new curriculum) and fulfil all requirements based on the new curriculum in accordance with information in Table 1 below:

**Table 1: Corresponding Courses**

Course Code	Bachelor of Sciences in Applied Stats Honours(Old Courses)	Course Code	Bachelor of Sciences Honours in Applied Stats(New/Revised Corresponding Courses to be Done, if Failed)
ADC411S	Advanced Calculus 1	ADC801S	Advance Calculus
RMA411S	Research Methodology	RME801S	Research Methodology
SQC411S	Statistical Quality Control	SQC801S	Statistical Quality Control
NPS411S	Non Parametric Statistics	STP801S	Stochastic Processes
MVA421S	Multivariate Analysis	MVA802S	Multivariate Analysis
RPM420S	Research Project	MTS802S	Mini-Thesis
MHP421S	Mathematical Programming 3	AOR802S	Applied Operations Research
TSA421S	Time Series Analysis and Forecasting	SAT802S	Sampling Theory
	None	BIO801S	Biostatistics
DAE411S	Design & Analysis of Experiments		None

**NQF Level: 9**

**NQF Credits: 240**

**NQF Qualification ID: Q0893**

### **Description**

The Master of Science in Applied Statistics is of interdisciplinary nature that aims at consolidating and deepening the knowledge and expertise in the Statistics discipline, and to develop student's capacity to conduct supervised research of applied nature. The programme is fully aligned with requirements of the National Qualifications Framework (NQF) and the NUST Curriculum Framework. It also conforms to the regional and international standards and quality requirements

### **Admission Criteria**

Applicants will be considered for admission into the Master of Science in Applied Statistics if they have a minimum of Bachelor of Science in Applied Statistics Honours from the Namibia University of Science and Technology, or equivalent qualification in a related discipline from any other recognised institutions. Applicants need to provide evidence of having conducted supervised research; possess communication proficiency in the English language and may be required to make-up specific deficiencies in coursework at the discretion of the Postgraduate Studies Committee. In addition, applicants may be required to attend a pre-selection interview and/or test at the discretion of the department.

Applicants from other institutions must submit detailed information on all courses in their previous qualifications, as well as contact details of three referees. This also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Postgraduate Studies Committee. These procedures will be fully explained to each prospective student during their personal interview.

### **Articulation Arrangements**

The Master of Science in Applied Statistics will ordinarily provide access to further studies in the same area or related cognate area at Doctoral degree level, i.e., NQF Level 10.

### **Mode of Delivery**

This programme will be delivered on a full-time and part-time basis in accordance with the Namibia University of Science and Technology rules. The delivery mode will also employ the blended learning strategy of the University, which includes the online learning (i.e., e-Learning) facilitation.

### **Requirements for Qualification Award**

This qualification will be awarded to candidates credited with a minimum of 240 credits (all at NQF Level 9). The thesis will represent the entire body of work to be assessed and must meet the University's requirements as detailed in the rules for postgraduate studies. In addition, students should meet the administrative and financial requirements spelt out in Part 1 of the NUST Yearbook.

### **Teaching and Learning Strategies**

The Postgraduate Studies Committee, on the recommendation of the Head of Department, will appoint supervisor(s)/co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan. Students will be supervised, guided and supported through regular contact sessions, using all available means during which study planning, progress, and other relevant topics are discussed. Academic support will be provided in accordance with the University's rules and procedures for postgraduate studies leading to the award of research degrees.

Candidates are encouraged to pursue part of their research within the industries in Namibia, or at other recognised and established tertiary institutions abroad. The possibility to gain international exposure by participating in an international workshop/symposium will be promoted.

### **Assessment Strategies**

Students are required to submit a research proposal within six months of registering for the programme, for approval by the Postgraduate Studies Committee. It is compulsory that students attend regular research seminars until successful defence and approval of their thesis. Furthermore, students are required to present work-in-progress every six months during research seminars, for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of six months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their thesis. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their thesis before an appropriate constituted committee in accordance with the rules for post-graduate studies at the University. The thesis will be returned to students for correction before final binding and archiving. Final mark will only be released after the suggested correction(s) have been implemented in the thesis.

### Transition Arrangements

This is a new qualification. It does not replace any existing NQF registered qualification.

Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
<b>Semester 1</b>			<b>Semester 1</b>		
TAS910S	Thesis	None	TAS910P	Thesis	None
<b>Semester 2</b>			<b>Semester 2</b>		
TAS912S	Thesis	None	TAS912P	Thesis	None
<b>Year 2</b>					
<b>Semester 3</b>			<b>Semester 3</b>		
TAS913S	Thesis		TAS913P	Thesis	
<b>Semester 4</b>			<b>Semester 4</b>		
TAS914S	Thesis		TAS914P	Thesis	
<b>Year 3</b>					
<b>Semester 5</b>			<b>Semester 5</b>		
TAS915X	Thesis Extension		TAS915P		
			<b>Semester 6</b>		
			TAS916P		
<b>Year 4</b>					
			<b>Semester 7</b>		
			TAS917P		
			<b>Semester 8</b>		
			TAS918P		
<b>Year 5</b>					
			<b>Semester 9</b>		
			TAS919X	Thesis Extension	

**NQF Credits: 360**

**Programme Aims/Purpose**

The Doctor of Philosophy (PhD) in Mathematics is a postgraduate specialization degree that aims at enhancing and expanding the knowledge and expertise in the mathematics field, and to advance the student's capacity to carry out supervised research at a highly advanced level in at least one sub-discipline of Mathematics. It is a programme intended to enable students to develop new mathematical theories. Techniques and models to solve convoluted mathematical related problems. Students may develop and apply these in the specialised areas such as Optimisation (including Operations Research), Fluid Dynamics (to address water and energy problems), Computational Methods, Biomathematics, Mathematical Ecology, Dynamical Systems, Cryptography, Game Theory, and Mathematical Modelling (including Financial Mathematics) that will help to model financial problems and many others that face the public and private sectors. It focuses on the broad research-based learning in the area of Mathematics.

The knowledge acquired from the programme will enable students to participate in research projects involving endemic problems faced in the sub-region such as water, energy, finance, health and resource management. In addition, students are expected to explore and conduct independent research, with a focus on special research questions, apply and/or develop new advanced methods and techniques to deal with sophisticated problems connected to the topic of interest, resulting in an original contribution to knowledge.

Overall, the PhD in Mathematics specifically aims at:

- Providing candidates with deepened, comprehensive and niche, theoretical and problem-solving techniques in Mathematics and its applications.
- Strengthening candidates research capacity towards innovation and creativity in Mathematics; and
- Developing and sharpening the critical thinking, analytical and problem-solving skills of candidates in the Mathematics discipline and its ever-growing multi-disciplinary applications.
- Members of the Programme Advisory Committee (PAC) have endorsed the programme while academic peers at higher learning institutions were also consulted for purposes of international benchmarking.

**Programme Rationale**

In response to the growing national development need for high human capacity in Mathematical Sciences, which is a key catalyst in driving a knowledge-based economy, the PhD in Mathematics addresses the critical need for qualified mathematicians in the public institutions and private sector based on consultations with stakeholders and members of the PAC. The development of this programme is in line with the mission of NUST, i.e to promote national competitiveness by providing multiple opportunities for excellent education, applied research, innovation and service. The PhD in Mathematics is designed to extend the Mathematics Master's degree programme and promote the continued relevance of mathematics in terms of the national need for employment creation. Graduates of this programme will be able to contribute significantly to the attainment of national development objectives in the educational and economic sectors of the nation by taking up jobs in the public and private sectors of Namibia and beyond. The programme is fully aligned with the requirements of the National Qualification Framework (NQF) and the NUST Curriculum Framework.

**Exit Programme Outcomes (Qualification Outcomes)**

Upon completing the PhD in Mathematics, graduates will be able to:

- Demonstrate highly specialised, authoritative knowledge in Mathematics and areas of specialization and the ability to apply that knowledge to solve real-life problems faced by the community;
- Conduct independent applied research to internationally recognised standards by applying a specific research method, theories of Mathematical sciences showing a high level of research competence;
- Produce a thesis, which represents an original contribution to the body of knowledge in the field of study/areas of specialization;
- Present and communicate research findings in a professional and efficient manner catering for a wide range of audiences including specialists and no-specialists;
- Provide leadership in the area of research and scientific writing; and
- Demonstrate the acquisition of high skill capability to work individually and as members of multidisciplinary teams.

**Criteria for Admission**

Applicants will be considered for admission into the PhD in Mathematics if they have a Master of Science in Mathematics from NUST or equivalent qualification in a related discipline from a recognised institution at NQF Level 9 with evidence of a supervised research.

Applications will be required to submit a concept paper on their proposed research areas and may be required to attend a pre-selection interview at the discretion of the Faculty Research Committee (FRC) to ascertain their competencies for independent research in a specialised area of Mathematics and its applications.

The Higher Degrees Committee (HDC) will approve the final selection and admission of the selected candidates in accordance with the regulations as specified by the Rules for Postgraduate Studies of the NUST Yearbook. Hence, registration prior to the approval by the HDC. These procedures will be fully explained to each prospective student during his or her personal interview.

### **Mode of Delivery**

This programme will be offered on the full-time and part-time modes of study in accordance with NUST's Rules for Postgraduate Studies. Additional information is given in the Guidelines for the Supervision and Examination of Masters and Doctoral Programmes.

### **Requirements for Qualification Award**

The PhD in Mathematics will be awarded to candidates credited with a minimum of 360 NQF credits (all at NQF Level 10). The thesis will represent the entire body of work to be assessed and must meet NUST's requirements as detailed in the Rules for Postgraduate Studies. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

Candidates have a minimum of three (3) years and a maximum of five (5) years to complete the programme on full-time mode. The minimum and maximum duration for completing the programme on part-time mode are six (6) years and eight (8) years respectively. The student is required to produce at least one research article before he/she can graduate.

#### **Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive research activities through supervised and collaborative work with supervisors and peers in order to provide for the development of generic research and intellectual skills in Mathematics and specifically in the proposed areas of specialization as stated in section 3 above.

The research activities and facilitation will include in-depth literature review and problem-solving seminars. Students will be encouraged to engage with the industry in Namibia to identify problems solvable by their research contributions. The students will also be encouraged to take advantage of updating their knowledge through conferences and workshops both locally and internationally during the research programme.

The HDC, on the recommendation of the FRC, will appoint supervisor(s) and co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan to be submitted according to the timeframe as specified by the Rules for Postgraduate Studies of the NUST Yearbook and the Guidelines for the Supervision and Examination of Masters and Doctoral Programmes. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant topics are discussed.

Academic support will be provided in accordance with NUST's Guidelines for the Supervision and Examination of Masters and Doctoral Programmes as well as the Rules for Postgraduate Studies of Part 1 of the NUST Yearbook.

### **Assessment Strategies**

Students are required to submit a research proposal within six months for approval by the HDC. It is compulsory and mandatory that students attend regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present work-in-progress every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of three months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate professional work ethics to deliver the combination of research, analysis, communication and presentation demanded by their theses. The thesis will be assessed in accordance with the University's Rules for Postgraduate Studies.

Students will present and defend their theses before an appropriately constituted committee and an External Examiner in accordance with the rules for postgraduate studies at NUST. The theses will be returned to students for correction before final binding and archiving. Final marks will only be released after corrections have been done.

### **Quality Assurance requirements**

The final assessment of the thesis will done by qualified academics and practitioners with relevant Doctoral degrees. The examiners must be acknowledge and respected individuals in the field with experience in assessment of postgraduate scientific reports of theses and will be appointed by Senate upon recommendation of the HDC. This will be done in accordance with the regulations specified in the Rules for Postgraduate Studies of Part 1 of the NUST Yearbook and the NUST Guidelines for the Supervision and Examination of Masters and Doctoral Programmes. However, a supervisor cannot be appointed as an examiner for the thesis that was produced under his supervision.

### Transition Arrangements

This is a new programmes and transition arrangements are therefore not applicable.

### Career Opportunities

Graduates from the PhD programme in Mathematics will be well-equipped to fill positions that require critical thinking, logical reasoning, modeling, computational, quantitative and qualitative skills acquired in the programme at research organisations, consulting firms, tertiary institutions and government agencies and to participate as consultants or members of interdisciplinary teams in a wide range of organisations, including the financial service, engineering and environmental service sectors.

Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
Semester 1 TMM101S	Thesis	None	Semester 1 TMM101P	Thesis	None
Semester 2 TMM102S	Thesis	None	Semester 2 TMM102P	Thesis	None
<b>Year 2</b>					
Semester 3 TMM103S	Thesis	None	Semester 3 TMM103P	Thesis	None
Semester 4 TMM104S	Thesis	None	Semester 4 TMM104P	Thesis	None
<b>Year 3</b>					
Semester 5 TMM105S	Thesis	None	Semester 5 TMM105P	Thesis	None
Semester 6 TMM106S	Thesis	None	Semester 6 TMM106S	Thesis	None
<b>Year 4</b>					
Semester 7 TMM107X	Thesis Extension	None	Semester 7 TMM107P	Thesis	None
			Semester 8 TMM108P		
<b>Year 5</b>					
			Semester 9 TMM109P	Thesis	None
			Semester 10 TMM109P	Thesis	None
<b>Year 6</b>					
			Semester 11 TMM110P	Thesis	None
			Semester 12 TMM111P	Thesis	None
<b>Year 7</b>					
			Semester 13 TMM112P	Thesis	None
			Semester 14 TMM113X	Thesis Extension	None

**Doctor of Philosophy in Statistics  
(Phasing in 2022)**

**10DPSC**

**NQF Level: 10**

**NQF Credits: 360**

**NQF Qualification ID: Q2075**

**Programme Aims/Purpose**

The Doctor of Philosophy (PhD) in Statistics is a postgraduate specialisation degree programme that aims at improving the candidate's level of thinking, expanding his/her skills, expertise and knowledge in the discipline, and ultimately developing the candidate's capacity to conduct and supervise research both in broad and specialised areas of statistics. The programme is devised to enable candidates to explore statistical theories, techniques and models to solve complex statistically related problems in areas such as Operations Research, Statistical Modelling, Financial Statistics, Computational Methods, Biostatistics and Statistical Ecology. The candidate will be able to frame, model and solve problems that face the public and private sectors. The programme focuses on developing the candidate's ability to carry out original scientific research and to disseminate and publish the results. The programme will enable the candidate to develop higher order understanding of relevant advanced methodical approaches and deepen his/her subject competence through regular participation in research seminars and projects. Thus, the candidate is required to conduct independent research while maintaining strong collaborative posture, resulting in original contributions to the body of knowledge.

Overall, the PhD in Statistics specifically aims at:

- equipping candidates with deepened understanding of advanced concepts, theories and techniques in Statistics and its applications;
- strengthening the candidates' research capacity towards innovation and creativity in Statistics; and
- sharpening the candidates' critical thinking, analytical and problem-solving skills, henceforth creating opportunities for inventions.

**Programme Rationale**

In response to the growing developmental needs for higher human capital in Statistical Sciences, a PhD in Statistics addresses the critical need for qualified statisticians in the public institutions and private sector, a view strongly supported by stakeholders and members of the PAC. The development of this programme is in line with the mission of NUST, i.e. to promote national competitiveness by providing multiple opportunities for excellent education, applied research, innovation and service as well as a key catalyst in driving a knowledge-based economy. The PhD in Statistics is designed to extend the Statistics Master's degree programme and promote the continued relevance of statistics in terms of the national need for employment creation. Graduates of this programme will be able to contribute significantly to the attainment of national development objectives in the education and economic sectors of Namibia by taking up jobs in the public and private sectors of the country and beyond. The programme is fully aligned with requirements of the National Qualifications Framework (NQF) and the NUST Curriculum Framework, and it also conforms to regional and international standards and quality assurance requirements.

**Exit Programme Outcomes (Qualification Outcomes)**

Upon completing the PhD programme in Statistics, graduates will be able to:

- Demonstrate deepened comprehension, systematic knowledge and expertise in Statistics and its applications;
- Conduct research at post-doctoral level using rational, principles, theories and methodologies of Statistical sciences;
- Produce a thesis, which represents an original contribution to the body of knowledge in the field of study/areas of specialisation;
- Present and communicate academic and/or professional work effectively, catering for a wide range of audiences including industrial and academic audiences;
- Evaluate and apply statistical theories, techniques and models to solve complex statistical related problems; and
- Demonstrate the ability to work individually and as members of a multidisciplinary team.

**Criteria for Admission**

A candidate will be considered for admission into the PhD in Statistics degree programme if he/she is having a Master of Science degree in Pure or Applied Statistics from NUST or an equivalent qualification in a related discipline from a recognised institution at NQF Level 9 with evidence of a supervised research. Candidates will be required to submit a concept paper on their proposed research areas and may be required to attend a pre-selection interview at the discretion of the Faculty Research Committee (FRC) to ascertain their competencies for independent research in a specialised area of Statistics and its applications.

The Higher Degrees Committee (HDC) will approve the final selection and admission of the candidates in accordance with the regulations as specified by the Rules for Postgraduate Studies of NUST. Hence, registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the HDC. These procedures will be fully explained to each prospective student during his/her selection interview.

**Mode of Delivery**

This programme will be offered both on full-time and part-time modes of study in accordance with NUST's *Rules for Postgraduate Studies*. Students are advised to read the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes* for additional information.

### **Requirements for Qualification Award**

The PhD in Statistics will be awarded to candidates credited with a minimum of 360 NQF credits (all at NQF Level 10). The thesis will represent the entire body of work to be assessed and must meet NUST's requirements as detailed in the Rules for Postgraduate Studies. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

Candidates have a minimum of three (3) years and a maximum of five (5) years to complete the programme on full-time mode. The minimum and maximum duration for completing the programme on part-time mode are six (6) years and eight (8) years respectively. The student is required to produce at least one research article before he/she can graduate.

### **Teaching and Learning Strategies**

The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive research activities through supervised and collaborative work with supervisors and peers in order to provide for the development of generic research and intellectual skills in Statistics and specifically in the proposed areas of specialization.

The research activities and facilitation will include in-depth literature review and problem-solving seminars. Students will be encouraged to engage with the industry in Namibia to identify problems solvable by their research contributions. The students will also be encouraged to take advantage of updating their knowledge through conferences and workshops both locally and internationally during the research programme.

The HDC, on the recommendation of the FRC, will appoint supervisor(s) and co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan to be submitted according to the timeframe as specified by the Rules for Postgraduate Studies of the NUST Yearbook and the Guidelines for the Supervision and Examination of Masters and Doctoral Programmes. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant topics are discussed.

Academic support will be provided in accordance with NUST's Guidelines for the Supervision and Examination of Masters and Doctoral Programmes as well as the Rules for Postgraduate Studies of Part 1 of the NUST Yearbook.

### **Assessment Strategies**

Students are required to submit a research proposal within six months for approval by the HDC. It is compulsory and mandatory that students attend regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present work-in-progress every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of three months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate professional work ethics to deliver the combination of research, analysis, communication and presentation demanded by their theses. The thesis will be assessed in accordance with the University's Rules for Postgraduate Studies.

Students will present and defend their theses before an appropriately constituted committee and an External Examiner in accordance with the rules for postgraduate studies at NUST. The theses will be returned to students for correction before final binding and archiving. Final marks will only be released after corrections have been done.

### **Quality Assurance requirements**

The final assessment of the thesis will be done by qualified academics and practitioners with relevant Doctoral degrees. The examiners must be acknowledged and respected individuals in the field with experience in assessment of postgraduate scientific reports of theses and will be appointed by Senate upon recommendation of the HDC. This will be done in accordance with the regulations specified in the Rules for Postgraduate Studies of Part 1 of the NUST Yearbook and the NUST Guidelines for the Supervision and Examination of Masters and Doctoral Programmes. However, a supervisor cannot be appointed as an examiner for the thesis that was produced under his supervision.

### **Transition Arrangements**

This is a new programmes and transition arrangements are therefore not applicable.

### **Career Opportunities**

Graduates from the PhD in Statistics programme will be well-equipped to fill positions that require critical thinking, logical reasoning, modelling as well as computational, quantitative and qualitative skills acquired through the programme such as at research-based organisations, consulting firms, tertiary institutions and government agencies. They can also participate as consultants or members of interdisciplinary teams in a wide range of organisations, including the financial, engineering, and environmental service sectors.



Full time			Part time		
Course Code	Course Title	Prerequisite	Course Code	Course Title	Prerequisite
<b>Year 1</b>					
<b>Semester 1</b> TPS101S	Thesis	None	<b>Semester 1</b> TPS101P	Thesis	None
<b>Semester 2</b> TPS102S	Thesis	None	<b>Semester 2</b> TPS102P	Thesis	None
<b>Year 2</b>					
<b>Semester 3</b> TPS103S	Thesis	None	<b>Semester 3</b> TPS103P	Thesis	None
<b>Semester 4</b> TPS104S	Thesis	None	<b>Semester 4</b> TPS104P	Thesis	None
<b>Year 3</b>					
<b>Semester 5</b> TPS105S	Thesis	None	<b>Semester 5</b> TPS105P	Thesis	None
<b>Semester 6</b> TPS106S	Thesis	None	<b>Semester 6</b> TPS106S	Thesis	None
<b>Year 4</b>					
<b>Semester 7</b> TPS107X	Thesis Extension	None	<b>Semester 7</b> TPS107P	Thesis	None
			<b>Semester 8</b> TPS108P		
<b>Year 5</b>					
			<b>Semester 9</b> TPS109P	Thesis	None
			<b>Semester 10</b> TPS110P	Thesis	None
<b>Year 6</b>					
			<b>Semester 11</b> TPS111P	Thesis	None
			<b>Semester 12</b> TPS112P	Thesis	None
<b>Year 7</b>					
			<b>Semester 13</b> TPS113P	Thesis	None
			<b>Semester 14</b> TPS114X	Thesis Extension	None

## SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

### DEPARTMENT OF AGRICULTURAL SCIENCES AND AGRIBUSINESS

Bachelor of Science in Agriculture Honours	08BSAH
Master of Agribusiness Management	09MAGB
Master of Agribusiness Management (Old Curriculum – Phasing out until 2023)	09MAGM

### BACHELOR OF SCIENCE IN AGRICULTURE HONOURS

08BSAH

**NQF Credit: 120**

#### Description

The Bachelor of Science Honours in Agriculture (with specialisation in Agribusiness Management or Sustainable Agriculture) is a postgraduate specialisation degree, designed for registration at NQF level 8. The programme builds on the outcomes of the Bachelor of Science in Agriculture (with specialisation in Agribusiness Management or Sustainable Agriculture) and aims at consolidating and deepening the knowledge and skills of students in the main cognate area of learning, as well as developing their capacity to conduct supervised applied research.

Overall, the programme aims at:

- Producing graduates with extensive knowledge of the principles, theories, methodologies and problem-solving techniques of the agriculture discipline;
- Providing students with deepened knowledge of advanced concepts and frameworks in agriculture and facilitate a high level of theoretical engagement;
- Capacitating students to conduct supervised research, including identification of a research problem, development of rigorous and methodical approaches to the collection and management of data, analysis and interpretation of results, and effective communication of research findings;
- Developing the critical thinking, analytical and problem-solving abilities and skills of students thereby enabling them to resolve complex problems in agricultural systems; and
- Exposing students to relevant policy aspects and interventions in the global agricultural arena.

#### Criteria for Admission

Candidates will be considered for admission to the Bachelor of Science Honours in Agriculture if they have a Bachelor of Science in Agriculture, or a Bachelor of Agriculture, from the Namibia University of Science and Technology and a minimum average of 60% in exit level courses.

Alternatively, candidates should have an equivalent qualification at NQF level 7 from a recognised institution, worth at least 360 credits.

#### Articulation Arrangements

Transfer of credits will be dealt with according to the NUST's regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions.

Maximum credit that can be granted is 50% of the credits for a qualification. Graduates of the Bachelor of Science Honours in Agriculture will be able to pursue further studies in Agriculture, or a similar/related cognate area of learning, at NQF level

#### Mode of Delivery

The programme will only be offered on full-time mode through block sessions in accordance with NUST rules and regulations.

#### Requirements for Qualification Award

This qualification will be awarded to students credited with a minimum of 120 credits (all at NQF Level 8), and who have met the administrative and financial requirements spelt out in Part 1 of the NUST Yearbook.

Students are able to specialise in Agribusiness Management or Sustainable Agriculture and have to complete 2 compulsory courses (worth 30 credits), 4 strand compulsory courses per specialisation (worth 60 credits) and a mini-thesis (worth 30 credits).

## CURRICULUM

### Year 1

#### Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
RME810S	Research Methodology	None	8	15
APJ811S	Applied Project Management	None	8	15

***Plus TWO of the following strand courses depending on Specialisation***

#### ***Sustainable Agriculture Strand***

DPD810S	Dryland Permaculture Design	None	8	15
ASS811S	Applied Statistics for Sustainable Agriculture	None	8	15

#### ***Agribusiness Management Strand***

AEA810S	Applied Econometric for Agriculture	None	8	15
APE811S	Applied Production Economics	None	8	15

### Year 1

#### Semester 2

Course Code	Course Title	Prerequisites	NQF level	NQF Credits
MAT820S	Mini-thesis	Research Methodology	8	30

***Plus TWO of the following strand compulsory courses depending on Specialisation undertaken in semester 1***

#### ***Sustainable Agriculture Strand***

SAP820S	Sustainable Animal Production Systems	None	8	15
SPP820S	Sustainable Plant Production Systems	None	8	15

#### ***Agribusiness Management Strand***

AMA821S	Agribusiness Management Analysis	None	8	15
APA821S	Agricultural Policy Analysis	None	8	15

**MASTER OF AGRIBUSINESS MANAGEMENT  
(Revised Programme)**

**09MAGB**

**NQF Level: 9**

**NQF Credits: 240**

**NQF Qualification ID: Q0482**

**Description**

The Master of Agribusiness Management by research is a postgraduate degree designed for registration at NQF Level 9. The revised Master's degree is designed to develop students' scientific research skills in various areas of agribusiness management. The programme further aims at equipping students with various methodological approaches, and develop competence in the application of qualitative, quantitative and mixed research methods through participation in research projects under the supervision of experienced staff members. The programme will provide a unique education and required knowledge to finding sustainable solutions to interdisciplinary challenges related to the management of agribusinesses. The research will be of applied nature and aimed at addressing the practical problems related to Agribusiness Management in Namibia and beyond. Such research will lead to a better understanding of the Namibian agribusiness environment, which will allow managers in agribusiness to manage the country's agricultural enterprises more effectively in terms of sustainability, with the emphasis on NDP5. Graduates will be able to make meaningful contributions to the development of new knowledge/expertise in their areas of specialisation and to the socio-economic development of the country.

**Criteria for Admission**

Candidates, who hold Bachelor of Science Honours in Agriculture or related cognate areas at NQF Level 8, or equivalent qualification, from recognised institutions, may be considered for admission into this programme. Such qualifications must include a component of supervised research.

Final selection will be based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will only become official, upon by the Higher Degrees Committee of the Namibia University of Science and Technology. These procedures will be fully explained to each prospective student during his or her personal interview.

**Articulation Arrangements**

The Master of Agribusiness Management will ordinarily provide access to further studies in the same, or a related cognate area, at Doctoral degree level, i.e. NQF Level 10.

**Mode of Delivery**

This programme will be delivered on a full-time and part-time basis, i.e. students are expected to conduct independent research complemented by block sessions between the supervisor and student in accordance with a pre-agreed research plan.

**Requirements for Qualification Award**

This qualification will be awarded to candidates credited with a minimum of 240 credits (all at NQF Level 9). The thesis will represent the entire body of work to be assessed, and must meet NUST's requirements as detailed in the rules for postgraduate studies. In addition, students should meet the administrative and financial requirements spelt out in Part 1 of the Namibia University of Science and Technology Yearbook.

**Teaching and Learning Strategies**

The Higher Degrees Committee, on the recommendation of the programme coordinator/Head of Department, will appoint appropriate supervisors and/or co-supervisor(s) for each student.

Students will be required to work independently most of the time with minor intervention. Guidance and support will be provided by the supervisor through regular contact with the student (face-to-face communication) as well as using relevant information and communication technologies. Academic support will essentially be provided in accordance with NUST's rules and procedures for postgraduate studies leading to the award of research degrees. Students will also be required to provide regular progress reports for assessment.

**Assessment Strategies**

In addition to the general requirements of Senate, candidates are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis will be assessed by examiners, approved by Senate, upon recommendation of the Higher Degrees Committee. In addition, students will undergo an oral examination (i.e. viva voce) before submitting the final thesis in accordance with the rules for postgraduate studies at NUST.

**Quality Assurance Requirements**

The examination will be done by qualified academics and practitioners with Doctoral degrees, or in special exceptions by Masters' holders with good publication records. The examiners must be recognised and respected individuals in the field with experience in assessment of postgraduate scientific reports or theses. Continuous monitoring of progress of students will be according to the methods of learning described in the syllabus outlined below.

### **Transition Arrangements**

There are significant changes to this programme, thus the Master of Agribusiness Management by coursework and Thesis (old curriculum) will be phased out systematically until 2023 with no disruption to existing students' learning progression. The last intake for the Master of Agribusiness Management by coursework and Thesis (old curriculum) was in 2019. The Master of Agribusiness Management by research will take effect from January 2020. Students who are registered on the out-phasing programme (old curriculum), and who fail more than 50% of the courses at the end of 2019, will be given an option to transition to the revised curriculum. These students, however, will lose credits.

## **CURRICULUM**

### **Year 1**

#### **Semester 1-4**

#### **Course Code**

MAT921P

MAT921S

MAT922S

MAT923S

MAT924S

MAT927X

**MASTER OF AGRIBUSINESS MANAGEMENT  
(Old Curriculum – Phasing out until 2023)**

**09MAGM**

**NQF Level: 9**

**NQF Credits: 240**

**NQF Qualification ID: Q0482**

**Description**

The Master of Agribusiness Management is a postgraduate specialisation degree, designed for registration at NQF Level 9. This programme builds on the outcomes of the Bachelor of Agriculture Honours, and aims at addressing the need for high level specialists and managers who can provide practical solutions to agribusiness management related problems in Namibia and beyond, support government projects in agribusiness management and farmers embarking on commercial enterprises in new areas, and improve agricultural product quantity, quality, and access to markets. The theory provided through the coursework component will enable graduates to demonstrate mastery of theoretically sophisticated subject-matter of the management of agribusiness enterprises as individuals and as part of a team. Furthermore, the Master of Agribusiness Management is designed to enhance Namibia’s capacity for applied research in the area of agribusiness management that will in turn lead to value-added economic activities.

Overall, the Master of Agribusiness Management aims at:

- Producing agribusiness experts with an appreciation for technological advancement and who are able to provide leadership in the workplace.
- Capacitating students to contribute to the creation of employment and improve food production.
- Providing students with skills to add value to primary products and services and effectively market these products either locally or internationally.
- Cultivating an applied industry focused mindset in students who will, through carrying out industry designed research, resolve specific and non-routine problems in agricultural systems.
- Providing students with advanced competencies in conducting independent research.

**Admission Requirements**

Candidates will be considered for admission to the Master of Agribusiness Management if they have a Bachelor of Agriculture Honours from the Namibia University of Science and Technology, or an equivalent qualification at NQF Level 8 from a recognised institution that includes a component of supervised research. Applicants need to provide evidence of having completed a course in Econometrics at NQF Level 8.

Holders of the University’s Bachelor of Technology (Agricultural Management) with a minimum overall average of 60% will be admitted to the Master of Agribusiness Management programme, but will be required to complete the following courses at the Bachelor of Agriculture Honours level.

- Natural Resource Economics
- Agricultural Policies
- Agricultural Trade Analysis
- Applied Econometrics for Agriculture

Applicants from other recognised institutions must submit academic records for all courses in their highest qualifications, as well as contact details of two referees. The latter also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications.

The final selection of candidates may be based on a personal interview with a departmental selection panel and/or a test.

**Articulation Arrangements**

Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

Graduates of this programme will ordinarily be able to pursue further studies at NQF level 10 in Agribusiness Management, or a similar/related cognate area of learning.

**CURRICULUM**

**Year 1**

**Semester 1**

Course Code	Course Title	Prerequisite	NQF Level	NQF Credit
ARM910S	Advanced Research Methodology	None	9	20
AMA910S	Agribusiness Management Analysis	None	9	20
PDE910S	Production Economics	None	9	20

**Semester 2**

AAM920S	Advanced Agricultural Marketing and Price Analysis	None	9	20
ASM920S	Agricultural Supply Chain Management	None	9	20
PDP920S	Project Design, Planning and Management	None	9	20

**Year 2**

**Semesters 3 and 4**

MAT920S	Thesis	Advanced Research	9	120
		Methodology		

**Special Arrangements**

**Teaching and Learning Strategies**

Teaching and Learning Strategies are described in the syllabus outlines for the different courses. The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. This facilitation will make use of, inter alia, practical projects, tutorials, case studies, problem based learning and individual and/or group work. The progress of learning embedded in such tasks will be monitored, recorded and assessed. Some courses will have contact hours which will occur during intensive workshops (referred hereto as block sessions). These blocks will be offered 2 - 3 times over a semester, where learning will occur continuously through assignments between the blocks; preparation for tests administered during the blocks; hands-on experiences; group work and oral presentations during each block. These blocks need not occur on-campus and could serve as "excursions" for those courses requiring hands-on experience on farms.

**Assessment Strategies**

In addition to the general requirements of Senate, the assessment of the student's academic performance will be on the basis of employing assessment methodologies and strategies appropriate to the learning outcomes of the applicable course. All the courses will be assessed using diversified Continuous Assessment (CA) only in accordance with the University's general rules. To obtain a final pass mark a student must attain at least 50% in each course. Some courses will use open book tests which basically allow students access to their study materials at the discretion of the examiner. The assessments will be designed to ensure that the learning outcomes of a particular course are attained. The thesis will be assessed in accordance with the University's rules on postgraduate studies.

**Transition Arrangements**

This programme does not replace any existing programme or qualification and transition arrangements are, therefore, not applicable.

## SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

### DEPARTMENT OF NATURAL RESOURCE SCIENCES

Bachelor of Natural Resource Management Honours (Phasing in 2021)	08BNRH
Master of Natural Resource Management	09MNRT
Doctor of Philosophy in Natural Resource Sciences (Phasing out 2020)	10DNRS

### BACHELOR OF NATURAL RESOURCE MANAGEMENT HONOURS (NATURE CONSERVATION) (Revised - Phasing in 2021)

08BNRH

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q0263

#### Description

The Bachelor of Natural Resource Management Honours is a postgraduate specialization degree that aims at consolidating and deepening the knowledge and skills of students in the main cognate area of learning, as well as developing their capacity to conduct supervised research in the field of Natural Resources Management. The programme is designed to develop student's capacity to conduct research of an applied nature to assist with effective management of natural resources. Further, it will equip the students with the requisite tools, knowledge, methods and a deepened theoretical grounding in Natural Resource Management. Students will be taught to independently identify, formulate, and solve complex problems in various aspects and their relevant components.

#### Exit Programme Outcomes

On completion of the Bachelor of Natural Resource Management Honours, graduates will be able to:

- Demonstrate deepened, comprehensive and systematic expertise in Natural Resource Management;
- Apply the principles, theories and methodologies applicable to Natural Resource Management in solving problems of a diverse nature and as a basis for conducting applied research;
- Evaluate the different components of the biophysical environment in the broader context of Natural Resource Management;
- Plan and conduct supervised research of an applied nature in any of the functional areas of Natural Resource Management;
- Present and communicate academic or professional work effectively, catering for a wide range of audiences and/or in diverse genres;
- Demonstrate the necessary skills required to effectively plan and help manage natural resources; and
- Demonstrate leadership qualities in terms of problem-solving, critical thinking, innovation, independent evaluation, responsibility, accountability, and ethical global and national citizenship.

#### Admission Requirements

Candidates may be admitted to this programme if they have a Bachelor degree in Natural Resource Management, or an equivalent qualification at NQF Level 7, from a recognised institution, worth at least 360 credits. All admissions are at the discretion of the Department and exceptions may be approved by the Department.

Potential candidates with a three-year National Diploma in Nature Conservation or equivalent course will only be considered National Diploma holders who have been working in the industry may be exempted from the course(s) mentioned above, provided that they show competence in the field, based on a portfolio of relevant work undertaken, at an acceptable standard.

Applicants may be required to attend a pre-selection interview and/or test at the discretion of the Department. Applicants from other institutions must submit academic records for all courses in their previous qualifications, as well as contact details of three referees. The latter also applies to applicants who have been working in the field of Natural Resource Management but have other qualifications, which are not equivalent to the NRM qualifications.

#### Articulation Arrangements

The transfer of credits will be dealt with according to NUST's regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

Graduates of this programme will be able to pursue further studies in Natural Resource Management or a similar/related cognate area of learning, at NQF Level 9.

#### Mode of Delivery

The programme will be offered both on full-time and part-time mode in accordance with NUST's rules and regulations.

#### Requirements for Qualification Award

The Bachelor of Natural Resource Management Honours will be awarded to students credited with 120 NQF credits at NQF Level 8. Students are required to do three compulsory courses (worth 45 credits), three elective courses (worth 45 credits), and a Mini-Thesis (worth 30 credits). Students can also take additional electives for non-credit purposes should they wish to do so. In addition, students should meet the administrative and financial requirements in accordance with the Yearbook Part 1 of the NUST Yearbook, General Information and Regulations.



## CURRICULUM

### Year 1:

#### Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
RMC811S	Research Methods for Natural Sciences	None	8	15
GRS811S	GIS and Remote Sensing in Practice	None	8	15
CSB810S	Conservation Biology	None	8	15

**Plus ONE of the following elective courses**

IWW821S	Integrated Water and Wetland Management	None	8	15
RGE811S	Rangeland Ecology	None	8	15

### Year 1:

#### Semester 2

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
MNT820S	Mini-Thesis	Research Methods for Natural Sciences	8	30

**Plus TWO of the following elective courses depending on demand**

CRM820S	Community Resource Management	None	8	15
ELR821S	Ecological Restoration	None	8	15
INM821S	Integrated Environmental Management	None	8	15
FMG821S	Forest Management	None	8	15
WLM821S	Wildlife Management	None	8	15

### Special Arrangements Teaching, Learning Strategies

Teaching and Learning Strategies are described in the syllabus outlines for the different courses. In broad terms, the Teaching and Learning Strategies for this programme are designed not only to equip students with the necessary expertise and knowledge regarding natural resource management but also to enable them to present and communicate academic or professional work effectively. These strategies will make use of a variety of appropriate methods that will encourage the use of the latest, innovative technologies available, such as making use of digital library resources, apt scientific internet resources, the use of cell phone Apps and aerial and photographic imagery for natural resource monitoring, to transfer skills appropriate to each course.

The Teaching and Learning Strategies will enable students to practise the necessary skills/competencies required at this level, e.g. conducting research, efficient and effective information retrieval, effective planning, problem-solving, critical thinking, innovation and independent process evaluation. Regular field trips and practicals will be undertaken to teach students teamwork and organisational skills, and also to allow them to practise technical skills and to collect, analyse, evaluate and present data. The compulsory Mini-Thesis is aimed at developing students' research capacity by planning and applying a coherent and critical understanding of the principles, theories and methodologies applicable to Natural Resource Management.

### Assessment Strategies

Students will be assessed through continuous and summative assessment, as well as final end-of-semester examinations. These assessments will focus on the achievement of qualification outcomes and take the form of problem-solving exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, practical projects and questioning (tests and/or examinations). In accordance with NUST's policy on diversified continuous assessment, each non-examination course will have a minimum of four assessment events. Courses that are assessed using a combination of continuous assessment and a final examination must have at least two assessments prior to the examination. The Mini-Thesis will be assessed in accordance with the NUST rules for studies at postgraduate level. The mini-thesis as well as written scientific assignments in all courses will be subjected to Turnitin to discourage plagiarism.

In addition to the general requirements of the Senate, the assessment of the student's academic performance will be according to the syllabus description for the different courses. A semester mark of 40% is required for admission to the examinations and all courses require a final mark of at least 50% to pass. A ratio of 60:40 Continuous assessments: Formal examination will apply to all courses except the Mini-Thesis.

In addition to the general regulations of Senate, in order to pass, a student will obtain an overall final mark of at least 50% per course with a sub-minimum of 40% for the examination, where applicable. The proportion of marks contributed by each course to the overall average, will be in relation to the proportion of credits carried by each course. The mini-thesis as well as written assignments in all courses will be subjected to Turnitin to discourage plagiarism.

### Programme Aims/Purpose

The Master of Natural Resource Management is a research-based postgraduate degree designed for registration at NQF Level 9. The revised Master's degree is designed to develop students' scientific research skills in various areas of management of natural resources for the purpose of sustainable use. The programme further aims at equipping students with various methodological approaches, and develop competence in the application of qualitative, quantitative and mixed research methods through participation in research projects under the supervision of experienced staff members. The programme will provide a unique education and required knowledge to finding sustainable solutions for interdisciplinary challenges related to the management of natural resources. The research to be conducted will be applied in addressing practical problems related to Natural Resource Management in Namibia and beyond. The unique habitats and aridity of the Namibian environment also makes it necessary for specialised training and research informed and guided by local experts. This will lead to a better understanding of the Namibian environment and its biodiversity, which will allow managers in Natural Resource to manage the country's natural resources more effectively in terms of sustainable utilisation, with the emphasis on conservation as highlighted in NDP5. Graduates will be able to make meaningful contributions to the development of new knowledge/expertise in their areas of specialisation and to the socio-economic development of the country.

### Criteria for Admission

Candidates who hold qualifications in Natural Resource Management or related cognate areas at NQF Level 8, or equivalent, from recognised institutions, may be considered for admission to this programme. Such qualifications must include a component of research methodology and supervised research.

Final selection will be based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will only become official when the proposal is approved by the Higher Degrees Committee of the Namibia University of Science and Technology. These procedures will be fully explained to each prospective student during his or her personal interview.

### Articulation Arrangements

The Master of Natural Resource Management will ordinarily provide access to further studies in the same, or a related cognate area, at Doctoral degree level, i.e. NQF Level 10.

### Mode of Delivery

This qualification will be delivered on a full-time and part-time basis, i.e. students are expected to conduct independent research complemented by contact sessions between the supervisor and student in accordance with a pre-agreed research plan.

### Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 240 credits (all at NQF Level 9). The thesis will represent the entire body of work to be assessed and must meet NUST's requirements as detailed in the rules for postgraduate studies. In addition, students should meet the administrative and financial requirements spelt out in Part 1 of the Namibia University of Science and Technology Yearbook.

Full-time students have a minimum of two years and a maximum period of four years to complete the programme. An appropriate extension can be arranged for part-time students. Students have to register each semester for this programme.

### Teaching and Learning Strategies

The Higher Degrees Committee, on the recommendation of the programme coordinator/Head of Department, will appoint appropriate supervisors and/or co-supervisor(s) for each student.

Students will be required to work independently most of the time with minor intervention. Guidance and support will be provided by the supervisor through regular contact with the student (face-to-face communication) as well as through the use of relevant information and communication technologies. Academic support will essentially be provided in accordance with NUST's rules and procedures for postgraduate studies leading to the award of research degrees. Students will also be required to provide regular progress reports for assessment.

### Assessment Strategies

In addition to the general requirements of Senate, candidates are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis will be assessed by examiners, approved by Senate, upon recommendation of the Higher Degrees Committee. In addition, students will undergo an oral examination (i.e. viva voce) before submitting the final thesis in accordance with the rules for postgraduate studies at NUST.

### Quality Assurance Arrangements

The examination will be done by qualified academics and practitioners with Doctoral degrees, or in special exceptions by Masters' holders with good publication records. The examiners must be recognised and respected individuals in the field with experience in assessment of postgraduate scientific reports or theses.

### Transition arrangements

This is a Master by research only; hence transition arrangements are not applicable.

**CURRICULUM**

<b>Course Code</b>	<b>Course Title</b>	<b>Prerequisites</b>	<b>NQF Level</b>	<b>NQF Credits</b>
<b>Semester 1-4</b>				
MNT911S	Thesis	None	9	240
MNT912S	Thesis	None		
MNT913S	Thesis	None		
MNT914S	Thesis	None		
MNT915X	Thesis	None		

## DOCTOR OF PHILOSOPHY IN NATURAL RESOURCE SCIENCES

10DNRS

NQF Level: 10

NQF Credits: 360

NQF Qualification ID: Q0973

### Description

The Doctor of Philosophy (PhD) in Natural Resource Sciences is aimed at equipping students with deepened knowledge and research skills in their specialisation area by creating new knowledge that will bring solutions and implement new ideas to the Natural Resource Sciences. The programme will enable students to develop a thorough understanding of relevant methodological approaches and develop general competence in and knowledge of one or more of the subfields in Natural Resource Sciences. In addition, through independent research using advanced methods and techniques, the student will contribute new knowledge on the topic of interest and/or contribute to the solution of sophisticated application problems in the field of study.

The development of research competence has prime priority in the context of this PhD programme. Thus, the research output, in the form of a thesis, must contribute meaningfully and substantially to the existing body of knowledge in the field/area of specialisation through comprehension, application, analysis, synthesis and evaluation of existing knowledge. The qualification aims at producing high-calibre scientists in various specialisation areas related to Agriculture and Natural Resources.

### Criteria for Admission

Applicants who hold qualifications from recognised institutions at NQF level 9 in Natural Resource Sciences related subjects and/or related cognitive areas can be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at Master's degree level. In addition, applicants will be requested to attend a pre-selection interview at the discretion of the Faculty of Natural Resources and Spatial Sciences (FNRS). The applicants may be requested to make up specific deficiencies at the discretion of the supervisor and the respective Head of Departments. Apart from the applicant's qualification, the admission of an applicant will also depend on the availability of a qualified and competent supervisor for the planned topic and the available staff resources of the affected department(s).

*Higher degrees Committee (HDC)* will approve the final selection and admission of the selected candidates in accordance with the regulations as specified by *Rules for Postgraduate Studies* of the NUST Yearbook. First-time registration may only occur upon the submission and approval of a Concept Note by the HDC. The Concept Note is prepared under the guidance of the student's designated supervisor. Continuation of admission to the programme is conditional on the production and approval of a comprehensive research proposal, which needs to be submitted within the first two semesters for full-time students and within the first three semesters for part-time students. These procedures will be fully explained to each prospective student during his or her personal interview. Additional information is given in the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*.

### Mode of Delivery

The qualification will be delivered on a full-time or part-time basis in accordance with the *Rules for Postgraduate Studies*. Students may interchange between full and part-time according to the speed of their progress. The whole programme is comprised of semester courses, (six for the full-time mode and 12 for the part-time mode) each of which needs to be registered for in succession. Students may also opt to skip one semester, provided that the supervisor is informed and provides no service to the student for that semester. If the student skips more than one semester, then a form for resumption of studies will need to be submitted upon re-registration within three years of first registration. If this period is exceeded without registration and the former student wishes to continue with the PhD programme, then a new application would need to be submitted. Students who exceed the minimum registration period for the relevant mode of study will be registered for the Thesis Extension course in the subsequent semesters, until such time as they complete or reach the maximum study period. Additional information is given in the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*.

### Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 360 credits (all at NQF Level 10). The thesis will represent the entire body of work to be assessed and must meet the NUST requirements as detailed in the *Rules for Postgraduate Studies*. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

Students who register for the full-time option every semester would be expected to complete the programme within six semesters, but may be permitted to extend to a maximum of 10 semesters while registering and paying for additional semester courses. Students who register for the part-time option every semester would be expected to complete the programme within 12 semesters, but may be permitted to extend to a maximum of 16 semesters while registering and paying for additional semester courses.

Students who opt for a combination of full and part-time registrations, will be permitted extra semesters in proportion to the number of semesters they registered under each option.

### Teaching and Learning Strategies

The Higher Degrees Committee will appoint supervisor(s) and / or co-supervisor(s) for each student. It is however expected that the prospective student will study the research interests and activities of the Faculty's academic staff as these are described on their biographical webpages to determine whether there are qualified people whose current activities or research programmes align with his/her field and topic of interest. The prospective student should then contact the Programme Coordinator who will facilitate a discussion with specific staff member/s with the aim of finding a suitable supervisor and a workable research topic that may be developed into a Concept Note. Students will be required to work independently in accordance with a pre-agreed research plan that has to be submitted as part of the Full Research Proposal. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant topics are discussed.

Depending on the subject matter background and the qualification and experience of the PhD student in general and on the proposed topic in particular, the supervisor may prescribe the attendance of one or more courses to address any identified technical, methodical and subject matter deficiencies of the student. Such course work may be done within existing NUST programmes or at another recognised institution in Namibia or abroad. The course fees for such courses are covered by the student fees for the PhD programme, if courses within the framework of existing NUST programmes are being used for this purpose.

Academic support will be provided in accordance with the NUST *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*, the *Rules for Postgraduate Studies* of Part 1 of the NUST Yearbook and other rules and procedures for postgraduate studies leading to the award of research degrees.

### Assessment Strategies

Students are required to submit a research proposal for approval by Higher Degrees Committee (HDC), in accordance with the details as specified in the *Rules for Postgraduate Studies* and the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*.

A thesis has to be submitted for evaluation at the end of the study period. The thesis should be a record of the independent investigation of the student's own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their chosen field of study and the University's tradition of high academic standards. The thesis will be assessed in accordance with the *Rules for Postgraduate Studies* and the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*.

Students will present and defend their thesis before an appropriately constituted panel in accordance with the *Rules for Postgraduate Studies*. The thesis will be returned to the students for correction before final binding and archiving. The doctoral certificate will only be released after correction of the thesis.

Any other special arrangements will be done in accordance with the *Rules for Postgraduate Studies* and the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*.

### Quality Assurance Arrangements

Qualified academics and practitioners with Doctoral Degrees will assess the thesis. The examiners will be knowledgeable and respected individuals in the respective fields of research that has been selected as research topic and should have experience in assessment of postgraduate scientific theses. The examiners will be appointed by the Institutional HDC in accordance with the regulations specified in the *Rules for Postgraduate Studies* of Part 1 of the NUST Yearbook and the *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*.

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
NRS101S	Thesis – Semester 1	None	10	360
NRS102S	Thesis – Semester 2	None		
NRS103S	Thesis – Semester 3	None		
NRS104S	Thesis – Semester 4	None		
NRS105S	Thesis – Semester 5	None		
NRS106S	Thesis – Semester 6	None		

### CURRICULUM for Part-time mode

Course Code	Course Title	Prerequisite
NRS101P	Thesis – Part Semester 1	None
NRS102P	Thesis – Part Semester 2	None
NRS103P	Thesis – Part Semester 3	None
NRS104P	Thesis – Part Semester 4	None
NRS105P	Thesis – Part Semester 5	None
NRS106P	Thesis – Part Semester 6	None
NRS107P	Thesis – Part Semester 7	None
NRS108P	Thesis – Part Semester 8	None
NRS109P	Thesis – Part Semester 9	None
NRS110P	Thesis – Part Semester 10	None
NRS111P	Thesis – Part Semester 11	None
NRS112P	Thesis – Part Semester 12	None
NRS113X	Thesis - Part Extension	