

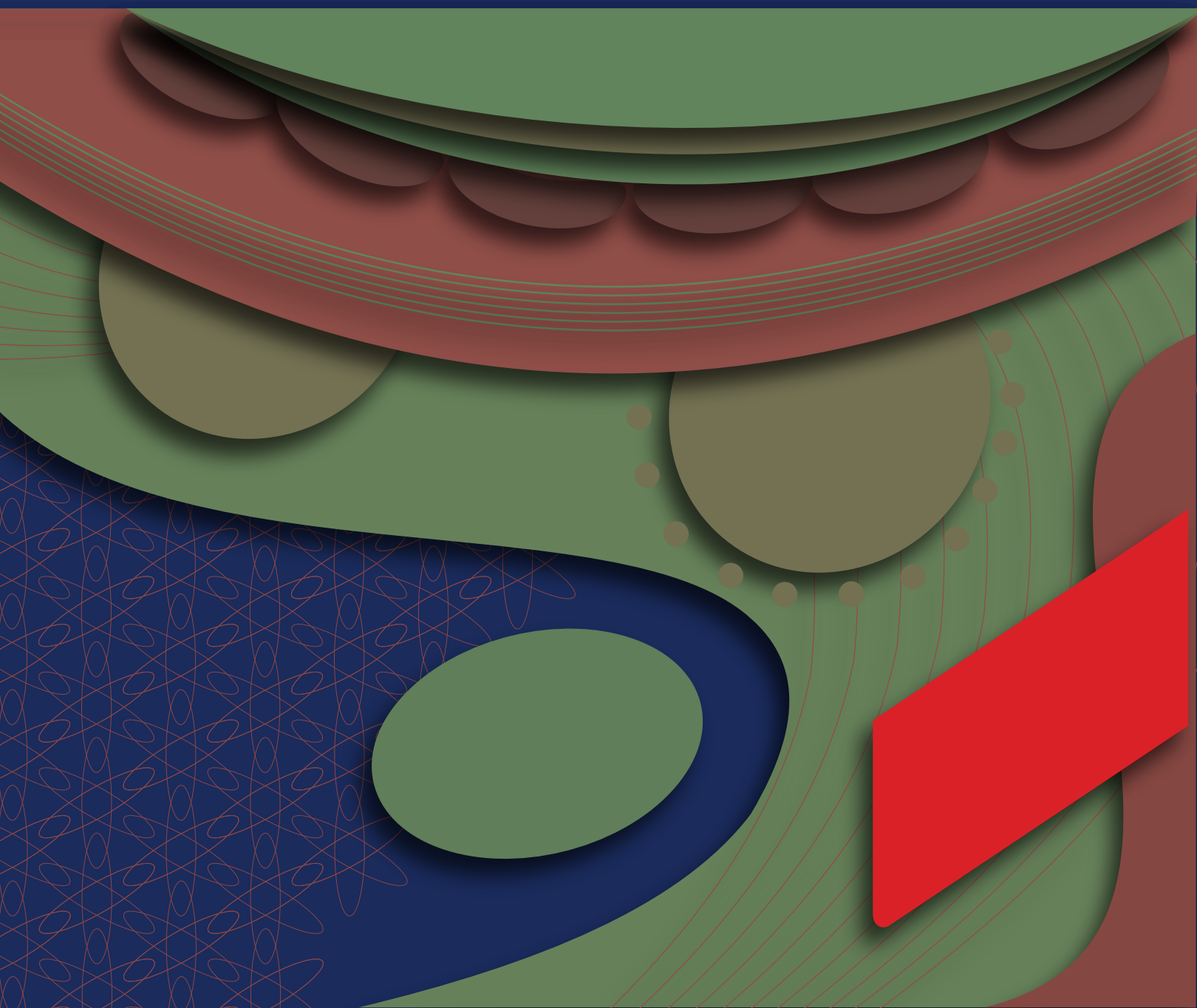


NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Office of the Registrar

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

PROSPECTUS 2024





NAMIBIA
UNIVERSITY
OF SCIENCE
AND TECHNOLOGY

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Prospectus 2024

*(Note: The final interpretation of all regulations in this Prospectus for the **Faculty of Engineering and the Built Environment** shall be vested in Council)*

NOTE

The Prospectus for the **Faculty of Engineering and the Built Environment** is valid for 2024 only. Curricula and Syllabi may be amended for 2025. It is obtainable free of charge from:

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Although the information contained in this Prospectus has been compiled as accurately as possible, Council and Senate accept no responsibility for any errors and omissions, which may occur. The University retains the right to amend regulations or conditions without prior notice.

Due to the rapidly changing external environment that many programmes operate in, and the University's desire to remain constantly relevant in its offerings, some programmes may be significantly amended after publication of this Prospectus. Please consult our website for the latest versions of our curricula, syllabi and academic regulations.

The fact that particulars of a specific programme, field of study, subject, or course have been included in this Prospectus does not necessarily mean that such a programme, field of study, subject, or course will be offered in the academic year 2024.

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 : **Mr Paulus Nashidengo**, ND: Land Surveying (NUST), C. Geo-IT (NUST)

EVALUATION SCALES

English Modules

Grade 12		Namibia University of Science and Technology
Level	Result	English Module to do
Higher Level First Language	1,2,3 and 4	EAP511S
Ordinary level First Language	A or B	EAP511S
Higher level Second Language	1,2 or 3	EAP511S
Ordinary level Second Language	A	EPR511S
Ordinary level Second Language	B	EPR511S
Higher level Second Language	4	EPR511S
Ordinary level First/Second Language	C or D or E	PLU411S

Evaluation Scale 1(Phased in 2020)

NSSC Namibia Senior Secondary Certificate			GCE General Certificate of Education			IGCSE International General Certificate of Secondary Education		NEW (2021 Intake)		N3 (%)	InSTEM (%)
								NSSCO Namibia Senior Secondary Certificate Ordinary (Grade 10-11)	NSSCAS Namibia Secondary School Certificate Advanced Subsidiary		
A P S	Higher Level (NSSCH)	Ordinary Level (NSSCO)	A LEVEL	AS LEVEL	O LEVEL	HIGCSE	IGCSE	NSSCO	NSSCAS		
1 2			A								
1 1			B	A					a		
1 0	1		C	B		1			b		80+
9	2		D	C		2			c		70-79
8	3	A*	E	D	A*	3	A*	A*	d	80+	60-69
7	4	A		E	A	4	A	A	e	70-79	50-59
6		B			B		B	B		60-69	
5		C			C		C	C		50-59	
4		D			D		D	D		40-49	
3		E			E		E	E			
2		F			F		F	F			
1		G						G			

Evaluation Scale 2

IB International Baccalaureate			NSC (RSA) National Senior Certificate	Senior Certificate Cape Education		Angola and Congo			Zimbabwe/Zambia Benchmarked with UNAM	
APS	HL Higher Level	SL Standard Level	NSC	HG Higher Grade	SG Standard Grade	16-20 A 13-15 B 10-12 C 1-9 F	%		A-LEVEL	O-LEVEL
12	7								A	
11	6		7						B	
10	5	7	6	A					C	
9	4	6	5	B					D	1 (75-100)
8	3	5	4	C	A	A (1&2)	75-100	18-20	E	2 (70-74)
7	2	4	3	D	B	B (1&3)	70-74	16-17		3 (65-69)
6	1	3	2	E	C	C (5&6)	60-69	14-15		4 (60-64)
5		2	1		D	D (7)	50-59	12-13		5 (55-59)
4		1			E	E J(8)	45-49	10-11		6 (45-54)
3					F	F	40-44	08-09		7 (35-44)
2										

Evaluation Scale 3

Malawi/Botswana			IEB Independent Examination Board	Kenya/Tanzania
APS	Botswana	Malawi		<i>Based on USA Scale</i>
12				
11			7	
10			6	A
9			5	B
8			4	C
7	A (80-100)	A	3	D
6	B (70-79.99)	A-/B+	2	E
5	C (60-69.99)	C		F
4	D (50-59.99)	D		
3	E (40-49.99) FAIL	E		
2	F (0.00-39.99) FAIL	F		

UNDERGRADUATE PROGRAMMES



UNDERGRADUATE PROGRAMMES

**INTRODUCTION TO SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (InSTEM)
(Bridging Programme)
(Revised Curriculum – Phasing in 2023)**

**CODE: 39
04SMET**

Description

The Introduction to Science, Technology, Engineering and Mathematics (InSTEM) bridging programme targets students who do not meet the admission requirements of programmes in the Science, Technology, Engineering and Mathematics (STEM) Faculties at the Namibia University of Science and Technology, NUST. The programme is designed to strengthen the competencies of students in the basic sciences, which include Physics, Chemistry, as well as Mathematics and English communication. Students who successfully meet the pass requirements of the InSTEM bridging programme, will be eligible for admission to undergraduate programmes in the STEM Faculties at NUST, provided they meet the specific requirements of relevant Faculties.

Criteria for Admission

In addition to meeting the NUST General Admission Requirements as spelt out in the general rules, candidates must have at least 22 points on the Admission Point Scale, counting up to five subjects with a minimum D symbol in Mathematics and a minimum D symbol in any two of the three subjects: Physics, Chemistry and Biology and minimum E symbol in English Language at Grade 11/ NSSC Ordinary Level.

Candidates with Mathematics and Physics or Chemistry at Grade 11 / NSSC Ordinary Level will be admitted into the programme on condition that such candidate enrolled for the missing subject (Physics or Chemistry) at a special delivery offered by InSTEM staff that will run parallel with the InSTEM programme. Modalities will be put in place by the Office of the Registrar, NUST, through the InSTEM Coordinator on how these students can register with the Ministry of Higher Education to write the missing Grade 11/ NSSC Ordinary level subject.

Special requirements

Students who wish to apply to the Department of Mathematics and Statistics must pass Introduction to Mathematics A&B. Students who wish to apply to the Department of Land and Spatial Sciences must pass Introduction to Mathematics B and Introduction to Physics B.

Applicants with an interest in further studies in Engineering with N3 OR N4 qualifications, will be required to have passed at least four N3 subjects with at least 50% each in Mathematics and a Physics equivalent subject OR should have passed at least four N4 subjects with at least 40% each in Mathematics and a Physics equivalent subject.

Applicants who hold equivalent qualifications might be considered for admission.

The following exemptions will be granted to applicants that gain admission to the InSTEM bridging programme (minimum symbols are indicated):

InSTEM Exemption Arrangements

InSTEM Course	Grade 11/12 Subject	Minimum Symbol Required
Introduction to Mathematics A and B	Mathematics	AS Level d
Introduction to Physics A and B	Physics	AS Level d
Introduction to Chemistry A and B	Chemistry	AS Level d
Computer User Skills	Computer Studies	NSSCO B AS Level d
Principles of English Language Use	English as a Second Language English as a First Language	AS Level d NSSCO B AS Level e NSSCO D

Mode of Delivery

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

Articulation Arrangements

Students who successfully complete the InSTEM bridging programme will have the opportunity to apply for admission to any of the STEM undergraduate programmes within the Namibia University of Science and Technology, provided they meet the admission requirements of the said programme.

Students will be allowed to spend two years to complete all required courses in the programme.

Transition Arrangements

The revised InSTEM programme will be implemented in January 2023. Students, who have not completed all the courses in the InSTEM programme up to November 2022, will need to transition to the revised InSTEM programme and will be granted credits on a course-by-course basis in accordance with information in the table below:

InSTEM Transition Arrangements

InSTEM (2013 version)		InSTEM (Revised courses)	
Course code	Course Title	Course code	Course Title
ITM401S	Introduction to Mathematics A	IMA411S	Introduction to Mathematics A
ITM402S	Introduction to Mathematics B	IMB412S	Introduction to Mathematics B
PLU411S	Principles of English Language Use	PLU411S	Principles of English Language Use
EPR511S	English in Practice	EPR511S	English in Practice
CUS411S	Computer User Skills	CUS411S	Computer User Skills
ESK402S	Engineering Skills	ESS502S	Engineering Skills and Safety
ICH401S	Introduction to Chemistry A	ICA411S	Introduction to Chemistry A
ICH402S	Introduction to Chemistry B	ICB412S	Introduction to Chemistry B
IPH401S	Introduction to Physics A	IPA411S	Introduction to Physics A
IPH402S	Introduction to Physics B	IPB412S	Introduction to Physics B

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Introduction to Mathematics A	IMA411S	None	4	14
Introduction to Physics A	IPA411S	None	4	16

Plus ANY of the Elective Courses

Introduction to Chemistry A	ICA411S	None	4	16
Principles of English Language Use	PLU411S	None	4	NCB
Computer User Skills	CUS411S	None	4	10
Introduction to Biology A	IBA411S	None	4	12

Semester 2

Introduction to Mathematics B	IMB412S	Introduction to Mathematics A	4	14
Introduction to Physics B	IPB412S	Introduction to Physics A	4	16

Plus ANY of the Elective Courses

Introduction to Chemistry B	ICB412S	None	4	16
Principles of English Language Use	PLU411S	None	4	NCB
Engineering Skills and Safety	ESS502S	None	4	12
Introduction to Biology B	IBB412S	None	4	12

Requirements for Qualification Award

There will be no formal award, but to complete the InSTEM programme successfully students must have passed 10% of the compulsory and elective courses that they register for. Students will be required to register for a minimum of three (3) courses per semester. Students may register for a maximum of (5) courses per semester.

SCHOOL OF ENGINEERING

GENERAL PROVISIONS AND RULES

(Applicable to Undergraduate Programmes in the School of Engineering)

ENGINEERING ADMISSION REQUIREMENTS

Admission Requirements for Bachelor of Technology Programme

1. Candidates with a grade 12 Certificate with at least 5 subjects graded 4 on the NSSC Higher Level or a "D" on the NSSC Ordinary level. A minimum NSSC Higher level 3 or NSSC Ordinary level "A" symbol must have been obtained for Mathematics and Physical Science, as well as gaining Entry into Principles of English Language Use (See English Modules Table). The candidate must also score 30 points on the Engineering Evaluation Scale counting up to five subjects that must include Mathematics, Physical Science and English. If a candidate did not do Physical Science, but a "Physics equivalent" subject, the Registrar may, upon recommendation of the HoD and Dean, approve registration of the candidate.
OR
2. Pass at least 4 N5/N6 subject, with at least 40% in each, including Mathematics and a Physics equivalent subject as well as gain entry into English for Academic Purposes.
OR
3. Candidates from other tertiary institutions that gain entry into English for Academic Purposes be assessed on an individual basis.
4. Candidates that want to enrol into the Mechanical Engineering programme MUST obtain a credit/exemption for Engineering Graphics

Note: These candidates must pass Computer User Skills

Bachelor of Technology (Fourth Year) Admission Requirements

Civil Engineering

The minimum admission requirements to the fourth year of either Bachelor of Technology Degrees in Civil Engineering are as follows:

Holders of a three-year National Diploma in Civil Engineering from either NUST or any other recognised tertiary institution will be admitted into semester seven of the revised Bachelor of Technology in Civil Engineering degree programme. In addition to semester 7 courses, holders of a three-year National Diploma in Civil Engineering from either NUST or any other recognised tertiary institutions will be required to do Engineering Mathematics 3 and Reinforced concrete Design as co-requisites. Candidates from other recognised tertiary institutions who have not completed their National Diploma, Traffic Engineering and Pavement Technology will be assessed on an individual case-by-case basis.

Mechanical Engineering

Alternative 1

For current local students: National Diploma in Mechanical Engineering (M+3) qualification and registration as a Mechanical Engineering Technician with the Engineering Council of Namibia or the equivalent regulatory body in the SADC region or internationally recognised.

OR

Alternative 2

For mature age students: A (M+3) qualification and registration as a Mechanical Engineering Technician with the Engineering Council of Namibia or the equivalent regulatory body within SADC region or internationally recognised.

OR

Alternative 3

For all other students not in the above categories: A recognised (M+3) qualification in Mechanical Engineering and a Polytechnic of Namibia/Namibia University of Science and Technology evaluation on merit. Such applicant should have at least 2 years of relevant industrial experience.

In addition, applicants are subjected to a selection process for this programme.

Electronic and Power Engineering

Alternative 1

A National Diploma in Electrical Engineering (M+3) from the Namibia University of Science and Technology.

OR

Alternative 2

An equivalent Electrical Engineering qualification recognised by the Namibia University of Science and Technology. These candidates must also be able to register as a Technician-in-Training with the Engineering Council of Namibia or an equivalent international body.

A candidate must have entry to English for Academic Purposes before he/she will be allowed to continue with any of the S1 or higher-level course. See English Modules Table.

Proficiency Tests

Proficiency tests in Mathematics, Physical Science, Computer skills and a placement test in English Communication/English for Academic Purposes will be written at the Namibia University of Science and Technology at a predetermined date. The Mathematics and Science tests will cover the NSSC (Extended) Syllabus.

Engineering Assessment Criteria

Diversified Continuous Evaluation

Final Assessment

Students build a semester mark through tests and assignments and write in most cases a final assessment covering the whole course content at the end of such a course.

The final course mark will consist of 50% of the end of semester examination course mark and 50% of its semester mark. To pass a course, a candidate must have a final mark of 50% in that course.

Diversified Continuous Evaluation

Students build a final mark through projects, examinations and assignments during the semester. These aspects are set out in the course outlines of the particular courses.

General Engineering Progression Requirements

Subject to the provisions of the progression rules that follow for each programme a candidate who completes 50% or less of the courses required in a year in a programme must re-apply for entry to the programme. A candidate can complete a course either by receiving credit for the courses or by passing the course.

Diploma and B.Tech Degree Minimum Requirements

Electronic, Mechanical and Power Engineering

A Diploma will only be issued to a candidate after the successful completion of all the courses stated in the S1, S2, P1, P2, S3 and S4 part of the curricula.

A Bachelor of Technology Degree will only be issued to a candidate after successful completion of a Diploma, and the successful completion of all courses stated in the respective Bachelor of Technology Degree curriculum.

Civil Engineering

A Diploma will be issued at an exit level after completing all courses up to and including Semester 6 of the revised Bachelor of Technology Degree Curriculum

A Bachelor of Technology Degree will only be issued to a candidate after successfully completing all courses stated in the respective four year Bachelor of Technology Degree Curriculum.

EXCEPTION AND PROGRESSION RULES

A. BACHELOR OF TECHNOLOGY PROGRESSION RULES

1. "Subject to the provisions of the progression rules that follow for each programme, a student who completes 50% or less of the course required in a year in a programme must re-apply for entry in the programme".
2. A student have successfully completed all courses from Semester 5 and Semester 6 (Diploma) to proceed to the final year of study (Bachelor of Technology: semester 7 or semesters 7 and 8). A candidate from any credible and internationally recognised institution must have completed their diploma before they can be allowed to proceed to the final year of study (semester 7 or semesters 7 and 8) of the Bachelor of Technology programme.
3. A student with more than two outstanding courses is not allowed to register for any course in the final year of the Diploma programme.
4. A student may only enrol for a maximum of one full time course during Work Integrated Learning (WIL) without any preconditions.
5. Students are required to do a compulsory component of Work Integrated Learning as detailed in the Syllabi for Work Integrated Learning as a precondition for graduation.

Exception Rule

For all subsequent progression rules for all Bachelor of Technology programmes, the Registrar may, upon the HoD's recommendation in consultation with the Associate Dean, approve registration for courses if this directly supports the student's success.

B. BACHELOR OF ENGINEERING PROGRESSION RULES

General

Subject to the provisions of the progression rules that follow for each programme, a candidate who attains less than 50% of the National Qualification Framework (NQF) credits required in a year in the programme will be withdrawn from the programme on academic grounds.

Progression from first to second year

A student should have passed at least two-thirds of all required first year NQF credits before enrolling for any course. Enrolment for any course shall additionally be subject to attainment of necessary pre-requisites.

Progression from second to third year

A student should have passed at least two-thirds of all required second year NQF credits and must not have more than **two** outstanding first year courses before enrolling for any course. Enrolment for any course shall additionally be subject to attainment of necessary pre-requisites.

Progression from third to fourth year

A student should have passed at least two-third of all required third year NQF credits and must not have more than **two** outstanding second year courses before enrolling for any course. Enrolment for any course shall additionally be subject to attainment of necessary pre-requisites.

Exception Rule

For all subsequent progression rules for all Bachelor of Engineering programmes, the Registrar may, upon the HoD's recommendation in consultation with the Associate Dean, approve registration for courses if this directly supports the student's success.

C. Promotion regulations: Continuous and Diversified Assessment without a final examination

- C.1 Courses that are assessment by continuous assessment only with no final examination, will present a minimum of six (6) assessment opportunities in a semester, the results of each of which will be utilised to calculate the final mark for the course in a ratio as published in the course outline for each such course. The ratio is determined by the principle course lecturer in liaison with the head of the department in which the course is resident.

The assessments may include examinations, laboratory practicals in conjunction with laboratory reports and associated tests, computer simulation, design or other types of assignment reports and associated tests, tutorials in conjunction with assessed tutorial scripts as well as other types of suitable assessments that the principle course lecturer may from time to time identify in liaison with the head of the department in which the course resides.

The requirements of four (4) assessments excludes the final year project courses whose assessment shall be determined by the Head of Department in which the course resides in liaison with the Dean of the relevant faculty. The procedure for the calculation of the final mark for such courses shall be as described in the course outline.

Exceptions to the stated minimum number of assessments for any particular course or the general application of this rule to such course must be approved by Senate before that course is presented in the mode for which approval is sought.

- C.2 With the exception of final year project courses, at least fifty percent (50%) of the final mark of the courses described in C.1 will be made up of assessments that are conducted under controlled conditions similar to those under which institutional examinations are conducted. Such assessments are hereinafter referred to as the examination component of the course. The actual weight ($\geq 50\%$) of the examination component of the course to the final mark is as determined by the principal course lecturer in liaison with the head of the department in which the course resides and is as published in the course outline.

No student who obtains a mark of less than 50% for the examination component of the final mark passes the course. The examination component covers the entire course syllabus and each individual assessment in this component covers approximately equal portions of the syllabus.

- C.3 A student who misses one or more assessment(s) of the examination component of the course (i.e. an assessment as defined in C.2), or who fails one or more such assessment(s), will be given the opportunity to improve their results for all but one (1) such failed- or missed assessments by writing relevant sections (2) of a single supplementary examination that is set on the whole syllabus of the course and that covers the different portions of the Work on an equitable basis as determined by the principal course lecturer in liaison with the head of the department in which the course resides.

If only one such assessment is scheduled in a course, every student who fails- or misses the assessment is entitled to write the supplementary examination that will in this case consist of only one section.

The marks obtained by the student for the relevant sections of such supplementary examination will replace the results he/she obtained in the corresponding missed- or failed examination(s). The maximum final mark allocated for the examination component of the course (i.e. the aggregated mark of all assessments as defined in C.2) will be 50% except for the students registered in the InSTEM programme. These students will be allocated the calculated final mark and not the adjusted final mark after writing the supplementary exam.

The supplementary examination will be conducted during the scheduled contact hours for the course during the regular institutional examination period towards the end of the semester, in the same week as the last scheduled regular examination.

The results previously obtained by the student who misses the supplementary examination are retained in the calculation of the final mark for that student.

A student who writes only certain portions of the supplementary examination will be required to hand in the answer script and leave the examination venue after the lapse of a time period that is commensurate with the time allocated for the completion of the relevant portion(s).

- C.4 No supplementary opportunities will be granted for failed laboratory practical reports and/or failed-or missed associated tests. A student is awarded a mark of zero for a practical report that is submitted later than the deadline for submission of such report as published in the course outline.

No student who misses a laboratory practical is allowed to submit a report for the missed practical, either individually or as part of a group.

A student who misses a laboratory practical has to apply in writing to the HoD in which the course resides to obtain permission for the missed practical to be undertaken at a later stage. Depending on the unique circumstances described in the application and the additional resources required for the particular practical to be repeated and assessed, the request may either be approved or denied. If it is denied, the student is awarded a mark of zero for the missed practical.

The results of tests of student knowledge related to laboratory practicals and/or assignments are employed in the calculation of the mark for the student for the particular practical. The contribution of the marks obtained in such tests to the mark obtained for the practical as a whole is as determined by the principal course lecturer in liaison with the head of the department in which the course is resident and is as published in the course outline.

A student who misses a laboratory practical is not allowed to take the tests that pertain to the missed practical. A student fails the practical if he/she obtains a mark of less than 50% for that practical. A student fails the course if he/she obtains a fail mark in more than the total number of scheduled practicals but one. This rule is waived if only one practical is scheduled in the course.

- C.5 No supplementary opportunity will be granted for failed assignment reports and/or failed or missed associated tests. A student is awarded a mark of zero or an assignment report that is submitted later than the deadline for submission of such report as published in the course outline.

The results of tests of student knowledge related to assignments are employed in the calculation of the mark for the student for the particular assignment. The contribution of the marks obtained in such tests to the mark obtained for the assignment as a whole is as determined by the principle course lecturer in liaison with the head of the department in which the course is resident and is as published in the course outline.

The student who misses the deadline for submission of an assignment report is not allowed to take the tests that pertain to the assignment. A student fails the assignment if he/she obtains a mark of less than 50% for that assignment. A student fails the course if he/she obtains a fail mark in more than the total number of scheduled assignments but one. This rule is waived if only one assignment is scheduled in the course.

- C.6 No supplementary opportunity will be granted for missed- or failed assessed tutorials. A student who misses an assessed tutorial will be requested to hand in a tutorial script at the end of a subsequent tutorial session and the mark obtained for such tutorial script will be deemed to be the mark obtained for the missed tutorial opportunity. A student of whom the attendance rate for tutorials does not allow the required number of tutorial scripts to be handed in, will receive a mark of zero for tutorial scripts not handed in immediately after the end of the tutorial sessions in which these were requested.
- C.7 No reason needs to be provided for missed assessment opportunities except in the case of a missed laboratory practical for which the application described in C.4 is required.
- C.8 Opportunities for the improvement of marks obtained for a failed final year project report exist and are as described in paragraph AC4.4 of the Yearbook (Part 1: General Information and Regulations).

SCHOOL OF ENGINEERING

DEPARTMENT OF CIVIL, MINING AND PROCESS ENGINEERING

CODE: 97

CIVIL ENGINEERING

QUALIFICATIONS OFFERED

Bachelor of Technology in Civil Engineering: Urban (Phasing out 2024)	35BCUR
Bachelor of Technology in Civil Engineering	07BECV
Bachelor of Engineering in Civil Engineering	08BCEN

INTRODUCTION

Revised programmes of the Bachelor of Technology in Civil Engineering, and the Bachelor of Engineering in Civil engineering were implemented in 2020. The Bachelor of Technology Urban or Water will phase out entirely by 2024 while the National Diploma of Engineering in Civil (Civil and Project Management has been phased out entirely in 2019). The transition arrangement for both programmes are discussed on Pg. 22.

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING: URBAN

35BCUR

(Description (B.Tech Urban Engineering))

Studies are concentrated in technologies related to Engineering Mathematics, Engineering Physics & Chemistry, Basic Surveying practices, Soil Mechanics and Material Science overviews in Water Engineering, Structural Design and Construction of roads, buildings, bridges and dams and key elements of Project Management, On-site Logistics and Quantity Surveying, Solid and Liquid Waste Management, Urban Planning and Design and Systems Reticulation and Design. The total notional hours for this programme amount to 5870 up to the end of the B.Tech in Urban Engineering. All courses have pre-determined competence profiles clearly indicating the competence & skills training through modular lecturing, excursions, self-study, assignments, practicals and projects.

Exception Rule: *(For all subsequent progression rules)* The Registrar may, after student counselling and upon recommendation of the Course Lecturer and the HoD and the Dean, approve registration for courses if this directly supports the student’s success.

**BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING: URBAN
(Phasing out 2024)**

35BCUR

Semester 7 – B.Tech 1 (Advanced Engineering Level)

Code	Course Title	Pre-Requisite
CMT411S	Construction Material Technology 2	Construction Material Technology
IWL410S	Introduction to Water Law	None
PJM411S	Project Management 1	Building Construction Scheduling
RDM411S	Reticulation Design & Management 1	Water Engineering 3
SWM411S	Solid Waste Management 1	None
GDE411S	Geometric Design	None
RCD411S	Reinforced Concrete	None
PTN411S	Pavement Technology	None

Progression Rule No. X (CIV): The student must have successfully completed minimum four courses from Bachelor 1 Advanced Engineering Level in Semester 7 (the recommended course sequence refers) to proceed to either Bachelor design project: UDP410S or WDP410S depending on the programme chosen.

Semester 8 – B.Tech 2 (Advanced Engineering Level) Notional Hours: 800h

Code	Course Title	Pre-Requisite
PJM421S	Project Management 2	Project Management 1
PTN421S	Pavement Technology 2	Pavement Technology 1
RCD421S	Reinforced Concrete Design 2	Reinforced Concrete Design 1
RDM421S	Reticulation Design & Management 2	Reticulation Design & Management 1
SWM421S	Solid Waste Management 2	Solid Waste Management 1
TEN411S	Traffic Engineering	None
UDP410S	Urban Engineering Design Project	See progression Rule No X (CIV)

NQF Level:

NQF Credits: 581

NQF Qualification ID:

Description

The Bachelor of Technology in Civil Engineering is designed for students who intend to pursue careers as civil engineering technologists. The programme is designed to provide students with comprehensive and systematic knowledge and skills in the field of civil engineering using the principles, theories and methodologies of the profession. Through this programme, students will be able to acquire cognitive/intellectual skills, practical skills and key transferable skills in relation to the various aspects and interdisciplinary nature of civil engineering at all levels. The programme also intends to provide a diverse range of skills and competencies that are both discipline-specific and job-related and facilitate the development of generic cognitive and intellectual skills, enabling a graduate to adapt to a continuously changing environment. Additionally, the skills acquired, enable students to absorb a wide range of knowledge, adapt to various conditions, and to solve problems creatively and innovatively.

Additionally, the revised Bachelor of Technology in Civil Engineering is intended to enable students to demonstrate their capabilities in applying the acquired knowledge, understanding, skills, attitudes and values in the work environment. Moreover, the revised programme is structured to set the educational base knowledge, understanding, abilities and skills required for practicing and eligibility for professional registration as Incorporated Engineer with the Engineering Council of Namibia (ECN) pending the fulfilment of post-qualification requirements.

Exit Points: Diploma in Civil Engineering after successful completion of semester 6, Bachelor of Technology in Civil Engineering after successful completion of semester 8.

Criteria for Admission

In addition to meeting the NUST General Admission Requirements as spelt out in the general rules, candidates must have at least 30 points on the Admission Point Scale, counting up to five subjects that must include Mathematics, Physical Science and English; with a minimum of grade 3 in Mathematics and Physical Science at Grade 12/NSSC Higher Level or with a minimum A symbol in Mathematics, Physical Science and English at Grade 12/NSSC Ordinary Level.

Candidates who do not meet the minimum requirements for English, but who meet all other admission requirements, may be admitted into the programme on condition that they register for the institutional English courses that are pre-requisites to English for Academic Purposes, based on their NSSC Higher/ordinary level (or equivalent) English grades.

If a candidate does not have Physical Science but has Physics or a "Physics equivalent" subject, the Registrar may, upon recommendation from the Head of the Department of Civil and Environmental Engineering and the Dean of the Faculty of Engineering approve registration of the candidate.

OR

Candidates who have passed at least 4 N5/N6 subjects, with at least 50 % in each, including Mathematics and a Physics equivalent subject. Candidates will be required to register for Institutional English courses in the first and/or second semester based on their NSSC Higher/Ordinary level English grades (or equivalent) and the English courses Table.

OR

Candidates who have successfully completed Introduction to Science, Technology, Engineering and Mathematics (InSTEM) 1 and 2 programme will be considered for admission into the first year of this programme and such admission is not guaranteed. Successful completion of the InSTEM programme constitutes passing all NUST approved courses in the programme.

Holders of a three-year National Diploma in Civil Engineering from either NUST or any other recognised tertiary institution will be admitted into semester seven of the revised Bachelor of Technology in Civil Engineering degree programme. In addition to semester 7 courses, holders of a three-year National Diploma in Civil Engineering from either NUST or any other recognised tertiary institutions will be required to do Engineering Mathematics 3 (ENM610S). Reinforced concrete Design (RFC611S). Traffic Engineering (TFE611S), and Pavement Technology (PTT611S) as co-requisites. Holders of a three year National Diploma in Civil Engineering who plan to apply for the revised B.Tech programme, may enrol for these co-requisite course prior to registering for the new B.Tech.

Candidates from other recognised tertiary institutions who have not completed their National Diploma will be assessed on an individual case-by-case basis. Candidates who have completed any of these co-requisite courses as part of their prior studies, may apply for exemption.

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. The maximum credit load transfer that can be granted is 50% of the credits for the qualification.

Students who graduate with a Bachelor of Technology in Civil Engineering will ordinarily be able to pursue further studies in Civil Engineering, or a related cognate area of learning, at NQF level 8.

Mode of Delivery

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

Course Presentation Schedule

Semester 1,2,3,5 and 7 are semester 1 courses and will only be presented in the first Semester of each year.

Semester 2,4,6 and 8 are semester 2 courses and will only be presented in the second semester of each year.

All semesters but Semester 4-6 consist of theoretical training and imply studies at the Namibia University of Science and Technology. Semester 4 is applied studies with a minimum duration of 16 continuous weeks. These studies will be conducted in the industry under the supervision of a mentor in collaboration with the University's Coordinator. **Students are solely responsible for their placement in industry for Semester 6.**

Requirements for Qualification Award

The Bachelor of Technology in Civil Engineering degree will be awarded to candidates credited with a minimum of 533 NQF credits while Diploma in Civil Engineering (Level 6) will be credited with a minimum of 402 NQF credits. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook. Students are required to do compulsory component of Work Integrated Learning (WIL) as detailed in the syllabus.

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, professional and technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process to provide for the development of generic cognitive and intellectual skills, key transferable skills, subject-specific and/or professional/technical practical skills. This learning process will be facilitated both in and outside the classroom where specific tasks will be carried out by students. This facilitation will make use of a variety of appropriate methods, including, lectures, practical classes, workshops and seminars, site visits and Work Integrated Learning/ In-service practical training. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Assessment strategies

Assessment for all cognate area courses will be done in accordance with NUST policy for diversified Continuous Assessment. Each course will have a minimum of four (4) assessment events of which at least two (2) assessments will be written under conditions comparable to those of normal examination. Learning and assessment will be integrated throughout the programme. Diversified Continuous Assessment strategies are applied to ensure that students are adequately and comprehensively assessed. Assessment strategy for the programme include individual written assessments, assignments, group presentations, tests, case studies and projects. However, the assessment will be varied depending on the learning outcomes and on the syllabus descriptions for the different courses.

Quality Assurance requirements

The teaching and learning processes are monitored through an effective quality assurance process that supports continuous improvement. Each course will have one examiner and one moderator. Identified moderators can be either internal (full-time staff members of the University) or external (from partner Universities or from local industry). The required minimum qualification of the moderator will be at least a master's degree in engineering and moderator of a course must be a knowledgeable individual that is an expert in sub-discipline that course falls. The assessments will be set and marked by the examiners. The examinations memoranda will then be forwarded to the course moderators for moderation.

Transition Arrangements

The Bachelor of Technology in Civil Engineering: Water/Urban (old curriculum) will be phased out systematically until 2025. The last intake of 1st year students for the Bachelor of Technology in Civil Engineering: Water/Urban out-phasing programme was in January 2019. The first intake of the revised Bachelor of Technology in Civil Engineering will be in 2020.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who do not meet the rules of the Faculty of Engineering for progression to the 2nd year at the end of 2019, will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in the table below.

Students who are registered in 2019 for the 2nd and 3rd year of the out-phasing programme (old curriculum), and who meet the minimum requirements to progress to the 3rd and 4th year of the programme in 2020, will also be required to complete their studies based on the requirements of the old curriculum. Similarly, students who are registered in 2019 for the 4th (final) year of the out-phasing programme will also be required to complete the programme based on the requirements of the old curriculum.

The revised Bachelor of Technology in Civil Engineering (new curriculum) takes effect from January 2020 with implementation of the 1st year only. The revised programme (new curriculum) will be fully implemented by 2023. Courses will only be offered based on the new/revised syllabi in 2020 (1st), 2021 (2nd year), 2022 (3rd year) and 2023 (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 the tables below). Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.

The deadline for complete phasing out of the Bachelor of Technology in Civil Engineering: Water/Urban (old curriculum) is 2025 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

1st Year Courses to be credited

Course Code	Bachelor of Technology: Mechanical Engineering (Old Courses)	Course Code	Bachelor of Technology in Civil Engineering (Equivalent New/Revised Courses)
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
APC110S	Applied Physics and Chemistry	APC 510S	Applied Physics and Chemistry
CMT110S	Construction Material Technologies 1	EMT 520S	Engineering Material Technologies
SUR 110S	Surveying 1	ENS521S	Engineering Surveying
EDG110S	Engineering Descriptive Geometry	IED 520S	Introduction to Engineering Drawing
CDR110S	Civil Engineering Drawing Auto-CAD		
MAT111S	Mathematics 1	ENM510S	Engineering Mathematics 1
MAT 120S	Mathematics 2	ENM520S	Engineering Mathematics 2
TST110S	Theory of Structures	EMS 520S	Engineering Mechanics (Statics)
SOM110S	Strength of Materials		

Corresponding Courses to be done, if Failed – this is not a Credit Table

Course Code	Bachelor Of Technology: Water/Urban (Old Courses)	Course Code	Bachelor Of Technology In Civil Engineering (New/Revised Corresponding Courses)
APC110S	Applied Physics and Chemistry	APC510S	Applied Physics and Chemistry
CMT110S	Construction Material Technologies 1	EMT520S	Engineering Material Technologies
EDG110S	Engineering Descriptive Geometry	IED520S	Introduction to Engineering Drawing
CDR110S	Civil Engineering Drawing Auto-CAD		
MAT111S	Mathematics 1	ENM510S	Engineering Mathematics 1
CUS411S	Computer User Skills	CFT510S	Computing for Technologists
MAT120S	Mathematics 2	ENM520S	Engineering Mathematics 2
TST110S	Theory of Structures	EMS520S	Engineering Mechanics (Statics)
QSV110S	Quantity Surveying	FQS611S	Fundamental of Quantity Surveying
SUR110S	Surveying 1	ENS521S	Engineering Surveying
WAE110S	Water Engineering 1	WEG621S	Water Engineering
WAE310S	Water Engineering 2		
WAE320S	Water Engineering 3		
CPR210S	Civil Engineering Practical Training	WCE620S	Work Integrated Learning
GDE310S	Geometric Design 1	GMD621S	Geometric Design 1
GDE411S	Geometric Design 2		
GET310S	Geo-technical Engineering 3A	GTE611S	Geotechnical Engineering 1
SAN310S	Structural Analysis 3A	STA611S	Structural Analysis 1
SDE311S	Structural Design 3A	SST611S	Structural Steel and Timber Design
CAS310S	Computer Application in Structural Analysis	CAE711S	Computer Application in Structural Analysis
SAN320S	Structural Analysis 3B	STA621S	Structural Analysis 2
DOC310S	Documentation	DCT621S	Documentation
SDE321S	Structural Design 3B	RFC611S	Reinforced Concrete Design
WDP 410S	Water Engineering Design Project	CED721S	Civil Engineering Project
UDP 410S	Urban Engineering Design Project		
TEM 411S	Traffic Engineering	TFE611S	Traffic Engineering
RCD 411S	Reinforced Concrete Design	RFC611S	Reinforced Concrete Design
RCD 421S	Reinforced Concrete Design 2		
WWT411S	Wastewater Treatment 1	WWT611S	Water and Wastewater Treatment 1

WWT421S	Wastewater Treatment 2	WWT721S	Water and Wastewater Treatment 2
PTN 411S	Pavement Technology 1	PTT611S	Pavement Technology
PTN 421S	Pavement Technology 2		
SWM 411S	Solid Waste Management 1	SWM711S	Solid Waste Management
SWM 421S	Solid Waste Management 2		
PJM 411S	Project Management 1	PRM621S	Project Management 423
PJM421S	Project Management 2		
UDP 411S	Urban planning and Design 1	UPD711S	Urban planning and Design
UDP421S	Urban Planning and Design 2		
RMD 411S	Reticulation Design and Management 1	RDM711S	Reticulation Design and Management
RMD 421S	Reticulation Design and Management 2		
WTT 411S	Water Treatment Technology 1	WWT611S	Water and Wastewater Treatment Technology 1
WTT 421S	Water Treatment Technology 2	WWT721S	Water and Wastewater Treatment Technology 2
CMT 411S	Construction Material Technology 2	CMT721S	Construction Material Technologies

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

The table above, only highlights new/revised core courses in engineering that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.

Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out in 2025.

The following courses do not have corresponding courses in the revised programme:

Study Skills and Learning Methods – SLM 110S	Construction Site Equipment – CSE 630S
Building Costing and Pricing 1 – BCP 110S	Introduction to Water Law – IWL 410S
Building Construction Scheduling – BCS 110S	Water Utility Management 1 – WUM 410S
Building costing and Pricing 2 – BCP 310S	Construction Methods – CON110S
Water Supply and Sanitation 1 – WSS 411S	Integrate Water Management – IWM 410S
Introduction to Management Practices in Civil Engineering Industry – MPC 110S	

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Applied Physics and Chemistry	AAP510S	None	5	12
Computing and Technologies	CFT510S	None	5	12
Fundamentals of Electrical Technology	FET510S	None	5	12
Engineering Mathematics 1	ENM510S	None	5	15
Workshop Practice	WSP510S	None	5	NCB

Semester 2

Engineering Surveying	ENS521S	None	5	12
Engineering Material Technologies	EMT520S	None	5	12
Engineering Mechanics (Statistics)	EMS520S	Engineering Mathematics 1	5	12
Introduction to Engineering Drawing	IED520S	None	5	12
Engineering Mathematics 2	ENM520S	Engineering Mathematics 1	5	15
Engineering Hydrology	ENH521S	None	5	12

Progression Rule No 2: The student must have passed all Semester 1 and Semester 2 Courses to be admitted in Semester 2

YEAR 2

Semester 3

Traffic Engineering	TFE611S	None	6	12
Engineering Mathematics 3	ENM610S	Engineering Mathematics 2	6	15
Geotechnical Engineering 1	GTE611S	None	6	12
Fundamental of Quantity Surveying	FQS611S	None	6	12
Structural Analysis 1	STA611S	Engineering Mechanics (Statistics)	6	12
Fluid Mechanics	FDM610S	None	6	12

Semester 4

Information Competence	ICT521S	None	5	10
Water Engineering	WEG621S	Engineering Hydrology	6	12
Geotechnical Engineering 2	GTE621S	Geotechnical Engineering 1	6	12
Geometric Design 1	GMD621S	Traffic Engineering	6	12
Documentation	DCT621S	None	6	12
Structural Analysis 2	STA621S	Structural Analysis 1	6	12

YEAR 3

Semester 5

Sustainability and Development	SYD611S	None	6	12
Innovation, Creativity and Entrepreneurship	ICE712S	None	7	15
Water and Wastewater Treatment 1	WWT611S	Water Engineering	6	12
Structural Steel and Timber Design	SST611S	Structural Analysis 2	6	12
Reinforced Concrete Design 1	RFC611S	Structural Analysis 2	6	15
Pavement Technology	PTT611S	Geometric Design 1	6	15

Progression Rule No. 2: The students must have passed all Semester 4 Engineering courses to proceed to Work Integrated Learning

Semester 6

Work Integrated Learning	WCE620S	A pass in all second-year courses and at least 80 % of total NQF credits at semester 5	6	36
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Semester 7

Computer Application in Structural Engineering	CAE711S	Reinforced Concrete Design	7	12
Geometric Design 2	GMD711S	Geometric Design 1	7	12
Solid Waste Management	SWM711S	None	7	12
Urban Planning & Design	UPD711S	None	7	12
Reticulation Design & Management	RDM711S	None	7	12

Plus any ONE of the following Electives

Fundamentals of Transport Planning	FTP711S	None	7	12
Fundamentals of Pre-stressed Concrete Design	FPC711S	None	7	12
Integrated Water Resources Management	IWR711S	None	7	12

Semester 8

Civil Engineering Design Project	CED721S	None	7	35
Project Management 423	PRM621S	None	7	12

Plus any ONE of the following Electives

Construction Material Technologies	CMT721S	None	7	12
Water and Wastewater Treatment 2	WWT721S	None	7	12
Geometric Design 3	GMD721S	None	7	12

Description

The revised Bachelor of Engineering in Civil Engineering is a professional degree programme, designed for registration at level 8 on the National Qualifications Framework (NQF) and level 6 on the European Qualification Framework for Lifelong Learning (EQF-LLL). This programme builds to a level of conceptual sophistication, specialised knowledge and intellectual autonomy in accordance with requirements at NQF level 8 / EQF level 6. Furthermore, the programme demands a high level of theoretical engagement and intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major subject/cognate areas of learning, i.e. structural engineering, transportation engineering, water engineering and geotechnical engineering. Students will be equipped with cognitive and intellectual skills, key transferable skills, and professional/technical/practical skills that would enable them to plan, design, construct, and maintain the physical and naturally built environment, including works such as bridges, roads, canals, dams, and buildings. The programme includes a substantial element of Work Integrated Learning and requires the conduct and reporting of supervised research in order to adequately prepare students for entry into the civil engineering related profession.

The principal purposes of this programme is to:

- Provide students with professional competencies related to professional practice in Civil Engineering so as to meet the needs of the industry/market;
- Equip students with a foundation for further intellectual development and opportunities for gainful employment and rewarding contributions to society;
- Produce students who are prepared for and demonstrate an understanding of the principles of:
 - Life-long learning,
 - Critical thinking,
 - A wide range of issues which are crucial to the welfare of society, for example, empowerment and transformation;
- Contribute towards a student’s personal career path development by laying the foundation for further specialisation/qualifications in worldwide accepted sub-disciplines;
- Equip students with generic competencies in communication, teamwork and cross-cultural cooperation.

On completion of this revised programme, graduates will be eligible to register with the Engineering Council of Namibia (ECN) as Engineers-in-Training upon fulfilment of post-qualification requirements. This programme has been endorsed by members of the Programme Advisory Committee, key civil engineering industries/firms and the Engineering Council of Namibia, (ECN).

Criteria for Admission

In addition to meeting NUST’s General Admission Requirements as spelt out in the general rules, candidates must have at least 37 points on the Engineering Evaluation Scale, with a minimum 3 symbol in Mathematics, Physical Science and English at Grade 12/NSSC Higher Level. Only symbols on NSSC Higher Level will be considered for Mathematics, Physical Science and English or D-symbols on NSSCAS in Chemistry, Physics and Mathematics.

If a candidate does not have Physical Science but has Physics or a “Physics equivalent” subject, the Registrar may upon recommendation from the relevant Head of Department and the Dean of the School of Engineering, approve registration of the candidate.

OR

Candidates must have successfully completed the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) bridging programme offered at the Namibia University of Science and Technology with at least 60% in each of the following courses: Introduction to Mathematics A and B, Introduction to Physics A and B, Introduction to Chemistry A and B, and English in Practice (EPR511S). However, a score of 60% in the above courses will not guarantee automatic entry into the programme as selection will be based on merit.

OR

Students with foreign qualifications that are different from the National Qualifications Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the Prospective Department on a case-by-case basis in accordance with the University’s 2020 revised Engineering Evaluation Scale.

Holders of the University’s National Diploma in Civil Engineering with a minimum overall average of 60% will be admitted to the second year of this programme on condition that they take the following first year courses:

- Engineering Physics 114 – APH511S
- Engineering Mathematics 125 – MTM521S
- Mechanics of Materials 124 – MOM521S
- Engineering Chemistry 123 – ACH521S

In addition, holders of NUST's National Diploma in Civil Engineering who are admitted into this programme will be granted credits for the following second year courses:

National Diploma in Civil Engineering (35DCPM)	Bachelor of Engineering: Civil
Water Engineering 1: WAE1102S (Sem 3) Water Engineering 2: WAE310S (Sem 5) Water Engineering 3: WAE320S (sem 6)	Fluid Mechanics 214
Theory of Structures: TST110S (Sem 2) Structural Analysis 3A SAN310S (Sem 5) Business Operations BSO221S (Sem 5) Introduction to Management Practice in Civil Engineering MKPC110S (Sem 2)	Theory of Structure 214 Introduction to Business Management 241
Structural Analysis 3B SAN320S (Sem 6)	Structural Analysis 224
Geotechnical Engineering 3A GET310S (Sem 5) Geotechnical Engineering 3B GET320S (Sem 6)	Geomechanics 224
Civil Engineering Practical Training CPR210S (Sem 4)	Work Integrated Learning 220

Holders of NUST's Bachelor of Technology in Civil Engineering degree with a minimum overall average of 60% will be admitted to the third year of this programme on condition that they take the following second year courses:

- Engineering Mathematics 215
- Engineering Geology 214
- Engineering Surveying 214
- Statistics 224

In addition, holders of NUST's Bachelor of Technology in Civil Engineering degree will be granted credits for the following third year courses:

Bachelor of Technology in Civil Engineering (35BCUR)	Bachelor of Engineering: Civil
Water Treatment Technology 1&2: WTT411S/421S (Sem 7 & 8) Wastewater Treatment 1&2: WWT411S/421S (Sem 7 & 8)	Water and Wastewater Treatment 313 (for B.Tech Water Specialisation holders only)
Geometric Design 1: GDE310S (Sem 5): Geometric Design 2: GDE411S (Sem 2)	Geometric Design of Roads 313 (For B.Tech: Urban Specialisation holders only)
Structural Design 3A&3B SDE311S/321S (Sem 5 & 6) Reinforced Concrete Design 1 RCD411S	Reinforced Concrete and Masonry Design 315 (for B.Tech Urban Specialisation holders only)
Reticulation Design and Management 1&2: RDM411S/421S (Sem 7 & 8)	Water and Wastewater Reticulation Design and Management 324
Pavement Technology 1&2 PTN411S/421s (Sem 7 & 8)	Pavement Technology 325 (For B.Tech Urban Specialisation holders only)
Building Costing and Pricing 1&2 BPB110S/310S (Sem 3 & 5) Quantity Surveying QSV110S (Sem 1)	Construction Cost Calculation 324

Teaching and Learning Strategies

The requirements of the NQF and European Qualification Framework, EQF 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, including design studio, lectures, practical classes, workshops and seminars, site visits and Work Integrated Learning. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The Bachelor degree student must undertake compulsory Work Integrated Learning were they have to fully participate in a wide range of civil engineering activities that will give them the required practical experience in industry. They do not only have to record all duties performed but also have to participate in the civil engineering projects so as to come up with optimal solutions for continual improvement of the civil processes. Their work performance is evaluated in terms of preliminary and final technical reports students submit at the end of the third and fourth year of their studies respectively. Such reports must include technical, practical, attitude and work ethics that must be endorsed by their industrial supervisors/coordinators and approved by the Department's Evaluate Committee members.

Assessment Strategies

The assessment for the courses is designed to enable students to fully develop and demonstrate their detailed analytical skills and produce original, well-researched and evidenced work as would be required by a practising engineer. Learning and assessment

are integrated throughout the programme. Diversified Continuous Assessment strategies are applied to ensure that students are adequately / comprehensively assessed in all critical areas in a course. This approach enables students to receive feedback on their progress towards the achievement of specific learning outcomes; to conduct practicals, class seminars, writing technical reports, and any other academic activity deemed appropriate for the acquisition of engineering knowledge

Forms of assessment for the programme include individual written assignments, group presentations, tests, case studies, investigational and design projects. These are varied depending on the learning outcomes for the core courses and according to the syllabus descriptions for the different courses. In accordance with NUST policy on diversified Continuous Assessment, each course will have a minimum of four assessment events.

Quality Assurance Arrangements

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 studies or the person must be a well-respected expert in the field. All the courses that incorporate exit level outcomes of this programme (as defined by ECSA), as well as exit level courses at NQF level 8, will be externally moderated.

Transition Arrangements

There are no significant changes between the current version of the Bachelor of Engineering in Civil Engineering (implemented in 2014) with the reviewed curriculum. Thus, the Bachelor of Engineering in Civil Engineering (old curriculum) will be phased out completely end the year 2019. The last intake of 1st year students for the out-phasing programme (old curriculum) was in January 2019.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who do not meet the rules of the Faculty of Engineering for progression to the 2nd year at the end of 2019, will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in the table below. Similarly, students who are registered in 2019 for the 1st, 2nd, 3rd and 4th year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression at the end of 2019, will also be required to transition to the revised programme (new curriculum), and will be granted credits on a course-by-course basis

Articulation Arrangements

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 credit that can be granted is 50% of the credits for a qualification.

Students who graduate with a Bachelor of Engineering in Civil Engineering will ordinarily be able to pursue further studies in Civil Engineering, or a related cognate area of learning, at NQF level 9.

Mode of Delivery

This programme is offered on the full-time mode, in accordance with NUST rules and procedures.

Requirements for Qualification Award

The Bachelor of Engineering in Civil Engineering will be awarded to students credited with a minimum of 659 NQF credits, and who have met the detailed requirements set out below. Students are required to complete compulsory courses (worth 635 credits) and elective courses (worth 24 credits). In addition, students should meet the administrative and financial requirements as spelt out in the Yearbook (Part 1) of the Namibia University of Science and Technology.

Students are required to do compulsory component of Work Integrated Learning as detailed in the syllabi for Work Integrate Learning as a precondition for graduation.

The Bachelor of Engineering in Civil Engineering Programme has one cognate area of learning (i. e Civil Engineering) that is developed in increasing complexity across relevant NQF levels in accordance with NQF principles as follows:

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12
Introduction to Engineering Drawing 115	IED511S	None	5	15
Computing for Engineers 114	CEN510S	None	5	12

Semester 2

Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Engineering Chemistry 123	ACH521S	None	5	9
Material Science 124	MLS521S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114 Engineering Physics 114 Engineering Mathematics 115	5	12
Electrical Circuits	ELC520S	None	5	12
Introduction to Industry 4.0 124	IIN521S	None	5	12
Workshop Practice 120	WPR421S	None	4	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM611S	Engineering Mathematics 125	6	15
Fluid Mechanics 214	FMC610S	Engineering Mechanics 114	6	12
Theory of Structures 214	TST610S	Mechanics of Materials 124	6	12
Engineering Geology 214	EGY610S	None	6	12
Introduction to Business Management 214	BMI511S	None	5	10
Engineering Surveying 214	ENS611S	None	6	12

Semester 4

Information Competence	ICT521S	None	5	10
Structural Analysis 224	STA620S	Theory of Structures 214	6	12
Geomechanics 224	GMS620S	None	6	12
Statistics 224	SSS621S	Engineering Mathematics 215	6	12
Engineering Hydrology 224	ENH521S	None	6	12
Traffic Engineering 223	TEM620S	None	6	9

YEAR 3

Semester 5

Sustainability and Development	SYD611S	None	6	12
Geometric Design of Transport Infrastructure 315	GDT711S	None	7	15
Structural Analysis 314	STA710S	Structural Analysis 224	7	12
Geotechnical Engineering 314	GET710S	Geomechanics 224	7	12
Reinforced Concrete and Masonry Design 315	RCM710S	Structural Analysis 224	7	15
Water Engineering 314	WEG711S	Engineering Hydrology 224	7	12

Semester 6

Innovation, Creativity and Entrepreneurship	ICE712S	None	7	15
Water Reticulation Design and Management 324	WRD720S	Water Engineering 314	7	12
Pavement Technology 325	PTN720S	None	7	15
Geotechnical Engineering 324	GET720S	Geotechnical Engineering 314	7	12
Structural Design of Steel and Timber 324	STD720S	Structural Analysis 314	7	12
Construction Cost Calculation 324	CCC720S	None	7	12

Semester 7

Computer Applications in Structural Engineering 414	CAS810S	Reinforced Concrete and Masonry Design 315	8	12
Water and Waste water Treatment 414	WWT711S	Engineering Chemistry 123	7	12
Engineering Research Methodology 414	ERM811S	None	8	12
Environmental Engineering 414	EVE810S	None	8	12
Civil Engineering Design Project 410	CET810S	None	8	15

Plus any ONE of the following Electives

Continuum Mechanics and Finite Element Methods 414	CMF810S	None	8	12
Hydraulic Structures 414	HSS810S	Water Engineering 314	8	12
Infrastructure & Facility Management 414	IFM810S	None	8	12
Solid Waste Management 414	SWM810S	None	8	12

Semester 8

Civil Engineering Research Project 420	CET820S	Engineering Research Methodology 414	8	35
Building Contract and Tendering 424	BCT820S	None	8	12
Engineer in Society: Ethics Professionalism 424	EIS820S	None	8	12
Project & Facility Management 425	PFM821S	None	8	15
Work Integrated Learning	WCM821S	All first year courses and at least 80% of NQF credits at second year	8	27

Plus any ONE of the following Electives

Transport Systems and Structures 424	TSS820S	Geometric Design of Transport Infrastructure 315	8	12
Irrigation and Drainage Engineering 424	EID820S	Water Engineering 314	8	12
Geotechnical Engineering 424	GEN821S	Geotechnical Engineering 324	8	12
Reinforced Concrete Design 424	RCD821S	Reinforced Concrete and Masonry Design 315	8	12

MINING AND PROCESS ENGINEERING

QUALIFICATIONS OFFERED

Bachelor of Engineering in Mining (Revised – Phased in 2021)	08BMEG
Bachelor of Engineering in Metallurgy (Revised – Phased in 2021)	08BEMT
Bachelor of Engineering in Chemical Engineering (Revised – Phased in 2021)	08BECE

BACHELOR OF ENGINEERING IN MINING

08BMEG

NQF Level: 8

NQF Credits: 594

NQF Qualification ID: Q0414

Description

The Bachelor of Engineering in Mining Engineering is a specialised degree aimed at providing students with firm grounding fundamental engineering principles and principles of mining and mineral processing engineering. Students will be able to use math, engineering, science and, conduct research to solve existing problems and prevent future problems. Additionally, the programme exposes students to critical mining engineering aspects such as safety, economic and environmentally sustainable recovery, processing and marketing of mineral resources from the earth.

The revised Bachelor of Engineering in Mining Engineering programme is further designed to enable the graduates to register as Professional Engineers with the Engineering Council of Namibia (ECN) pending the fulfilment of post qualification requirements. The overall aim is to develop competent and proactive mining engineers who will address diverse complex technical issues in both macro/environmental and micro/organisational settings.

In addition, the curriculum and syllabi of the Bachelor of Engineering in Mining conform to internationally benchmarked/harmonised mining engineering education programmes, as offered by the University of the Witwatersrand (South Africa), University of Zimbabwe (Zimbabwe) and University of Pretoria (South Africa). The revised programme was endorsed by members of the Programme Advisory Committee and has been submitted to the ECN.

Criteria for Admission

In addition to meeting the University's General Admission Requirements as spelt out in the general rules, candidates must have at least 37 points in five subjects on the University's Engineering Evaluation Scale, with a minimum:

- 3 symbol in Mathematics and Physical Science at Grade 12 NSSC Higher level, "D" symbol in English at NSSC Ordinary level and any other two subjects using a combination of both NSSCH and NSSCO (Out-phasing school curriculum)
- "D" symbol in Mathematics, Physics and Chemistry at Advanced Subsidiary level "D" symbol in English at NSSC Ordinary level and any other one subject at NSSCAS or NSSCO (Phasing-in school curriculum).

OR

Candidates must have successfully completed the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) studies programme offered at the Namibia University of Science and Technology (NUST) with at least a combined average score of 60% for the "A" and "B" parts of the courses: Introduction to Mathematics, Introduction to Physics and Introduction to Chemistry but with a score not lower than 55% in each. However, a combined average score of 60% in the above InSTEM courses will not guarantee automatic entry into any of the mainstream programmes as the final selection will be based on merit and the number of places available.

Students with foreign qualifications that are different from the National Qualification Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the prospective Department on a case-by-case basis in accordance with the University's 2020 revised Engineering Evaluation Scale.

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 that can be granted is 50% of the credits for a qualification. Students who graduate with a Bachelor of Engineering in Mining will ordinarily be able to pursue further studies in Mining, or a related cognate area of learning, at NQF level 9.

Mode of Delivery:

The programme will only be offered on full-time mode in accordance with Namibia University of Science and Technology rules.

Requirements for Qualification Award:

This Bachelor of Engineering in Mining Engineering will be awarded to candidates credited with 587 NQF credits and who have met the detailed qualification requirements as set out below. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the Namibia University of Science and Technology Yearbook. Students are required to undertake a compulsory component of Work Integrated Learning (WIL) as detailed in the syllabi for WIL420 as a precondition for graduation.

Transition Arrangements:

The Bachelor of Engineering in Mining (old curriculum) will be phased out systematically until 2025 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 2020. The revised curriculum will take effect in 2021.

Students who are registered in 2020 for the 1st year of the out-phasing programme (old curriculum), and who do not meet the rules for progression to the 2nd year at the end of 2019, will be required to change their registration to the revised programme (new curriculum) in 2020, and will be granted credits on a course-by-course basis in accordance with information in the table below. Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 2nd year at the end of 2020, will also be required to transition to the revised programme (new curriculum) in 2020, and will be granted credits on a course-by-course basis in accordance with information in the Table below.

Students who are registered in 2020 for the 2nd year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 3rd year at the end of 2020, will be required to complete their studies based on the old curriculum. Additionally, students who are registered in 2020 for the 3rd year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 4th year at the end of 2020, will be required to complete their studies based on the old curriculum. Similarly, 4th year students will also be required to complete their studies based on the old curriculum.

The revised Bachelor of Engineering in Mining (new curriculum) takes effect from January 2021 with concurrent implementation of the 1st, 2nd years, and will be fully implemented by 2023. Courses will only be offered based on the syllabi of new/revised courses as follows 1st, 2nd year (2021); 3rd year (2022), and 4th year (2023). 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 in accordance with the Table below.

The deadline for complete phasing out of the Bachelor of Engineering in Mining (old curriculum) is 2025 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

Courses to be credited

Course Code	Bachelor of Engineering in Mining (Old Courses)	Course Code	Bachelor of Engineering in Mining (Equivalent New/Revised Courses)
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
EGY610S	Engineering Geology 214	GFE611S	Geology for Engineers 214
	NONE	IIN521S	Introduction to Industry 4.0 124
IMM610S	Introduction to Mining and Metallurgy	IMM610S	Introduction to Mining and Metallurgy 214
RME710S	Rock Mechanics 313	RMC711S	Rock Mechanics 314
UGM710S	Underground Mining 313	UDM711S	Underground Mining 315
UGM720S	Underground Mining 323		
SUM710S	Surface Mining 315	SUM710S	Surface Mining 315
TEV720S	Technical Valuation 324	GSS711S	Geo Statistics 314
ENE710S	Environmental Engineering 314	EVE810S	Environmental Engineering 414
MDD710S	Mine Drawing and Design 314	CMD811S	Computerised Mine Design 414
MPD720S	Mine Planning and Design 324	MPD811S	Mine Planning and Design 415
MPD810S	Mine Planning and Design 414		
MMY720S	Mine Machinery 324	MHD721S	Materials Handling 324
MAH810S	Materials Handling 414		
CIS610S	Contemporary Issues	SDY611S	Sustainability and Development 324
DLB720S	Drilling and Blasting 323	DBS721S	Drilling and Blasting 324
MMG810S	Mine Management 414	MRE810S	Mine and Resource Engineering Management 414

OHS820S	Occupational Health and Safety 423	SRM820S	Safety and Risk Management 424
WME820S	Work Integrated Learning 400	WME821S	Work Integrated Learning 420

Old/ revised Corresponding Courses to be Done, If Failed – This is not a credit table.

Course Code	Bachelor of Engineering in Mining (Old Courses)	Course Code	Bachelor of Engineering in Mining Revised Corresponding Courses to be done if failed.
CEN510S	Computing for Engineers 114	CEN511S	Computing for Engineers 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
CAD120S	Computer Aided Drawing 124		
MTM110S	Engineering Mathematics 115	MTM511S	Engineering Mathematics 115
AMC511S	Engineering Mechanics 114	AMC511S	Engineering Mechanics 114
APH511S	Engineering Physics 114	APH511S	Engineering Physics 114
ELC521S	Electrical Circuits 124	ELC521S	Electrical Circuits 124
ACH521S	Engineering Chemistry 123	ACH521S	Engineering Chemistry 123
MTM521S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
MLS520S	Materials Science 124	MLS521S	Materials Science 124
MOM521S	Mechanics of Materials 124	MOM521S	Mechanics of Materials 124
MOM610S	Mechanics of Materials 124		
MTM611S	Engineering Mathematics 215	MTM611S	Engineering Mathematics 215
IMM610S	Introduction to Mining and Metallurgy 214	IMM610S	Introduction to Mining and Metallurgy 214
ICT521S	Information Competence		
EGY610S	Engineering Geology 214	GFE611S	Geology for Engineers 214
ENS611S	Engineering Surveying 214	ENS611S	Engineering Surveying 214
EMC610S	Electrical Machines 214	EMC610S	Electrical Machines 214
NMS620S	Numerical Methods 224	NMS620S	Numerical Methods 224
GMS620S	Geo Mechanics 224	GMS620S	Geo Mechanics 224
SSS620S	Statistics 224	SSS621S	Statistics 224
EGY620S	Engineering Geology 223	MGY621S	Mining Geology 224
MSV620S	Mine Surveying 223	MSG621S	Mine Surveying 224
TFL620S	Thermo Fluids 225	TDN621S	Thermodynamics 225
		FMC610S	Fluid Mechanics 224
MPD710S	Mine Drawing and Design 314	CMD811S	Computerised Mine Design 414
RME710S	Rock Mechanics 313	RMC712S	Rock Mechanics 314
UGM710S	Underground Mining 313	UDM712S	Underground Mining 315
UGM720S	Underground Mining 323		

SUM710S	Surface Mining 315	SUM711S	Surface Mining 315
ENE710S	Environmental Engineering 314	EVE810S	Environmental Engineering 314
MIP710S	Mineral Processing 314	MPC712S	Mineral Separation Processes 314
MPD720S	Mine Planning and Design 324	MPD812S	Mine Planning and Design 415
MPD810S	Mine Planning and Design 414		
MMY720S	Mine Machinery 324	MHD721S	Materials Handling 324
MAH810S	Materials Handling 414		
REE720S	Rock Engineering 324	REE720S	Rock Engineering 324
CIS610S	Contemporary Issues	SDY611S	Sustainability and Development
DLB720S	Drilling and Blasting 323	DBS721S	Drilling and Blasting 324
TEV720S	Technical Valuation 324	GSS712S	Geo Statistics 324
OPR810S	Operations Research 413	ORC712S	Operations Research 313
MMG810S	Mine Management 414	MRE812S	Mine and Resource Engineering Management 414
MVE810S	Mine Ventilation 414	VMT721S	Mine Ventilation 325
MEF810S	Mineral Economics and Financial Valuation 413	MEF812S	Mineral Economics and Financial Valuation 413
	None	RSS811S	Research Seminars 400
OHS820S	Occupational Health and Safety 423	SRM820S	Safety and Risk Management 424
MLL820S	Mine Laws and Licences 423	MLL721S	Mine Laws and Licences 323
MPR820S	Mining Project 420	MPI821S	Mining Research Project 420
MDP820S	Mining Engineering Design Project 420	MDP821S	Mining Design Project 420

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

Please Note:

The Table above, only highlights consolidated core courses in Bachelor of Engineering in Mining (old curriculum) that should be done if courses in the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well. Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out in 2025. The following courses do not have corresponding courses in the revised programme:

- : Mechanics of Materials 124
- : Mine Laboratory 220
- : Mine Laboratory 310
- : Mine Laboratory 320
- : Mine Laboratory 410

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Computing for Engineers 114	CEN510S	None	5	12
Introduction to Engineering Drawing	IED511S	None	5	15
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12

Semester 2

Introduction to Industry 4.0 124	IIN521S	None	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114 Engineering Mathematics 115	5	12
Engineering Chemistry 123	ACH521S	None	5	9
Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Materials Science 124	MLS520S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Workshop Practice 120	WPR421S	None	4	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM611S	Engineering Mathematics 125	6	15
Introduction to Mining and Metallurgy 214	IMM610S	None	6	12
Geology for Engineers 214	GFE611S	None	6	12
Engineering Surveying 214	ENS611S	None	6	12
Fluid Mechanics 214	FMC610S	Engineering Mechanics 114	6	12
Electrical Machines 214	EMC611S	Electrical Circuits 124	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Geo Mechanics 224	GMS620S	None	6	12
Statistics 224	SSS621S	Engineering Mathematics	6	12
Mining Geology 224	MGY621S	Geology for Engineers 214	6	12
Mine Surveying 224	MSG621S	Engineering Surveying 214	6	12
Thermodynamics 224	TDN620S	Engineering Mathematics 115	6	12

YEAR 3

Semester 5

Operations Research 313	ORC712S	Statistics 224	7	9
Rock Mechanics 314	RMC712S	Soil Mechanics 224	7	12
Underground Mining 315	UDM712S	Introduction to Mining and Metallurgy 214	7	15
Surface Mining 315	SUM711S	Introduction to Mining and Metallurgy 214	7	15
Geo Statistics 314	GSS712S	Mining Geology 224; Statistics 224	7	12
Mineral Separation Processes 314	MPC712S	Introduction to Mining and Metallurgy 214	7	12

Semester 6

Mine Ventilation 324	MVT721S	Fluid Mechanics 214 Thermodynamics 225	7	12
Materials Handling 324	MHD721S	Fluid Mechanics 214 Thermodynamics 225	7	12
Rock Engineering 324	REE720S	Rock Mechanics 314	7	12
Sustainability and Development	SYD611S	None	6	12
Drilling and Blasting 324	DBS721S	Introduction to Mining and Metallurgy 214	7	12
Mine Laws and Licences 323	MLL721S	None	7	9

YEAR 4

Semester 7

Mine and Resource Engineering Management 414	MRE812S	None	8	12
Computerised Mine Design 414	COM811S	Underground Mining 315 Surface Mining 315	8	12
Mine Planning and Design 415	MPD812S	Underground Mining 315 Surface Mining 315	8	15
Mineral Economics and Financial Valuation 413	MEF812S	None	8	9
Environmental Engineering 414	EVE810S	None	8	12
Research Seminars 400	RSS811S	None	8	NCB

Semester 8

Mining Research Project 420	MPT821S	All courses up to and including Semester 6	8	30
Mining Design Project 420	MDP821S	All courses up to and including Semester 6	8	30
Safety and Risk Management 424	SRM820S	None	8	12
Work Integrated Learning 420	WME821S	None	8	NCB

Plus ONE of the Following Electives

Small Scale Mining 423	SSM821S	None	8	9
Future Mining 423	FTM821S	None	8	9
Coal Mining 423	CLM821S	None	8	9
Marine Mining 423	MRM821S	None	8	9

**BACHELOR OF ENGINEERING IN METALLURGY
(Revised – Phased in 2021)**

08BEMT

NQF Level: 8

NQF Credits: 594

NQF Qualification ID: Q0415

Description

The Bachelor of Engineering in Metallurgy aims to produce graduates that are flexible and equipped to work effectively within industrial teams or research and development groups, contributing specialist skills, demonstrating an awareness of the context within which they work, and taking responsibility for their own personal and professional development. Further the programme aims to develop competent and proactive metallurgical engineers who will address and solve diverse complex technical issues in both macro environmental and micro organisational settings.

Criteria for Admission

In addition to meeting the University's General Admission Requirements as spelt out in the General Rules, candidates must have at least 37 points in five subjects on the University's engineering Evaluation Scale, with a minimum:

- a) 3 Symbol in Mathematics and Physical Science at Grade 12 NSSC Higher level "D" symbol in English and NSSC Ordinary level and other two subjects using a combination of both NSSCH and NSSCO (out-phasing school curriculum);
- b) "D" symbol in Mathematics, Physics and Chemistry at Advanced Subsidiary level, "D" symbol in English at NSSC Ordinary level and any other one subject at NSSCAS or NSSCO (Phasing-in school curriculum)

OR

Candidates must have successfully completed the Introduction to Engineering studies programme (InSTEM) offered at NUST with at least 60% average in each of the following courses: Introduction to Mathematics, Introduction to Physics and Introduction to Chemistry. However, a score of 60% in the above courses will not guarantee automatic entry into the programmes as selection will be based on merit and the number of places available.

Students with foreign qualifications that are different from the National Qualifications Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the prospective Department on a case-by-case basis in accordance with University's 2020 revised Engineering Evaluation Scale.

Articulation Arrangements

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 credit that can be granted is 50% of the credits for a qualification.

Students who graduate with a Bachelor of Engineering in Metallurgy will ordinarily be able to pursue further studies in Metallurgy, or a related cognate area of learning, at NQF level 9.

Mode of Delivery

The programme will be offered on a full-time mode in accordance with Namibia University of Science and Technology rules.

Requirements for Qualification Award

This degree will be awarded to students credited with a minimum of 590 NQF credits and who have met the detailed qualification requirements as set out below. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the Namibia University of Science and Technology Yearbook.

Students are required to complete a compulsory component of Work Integrated Learning 420 and all requirements as a precondition for graduation.

Transition Arrangements

The Bachelor of Engineering in Metallurgy (old curriculum) will be phased out systematically until 2025 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 2020.

Students who are registered in 2020 for the 1st year of the out-phasing programme (old curriculum), and who do not meet the rules for progression to the 2nd year at the end of 2020, will be required to change their registration to the revised programme (new curriculum) in 2021, and will be granted credits on a course-by-course basis in accordance with information in Table, below. Students who are registered in 2020 for the 1st year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 2nd year at the end of 2020, will also be required to transition to the revised programme (new curriculum) in 2021, and will be granted credits on a course-by-course basis in accordance with information in the Table, below.

Students who are registered in 2020 for the 2nd year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 3rd year at the end of 2020, will be required to complete their studies based on the old curriculum. Additionally, students who are registered in 2020 for the 3rd year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 4th year at the end of 2020, will be required to complete their studies based on the old curriculum. Similarly, 4th year students will also be required to complete their studies based on the old curriculum.

The revised Bachelor of Engineering in Metallurgy (new curriculum) takes effect from January 2021 with concurrent implementation of the 1st, 2nd years, and will be fully implemented by 2023. Courses will only be offered based on the syllabi of new/revised courses as follows 1st, 2nd year (2021); 3rd year (2022), and 4th year (2023). 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 in accordance with the table below.

The deadline for complete phasing out of the Bachelor of Engineering in Metallurgy (old curriculum) is 2025 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

Courses to be credited

Course Code	Bachelor of Engineering in Metallurgy (Old Courses)	Course Code	Bachelor of Engineering in Metallurgy (Equivalent New/Revised Courses)
MGY610S	Mineralogy 213	GMT611S	Geo-metallurgy 214
ICT521S	Information Competence	IMM610S	Subsumed in Introduction to Mining and Metallurgy 214
	None	IIN521S	Introductory to Industry 4.0 124
CAD521S	Computer Aided drawing 124	IED521S	Introduction to Engineering Drawing 115
MTD620S	Metallurgical Thermodynamics 225	TND620S	Thermodynamics 225
CHY620S	Chemistry 223	PCH602S	Physical Chemistry
ETM620S	Experimental Techniques for Metallurgists 224	EPT720S	Experimental Techniques for Process Engineers 324
MMS720S	Metallurgy of Iron and Steel 324	PNM720S	Pyrometallurgy of Ferrous Metals 324
MMS810S	Metallurgy of Iron and Steel 414		
PMY710S	Physical Metallurgy 314	PDF711S	Phase Diagrams and Forming Processes 314
PMY810S	Physical Metallurgy 414	HTM811S	Heat Treatment of Metals 414
TRP620S	Transport Phenomena 224	TRP620S	Transport Phenomena 225
MPD710S	Metallurgical Plant Design 314	PPD710S	Process Plant Design & Economic 315
MET720S	Metallurgical Plant Design 324		
ENE710S	Environmental Engineering 314	EVE810S	Environmental Engineering 414
MIP710S	Mineral Processing 314	MPC712S	Mineral Separation Processes 314
MIP720S	Mineral Processing 324	MPT721S	Mineral Processing Techniques and Applications 324
ACM720S	Accounting and Management 324	MEF810S	Mineral Economics and Financial Valuation
MPM810S	Mineral Project Management 413	MRE810S	Mine and Resource Engineering Management 414
		RSS811S	Research Seminars 400
MYP820S	Metallurgy Project 420	MPP822S	Metallurgical Engineering Research Project 420
WME820S	Work Integrated Learning 400	WME821S	Work Integrated Learning 420

Corresponding Courses to be done (if failed). This is not a Credit Table

Course Code	Bachelor of Engineering in Metallurgy (Old Courses)	Course Code	Bachelor of Engineering in Metallurgy (New Courses)
	None	IIN521S	Introductory to Industry 4.0
END511S	Engineering Drawing 114	IED521S	Introduction to Engineering Drawing 115
CAD521S	Computer aided drawing 124		
CHY620S	Chemistry 223	PCH602S	Physical Chemistry
MGY610S	Mineralogy 213	GMT611S	Geo-metallurgy 214
MTD620S	Metallurgical Thermodynamics 225	PTD720S	Process Thermodynamics 324
MIP710S	Mineral Processing 314	MPC712S	Mineral Separation Processes 314
MMS720S	Metallurgy of Iron and Steel 324	PNM720S	Pyrometallurgy of Ferrous Metals 324

MMS810S	Metallurgy of Iron and Steel 414		
ENE710S	Environmental Engineering 314	EVE810S	Environmental Engineering 414
PMY710S	Physical Metallurgy 314	PMY710S	Phase Diagrams and Forming Processes 314
WME820S	Work Integrated Learning 400	WME821S	Work Integrated Learning 420
AMG720S	Accounting and Management 324	MEF810S	Mineral Economics and Financial Valuation 413
ETM620S	Experimental Techniques for Metallurgists 214	EPT720S	Experimental Techniques for Process Engineers 324
MIP720S	Mineral Processing 324	MPT721S	Mineral Processing Techniques and Applications 324
MPD710S	Metallurgical Plant Design 314		
MET720S	Metallurgical Plant Design 324	PPD711S	Process Plant Design & Economic 315
CEN810S	Corrosion Engineering 414	CEN810S	Corrosion Engineering 413
PMY810S	Physical Metallurgy 414	HTM811S	Heat Treatment of Metals 414
MIS720S	Metallurgy of Iron and Steel 324		
MIS810S	Metallurgy of Iron and Steel 414	PNM720S	Pyrometallurgy of Ferrous Metals 324
MPM810S	Mineral Project Management 413	MRE810S	Mine and Resource Engineering Management 414
CPN810S	Cleaner Production 413	MPW721S	Mine and Process Waste Management 314
PIC810S	Process Instrumentation and Control 413	PIC710S	Process Instrumentation and Control 314
OHS820S	Occupational Health and Safety 423	SRM820S	Safety and Risk Management 424
MEP820S	Metallurgical Engineering Design Project 420	MPD821S	Metallurgical Engineering Plant Design Project 420
MYP820S	Metallurgy Project 420	MPP822S	Metallurgical Engineering Research Project 420
	None	FMC610S	Fluid Mechanics 214

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

The Tables above only highlight new/revised core courses in engineering that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well. Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out in 2025:

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Computing for Engineers 114	CEN510S	None	5	12
Introduction to Engineering Drawing	IED511S	None	5	15
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12

Semester 2

Introduction to Industry 4.0 124	IIN521S	None	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114 Engineering Mathematics 115	5	12
Engineering Chemistry 123	ACH521S	None	5	9
Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Materials Science 124	MLS520S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Workshop Practice 120	WPR421S	None	4	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM611S	Engineering Mathematics 125	6	15
Introduction to Mining and Metallurgy 214	IMM610S	None	6	12
Chemistry 215	CHY610S	Engineering Chemistry 123	6	12
Fluid Mechanics 214	FMC610S	Engineering Mathematics 114	6	12
Electrical Machines 214	EMC611S	Electrical Circuits 124	6	12
Geometallurgy 214	GMT611S	None	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Thermo-dynamics 225	TDN620S	Engineering Mathematics 115	6	12
Physical Chemistry	PCH602S	Chemistry 215	6	12
Statistics 224	SSS621S	Engineering Mathematics	6	12
Transport Phenomena 225	TRP620S	Engineering Physics 114	6	15
Sustainability and Development	SYD611S	None	6	12

YEAR 3

Semester 5

Mineral Separation Process 314	MPC712S	Introduction to Mining and Metallurgy 214	7	12
Hydrometallurgy 314	HMT711S	Physical Chemistry	7	12
Pyrometallurgy of Non-Ferrous Metals 314	PNM711S	Thermodynamics 225	7	12
Process Plant Design and Economics 315	PPD711S	Introduction to Mining and Metallurgy 214	7	15
Phase Diagrams and Forming Processes 314	PDF712S	Introduction to Mining and Metallurgy 214	7	12
Process Instrumentation and Control 314	PIC710S	Engineering Mathematics 215	7	12

Semester 6

Mineral Processing Techniques and Applications 324	MPT721S	Mineral Separation Processes 314	7	12
Hydrometallurgy 324	HMY720S	Hydrometallurgy 314	7	12
Experimental Techniques for Process Engineers 324	ETP720S	Hydrometallurgy 314	7	12
Process Thermodynamics 324	PTD720S	Physical Chemistry Thermodynamics 225	7	12
Pyrometallurgy of Ferrous Metals 324	PNM720S	Pyrometallurgy of Non Ferrous Metals 314	7	12
Mine and Process Waste Management 314	MPW721S	None	7	12

YEAR 4

Semester 7

Heat Treatment of Metals 414	HTM812S	Phase Diagrams and Forming Processes 314	8	12
Corrosion Engineering 413	CEN811S	Hydrometallurgy 324	8	9
Mineral Economics and Financial Valuation 413	MEF812S	Phase Diagrams and Forming Processes 314	8	9
Mine and Resource Engineering Management 414	MRE812S	None	8	12
Environmental Engineering 414	EVE810S	None	8	12
Research Seminars 400	RSS811S	None	8	NCB

Plus any ONE of the Following Electives

Cement and Ceramics Processing 423	CCP820S	Process Thermodynamics 324	8	9
Mechanical Metallurgy 423	MMY821S	Phase Diagrams and Forming Processes 314	8	9
Fuels, Furnaces and Refractories 423	FFR821S	Pyrometallurgy of Non-Ferrous Metals 314	8	9
		Pyrometallurgy of Ferrous Metals 324		

Semester 8

Safety and Risk Management 424	SRM820S	None	8	12
Metallurgical Engineering Research Project 420	MPP822S	Compulsory Courses up to Semester 6	8	30
Metallurgical Engineering Plant Design Project 420	MPD821S	Compulsory Courses up to Semester 6	8	30
Work Integrated Learning 420	WME821S	None	8	NCB

**BACHELOR OF ENGINEERING IN CHEMICAL ENGINEERING
(Phased in 2019)**

08BECE

NQF LEVEL: 8

NQF Credits: 590

Description

The Bachelor of Engineering in Chemical Engineering programme is designed to further develop and broaden engineering skills in Namibia. It is also intended to produce world-class professionals who are well-grounded in chemical engineering principles and equipped with the knowledge, skills set and quality attributes required in the development, construction and operation of industries of which raw materials are processed to manufactured goods of higher economic value. Additionally, the programme will expose students to principles required to make a difference and devise solutions to challenges of the 21st century in a wide variety of roles in industry.

Admission Criteria

In addition to meeting the University's General Admission Requirements as spelt out in the General Information and Regulations Yearbook – Part 1, candidates must have at least 37 points in five subjects on the University's Engineering Evaluation Scale, with a minimum:

- a) 3 symbol in Mathematics and Physical Science at Grade 12 NSSC Higher Level, "D" symbol in English at NSSC Ordinary Level and other two subjects using a combination of both NSSCH and NSSCO (out-phasing school curriculum);
- b) "D" symbol in Mathematics, Physics and Chemistry at Advanced Subsidiary level, "D" symbol in English at NSSC Ordinary level and any other one subject at NSSCAS or NSSCO (Phasing-in school curriculum).

OR

Candidates must have successfully completed the introduction to Science, Technology, Engineering and Mathematics (InSTEM) studies programme offered at the Namibia University of Science and Technology (NUST) with at least a combined average score of 60% for the "A" and "B" parts of the courses: Introduction to Mathematics, Introduction to Physics and Introduction to Chemistry but with a score not lower than 55% in each. However, a combined average score of 60% in the above InSTEM courses will not guarantee automatic entry into any of the mainstream programmes as the final selection will be based on merit and the number of places available.

Students with foreign qualifications that are different from the National Qualifications Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the prospective Department on a case-by-case basis in accordance with the University's 2020 revised Engineering Evaluation Scale. Students who graduate with a Bachelor of Engineering in Chemical Engineering will ordinarily be able to pursue further studies in chemical engineering or a related cognate area of learning, at NQF Level 9.

Mode of Delivery

The programme will only be offered on a full-time mode in accordance with Namibia University of Science and Technology rules.

Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 590 NQF credits and who have met the detailed qualification requirements as set out below. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the Namibia University of Science and Technology Yearbook.

Students are required to complete a compulsory component of Work Integrated Learning (WIL) programme as detailed in the syllabi (WCE820S) and all requirements as a precondition for graduation.

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 and methodologies for this programme are designed to equip students with the necessary knowledge regarding chemical engineering and to achieve the outcomes of the programme. Suitable learning opportunities are provided to facilitate the acquisition of knowledge and skills specified in the exit programme outcomes. The learning process encourages independent learning attitudes and abilities, and an appropriate mix and balance between different teaching methods will be maintained to encourage active participation of students in the teaching and learning process.

The Bachelor degree students must undertake compulsory Work Integrated Learning as a precondition for graduation. Students have to fully participate in all the activities in a process plant, as this would give them practical experience of what to expect in a processing plant. They not only have to record all duties performed but also have to participate in the plant trouble shooting exercises at the plant and come up with optimal solutions for continual improvement of the performance of the processes. Their work performance is evaluated in terms of the technical reports they submit as well as the attitude and work ethics reports from their industrial supervisors/mentors.

Assessment Strategies

The assessment for the courses is designed to enable students to fully develop and demonstrate their detailed analytical skills and produce original, well-researched and evidenced work as would be required by a practising engineer. The Bachelor of Engineering in Chemical Engineering programme shall fully comply with the assessment regulations detailed in the Undergraduate Scheme document of the Namibia University of Science and Technology, as well as the requirements of ECN and ECSA. Forms of assessment for the programme include individual written assignments, group presentations, tests, investigational and design projects. These are varied depending on the learning outcomes for the core courses and according to the syllabus description for the different courses.

The courses will have a minimum of four assessment events and a minimum Final Mark of 50% is required to pass the course. The examination questions will be well balanced and fair, assessing at the right level with a strict alignment to the learning outcomes, in the manner of Teaching and Learning Unit guidelines shown in Appendix 1C below.

Quality Assurance Arrangements

The teaching and learning process are monitored through an effective quality assurance process that supports continuous improvement. Each course (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 a Masters' degree, except in the case of technical courses.

The moderators must also be knowledgeable individuals who are well-respected experts in the field. All exit level courses for this programme (in accordance with ECSA's definition) will be moderated externally. 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 Senate, for moderation. This ensures that all forms of summative assessment of student performance within the programme are effective, fair, and rigorous and address the stated learning outcomes.

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

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Computing for Engineers 114	CEN510S	None	5	12
Introduction to Engineering Drawing 115	IED511S	None	5	15
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12

Semester 2

Introduction to Industry 4.0 124	IIN521S	None	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114 Engineering Mathematics 115	5	12
Engineering Chemistry 123	ACH521S	None	5	9
Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Materials Science 124	MLS520S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Workshop Practice 120	WPR421S	None	4	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM611S	Engineering Mathematics 125	6	15
Chemical Process Industry and Technologies 214	CPI610S	None	6	12
Physical Chemistry 215	PCH602S	Engineering Chemistry 123	6	15
Fluid Mechanics 214	FMC610S	Engineering Mathematics 114	6	12
Introduction to Chemical Engineering 214	ICE610S	None	6	12
Chemical Process Principles 214	CPP610S	Engineering Chemistry 123 Engineering Physics 114	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Thermo-dynamics 225	TDN620S	Engineering Mathematics 115	6	12
Chemistry 223	CHY620S	Chemistry 123	6	12
Statistics 224	SSS621S	Engineering Mathematics 215	6	12
Transport Phenomena 225	TRP620S	Engineering Physics 114	6	15
Sustainability and Development	SYD611S	None	6	12

YEAR 3

Semester 5

Mineral Processing 314	MPC711S	Introduction to Chemical Engineering 214	7	12
Hydrometallurgy 314	HMT710S	Chemistry 223	7	12
Reaction Engineering & Reactor Design 314	RER710S	Chemistry 223	7	12
Process Plant Design & Economics 315	PPD710S	Chemical Process Principles 214	7	15
Separation Processes 314	SPC710S	Transport Phenomena 225	7	12
Process Instrumentation and Control 314	PIC710S	Engineering Mathematics 215	7	12

Semester 6

Transport Phenomena 324	TPP720S	Transport Phenomena 225	7	12
Process Modelling, Simulation and Optimisation 324	PMS720S	Numerical Methods 224 Engineering Mathematics 125	7	12
Experimental Techniques for Process Engineers 324	ETP720S	Hydrometallurgy 314	7	12
Process Thermodynamics 324	PTD720S	Physical Chemistry 223 Thermodynamics 225	7	12
Innovation Creativity & Entrepreneurship	ICE712S	None	7	15
Separation Processes 323	SPC720S	Separation Processes 314	7	9

YEAR 4

Semester 7

Biochemical Engineering 414	BEN810S	None	8	12
Solid Fluid Mechanical Processes 413	SFM810S	Process Modelling, Simulation and Optimisation 324	8	9
Mineral Economics and Financial Valuation 413	MEF810S	None	8	9
Mine and Resource Engineering Management 414	MRE810S	None	8	12
Environmental Engineering 414	EVE810S	None	8	12

Plus ONE of the following Elective Courses

Petroleum Refining and Petrochemicals Production 413	PRP810S	None	8	9
Renewable Energy Systems 415	ESR810S	None	8	15
Colloid Science and Engineering 413	CSE810S	None	8	9

Semester 8

Safety and Risk Management 424	SRM820S	None	8	12
Process Engineering Design Project 420	PED820S	Process Modelling Simulation and Optimisation 324	8	30
Process Engineering Research Project 420S	PER820S	Mine and Resource Engineering 414	8	30
Work Integrated Learning (WIL)	WCE820S	None	8	NCB

Plus ONE of the following Elective Courses

Cement and Ceramics Processing 423	CCP820S	Process Thermodynamics 324	8	9
Polymer and Plastics Technology 423	PMP820S	None	8	9
Biotechnology 423	BTN820S	None	8	9

DEPARTMENT OF MECHANICAL, INDUSTRIAL AND ELECTRICAL ENGINEERING

CODE: 98

MECHANICAL AND INDUSTRIAL ENGINEERING

QUALIFICATIONS OFFERED

Bachelor of Technology in Mechanical Engineering (Revised- Phased in 2019)	07BMEC
Bachelor of Technology in Marine Engineering (will not be offered in 2024)	07BTME
Bachelor of Engineering in Mechanical Engineering	08BEME
Bachelor of Engineering in Industrial Engineering	08BIND

**BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Revised – Phased in 2019)**

07BMEC

NQF Level: 7

Description

The Bachelor of Technology in Mechanical Engineering provides students with a sound knowledge base in the field of Mechanical Engineering and the ability to apply their knowledge and skills to professional contexts. The programme, further aims to capacitate students with the knowledge required in the designing new products or equipment for use in industry or society. Students also acquire the skills to complete preventative maintenance so they can function at their highest capacity. The programme has a strong professional career focus and holders of this qualification are prepared to contribute and meet a specific niche in the labour market.

The programme allows for an early exit with a Diploma in Mechanical Engineering after successful completion of the two and a half years of study. Students who exit with a Diploma will be able to find employment in various industry as mechanical technicians and will be eligible to register with ECN as Engineering Technicians.

Upon completion of the Bachelor of Technology in Mechanical Engineering, graduates are well prepared to launch a successful career in the field of mechanical engineering, working within the chemical, mining, or iron and steel industries, or in transport services, power stations, or government services.

Criteria for Admission

In addition to meeting NUST General Admission Requirements as spelt out in the general rules, candidates must have at least 30 points on the Engineering Evaluation Scale, with a minimum of grade 3 in Mathematics and Physical Science at Grade 12/NSSC Higher Level or with a minimum A symbol in Mathematics, Physical Science and English at Grade 12/NSSC Ordinary Level.

If a candidate does not have Physical Science but has Physics or a “Physics equivalent” subject, the Registrar may upon recommendation from the relevant Head of Department and the Dean of the Faculty of Engineering, approve registration of the candidate.

Progression Rule No. 1 (applicable to students enrolled in InSTEM): The students must have passed all InSTEM .1/InSTEM.2 courses to proceed to S1

In addition, students who have passed Computer User Skills (CUS411S) i.e. from InSTEM programme etc., and are required to transition to the revised programme (new curriculum); will be offered an upgrading course to Computing for Technologists (CFT510S) at no additional cost. Students will be granted credit for Computing for Technologists upon successful completion of this upgrading course.

Progression Rule No. 2 (Applicable to holders of the National Diploma in Mechanical Engineering from Polytechnic of Namibia/NUST). Graduates with a minimum overall average of 50% will be admitted to the second year of this programme on condition that they take the following first year courses:

Semester 1	Semester 2
Applied Physics & Chemistry Computing for Technologies	Electronics and Instrumentation Engineering Materials Technologies Programming for Technologist

Progression Rule No. 3 (Applicable to current students registered of the NUST Bachelor of Technology in Mechanical Engineering). Credits will be granted for the following first year courses:

Semester 1	Semester 2
English for academic Purposes (EAP511S) Engineering Mathematics 1 Fundamentals of Electrical Technology Workshop Practice	Engineering Mathematics 2 Introduction to Engineering Drawings Engineering Mechanics (Statics)

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.

Students who graduate with a Bachelor of Technology in Mechanical Engineering will ordinarily be able to pursue further studies in Mechanical engineering or a related cognate area of learning, at NQF level 8.

Mode of Delivery

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

Assessment strategies

The assessment for the courses is designed to enable students to fully develop and demonstrate a practising technologist would require their detailed analytical skills and produce original, well-researched and evidenced work as. Learning and assessment are integrated throughout the programme. Diversified Continuous Assessment strategies are applied to ensure that students are adequately / comprehensively assessed in all critical areas in a course. This approach enables students to:

- * Receive feedback on their progress towards the achievement of specific learning outcomes;
- * Conduct practicals and be able to conduct class seminars, writing technical reports, etc.

Forms of assessment for the programme include individual written assignments, group presentations, tests, case studies, investigational and design projects. These are varied depending on the learning outcomes for the core courses and according to the syllabus descriptions for the different courses. In accordance with NUST policy on diversified Continuous Assessment, each course will have a minimum of four assessment events.

Quality Assurance requirements

The teaching and learning processes are monitored through an effective quality assurance process that supports continuous improvement. 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 a Bachelor Honours in engineering degree or the moderators must 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, 20 approved by Senate, for moderation. This ensures that all forms of summative assessment of student performance within the programme are effective, fair, and rigorous and address the stated learning outcomes.

Transition Arrangements

The Bachelor of Technology in Mechanical Engineering (old curriculum) will be phased out systematically until 2024 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 2018.

Students who are registered in 2018 for the 1st year of the out-phasing programme (old curriculum), and who do not meet the rules of the Faculty of Engineering for progression to the 2nd year at the end of 2018, will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in the table below.

The revised Bachelor of Technology in Mechanical Engineering (new curriculum) takes effect from January 2019 with implementation of the 1st year only. The revised programme (new curriculum) will be fully implemented by 2022. Courses will only be offered based on the new/revised syllabi in 2019 (1st), 2020 (2nd year), 2021 (3rd year) and 2022 (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 the Table below. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.

The deadline for complete phasing out of the Bachelor of Technology in Mechanical Engineering (old curriculum) is 2024 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

1st Year Courses to be credited

Course Code	Bachelor of Technology: Mechanical Engineering (Old Courses)	Course Code	Bachelor of Technology: Mechanical Engineering (Equivalent New/Revised Courses)
EMS1100	Engineering Mechanics (Statics)	EMS520S	Engineering Mechanics (Statics)
ELE111S	Electrical Engineering	FET510S	Fundamentals of Electrical Technology
MAT111S	Mathematics 1	ENM510S	Engineering Mathematics 1
CAD1100	Computer Aided Draughting	IED520S	Introduction to Engineering Drawing
WPR1100	Workshop Practice	WPR510S	Workshop Practice
MAT120S	Mathematics 2	ENM520S	Engineering Mathematics 2

Corresponding Courses to be done, if Failed – this is not a Credit Table

Course Code	Bachelor of Technology: Mechanical Engineering (Old Courses)	Course Code	Bachelor of Technology: Mechanical Engineering (New/Revised Corresponding Courses)
FMC1200	Fluid Mechanics 2	FDM610S	Fluid Mechanics
FMC310S	Fluid Mechanics 3		
EMP1200	Engineering Mechanics (Particle Dynamics) 2;	EMD610S	Engineering Mechanics (Dynamics)
EMR310S	Engineering Mechanics 3A (Rigid Body Dynamics)		
MAT120S	Mathematics 2	ENM520S	Engineering Mathematics 2
DEM1200	Design and Manufacture 2	DME610S	Design of Machine Elements 1
MOM1200	Mechanics of Materials 2	MCM610S	Mechanics of Materials 1
Mechanics of Materials 3A			
TDY1200	Thermodynamics 2	TMD610S	Thermodynamics
TDY310S	Thermodynamics 3A		
MPR2100	Mechanical Engineering Practice 1	WME610S	Work Integrated Learning (WIL)
MPR2200	Mechanical Engineering Practice 2		
MAT311S	Mathematics 3	ENM610S	Engineering Mathematics 3
DEM310S	Design and Manufacture 3A	DME620S	Design of Machine Elements 2
MEP320S	Mechanical Engineering Project	MDP720S	Mechanical Design Project
TOM320S	Theory of Machines 3A	TMC620S	Theory of Machines
MOM320S	Mechanics of Materials 3B ;	MCM620S	Mechanics of Materials 2
MOM410S	Mechanics of Materials 4		
HTF410S	Heat Transfer 4	HTR620S	Heat Transfer
MEP410S	Mechanical Engineering Project 4A	MEP720S	Mechanical Engineering Project 1
MEP420S	Mechanical Engineering Project 4B	MEP710S	Mechanical Engineering Project 2
COS410S	Control Systems 4	COS620S	Control Systems

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out in 2024. The following courses do not have corresponding courses in the revised programme:

- * Fluid Mechanics 3B (FMC320S)
- * Fluid Mechanics 4 (FMC420S)
- * Refrigeration and Air Conditioning (RAC410S)
- * Mechanical Vibration and Noise 4 (MVN410S)
- * Mathematics 4 (MAT410S)
- * Internal Combustion Engines (ICE320S)
- * Experimental Stress Analysis (ESA410S)

Requirements for Qualification Award

This degree will be awarded to candidates credited with a minimum of **519** NQF credits, while the Diploma in Mechanical Engineering (Level 6) will be awarded to candidates credited with a minimum of **360** NQF credits. In addition, students should meet the administrative and financial requirements as spelt out in the NUST general rules and regulations. As part of the compulsory section, candidates are required to undertake a compulsory component of Work Integrated Learning (WIL) as detailed out in the syllabus.

CURRICULUM

YEAR 1				
Semester 1				
Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Engineering Mathematics 1	ENM510S	None	5	15
Fundamentals of Electrical Technology	FET510S	None	5	12
Workshop Practice	WSP510S	None	5	NCB
Applied Physics and Chemistry	APP510S	None	5	12
Computing for Technologists	CFT510S	None	5	12
Semester 2				
Engineering Mathematics 2	ENM520S	Engineering Mathematics 1	5	15
Introduction to Engineering Drawing	IED520S	None	5	12
Electronics and Instrumentation	EAI520S	Fundamentals of Electrical Technology	5	12
Engineering Materials Technologies	EMT520S	None	5	12
Engineering Mechanics (Statics)	EMS520S	Engineering Mathematics 1	5	12
Programming for Technologists	PFT520S	Computing for Technologists	5	12
YEAR 2				
Semester 3				
Engineering Mechanics (Dynamics)	EMD610S	Engineering Mechanics (Statics)	6	15
Engineering Mathematics 3	ENM610S	Engineering Mathematics 2	6	15
Design of Machine Elements 1	DME610S	Introduction to Engineering Drawing Engineering Mechanics (Statics)	6	12
Fluid Mechanics	FDM610S	None	6	12
Mechanics of Materials 1	MCM610S	Engineering Mechanics (Statics)	6	12
Thermodynamics	TMD610S	None	6	12
Semester 4				
Design of Machine Elements 2	DME620S	Design of Machine Elements 1	6	12
Control Systems	COS620S	Engineering Mathematics 3	6	12
Mechanics of Materials 2	MCM620S	Mechanics of Materials	6	12
Heat Transfer	HTR620S	Thermodynamics	6	12
Information Competence	ICT521S	None	5	10
Theory of Machines	TMC620S	Engineering Mechanics (Dynamics)	6	12
YEAR 3				
Semester 5				
Work Integrated Learning (WIL)	WME610S	A pass in all first year Engineering courses	6	60
Sustainability and Development	SYD611S	None	6	12
Semester 6				
Mechanical Engineering Project 1	MEP720S	None	7	30
Mechanical Design Project	MDP720S	Design of Machine Elements	7	15
Heating, Ventilation, Air Conditioning and Refrigeration	HVA720S	Heat Transfer	7	12
Innovation, Creativity & Entrepreneurship	ICE712S	None	7	15
Plus ONE of the following Elective Courses (depending on demand)				
Computational Fluid Dynamics	CFD720S	Fluid Mechanics, Control Systems	7	15
Modern Manufacturing Technologies	MMT720S	Workshop Practice	7	15

YEAR 4

Semester 7

Mechanical Engineering Project 2	MEP710S	Mechanical Engineering Project 1	7	36
Maintenance Engineering	MTE710S	None	7	12
Renewable Energy Systems	RES710S	Heat Transfer	7	12

Plus ONE of the following Elective Courses (depending on demand)

Automotive Engineering	AME710S	None	7	12
Mechanical Vibration and Noise	MVN710S	Theory of Machines	7	12

BACHELOR OF TECHNOLOGY IN MARINE ENGINEERING
(Not offered in 2024)

07BTME

Description

The Bachelor of Technology in Marine Engineering is a double degree developed in partnership with Satakunta University of Applied Sciences. The programme aims at equipping students who intend to embark upon a career in maritime industry as Marine Engineer on commercial vessels by providing practiced-oriented training in the field of Marine Engineering.

Overall, the programme equips students with comprehensive and systematic knowledge and skills required to operate in international traffic, safely manage, facilitate, and undertake operation and maintenance linked to the shipboard marine engineering systems. Graduates of this programme will be able to contribute significantly to the national development goals in various roles such as engineer, chief engineer and captain within Namibia and abroad.

Criteria for Admission

In addition to meeting NUST General Admission Requirements as spelt out in the general rules, candidates must have at least 30 points on the Engineering Evaluation Scale, with a minimum 3 symbol in Mathematics and Physical Science at Grade 12/NSSC Higher Level or with a minimum A symbol in Mathematics, Physical Science and English at Grade 12/NSSC Ordinary Level.

If a candidate does not have Physical Science but has Physics or a “Physics equivalent” subject, the Registrar may upon recommendation from the relevant Head of Department and the Dean of the Faculty of Engineering, approve registration of the candidate.

Those who do not fulfill the minimum requirements as stated above, but have long years of on board experience, will be considered for admission after evaluating their knowledge and skills.

Candidates who have successfully completed both In STEM 1 and In STEM 2 offered at NUST will be admitted in the programme.

Holders of a National Diploma (ND) in Mechanical Engineering obtained from NUST are eligible for admission. Depending on the results of an evaluation of equivalence of their qualifications, holders of similar qualifications obtained elsewhere will be considered.

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.

Students who graduate with a Bachelor of Technology in Marine Engineering will ordinarily be able to pursue further studies in Marine engineering 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. Courses for the first two years will be offered at NUST campus in Windhoek and at Namibia Maritime and Fisheries Institute (NAMFI) campus in Walvis Bay. Courses for third and fourth year will be offered at SAMK, Finland. Thesis which is scheduled for the final semester can be completed at NUST or at SAMK.

Requirements for Qualification Award:

This degree will be awarded to students credited with 492 NQF credits and who have met the detailed qualification requirements as set out below. Students are required to complete compulsory courses (worth 484 credits) and elective courses (worth 8 credits). In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

Students are required to undertake a compulsory component of Work Integrated Learning (WIL) in the form of on-board training.

The Bachelor of Technology in Marine Engineering has one major subject/cognate area of learning that is developed in increasing complexity across relevant NQF levels.

CURRICULUM

YEAR 1

Semester 1 - at NUST, Windhoek

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Engineering Mathematics 1	EM510S	None	5	15
Fundamentals of Electrical Technology	FET510S	None	5	12
Workshop Practice	WSP510S	None	5	NCB
Applied Physics and Chemistry	APC510S	None	5	12
Computing for Technologists	CFT510S	None	5	12

Semester 2 - at NUST Windhoek

Engineering Mathematics 2	ENM520S	Engineering Mathematics 1	5	15
Introduction to Engineering Drawing	IED520S	None	5	12
Electronics and Instrumentation	EAI520S	Fundamentals of Electrical Technology	5	12
Engineering Materials Technologies	EMT520S	None	5	12
Engineering Mechanics (Statics)	EMS520S	Engineering Mathematics 1	5	12
Thermofluids	TFL520S	None	5	12

YEAR 2

Semester 3 – at NUST

Engineering Mechanics (Dynamics)	EMD610S	Engineering Mathematics 2	6	15
Mechanics of Materials 1	MCM610S	Engineering Mechanics (Statics)	6	12
Electric Power Engineering 1	EPN510S	None	5	8
Instrumentation and Automation	IAA520S	None	5	5
Hydraulics and Pneumatics	HAP520S	None	5	8
Pumps and Piping	PAP520S	None	5	8
Turbine Engineering and Operational Safety	TES520S	None	5	8

Semester 4 – at NAMFI

Marine Engineering Knowledge 3	MEK520S	Marine Engineering Knowledge 1 & 2	5	16
Ship's Machinery and Technical Systems 3	MTS520S	Ship's Machinery and Technical Systems 1 & 2	5	8
On-board Training	OBT520S	None	5	NCB
Marine Engineering Knowledge 2	MEK511S	None	5	10
Ship's Machinery and Technical Systems 1 & 2	MTS510S	None	5	12

BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING
(Revised – Phased in 2016)

08BEME

NQF Level: 8

NQF Credits: 597

NQF Qualification ID: Q0903

Description

The revised Bachelor of Engineering: Mechanical Engineering builds to a level of conceptual sophistication, specialised knowledge and intellectual autonomy in accordance with requirements at NQF level 8. This programme demands a high level of theoretical engagement and intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major subject/cognate areas of learning. Through this programme, students will be equipped with cognitive and intellectual skills, key transferable skills, and professional/technical/practical skills that would enable them to demonstrate in-depth understanding of the principles of mechanical engineering. Students will be capacitated with the knowledge to design and manufacture engineering systems. The programme includes a substantial element of Work Integrated Learning and requires the conduct and reporting of supervised research in order to adequately prepare students for entry into the profession.

The Bachelor of Engineering: Mechanical Engineering is designed to enable the graduates to register as Professional Engineers with the Engineering Council of Namibia (ECN) pending the fulfilment of post qualification requirements. The programme outcomes reflect the required levels of competence as 2 defined by the ECN, while the programme has also been designed to meet accreditation requirements of the Engineering Council of South Africa (ECSA).

Admission Criteria

In addition to meeting the University's General Admission Requirements as spelt out in the General Information and Regulations, candidates must have at least 37 points in five subjects on the University's Engineering Evaluation Scale, with a minimum:

- a) 3 symbol in Mathematics and Physical Science at Grade 12 NSSC Higher level, D symbol in English at NSSC Ordinary level and any other two subjects using a combination of both NSSCH and NSSCO (out-phasing school curriculum);
- b) D symbol in Mathematics, Physics and Chemistry at Advanced Subsidiary level, D symbol in English at NSSC Ordinary level and any other one subject at NSSCAS or NSSCO (phasing-in school curriculum).

OR

Candidates must have successfully completed the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) studies programme offered at the Namibia University of Science and Technology (NUST) with at least a combined average score of 60% for the A and B parts of the courses: Introduction to Mathematics, Introduction to Physics and Introduction to Chemistry but with a score not lower than 55% in each. However, a combined average score of 60% in the above InSTEM courses will not guarantee automatic entry into any of the mainstream programmes as the final selection will be based on merit and the number of places available.

Students with foreign qualifications that are different from the National Qualifications Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the prospective Department on a case-by-case basis in accordance with the University's 2020 revised Engineering Evaluation Scale.

Articulation Arrangements

Transfer of credits will be dealt with according to the Namibia University of Science and Technology 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 graduate with a Bachelor of Engineering: Mechanical Engineering will ordinarily be able to pursue further studies in Mechanical Engineering, or a related cognate area of learning, at NQF level 9.

Mode of Delivery

The programme will only be offered on the full-time mode in accordance with Namibia University of Science and Technology rules.

Requirements for Qualification Award

This degree will be awarded to students credited with 597 NQF credits and who have met the detailed qualification requirements as set out below. Students are required to complete compulsory courses (worth 573 credits) and elective courses (worth 24 credits). In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook. Students are required to undertake a compulsory component of Work Integrated Learning (WIL) as detailed in the syllabi for TBC as a precondition for graduation.

Teaching, 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, including design studio, lectures, practical classes, workshops and seminars, site visits and Work Integrated Learning. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The Bachelor degree student must undertake compulsory Work integrated Learning were they have to fully participate in a wide range of mechanical engineering activities that will give them the required practical experience in industry. They do not only have to record all duties performed but also have to participate in the mechanical engineering projects so as to come up with optimal solutions for continual improvement of the civil processes. Their work performance is evaluated in terms of preliminary and final technical reports they submit at the end of the second and third years of their studies. Such reports must include technical, practical, attitude and work ethics that must be endorsed by their industrial supervisors/mentors and approved by the Department's Evaluation Committee members.

Assessment Strategies

The assessment for the courses is designed to enable students to fully develop and demonstrate their detailed analytical skills and produce original, well-researched and evidenced work as would be required from a practicing engineer. Forms of assessment for the programme include individual written assignments, group presentations, tests, investigational and design projects. These are varied depending on the learning outcomes for the core courses and according to the syllabus description for the different courses.

Quality Assurance Arrangements

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 studies or the person must be a well-respected expert in the field. All the courses that incorporate exit level outcomes of this programme (as defined by ECSA), as well as exit level courses at NQF level 8, will be externally moderated.

Transition Arrangements

The Bachelor of Engineering: Mechanical (old curriculum) will be phased out until 2017 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 2015.

Students who were registered in 2015 for the 1st, 2nd and 3rd year of the out-phasing programme (old curriculum) will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in Table 27 below, regardless of whether they have passed that particular academic period or not.

Corresponding Courses to be Done, If Failed

Course Code	Bachelor of Engineering: Mechanical Engineering (Current Courses)	Course Code	Bachelor of Engineering: Mechanical Engineering (New/Revised Corresponding Courses)
MTM110S	Engineering Mathematics 115	MTM110S	Engineering Mathematics 115
APH120S	Engineering Physics 114	APH120S	Engineering Physics 114
END511S	Engineering Drawing 114	IED520S	Introduction to Engineering Drawing 115
AMC110S	Engineering Mechanics114	AMC110S	Engineering Mechanics114
CSK042S	Communication Skills	EAP511S	English for Academic Purposes
CUS411S	Computer User Skills	CEM510S	Computing for Engineers 114
ACH110S	Engineering Chemistry 123	ACH110S	Engineering Chemistry 123
MTM210S	Engineering Mathematics 125	MTM210S	Engineering Mathematics 125
MOM120S	Mechanics of Materials 124	MOM120S	Mechanics of Materials 124
	None	IIN521S	Introduction to Industry 4.0 124
EEG120S	Electrical Engineering 124	EEG120S	Electrical Engineering 124
EMC610S	Engineering Mechanics 213	EMC610S	Engineering Mechanics 213
MOM620S	Mechanics of Materials 214	MOM620S	Mechanics of Materials 214
ADI111S	Introduction to Algorithm Design 214	PFE610S	Programming for Engineers 214
NMS620S	Numerical Methods 224	NMS620S	Numerical Methods 224
EMC620S	Engineering Mechanics 224	EMC620S	Engineering Mechanics 224
TDN620S	Thermodynamics 225	TDN620S	Thermodynamics 225
ETR620S	Electronics 224	ETR620S	Electronics 224
POD620S	Principles of Design 224	POD620S	Principles of Design 224

SSS710S	Statistics 314	SSS710S	Statistics 314
EEM720S	Engineering Management 324	ETM810S	Engineering and Technology Management 414
SYM710S	Systems Modelling 313	SYM710S	Systems Modelling 313
MOM710S	Mechanics of Materials 314	MOM710S	Mechanics of Materials 314
EXM710S	Experimental Methods 315	EXM710S	Experimental Methods 315
TFL710S	Thermofluids 314	TFL710S	Thermofluids 315
MSP710S	Manufacturing Processes 313	MSP710S	Manufacturing Processes 313
MAD710S	Machine Design 315	MAD710S	Machine Design 315
CNS720S	Control Systems 324	CNS720S	Control Systems 324
VAN720S	Vibration and Noise 324	VAN720S	Vibration and Noise 324
HTF720S	Heat Transfer 324	HTF720S	Heat Transfer 324
MAD720S	Machine Design 315	TOM720S	Theory of Machines 324
ICE712S	Innovation Creativity & Entrepreneurship	ICE712S	Innovation Creativity & Entrepreneurship
ERM810S	Engineering Research Methodology 414	ERM810S	Engineering Research Methodology 414
DSP810S	Design Project 419	DSP810S	Design Project 419
EVE810S	Environmental Engineering 414	EVE810S	Environmental Engineering 414
	None	ESR810S	Renewable Energy Systems 414
MTS810S	Mechatronics 415	MTS810S	Mechatronics 415
MCP820S	Mechanical Project 424	MCP820S	Mechanical Project 424
CPN810S	Cleaner Production Technology 425	CPN810S	Cleaner Production Technology 425
PPT820S	Power Plant Technology 425	PPT820S	Power Plant Technology 425
MPA820S	Microprocessor Applications 425	MPA820S	Microprocessor Applications 425
WME820	Work Integrated Learning	WME820S	Work Integrated Learning

The table above only highlights new/revised core courses in engineering that should be done if courses on the old curriculum are failed. Service course from other Departments are excluded but the rules of relevant Departments apply to this programme as well. Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12
Introduction to Engineering Drawing 115	IED511S	None	5	15
Computing for Engineers 114	CEN510S	None	5	12

Semester 2

Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Engineering Chemistry 123	ACH521S	None	5	9
Materials Science 124	MLS1521S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114, Eng. Mathematics 115	5	12
Introduction to Industry 4.0 124	IIN521S	None	5	12
Workshop Practice 120	WPR421S	None	5	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM310S	Engineering Mathematics 125	6	15
Fluid Mechanics 214	FMC610S	Engineering Mechanics 114	6	12
Programming for Engineers 214	PFE610S	Computing for Engineers 114	6	12
Mechanics of Materials 214	MOM610S	Mechanics of Materials 124	6	12
Engineering Mechanics 214	EMC610S	Engineering Mathematics 115, Eng. Physics 114	6	12
Electrical Machines 214	EMC611S	Electrical Circuits 124	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Engineering Mechanics 224	EMC620S	Engineering Mathematics 125, Eng. Mechanics 213	6	12
Statistics 224	SSS621S	Engineering Mathematics 215	6	12
Thermodynamics 224	TDN620S	Engineering Mathematics 115	6	12
Information Competence	ICT521S	None	5	10
Principles of Design 224	POD620S	Engineering Drawing 114, Workshop Practice 120	6	12
Electronics 224	ETR620S	Electrical Circuits 124	6	12

YEAR 3

Semester 5

Mechanics of Materials 314	MOM710S	Mechanics of Materials 214	7	12
Thermofluids 315	TFL710S	Fluid Mechanics 214, Thermodynamics 224	7	15
Experimental Methods 314	EXM710S	Engineering Mathematics 215, Electronics 224	7	12
Systems Modelling 313	SYM710S	Engineering Mechanics 114, Electrical Machines 214	7	9
Manufacturing Processes 313	MPS710S	Workshop Practice 120	7	9
Machine Design 315	MAD710S	Principles of Design 224	7	15

Semester 6

Control Systems 324	CNS720S	Systems Modelling 313	7	12
Theory of Machines 324	TOM720S	Engineering Mechanics 224, Machine Design 315	7	12
Heat Transfer 324	HTF720S	Thermodynamics 225, Numerical Methods 224	7	12
Innovation Creativity & Enterprise	ICE712S	None	7	12
Vibration and Noise 324	VAN720S	Eng. Mechanics 224, Experimental Methods 315	7	12
Sustainability and Development	SYD611S	None	7	15

YEAR 4

Semester 7

Design Project 419	DSP810S	All courses up to and including Semester 6	8	27
Environmental Engineering 414	EVE810S	None	8	12
Engineering Research Methodology 414	ERM810S	None	8	12
Engineering & Technology Mgt 414	ETM810S	None	8	12

Plus ONE of the following Elective courses

Renewable Energy Systems 414	ESR810S	Thermofluids 314, Heat Transfer 325, Control Sys. 324	8	12
Computer Aided Manufacturing 414	CAM810S	Manufacturing Processes 313	8	12
Mechatronics 414	MTS810S	Electronics 224, Control Sys. 324, Exp. Methods 315	8	12

Semester 8

Mechanical Project 424	MCP820S	Engineering Research Methodology 414	8	42
Engineer-in-Society: Ethics, Professionalism 424	EIS820S	None	8	12
Work Integrated Learning (WIL)	WME820S	All courses up to and including Semester 4	8	NCB

Plus ONE of the following Elective courses

Power Plant Technology 424	PPT820S	Thermofluids 315, Heat Transfer 324, Control Sys. 324	8	12
Cleaner Production 424	CPN820S	Environmental Engineering 414	8	12
Microprocessor Applications 424	MPA820S	Mechatronics 415	8	12

BACHELOR OF ENGINEERING IN INDUSTRIAL ENGINEERING
(Phased in 2016)

08BIND

NQF Level: 8

NQF Credits: 594

NQF Qualification ID: Q0902

Description

The Bachelor of Engineering: Industrial Engineering aims to produce graduates that are flexibly equipped to work effectively within industrial teams or research and development groups, contributing knowledge and specialist skills, demonstrating an awareness of the context of work, and taking responsibility for personal and professional development.

The programme further aims to enable students to demonstrate comprehensive understanding of subject matter in engineering and business and develop productive solutions for processes found in organisations and thereby enhancing the competitiveness of such organisations. This would enable graduates to apply knowledge of industrial management in planning and optimising business operations in various industries in the private and public sectors, such as manufacturing, mining, management consultancies, banking, healthcare, transport, and agriculture.

The Bachelor of Engineering: Industrial Engineering prepares industrial experts to conduct comprehensive research, evaluate findings/discussions in literature, analyse and argue from evidence, engage in rigorous intellectual analysis, and contribute to the advancement of knowledge in the field. Overall, this programme is believed to produce graduates who are able to make a contribution to industry, the community and the society as a whole.

The Bachelor of Engineering: Industrial Engineering is designed to enable the graduates to register as Engineer-in-Training with the Engineering Council of Namibia (ECN) pending the fulfilment of post qualification requirements. The programme outcomes reflect the required levels of competence as defined by the ECN, while the programme has also been designed to meet accreditation requirements of the Engineering Council of South Africa (ECSA), and the Accreditation Board for Engineering and Technology (ABET) of the United States of America.

Criteria for Admission

In addition to meeting the Namibia University of Science and Technology General Admission Requirements as spelt out in the general rules, candidates must have at least 37 points on the Engineering Evaluation Scale, with a minimum 3 symbol in Mathematics, Physical Science and English at Grade 12/NSSC Higher Level. Only symbols on NSSC Higher Level will be considered for Mathematics, Physical Science and English.

If a candidate does not have Physical Science, but has Physics or a “Physics equivalent” subject, the Registrar may upon recommendation from the relevant Head of Department and the Dean of the School of Engineering, approve registration of the candidate.

OR

Candidates must have successfully completed the InSTEM programme offered at the Namibia University of Science and Technology with at least 60% in each of the Semester 2 courses prescribed for Engineering, that is, English I Practice (EPR511S), Introduction to Mathematics B (ITM402S), Introduction to Physics (IPH420S), Introduction to Chemistry B (ICH402S) and Engineering Skills (ESK402S). However, a score of 60% in the above courses will not guarantee automatic entry into the programmes as selection will be based on merit.

Articulation Arrangements

Transfer of credits will be dealt with according to the Namibia University of Science and Technology 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 graduate with a Bachelor of Engineering: Industrial Engineering will ordinarily be able to pursue further studies in Industrial Engineering, or a related cognate area of learning, at NQF level 9.

Mode of Delivery:

The programme will only be offered on the full-time mode in accordance with Namibia University of Science and Technology rules and regulations.

Requirements for Qualification Award

This qualification will be awarded to students credited with 594 NQF credits and who have met the detailed qualification requirements as set out below. Students are required to complete all the compulsory courses (worth 594 credits). In addition, students should meet the administrative and financial requirements as spelt out in the Namibia University of Science and Technology Yearbook.

Students are required to undertake a compulsory component of Work integrated Learning as detailed in the syllabi for WIL320 and WIL420 as a precondition for graduation.

Assessment Strategies

The assessment for the courses, comprising continuous and end of term examinations, is designed to enable students to fully develop and demonstrate their detailed analytical skills and produce original, well-researched and evidenced work as would be required from a practising engineer.

The Bachelor of Engineering: Industrial Engineering programme complies fully with the assessment regulations detailed in the Undergraduate Scheme document of the Namibia University of Science and Technology as well as the requirements of ECN and ECSA. Forms of assessment for the programme include individual written assignments, individual and group presentations, tests, examinations, investigational and design projects. These are varied depending on the learning outcomes for the core courses and according to the syllabus description for the different courses

Quality Assurance Arrangements

The teaching and learning processes are monitored through an effective quality assurance process that supports continuous improvement. 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 a Master's degree. The moderators must also be knowledgeable individuals who are well-respected experts in the field. All exit level courses for this programme (in accordance with ECSA's definition), as well as exit level courses at NQF level 8, will be moderated externally.

Transition Arrangements:

This is a new programme which does not replace any existing programme(s).

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12
Introduction to Engineering Drawing 115	IED511S	None	5	15
Computing for Engineers 114	CEN510S	None	5	12

Semester 2

Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Engineering Chemistry 123	ACH521S	None	5	9
Materials Science 124	MLS521S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114, Eng. Mathematics 115	5	12
Introduction to Industry 4.0 124	IIN521S	None	5	12
Workshop Practice 120	WPR421S	None	5	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM310S	Engineering Mathematics 125	6	15
Fluid Mechanics 214	FMC610S	Engineering Mechanics 114	6	12
Programming for Engineers 214	PFE610S	Computing for Engineers 114	6	12
Mechanics of Materials 214	MOM610S	Mechanics of Materials 124	6	12
Engineering Mechanics 214	EMC610S	Engineering Mathematics 115, Eng. Physics 114	6	12
Electrical Machines 214	EMC510S	Electrical Circuits 124	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Engineering Mechanics 224	EMC620S	Engineering Mathematics 125, Eng. Mechanics 213	6	12
Statistics 224	SSS621S	Engineering Mathematics 215	6	12

Thermodynamics 224	TDN620S	Engineering Mathematics 115	6	12
Information Competence	ICT521S	None	5	10
Principles of Design 224	POD620S	Engineering Drawing 114, Workshop Practice 120	6	12
Electronics 224	ETR620S	Electrical Circuits 124	6	12
YEAR 3				
Semester 5				
Systems Simulation Modelling 314	SSM710S	Statistics 224	7	12
Industrial Ergonomics 313	IEM710S	None	7	9
Manufacturing Systems 314	MFS710S	None	7	12
Quality engineering 314	QEN710S	Statistics 224	7	12
Optimisation Methods 314	OMM710S	Computing for Engineers 114	7	12
Manufacturing Processes 313	MPS710S	Workshop Practice 120	7	9
Engineering Economics 313	EEC710S	None	7	9
Semester 6				
Industrial Engineering Design 324	IED720S	Manufacturing Processes 313	7	12
Industrial Logistics 323	ILG720S	Optimisation Methods 314	7	9
Process Planning and Cost Estimation 424	PPC720S	Manufacturing Processes 313	7	12
Accounting and Management 324	ACM720S	None	7	12
Innovation Creativity and Entrepreneurship	ICE712S	None	7	15
Sustainability and Development	SYD611S	None	6	12
YEAR 4				
Semester 7				
Industrial Design Project 414	IDP810S	All courses up to and including semester 5	8	27
Environmental Engineering 414	EVE810S	None	8	12
Optimisation Methods 414	OMM810S	Optimisation Methods 314	8	12
Engineering Research Methodology 414	ERM810S	None	8	12
Engineering and Technology Mgt 414	ETM810S	None	8	12
Semester 8				
Industrial Engineering Project 420	IEP820S	Engineering Research Methodology 414	8	42
Projection and Operations Management 414	POM820S	Optimisation Methods 314, Statistics 224 Industrial Logistics 324	8	12
Engineer-in-Society: Ethics, Professionalism 424	EIS820S	None	8	12
Work Integrated Learning (WIL)	WME820S	All courses up to and including Semester 4	8	NCB

ELECTRICAL AND COMPUTER ENGINEERING

QUALIFICATIONS OFFERED

Bachelor of Technology in Electronic/Power Engineering (Old Programme- Phasing out in 2025)	35BELL and 35BPEN
Bachelor of Technology in Electronic Engineering (Revised Programme)	07BELL
Bachelor of Technology in Power Engineering (Revised Programme)	07BPEN
Bachelor of Engineering in Electronics and Telecommunications Engineering	08BEET
Bachelor of Engineering in Electrical Power Engineering	08BEEP

BACHELOR OF TECHNOLOGY IN ELECTRONIC/POWER ENGINEERING (Old Programme – Phasing out 2025)

35BELL & 35BPEN

BACHELOR OF TECHNOLOGY IN ELECTRONIC (Phasing out 2025)

35BELL

Description

Electronics is the buzzword of modern technology but has a history dating back to the first telephone and a little later the wireless. The discovery of semi-conductor technology opened up a vast area of new applications for increasingly smaller and more powerful devices. Qualified Technicians in this field of study are involved in telecommunications and radio/TV broadcasting, automation in which programmable controllers are used to operate systems and the maintenance and repair of electronic equipment and systems which is a field of specialisation.

Currently this Programme is offered only on part time and is divided into 4 semesters.

NOTE: Not all courses indicated in the respective semesters will be offered. The courses offered will depend on student enrolment and departmental resources.

Exception Rule: (For all subsequent progression rules) the Registrar may, after student counselling and upon recommendation of the Course Lecturer and the HoD and the Dean, approve registration for courses if this directly supports the student's success.

Progression Rule No. 1A: (Applicable to students enrolled in ItES). The student must have completed all ItES.1 and ItES.2 courses to proceed to S1.

Progression Rule No. 1B.1: (Applicable to Students in the Electronic and Power Programmes that qualify to enrol directly into S1). The student must have been granted credits for the following courses Introduction to Chemistry, Introduction to Physics, Introduction to Mathematics Module 1, Introduction to Mathematics Module 2, English in Practice, Engineering Graphics (IDT012S), Engineering Skills Module 1 (TLS011S_ and Engineering Skills Module 2 (TLS021S) before being allowed to enrol for S1.

S1 (Semester 1)

Course Code	Course Title	Pre-Requisite
EAP511S	English for Academic Purposes	English in Practice/Language in Practice B
DEL1100	Digital Electronics 1**	Introduction to Physics Introduction to Mathematics Module 2
ELE111S	Electrical Engineering 1**	English in Practice/Language in Practice B Introduction to Physics Introduction to Mathematics Module 2
ELC1100	Electronics 1**	English in Practice/Language in Practice B Introduction to Physics Introduction to Mathematics Module 2
ITD012S	Engineering Graphics	None
MAT111S	Mathematics 1**	English in Practice/Language in Practice B Introduction to Mathematics Module 2
CUS411S	Computer User Skills*	See admission Requirements

*Only applicable for candidates entering S1 directly after school

*** English for Academic Purposes is available on Distance Education Mode, but is this option is taken then the Vacation Schools are compulsory

S2 (Semester 2)

Course Code	Course Title	Pre-Requisite
APR520S	Applied Programming	Computer User Skills

DEL1200	Digital Electronics 2**	Introduction to Mathematics Module 2 Digital Electronics 1, Electronics 1, Mathematics 1 Co-Requisite: English for Academic Purposes
ELE120S	Electrical Engineering 2	Electrical Engineering 1, Mathematics 1 Co-Requisite: English for Academic Purposes
ELC1200	Electronics 2**	Electronics 1, Electrical Engineering 1, Mathematics 1 Co-Requisite: English for Academic Purposes
MAT120S	Mathematics 2**	Mathematics 1, English for Academic Purposes
PRJ110S	Projects 1	Computer User Skills, Engineering Graphics Electronics 1, Electrical Engineering 1 Co-Requisite: English for Academic Purposes

** Core S1/S2 Courses

Progression Rule No. 2: The student must have passed all core S1/S2 courses** to proceed to the relevant Engineering Practice.

- The student may not enrol for any full time courses whilst doing Engineering Practice 1 or Engineering Practice 2. In case the student was granted exception, according to the conditions of the exception rule, he/she may only enrol for a maximum of one full time course during P1 and P2 subject to the written approval of the employer/bursary giver.

NOTE: *The student must submit proof of employment offer to the coordinator before he/she can register for either Practice 1 or Practice 2.*

P1 (Semester 3)

Course Code	Course Title	Pre-Requisite
LPR2100	Electronic Engineering Practice 1	See Progression Rule 2

P2 (Semester 4)

Course Code	Course Title	Pre-Requisite
LPR2200	Electronic Engineering Practice 2	Electronic Engineering Practice 1

Progression Rule No 3: The student must have passed all S1/S2 core courses to proceed to S3.

S3 (Semester 5)

Course Code	Course Title	Pre-Requisite
CEL1300	Communication Electronics 2	Electrical Engineering 2, Mathematics 2, Electronics 2
CTS210S	Control Systems 2	Mathematics 2, Electronics 2, Electrical Engineering 2 Co-Requisite: Mathematics 3
DPJ310S	Design Projects 3A	Projects 1
ECD310S	Electronic Design 3A	Electronics 2, Mathematics 2
MAT311S	Mathematics 3	Mathematics 2
MIC310S	Micro Controller Applications 3A	Digital Electronics 2, Applied Programming
PRJ210S	Projects 2	Projects 1, Electronics 2

S4 (Semester 6)

Course Code	Course Title	Pre-Requisite
DPJ320S	Design Projects 3B	15 Electrical Engineering Credits, (P1/P2 excluded) Design Projects 3A, Projects 2
ICE712S	Innovation, Creativity and Entrepreneurship	None

And any FOUR of the following Electives

AUT3300	Automation 3	Electronics 2, Applied Programming
CTS310S	Control Systems 3	Control Systems 2, Mathematics 3
EMA3400	Electrical Machines 3	Electrical Engineering 2, Electrical Machines 2, Mathematics 2
EPR3400	Electrical Protection 3	Power Engineering 3, Electrical Distribution 3, Mathematics 3
ECD320S	Electronic Design 3B	Electronic Design 3A
HFE1300	High Frequency Engineering 3	Communication Electronics 2, Mathematics 3
MIC320S	Micro Controller Application 3B	Micro Controller Application 3A
PEL3300	Power Electronics 3	Electrical Machines 2, Electronics 2, Mathematics 3

S5 (Semester 7)

Course Code	Course Title	Pre-Requisite
ESD410S	Electronic System Design 4	Electronic Design 3B, High Frequency Engineering 3 Micro controller Applications 3B
IPJ410S	Industrial Project 4A	Design Project 3B
MAT410S	Mathematics 4	Mathematics 3

S5 (Semester 8)

Course Code	Course Title	Pre-Requisite
IPJ410S	Industrial Project 4A	Design Project 3B

Any ONE of the following (Sequence choice)

CTS410S	Control Systems 4	Control Systems 3
ECC410S	Electronic Communications 4	Control Systems 2, Electronic Design 3B
MSA410S	Micro Controller Systems Applications 4	High Frequency Engineering 3, Micro Controller Applications 3B

Any ONE of the following but not the same as a previous choice (Elective choice)

CTS410S	Control Systems 4	Control Systems 3
EMG410S	Energy Management 4	None
EGM410S	Engineering Management 4	Innovation, Creativity and Entrepreneurship
ECC410S	Electronic Communications 4	Control Systems 2, Electronic Design 3B High Frequency Engineering 3
MAE410S	Maintenance Engineering 4	None
MSA410S	Micro Controller Systems Applications 4	Micro Controller Applications 3B
REN410S	Renewable Energy 4	None
REL410S	Radio Engineering 4	Electronic Communications 4

S6 (Semester 9)

Course Code	Course Title	Pre-Requisite
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Any ONE of the following (Sequence choice)

DCS410S	Digital Control Systems 4	Control Systems 3, Mathematics 4
DCM410S	Digital Communications 4	Electronic Communications 4 and Micro Controller Applications 3B
FLD410S	Field Programmable Logic Device Applications 4	Micro Controller Applications 3B

Any ONE of the following but not the same as a previous choice (Elective choice)

DCS410S	Digital Control Systems 4	Control systems 3, Mathematics 4
DCM410S	Digital Communications 4	Electronic Communications 4 and Micro Controller Applications 3B
EMG410S	Energy Management 4	None
EGM410S	Engineering Management 4	Innovation, Creativity and Entrepreneurship
FLD410S	Field Programmable Logic Device Applications 4	Micro Controller Applications 3B
MAE410S	Maintenance Engineering 4	None
REN410S	Renewable Energy 4	None
REL410S	Radio Engineering 4	Electronic Communications 4

S7 (Semester 10)

Course Code	Course Title	Pre-Requisite
IPJ420S	Industrial Project 4B	Industrial Project 4A

Any ONE of the following (Sequence choice)

DCS410S	Digital Control Systems 4	Control Systems 3, Mathematics 4
DCM410S	Digital Communications 4	Electronic Communications 4 and Micro Controller Applications 3B
EMG410S	Energy Management 4	None
EGM410S	Engineering Management 4	Innovation, Creativity and Entrepreneurship
FLD410S	Field Programmable Logic Device Applications 4	Micro Controller Applications 3B
MAE410S	Maintenance Engineering 4	None
REN410S	Renewable Energy 4	None
REL410S	Radio Engineering 4	Electronic Communications 4

**BACHELOR OF TECHNOLOGY IN POWER ENGINEERING
(Phasing out in 2025)**

35BPEN

Description

Graduates with a Diploma in Power Engineering are typically involved in the area of power distribution, from domestic installations to large commercial complexes and from small remote electrical installations to large high voltage demand points. Their knowledge also allows them to become involved in High voltage Power distribution at national grid level in cities and in towns.

Transmission and distribution of electrical energy. The Protection option will produce experts in power system protection. A Graduate of this programme will be able to assume responsibilities and work effectively in the modern workplace. Graduates will acquire practical skills that will enable them to supervise the implementation of solutions to practical problems. Currently this programme is offered only part time and is divided into 4 semesters.

NOTE: Not all courses indicated in the respective semesters will be offered. The course offered will depend on student enrolment and departmental resources.

Exception Rule: (For all subsequent progression rules) The Registrar may, after student counselling and upon recommendation of the Course Lecturer and the HoD and the Dean, approve registration for courses if this directly supports the student’s success.

Progression Rule No 1A: (Applicable to students enrolled in ItES). The student must have completed all ItES.1 and ItES. 2 courses to proceed to S1.

Progression Rule No 1B.1: (Applicable to student in the Electronic and Power Programmes that qualify to enrol directly into S1). The student must have been granted credits for the following courses Introduction to Chemistry (ITS012S), Introduction to Physics (ITS022S), Introduction to Mathematics Module 1 (ITM011S), Introduction to Mathematics Module 2 (ITM021S), Language in Practice B, Engineering Graphics (ITD012S), Engineering Skills Module 1 (TLS011S) and Engineering Skills Module 2 (TLS021S) before being allowed to enrol for S1.

S1 (Semester 1)

Course Code	Course Title	Pre-Requisite
EAP511S	English for Academic Purposes	English in Practice/Language in Practice B
DEL1100	Digital Electronics 1**	Introduction to Physics Introduction to Mathematics Module 2
ELE111S	Electrical Engineering 1**	English in Practice/Language in Practice B English in Practice/Language in Practice B Introduction to Physics Introduction to Mathematics Module 2
ELC1100	Electronics 1**	English in Practice/Language in Practice B Introduction to Physics Introduction to Mathematics Module 2
ITD012S	Engineering Graphics	None
MAT111S	Mathematics 1**	English in Practice/Language in Practice B Introduction to Mathematics Module 2
CUS411S	Computer User Skills*	See admission Requirements

* Only applicable for candidates entering S1 directly after school

** English for Academic Purposes is available on Distance Mode, but if this option is taken then the Vacation Schools are compulsory.

S2 (Semester 2)

Course Code	Course Title	Pre-Requisite
APR520S	Applied Programming	Computer User Skills
ELE120S	Electrical Engineering 2	Introduction to Mathematics Module 2 Electrical Engineering 1, Mathematics 1 Co-Requisite: English for Academic Purposes
EMA120S	Electrical Machines 2**	Electrical Engineering 1, Mathematics 1 Co-Requisite: English for Academic Purposes
ELC1200	Electronics 2**	Electronics 1, Electrical Engineering 1, Mathematics 1 Co-Requisite: English for Academic Purposes
MAT120S	Mathematics 2**	Mathematics 1 Co-Requisite: English for Academic Purposes

PRJ110S	Projects 1	Computer User Skills, Engineering Graphics Electronics 1, Electrical Engineering 1 Co-Requisite: English for Academic Purposes
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** Core S1/S2 Courses

Progression Rule No 2: The student must have passed all core S1/S2 courses** to proceed to relevant Engineering Practice 1. The student may not enrol for any full time courses whilst doing engineering Practice 1 or Engineering Practice 2. In case the student was granted exception, according to the conditions of the exception rule, he/she may only enrol for a maximum of one full time course during Practice 1 and Practice 2, subject to the written approval of employer/bursary giver.

NOTE: *The student must submit proof of employment offer to the coordinator before he/she can register for either Practice 1 or Practice 2*

P1 (Semester 3)

Course Code	Course Title	Pre-Requisite
EPR2100	Electrical Engineering Practice 1	See Progression Rule 2

P2 (Semester 4)

Course Code	Course Title	Pre-Requisite
EPR2200	Electrical Engineering Practice 2	Electrical Engineering Practice 1

Progression Rule No 3: The student must have passed all S1/S2 core courses to proceed to S3.

S3 (Semester 5)

Course Code	Course Title	Pre-Requisite
EMS1100	Engineering Mechanics	Introduction to Mathematics Module 2 Introduction to Physics, Engineering Skills Module 2 Co-Requisite: English in Practice/Language in Practice B
CTS210S	Control Systems 2	Mathematics 2, Electronics 2, Electrical Engineering 2 Co-Requisite: Mathematics 3
DPJ310S	Design Projects 3A	Projects 1
ELD3300	Electrical Distribution 3	Electrical Engineering 2, Electrical Machines 2, Mathematics 2
PEN310S	Power Engineering 3	Electrical Engineering 2, Mathematics 2
PRJ210S	Projects 2	Projects 1, Electronics 2
MAT311S	Mathematics 3	Mathematics 2

S4 (Semester 6)

Course Code	Course Title	Pre-Requisite
DPJ320S	Design Projects 3B	15 Electrical Engineering Credits, (P1/P2 excluded) Design Projects 3A, Projects 2
ICE712S	Innovation, Creativity and Entrepreneurship	None

And any FOUR of the following Electives

AUT3300	Automation 3	Electronics 2, Applied Programming
CEL1300	Communication Electronics 2	Electrical Engineering 2, Mathematics 2, Electronics 2
CTS310S	Control Systems 3	Control Systems 2, Mathematics 3
EMA3400	Electrical Machines 3	Electrical Engineering 2, Electrical Machines 2, Mathematics 2
EPR3400	Electrical Protection 3	Power Engineering 3, Electrical Distribution 3, Mathematics 3
ECD320S	Electronic Design 3B	Electronic Design 3A
HFE1300	High Frequency Engineering 3	Communication Electronics 2, Mathematics 3
MIC320S	Micro Controller Application 3B	Micro Controller Application 3A
PEL3300	Power Electronics 3	Electrical Machines 2, Electronics 2, Mathematics 3

S5 (Semester 7)

Course Code	Course Title	Pre-Requisite
IPJ410S	Industrial Project 4A	Design Project 3B
MAT410S	Mathematics 4	Mathematics 3
POS410S	Power Systems 4	Electrical Distribution 3, Electrical Engineering 3 Electrical Machines 3, Electrical Protection 3, Mathematics 3

S5 (Semester 8)

IPJ410S Industrial Project 4A Design Project

Any ONE of the following (Sequence choice)

CTS410S Control Systems 4 Control Systems 3
 EPR410S Electrical Projection 4A Electrical Distribution 3, Electrical Protection 3, Mathematics 3

Any ONE of the following (Sequence choice)

CTS410S Control Systems 4 Control Systems 3
 EMA410S Electrical Machines 4 Electrical Machines 3, Power Systems 4
 EPR410S Electrical Projection 4A Electrical Distribution 3, Electrical Protection 3, Mathematics 3
 EMG410S Energy Management 4 None
 EGM410S Engineering Management 4 Innovation, Creativity and Entrepreneurship
 HVE410S High Voltage Engineering 4 Power Engineering 3, Electrical Protection 3
 IPE410S Industrial Power Engineering 4 Electrical Distribution 3, Electrical Protection 3, Power Engineering 3
 PEL410S Power Electronics 4 Power Electronics 3, Electrical Machines 4, Control Systems 3
 MAE410S Maintenance Engineering 4 None
 REN410S Renewable Energy 4 None

S6 (Semester 9)

Any ONE of the following (Sequence choice)

DCS410S Digital Control Systems 4 Control Systems 3, Mathematics 4
 EPR420S Electrical Protection 4B Electrical Protection 4A

Any ONE of the following but not the same as a previous choice (Elective choice)

DCS410S Digital Control Systems 4 Control Systems 3, Mathematics 4
 EMA410S Electrical Machines 4 Electrical Machines 3, Power Systems 4
 EPR420S Electrical Protection 4B Electrical Protection 4A
 EMG410S Energy Management 4 None
 EGM410S Engineering Management 4 Innovation, Creativity and Entrepreneurship
 HVE410S High Voltage Engineering 4 Power Engineering 3, Electrical Protection 3
 IPE410S Industrial Power Engineering 4 Electrical Distribution 3, Electrical Protection 3, Power Engineering 3
 PEL410S Power Electronics 4 Power Electronics 3, Electrical Machines 4, Control Systems 3
 MAE410S Maintenance Engineering 4 None
 REN410S Renewable Energy 4 None

S6 (Semester 10)

IPJ420S Industrial Project 4B Industrial Project 4A

Any ONE of the following but not the same as a previous choice (Elective choice)

DCS410S Digital Control Systems 4 Control Systems 3, Mathematics 4
 EMA410S Electrical Machines 4 Electrical Machines 3, Power Systems 4
 EPR420S Electrical Protection 4B Electrical Protection 4A
 EMG410S Energy Management 4 None
 EGM410S Engineering Management 4 Innovation, Creativity and Entrepreneurship
 HVE410S High Voltage Engineering 4 Power Engineering 3, Electrical Protection 3
 IPE410S Industrial Power Engineering 4 Electrical Distribution 3, Electrical Protection 3, Power Engineering 3
 PEL410S Power Electronics 4 Power Electronics 3, Electrical Machines 4, Control Systems 3
 MAE410S Maintenance Engineering 4 None
 REN410S Renewable Energy 4 None

BACHELOR OF TECHNOLOGY IN ELECTRONIC/POWER ENGINEERING

35BELL & 35BPEN

In addition to the Institution's admission requirements for degrees, the following admission requirements to the Bachelor of Technology Degree Programme in Electronic Engineering and Bachelor of Technology Degree Programme in Power Engineering will apply:

National Diploma	Course registration will be based on attained pre-requisites
M.Dip	Appropriate credits will be transferred
T4 qualification	Appropriate exemptions will be considered
T3 qualification	Applicants will need to undertake studies in the relevant courses to satisfy the pre-requisites of the B.Tech courses

The Bachelor of Technology Degree in Electronic Engineering and the Bachelor of Technology Degree in Power Engineering have four components each, comprising 10 credits per Programme. The first component is the Bachelor of Technology Degree Foundation. The second component is the Bachelor of Technology Degree core to provide a technical overview of either Electronic or Power areas respectively. The third component is the Bachelor of Technology Degree Sequence. This is a two course in-depth sequence in a particular technical area. The student must select at least one sequence to develop technical expertise. The fourth and final component is the Bachelor of Technology Degree Electives, which enables students to take three elective courses. Students are allowed to broaden their Programme by selecting courses from the sequenced courses as well as from the individual speciality courses to add depth and breadth to their Programme.

The Bachelor of Technology programmes are designed in such a way that students must take a minimum of nine (9) courses which they should successfully complete in order to obtain the qualification. The courses are sequenced in such a way that Industrial Project 4B (IPJ420S) though a foundation course, must be taken in the last semester after the student has successfully completed at least seven (7) of the courses that are required to obtain the qualification. These include all of the other foundation courses the core courses, two courses of the same sequence and two additional courses from the list of electives including individual electives and sequence courses not selected above. To summarise, students will take:

Foundation Courses

- * Industrial Project 4A
- * Industrial Project 4B (2 credits)
- * Mathematics 4

One of the 2 Core Courses

- * Power systems 4
- * Electronic System Design 4

One of the following 4 Sequences

- * Electrical Protection Sequence (Power only)
1 Electrical Protection 4A and 2 Electrical Protection 4B
- * Micro controllers Sequence (Electronics only)
1 Field Programmable Logic Device Applications and 4 2-Micro controller System Applications 4
- * Communications Sequence (Electronics only)
1- Electronic Communications 4 and 2- Digital Communications 4
- * Controls Sequence (Power and Electronics)
1- Control Systems 4 and 2- Digital Control Systems 4

Three additional courses from the list of **Electives** including **individual electives and sequence courses** not selected above.

Institutional resources will determine the number of courses that can be offered and presentation of any one course is dependent on the number of students enrolling for such a course. The decision to present or not to present a course lies with the management of the Namibia University of Science and Technology.

Electronic and Power Engineering Presentation Schedule

P1 and P2 are full time applied studies, each with a minimum duration of 19 continuous weeks. These studies will be conducted in Industry under the supervision of a mentor in collaboration with the University's coordinator. These two courses will be presented in each semester of the year.

S2, S4 are full time theoretical semester courses and will only be presented in the second semester of each year.

S5 (Semester 7) is part time theoretical semester course and will be presented in the 1st Semester of every second year.

S5 (Semester 8) is a part time theoretical semester course and will be presented in the second semester of every second year.

S6 (Semester 9) is a part time theoretical semester course and will be presented in the first semester of every second year.

S6 (Semester 10) is a part time theoretical semester course and will be presented in the second semester of every second year.

Note: Students are solely responsible for their placement in industry for P1, P2 applied studies.

Description

Programme Aims/Purpose

The Bachelor of Technology in Electronic Engineering is an industry-oriented programme that aims to build a sound knowledge in the field of Electronic Engineering to be able to apply proven, commonly understood techniques, procedures, practices and codes to devise engineering solutions critical (including but not limited) to the Fourth Industrial Revolution (4IR). The programme is designed to adapt to the increasingly technology-driven economy, by enabling students to acquire essential skills in programming, automation, artificial intelligence, Internet-of-Things (IoT), and innovation and entrepreneurship.

The programme is focused on providing hands-on skills and building capacity in emerging communication and embedded technologies. Therefore, it aims to build essential skills and cultivate innovative talents to enable graduates to build successful careers and drive innovation and entrepreneurship in the electronic engineering related fields. Further, it set the educational base required for registration as an Incorporated Engineer with the Engineering Council of Namibia (ECN), pending fulfilment of ECN post-qualification requirements.

Criteria for Admission

Applicable to Grade 12 candidates:

In addition to meeting the NUST General Admission Requirements as spelt out in the general rules, candidates must have at least 30 points on the Admission Point Scale (see Appendix 3), counting up to five subjects that must include Mathematics, Physical Science and English; with a minimum of grade 3 in Mathematics and Physical Science at Grade 12/NSSC Higher Level or with a minimum A symbol in Mathematics, Physical Science and English at Grade 12/NSSC Ordinary Level.

Candidates who do not meet the minimum requirements for English, but who meet all other admission requirements, may be admitted into the programme on condition that they register for the institutional English courses pre-requisites to English for Academic Purposes, based on their NSSC Higher/ordinary level (or equivalent) English grades. If a candidate does not have Physical Science but has Physics or a "Physics equivalent" subject, the Registrar may, upon recommendation from the relevant Head of Department and the Dean of the Faculty of Engineering, approve registration of the candidate.

Applicable to students enrolled in InSTEM programme at NUST:

Candidates must have successfully completed **all** courses in the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) programme offered at NUST, with at least 50% in each of the following courses: Introduction to Mathematics B (ITM402S), Introduction to Physics B (ITM402S), and Introduction to Chemistry B (ITM402S). However, a score of 50% in these courses will not guarantee automatic entry into the programmes as selection will be based on merit.

Applicable to holders of a Diploma/National Diploma:

Holders of a Diploma/National Diploma (with a major in Electronic Engineering) from either the Polytechnic of Namibia/NUST or an equivalent Diploma from any other recognised institutions may be admitted into Semester seven (7) of this programme, provided they have satisfied all Semester 7 course pre-requisites.

Applicable to holders of N5/N6 qualifications:

Candidates must have passed at least four (4) N5/N6 subjects, with at least 40% in each subject, including Mathematics and Physics equivalent subjects. Candidates will be required to register for Institutional English courses in the first and/or second semester as per the English modules table in Appendix 3, based on their NSSC Higher/Ordinary level (or their equivalent) English grades.

Articulation Arrangements:

Transfer of credits will be dealt with according to the 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. The maximum credit that can be granted is 50% of the credits for a qualification.

Students who graduate with a Bachelor of Technology in Electronic Engineering will ordinarily be able to pursue further studies in Electronic Engineering at NQF level 8 in the same, or a related cognate area of learning.

Mode of Delivery:

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

Requirements for Qualification Award

The Bachelor of Technology in Electronic Engineering (NQF Level 7) will be awarded to students credited with a minimum of **502** NQF credits, while the Diploma in Electronic Engineering (NQF Level 6) will be awarded to students credited with a minimum of **392** NQF credits. In addition, students should meet the administrative and financial requirements as spelt out in the NUST General Information and Regulations.

The students will be required to undertake a compulsory component of Work Integrated Learning (WIL) in the last semester of their third year as detailed in the syllabus for the course.

Special Arrangements

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 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, including design studio, lectures, practical classes, workshops and seminars, site visits and Work Integrated Learning. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The students enrolled for the Bachelor of Technology in Electronic Engineering must undertake compulsory Work Integrated Learning (WIL) where they have to fully participate in a wide range of Electronic Engineering activities that will give them the required practical experience in industry. They do not only have to record all duties performed but also have to participate in Electronic Engineering projects to come up with optimal solutions for continual improvement of the Electronic processes. Their work performance is evaluated in terms of preliminary and final technical reports they submit at the end of the third year of their studies. Such reports must include technical, practical, attitude and work ethics that must be endorsed by their industrial supervisors/mentors and approved by the Department's Evaluation Committee members.

Assessment strategies

Course assessment strategies:

All courses in this programme (except where indicated otherwise) are assessed using the Diversified Continuous Assessment (CASS) strategies. This approach ensures that students are adequately and comprehensively assessed in all critical areas during the course and enables students to receive feedback on their progress towards the achievement of specific learning outcomes. In accordance with NUST policy on diversified continuous Assessment, each course will have a minimum of four assessment activities.

Forms of course assessments include, but not limited to, quizzes, tutorial assignments, library/research/takehome assignments, tests, practical laboratory assignments, group assignments/mini-projects, presentations, case studies, investigational and design projects. For all unsupervised assignments which students do and submit at a later time or date, the usage of 'Turnitin' for plagiarism-check will be compulsory for all of the courses in this programme.

Work -Integrated Learning (WIL) assessment strategies:

Work-integrated learning is assessed through two instruments: the assessment done by the industrial supervisor and the report submitted by the student. The activities stated in the report must be supported by the student's daily log sheets which should be duly signed by the industrial supervisor.

Quality Assurance requirements

The teaching and learning processes are monitored through an effective quality assurance process that supports continuous improvement. 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 a Bachelor Honours in engineering degree or the moderators must 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 Senate, for moderation. This ensures that all forms of summative assessment of student performance within the programme are effective, fair, and rigorous and address the stated learning outcomes.

Transition Arrangements

The Bachelor of Technology in Electronic Engineering (old curriculum) will be phased out systematically until 2023 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 2019.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who do not meet the rules of the Faculty of Engineering for progression to the 2nd year at the end of 2019, will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in the *Table below*.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who meet the minimum requirements for progression to the 2nd year at the end of 2019, will not be required to transition to the revised programme (new curriculum). This is to ensure that they do not lose credits, neither required to pick up credits.

Students who are registered in 2019 for the 2nd and 3rd year of the out-phasing programme (old curriculum), and who meet the minimum requirements to progress to the 3rd and 4th year of the programme in 2020, will be required to complete their studies based on the requirements of the old curriculum. Students who are registered in 2019 for the 4th (final) year of the out-phasing programme will also be required to complete the programme based on the requirements of the old curriculum.

The revised Bachelor of Technology in Electronic Engineering (new curriculum) takes effect from January 2020 with implementation of the 1st year only. The revised programme (new curriculum) will be fully implemented by 2023. Courses will only be offered based on the new/revised syllabi in 2020 (1st year), 2021 (2nd year), 2022 (3rd year) and 2023 (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 the *table below*). Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.

The deadline for complete phasing out of the Bachelor of Technology in Electronic Engineering (old curriculum) is 2025 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

Bachelor of Technology in Electronic Engineering first year courses to be credited

Bachelor of Technology in Electronic Engineering (Old curriculum)		Bachelor of Technology in Electronic Engineering (Equivalent new/revised courses – new/revised curriculum)	
Code	Course	Code	Course
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
DEL1100	Digital Electronics 1	DGE521S	Digital Electronics 125
ELE111S	Electrical Engineering 1	EEF511S	Electrical Engineering Fundamentals 115
ELC1100	Electronics 1	ANE511S	Analogue Electronics 115
ITD012S	Engineering Graphics	IED520S	Introduction to Engineering Drawing
MAT111S	Mathematics 1	ENM510S	Engineering Mathematics 1
CUS411S	Computer User Skills	EPG511S	Fundamentals of Programming 114
APR520S	Applied Programming		
DEL1200	Digital Electronics 2	DGE511S	Digital Electronics 215
EMA120S	Electrical Engineering 2	ECA521S	Electrical Circuit Analysis 125
ELC1200	Electronics 2	ANE521S	Analogue Electronics 125
MAT120S	Mathematics 2	ENM520S	Engineering Mathematics 2
PRJ110S	Projects 1	ECC511S	Electronic Circuit CAD and Simulations 214
		EPJ511S	Electronic Projects 213

Corresponding Courses to be Done, If Failed – this is not a Credit Table

Bachelor of Technology in Electronic Engineering (Old curriculum)		Bachelor of Technology in Electronic Engineering (Corresponding New/Revised Courses)	
Code	Course	Code	Course
CEL1300	Communication Electronics 2	CCE620S	Communication Electronics 224
CTS210S	Control Systems 2	COS620S	Control Systems
ECD310S	Electronic Design 3A	ECD611S	Electronic Circuit Design 215
MAT311	Mathematics 3	ENM610S	Engineering Mathematics 3
MIC310S	Microcontroller Applications 3A	MCA621S	Microcontroller Applications 224
PRJ210S	Projects 2	EPJ621S	Electronic Projects 223
DPJ320S	Design Projects 3B	DPJ621S	Design Project 322
ENT3400	Entrepreneurship and Management 2	ICE712S	Innovation, Creativity & Entrepreneurship
ECD320S	Electronic Design 3B	ECD621S	Electronic Circuit Design 225
HFE1300	High Frequency Engineering 3	CCE611S	Communication Electronics 314
MIC320S	Microcontroller Application 3B	MCA611S	Microcontroller Applications 314
LPR2100	Electronic Engineering Practice 1	WEL621S	Work Integrated Learning (WIL)
LPR2200	Electronic Engineering Practice 2		
ESD410S	Electronic System Design 4	ESD711S	Electronic Systems Design 414
MSA410S	Microcontroller Systems Applications 4	ESS711S	Embedded Systems 414
IPJ420S	Industrial Project 4B	IDP711S	Industrial Design Project 422
AUT3300	Automation 3	AUT611S	Industrial Automation 314

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

The table above, only highlights new/revised core courses in engineering that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of the relevant Departments apply to this programme as well. Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out in 2025.

The following courses do not have corresponding courses in the revised programme:

Code	Course
DPJ310S	Design Projects 3A
CTS310S	Control Systems 3
IPJ410S	Industrial Project 4A
MAT410S	Mathematics 4
CTS410S	Control System 4
ECC410S	Electronic Communications 4
EMG410S	Energy Management 4
EGM410S	Engineering Management 4
REN410S	Renewable Energy 4
REL410S	Radio Engineering 4
DCS410S	Digital Control Systems 4
DCM410S	Digital Communications 4
FLD410S	Field Programmable Logic Device Application 4

EPR3400	Electrical Protection 3
PEL3300	Power Electronics 3
EMA3400	Electrical Machine 3
MAE410S	Maintenance Engineering 4

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Analogue Electronics 115	ANE511S	None	5	15
Electrical Engineering Fundamentals 115	EEF511S	None	5	13
Engineering Mathematics 1	ENM510S	None	5	15
English for Academic Purposes	EAP511S	English in Practice	5	14
Fundamentals of Programming 114	FPG511S	None	5	12

Semester 2

Analogue Electronics 125	ANE521S	Analogue Electronics 115 Electrical Engineering Fundamentals 115	5	15
Applied Programming 124	APP521S	Fundamentals of Programming 114	5	12
Digital Electronics 125	DGE521S	None	5	12
Electrical Circuit Analysis 125	ECA521S	Electrical Engineering Fundamentals 115	5	13
Engineering Mathematics 2	ENM520S	Engineering Mathematics 1	5	15

YEAR 2

Semester 3

Digital Electronics 215	DGE511S	Digital Electronics 125, Analogue Electronics 115	5	12
Electronic Circuit CAD and Simulations 214	ECC511S	Digital Electronics 125, Analogue Electronics 115	5	12
Electronic Circuit Design 215	ECD611S	Analogue Electronics 125	6	13
Electronic Projects 213	EPJ511S	Digital Electronics 125, Analogue Electronics 115	5	NCB
Engineering Mathematics 3	ENM610S	Engineering Mathematics 2	6	5
Information Competence	ICT521S	None	5	10

Semester 4

Communication Electronics 224	CCE620S	Analogue Electronics 125	6	12
Control Systems	COS620S	Engineering Mathematics 3	6	12
Electronic Circuit Design 225	ECD621S	Electronic Circuit Design 215	6	13
Electronic Projects 223	EPJ621S	Electronic Projects 213	6	9
Introduction to Engineering Drawing	IED520S	None		
Microcontroller Applications 224	MCA621S	Applied Programming 224, Digital Electronics 125	6	12

YEAR 3

Semester 5

Communication Electronics 314	CCE611S	Communication Electronics 224	6	12
Industrial Automation 314	IUT611S	Applied Programming 125, Digital Electronics 215	6	13
Innovation, Creativity & Entrepreneurship	ICE712S	None	7	15
Microcontroller Applications 314	MCA611S	Microcontroller Applications 224	6	12
Sustainability and Development	SYD611S	None	6	12

Semester 6

Design Project 322	DPJ621S	A Pass in all core Electronic Engineering courses up to and including Semester 5	6	24
Work Integrated Learning (WIL)	WEL621S	A Pass in all core Electronic Engineering courses up to and including Semester 5	6	36

YEAR 4

Semester 7

Data Communication and Networks 414	DCN711S	Communication Electronics 224	7	12
Electronic Systems Design 414	ESD711S	Electronic Circuit Design 225	7	12
Internet-of-Things 414	ITG711S	Microcontroller Applications 314	7	12

Plus TWO of the following Strand Elective courses depending on specialisation

Communication Systems Strand

Wireless Communication Systems 414	WCS711S	Communication Electronics 314	7	12
Optoelectronic Technology 414	OCT711S	Communication Electronics 314	7	12

Embedded Systems Strand

Embedded Systems 414	ESS711S	Microcontroller Applications 314	7	12
Artificial Intelligence 414	AIC711S	Applied Programming 124	7	12
		Engineering Mathematics 3		

Semester 8

Engineering Ethics 423	ENE620S	None	7	10
Industrial Design Project 422	IDP711S	Design Project 322		
		Successful completion of all Semester 7 courses including electives		
Project Management 423	PRM721S	None	7	10

BACHELOR OF TECHNOLOGY IN POWER ENGINEERING (Phased in 2020)

07BPEN

Description

The revised Bachelor of Technology in Power Engineering degree is an industry-driven programme that aims to build a sound knowledge base and understanding in the field of Power Engineering and to equip the students with vital skills for the Fourth Industrial Revolution. The programme is designed in such a way that the graduates can adapt to the increasingly technology-driven economy, by enabling them to acquire essential skills in power engineering, innovation and entrepreneurship. The education itself is well-rounded and broad and it will further enable the graduates to demonstrate initiative and responsibility in an academic or professional context. The programme focuses on general principles and theory and the application of these theories in practical contexts. This will also create a base for the students to undertake more specialised and intensive learning at postgraduate levels. Moreover, the revised programme is structured to set the educational base knowledge, understanding, abilities and skills required for practicing and eligibility for professional registration as Incorporated Engineer with the Engineering Council of Namibia (ECN) pending the fulfilment of post-qualification requirements.

Criteria for Admission

Applicable to Grade 12 candidates

In addition to meeting the Namibia University of Science and Technology's General Admission Requirements as spelt out in the general rules, candidates must have at least 30 points on the Admission Point Scale (see Appendix 3), counting up to five subjects that must include Mathematics, Physical Science and English; with a minimum of grade 3 in Mathematics and Physical Science at Grade 12/NSSC Higher Level or with a minimum A symbol in Mathematics, Physical Science and English at Grade 12/NSSC Ordinary Level.

Candidates who do not meet the minimum requirements for English, but who meet all other admission requirements, may be admitted into the programme on condition that they register for the institutional English courses that are pre-requisites to English for Academic Purposes, based on their NSSC Higher/ordinary level (or equivalent) English grades. If a candidate does not have Physical Science but has Physics or a "Physics equivalent" subject, the Registrar may, upon recommendation from the Head of the Department of Electrical and Computer Engineering and the Dean of the Faculty of Engineering approve registration of the candidate.

Applicable to students enrolled in the InSTEM programme at the Namibia University of Science and Technology

Candidates must have successfully completed **all** courses in the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) programme offered at the NUST, with at least 50% in each of the following courses: Introduction to Mathematics B (ITM402S), Introduction to Physics B (ITM402S) and Introduction to Chemistry B (ITM402S). However, a score of 50% in the above courses will not guarantee automatic entry into the programme as selection will be based on merit.

Applicable to holders of a Diploma/National Diploma

Holders of a Diploma/National Diploma in Power Engineering/Electrical Engineering (with a major in power engineering) from either the Namibia University of Science and Technology or any other recognised tertiary institution are eligible for admission into Semester seven (7) of this programme, provided they have satisfied all Semester 7 course pre-requisites. The admission will be subjected to the results of an evaluation of the equivalence of their qualifications to the revised Bachelor of Engineering in Power Engineering programme.

Applicable to holders of N5/N6 qualifications

Candidates must have passed at least four (4) N5/N6 subjects, with at least 40% in each, including Mathematics and Physics equivalent subjects. Candidates will be required to register for Institutional English courses in the first and/or second semester based on their NSSC Higher/Ordinary level (or their equivalent) English grades and the English Modules Table (See Appendix 3).

Articulation Arrangements

The transfer of credits will be dealt with according to the Namibia University of Science and Technology'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 number of credits that can be granted is 50% of the credits for a qualification.

Students who complete the revised Bachelor of Technology in Power Engineering programme will ordinarily be able to pursue further studies at NQF Level 8 in the same, or a related cognate area of learning.

Mode of Delivery

The programme will only be offered in the full-time mode of delivery in accordance with the Namibia University of Science and Technology's rules and regulations.

Requirements for Qualification Award

The Bachelor of Technology in Power Engineering degree will be awarded to candidates credited with a minimum of 503 National Qualifications Framework (NQF) credits, while Diploma in Power Engineering (Level 6) will be credited with a minimum of 381 NQF credits. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the University's Yearbook (General Information and Regulations).

The students will be required to undertake a compulsory component of Work Integrated Learning (WIL) in the last semester of their third year as detailed in the syllabus for the course.

Special Arrangements

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 in and outside the classroom, requiring specific tasks to be carried out by students. It will also make use of a variety of appropriate methods including a series of lectures, assignments, classroom exercises, tutorials, classroom-based group assignments, laboratory work and industrial excursions. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Students must undertake compulsory Work Integrated Learning (WIL) as a pre-condition for graduation. The students will participate fully in a wide range of electrical power engineering activities that will give them the required practical experience in industry. They will not only have to record all duties performed but will also have to participate in the electrical power engineering projects so as to come up with optimal solutions for the continual improvement of the electrical power processes. Their work performance will be evaluated in terms of the final technical reports which they will be required to submit at the end of the sixth semester (S6) of their studies. Such reports will include technical, practical, attitude and work ethics that must be endorsed by their industrial supervisors/mentors and approved by the Department's WIL evaluator and moderator. The semester in which Work Integrated Learning will be undertaken is also the last semester after which, on successful completion of their studies, the students will be eligible for the award of the Diploma in Power Engineering (at level 6).

Assessment Strategies

The Department of Electrical and Computer Engineering (DECE) follows the diversified continuous assessment system (CASS) of evaluation. In this system there are no final (or end-of-semester) examinations, rather a course is divided into 'modules' according to the number of assessments which the course lecturer intends to give in consultation with the head of the department.

The assessment system is 'diversified' in the sense that the lecturer uses a variety of assessment strategies and instruments, e.g. assessments under controlled conditions, library/research assignments, laboratory assignments, tutorial assignments, mini-projects, group assignments, etc., to arrive at the final course mark. The weight assigned to each assessment component is at the discretion of the course lecturer in consultation with the head of the department. However, "in order to ensure authenticity of the assessment evidence, at least fifty percent of the weight of the assessments making up the final mark should be conducted under controlled conditions similar to those under which institutional examinations are conducted" (Yearbook – Part 1, General Information and Regulations, AC7.1, second paragraph). This group of assessments is referred to as 'the examination component' of the assessment. At least two such assessments will be given for all courses referred to as 'highly structured courses'. These are courses with a prescribed number of lectures, tutorials, practical/laboratory activity and 'other' activity. Non-structured courses include project courses and courses with a high concentration of practical activity and little theory, etc.

Transition Arrangements

The old curriculum of the Bachelor of Technology in Power Engineering will be phased out systematically until 2025 with minimum disruption to the existing students' learning progression. The last intake of 1st year students for the out-phasing programme (old curriculum) was in January 2019.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum) and who do not meet the rules of the Faculty of Engineering for progression to the 2nd year at the end of the 2019 academic year, will be required to change their registration to the revised programme (new curriculum) and they will be granted credits on a course-by-course basis in accordance with the information in the table below.

Students who are registered in 2019 for the 1st year of the out-phasing programme (old curriculum) and who meet the minimum requirements for progression to the 2nd year at the end of 2019 academic year, will not be required to transition to the revised

programme (new curriculum). This is to ensure that they do not lose credits, neither will they be required to pick up credits from the new curriculum.

However, the students who are registered in 2019 for the 2nd year, or higher, of the out-phasing programme (old curriculum) and who do not meet the minimum requirements at the end of the 2019 academic year to progress to the following higher year, will be required to repeat the year and to subsequently complete their studies, based on the requirements of the out-phasing programme (old curriculum).

The revised programme (new curriculum) of the Bachelor of Technology in Power Engineering will be phased-in, in the 2020 academic year, starting with the implementation of the 1st year only, with the subsequent and systematic implementation of the other years [2nd year (2021), 3rd year (2022) and 4th year (2023)], reaching full implementation by 2023. Students who would have failed any of the courses on the old curriculum will be required to repeat such courses based on the syllabi of the new/revised corresponding courses, in accordance with the information in the Table below.

The deadline for the complete phasing-out of the Bachelor of Technology in Power Engineering (old curriculum) is 2025, after which students on the old curriculum must automatically change their registration to the revised programme (new curriculum) and fulfil all the requirements of the new curriculum.

First-Year Courses to be Credited

Bachelor of Technology in Power Engineering (Old Curriculum)		Bachelor of Technology in Power Engineering (New Curriculum) (Equivalent New/Revised Courses)	
Code	Course	Code	Course
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
DEL1100	Digital Electronics 1	DGE521S	Digital Electronics 125
ELE111S	Electrical Engineering 1	EEF511S	Electrical Engineering Fundamentals 115
ELC1100	Electronics 1	ANE511S	Analogue Electronics 115
ITD012S	Engineering Graphics	IED520S	Introduction to Engineering Drawing
MAT111S	Mathematics 1	ENM510S	Engineering Mathematics 1
CUS411S	Computer User Skills	FPG511S	Fundamentals of Programming 114
APR520S	Applied Programming	FPG511S	Fundamentals of Programming 114
ELE120S	Electrical Engineering 2	ECA521S	Electrical Circuit Analysis 125
EMA120S	Electrical Machines 2	EMC521S	Electrical Machines 224
ELC1200	Electronics 2	ANE521S	Analogue Electronics 125
MAT120S	Mathematics 2	ENM520S	Engineering Mathematics 2
PRJ110S	Projects 1		None

Corresponding Courses to be Done for Failed Courses (this is not a credits table)

Bachelor of Technology in Power Engineering (Old Curriculum)		Bachelor of Technology in Power Engineering (Corresponding New/Revised Courses)	
Code	Course	Code	Course
EPR2100	Electrical Engineering Practice 1	WPE621S	Work Integrated Learning (WIL)
EPR2200	Electrical Engineering Practice 2		
CTS210S	Control Systems 2	COS620S	Control Systems
DPJ310S	Design Projects 3A		None
ELD3300	Electrical Distribution 3	ERD611S	Electrical Transmission and Distribution 214
PEN310S	Power Engineering 3	PPL621S	Power Engineering Principles and Lighting 224
PRJ210S	Projects 2		None
MAT311S	Mathematics 3	ENM610S	Engineering Mathematics 3
DPJ320S	Design Projects 3B	DPJ621S	Design Project 322
AUT3300	Automation 3	IUT611S	Industrial Automation 314
CTS310S	Control Systems 3		None
EMA3400	Electrical Machines 3	ELM611S	Electrical Machines 314
EMA410S	Electrical Machines 4		
EPR3400	Electrical Protection 3	ELP611S	Electrical Protection 314
EPR410S	Electrical Protection 4A		
PEL3300	Power Electronics 3	PED621S	Power Electronics and Drives 224

IPJ410S	Industrial Project 4A		None
CTS410S	Control Systems 4		None
MAT410S	Mathematics 4		None
POS410S	Power Systems 4	PSS711S	Power Systems 414
EMG410S	Energy Management 4		None
EMG410S	Engineering Management 4		None
HVE410S	High Voltage Engineering 4	HVE711S	High Voltage Engineering 414
PEL410S	Power Electronics 4		None
MAE410S	Maintenance Engineering 4	MTE711S	Maintenance Engineering 414
REN410S	Renewable Energy 4	RET711S	Renewable Energy Technology 414
DCS410S	Digital Control Systems 4		None
EPR420S	Electrical Protection 4B	PWP711S	Power Systems Protection 414
IPJ420S	Industrial Project 4B	IDP711S	Industrial Design Project 422

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

Table 15.2 above, only highlights new/revised core courses in engineering that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of the relevant Departments apply to this programme as well. Old courses that do not have corresponding courses in the new curriculum will be offered until the old programme is completely phased out in 2025. The following courses do not have corresponding courses in the revised programme:

RJ110S	Projects 1
DPJ310S	Design Projects 3A
PRJ210S	Projects 2
CTS310S	Control Systems 3
IPJ410S	Industrial Project 4A
CTS410S	Control Systems 4
MAT410S	Mathematics 4
EMG410S	Energy Management 4
EMG410S	Engineering Management 4
PEL410S	Power Electronics 4
DCS410S	Digital Control Systems 4
IPE410S	Industrial Power Engineering 4

CURRICULUM

YEAR 1

Semester 1

Course Title

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Analogue Electronics 115	ANE511S	None	5	15
Electrical Engineering Fundamentals 115	EEF511S	None	5	13
Engineering Mathematics 1	ENM510S	None	5	15
English for Academic Purposes	EAP511S	English in Practice	5	14
Fundamentals of Programming 114	FPG511S	None	5	12

Semester 2

Analogue Electronics 125	ANE521S	Analogue Electronics 115 Electrical Engineering Fundamentals 115	5	15
Applied Programming 124	APP521S	Fundamentals of Programming 114	5	12
Digital Electronics 125	DGE521S	None	5	12
Electrical Circuit Analysis 125	ECA521S	Electrical Engineering Fundamentals 115	5	13
Engineering Mathematics 2	ENM520S	Engineering Mathematics 1	5	15

YEAR 2

Semester 3

Electrical Installation and Workshop Technology 214	EIW511S	None	5	NCB
Electrical Transmission and Distribution 214	ETD611S	Electrical Circuit Analysis 125	6	12
Engineering Mathematics 3	ENM610S	Engineering Mathematics 2	6	15
Information Competence	ICT521S	None	5	10
Introduction to Measurements and Instrumentation 214	IMT611S	Electrical Circuit Analysis 125	6	12

Semester 4

Control Systems	COS620S	Engineering Mathematics 3	6	12
Electrical Machines 224	EMS521S	Electrical Circuit Analysis 125	5	12
Microcontroller Applications 224	MCA621S	Applied Programming 124 Digital Electronics 125	6	12
Power Electronics and Drives 224	PED621S	Analogue Electronics 125	6	12
Power Engineering Principles and Lighting 224	PPL621S	Electrical Circuit Analysis 125	6	12
Introduction to Engineering Drawing	IED520S	None	5	12

YEAR 3

Semester 5

Electrical Machines 314	ELM611S	Electrical Machines 224	6	12
Electrical Protection 314	ELP611S	Power Engineering Principles and Lighting 224	6	12
Industrial Automation 314	IUT611S	Applied Programming 124 Digital Electronics 125	6	13
Innovation, Creativity & Entrepreneurship Sustainability and Development	ICE712S SYD611S	None None	7 6	15 12

Semester 6

Design Project 322	DPJ621S	A pass in all power-engineering courses up to and including semester 5 (S5)	6	24
Work Integrated Learning	WPE621S	A pass in all power-engineering courses up to and including semester 5 (S5)	6	36

YEAR 4

Semester 7

Power Systems 414	PSS711S	Engineering Mathematics 3 Power Engineering Principles and Lighting 224	7	12
Power systems Analysis and Simulation 414	PSA711S	Engineering Mathematics 2 Electrical Circuit Analysis 125	7	12
Power systems Protection 414	PWP711S	Electrical Protection 314	7	12
Renewable Energy Technology 414	RET711S	None	7	12

Plus ONE of the following Elective Courses depending on demand

High Voltage Engineering 414	HVE711S	Electrical Transmission and Distribution 214	7	12
Maintenance Engineering 414	MTE711S	None	7	12

Semester 8

Engineering Ethics 423	ENE620S	None	7	10
Industrial Design Project 422	IDP711S	Design Project 322 and successful completion of all Semester 7 (S7) courses including electives	7	30
Project Management 423	PRM721S	None		

Plus ONE of the following Elective Courses depending on demand

Electrical Building Services Design 424	EBS721S	Industrial Power Engineering 414	7	12
Ship Electrical Systems and Automation 424	SEA721S	Maintenance Engineering 414	7	12

**BACHELOR OF ENGINEERING IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING
(Phased in 2017)**

08BEET

NQF Level: 8

NQF Credits: 594

NQF Qualification ID: Q1032

Description

The Bachelor of Engineering in Electronics and Telecommunication Engineering curriculum is designed to produce graduates that are flexible and equipped to work effectively within industrial teams or research and development groups, contributing specialists' skills, demonstrating an awareness of the context within which they work and taking responsibility for their own personal and professional development. The revised Bachelor of Engineering in Electronics and Telecommunications degree programme to be offered at the Namibia University of Science and Technology, is designed to enable the graduates to register as Engineers-in-Training with the Engineering Council of Namibia (ECN) pending the fulfilment of post qualification requirements. The programme outcomes reflect the required levels of competence as defined by the ECN, while meeting the accreditation requirements of the Engineering Council of South Africa (ESA) and the Accreditation Board for Engineering and Technology (ABET) of the United States of America.

Criteria for Admission

In addition to meeting the University's General Admission Requirements as spelt out in the General Information and Regulations Yearbook – Part 1, candidates must have at least 37 points in five subjects on the University's Engineering Evaluation Scale, with a minimum:

a) 3 grade in Mathematics and Physical Science at Grade 12 NSSC Higher level, D symbol in English at NSSC Ordinary level and any other two subjects using a combination of both NSSCH and NSSCO (out-phasing school curriculum);

OR

b) D symbol in Mathematics, Physics and Chemistry at Advanced Subsidiary level, D symbol in English at NSSC Ordinary level and any other one subject at NSSCAS or NSSCO (phasing-in school curriculum).

OR

Candidates must have successfully completed the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) studies programme offered at the Namibia University of Science and Technology (NUST) with at least a combined average score of 60% for the A and B parts of the courses: Introduction to Mathematics, Introduction to Physics and Introduction to Chemistry but with a score not lower than 55% in each. However, a combined average score of 60% in the above InSTEM courses will not guarantee automatic entry into any of the mainstream programmes as the final selection will be based on merit and the number of places available.

Students with foreign qualifications that are different from the National Qualifications Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the prospective Department on a case-by-case basis in accordance with the University's 2020 revised Engineering Evaluation Scale.

Exceptions

Holders of the National Diploma in either Electronic or Power Engineering from the Namibia University of Science and Technology will be required to have obtained an average of 70% for all prescribed final year courses and a minimum of 75% in both Mathematics 2 and Mathematics 3. Students who satisfy these criteria will be admitted into the second year of the B.Eng Programme.

These students will be exempted from the following second year, semester 1 courses:

DEL510S – Digital Electronics 215

ANE510S – Analogue Electronics 215

EWP510S – Electrical Workshop Practice 214

EMC510S – Electrical Machines 215

However, they will be required to take the following extra first year courses in their first year of enrolment:

MLS120S – Materials Science 124

APH120S – Engineering Physics 114

ACH110S – Engineering Chemistry 123

CAD120S – Computer Aided Drawing 124

MOM120S – Mechanics of Materials 124

Mode of Delivery

This Bachelor of Engineering in Electronics and Telecommunications Engineering programme will only be offered on the full-time mode of teaching and learning in accordance with the Namibia University of Science and Technology rules.

Articulation Arrangements

Transfer of credits will be dealt with according to the Institution'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 credits that can be

granted amount to 50 % of the credits for a qualification. Students who successfully complete the Bachelor of Engineering in Electronics and Telecommunications Engineering degree programme will ordinarily be able to pursue further studies at NQF Level 9 in the same, or in a related cognate area of learning.

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 including a series of lectures, tutorials, laboratory work, visual demonstrations, project-based learning and practical classes. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The Bachelor degree student must undertake compulsory Work integrated Learning were they have to fully participate in a wide range of electronic engineering activities that will give them the required practical experience in industry. They do not only have to record all duties performed but also have to participate in the electronic engineering projects so as to come up with optimal solutions for continual improvement of the electronic processes. Their work performance is evaluated in terms of preliminary and final technical reports they submit at the end of the second and third years of their studies. Such reports must include technical, practical, attitude and work ethics that must be endorsed by their industrial supervisors/mentors and approved by the Department's Evaluation Committee members.

Assessment strategies

All of the courses in this programme (except where indicated otherwise), are assessed using the diversified and continuous evaluation system. In this system, the minimum number of assessments should six (6) with at least fifty percent (50%) of the assessments administered under typical examination conditions.

The instruments of assessment are 'diversified' and they include, but are not limited to, quizzes, 'tutorial assignments' (which are open-book but timed), 'library/research/take-home assignments', examinations, 'continuous assessment examinations', practical laboratory assignments, design projects, group assignments, discussion sessions, etc.

Work-integrated learning is assessed through two instruments, the assessment done by the industrial supervisor and the report submitted by the student. The activities stated in the report must be supported by the student's daily log sheets which should be duly signed by the industrial supervisor. However, WIL is non-credit bearing though it is a requirement for the successful completion of the programme.

Transition Arrangements

The Bachelor of Engineering: Electronics and Telecommunications (old curriculum) will be phased out systematically until 2020 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. The revised programme (new curriculum) will transition both 1st year and 2nd year students in 2017 with the credit table below being used to determine, on course- by-course basis, the courses to be credited for any student who maybe repeating any 2nd year course. The specific details for transitioning to revised curriculum are:

- Students who are registered in 2016 for the 1st year of the out-phasing programme (old curriculum), and who meet the programme rules for progression to the 2nd year at the end of 2016 will transition into the revised programme (new curriculum) in 2017.
- Students who are registered in 2016 for the 1st year and who do not meet the programme rules for progression to the 2nd year at the end of 2016, will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in the table below.
- Students who are registered in 2016 for the 2nd year of the out-phasing programme (old curriculum) and who do not meet programme the rules for progression into the 3rd year of the out-phasing programme would be required to change their registration into the new revised programme (new curriculum) in 2017 and will be granted credits on a course-by-course basis in accordance with information on the credit table in the table below.
- Students who are registered in 2016 in 3rd and or 4th year of the out-phasing programme (old curriculum) and who are carrying over any 1st and 2nd year courses (i.e. repeating 1st and 2nd year courses for two times or more) would be required to take the appropriate 1st and 2nd year courses in accordance with the information on the credit table in the table below, as no phasing out courses in 1st and 2nd year will be offered as from 2017.
- Students who are registered in 2016 for the 2nd ,3rd or 4th year of the out-phasing programme (old curriculum), will be required to complete their studies based on the requirements of the old curriculum.

The revised Bachelor of Engineering in Electronics and Telecommunications Engineering (new curriculum) takes effect from January 2017 with the implementation of the 1st and 2nd years. 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 15.2, 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 Engineering in Electronics and Telecommunications Engineering (old curriculum) is 2020 after which students must automatically change registration to the revised programme (new curriculum) and fulfil all requirements of the new curriculum.

Courses to be credited

Course Code	Bachelor of Engineering: Electronics and Telecommunications (Old Courses)	Course Code	Bachelor of Engineering: Electronics and Telecommunications (Equivalent New/Revised Courses)
MTM110S	Engineering Mathematics 115	MTM110S	Engineering Mathematics 115
AMC110S	Engineering Mechanics 114	AMC110S	Engineering Mechanics 114
APH120S	Engineering Physics 115	APH120S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
MTM210S	Engineering Mathematics 125	MTM210S	Engineering Mathematics 125
ACHI110S	Engineering Chemistry 123	ACHI110S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS120S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM120S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC611S	Electrical Circuits
	None	IIN521S	Introduction to Industry 4.0
WPR120S	Workshop Practice120	WPR120S	Workshop Practice 120
MTM3101S	Engineering Mathematics 215	MTM611S	Engineering Mathematics 215
ANE510S	Analogue Electronics 215	ADS611S	Analogue Electronics Devices & Systems 215
ANE620S	Analogue Electronics 215		
DSA610S	Data Structure & algorithm	PFE610S	Programming for Engineers 214
IPG120S	Introduction to Programming		
ACP710S	Applied Computer Programming 424		
EMC510S	Electrical Machines 215	EMC611S	Electrical Machines 214
MTM720S	Engineering Mathematics 225	NMS620S	Numerical Methods 224
DEL510S	Digital Electronics 215	DEC621S	Digital Electronic Circuits 225
DEL620S	Digital Electronics 225		
PAS620S	Probability and Statistics 324	SSS220S	Statistics 224
SAS620S	Signals and Systems 224	SAS620S	Signals and Systems 225
ICN210S	Introduction to Computer networking	CCN611S	Computer Communication networks 315
CMN620S	Communication Networks		
TCE610S	Telecommunications Engineering 315	ACT711S	Analogue Communication Techniques and Systems 315
TCE720S	Telecommunication Engineering 325		
CAR710S	Computer Architecture 315	CAM711S	Computer Architecture & Microprocessors 315
CNS610S	Control Systems 315	SYM710S	Systems Modelling 313
CNS620S	Control Systems 325	CNS720S	Control Systems 324
MCA720S	Microcontroller Applications 325	MCA720S	Microcontroller Applications 325
MAI620S	Measurements and Instrumentation 224	MAI711S	Measurements and Instrumentation 315
DIC810S	Digital Communication 415	DCT721S	Digital Comm. Techniques & systems 324
EEM720S	Engineering Electromagnetics 324	EEM721S	Engineering Electromagnetics 325
DPS820S	Digital Signal Processing 425	DSP721S	Digital Signal Processing 324
EMT810S	Engineering Management 415	ETM810S	Engineering and Technology Mgt 414
REG810S	Radio Engineering 415	MWE811S	Microwave Engineering 414
ESD820S	Electronic Systems Design 425	ECD811S	Electronic Design Project 415
OPC820S	Optical Communication 425	OCS811S	Optical Communication Systems 424
ERM810S	Engineering Research Methodology 414	ERM810S	Engineering Research Methodology 414
DCS820S	Digital Control Systems 425	DCS820S	Digital Control Systems 425
INR820S	Intelligent Robotics 425	INR820S	Intelligent Robotics 425
RNE820S	Renewable Energy 425	RNE820S	Renewable Energy 415

ETP830S	Electronics & Telecommunications Project 511	ETP821S	Electronics and Telecommunications Project 421
MCS820S	Mobile Communication Systems 425	MCS821S	Mobile Communication Systems 424
TSN820S	Telecommunication Switching and Network Systems 425		
EIS820S	Engineer-in-Society: Ethics, Professionalism 424	EIS820S	Engineer -in –Society: Ethics, Professionalism 424
		WET711S	Work Integrated Learning: Electronics and Telecommunications Engineering

Corresponding Courses to be done, if Failed – this is not a Credit Table

Course Code	Bachelor of Engineering: Electronics and Telecommunications (Old Courses)	Course Code	Bachelor of Engineering in Electronics and Telecommunications Engineering (Equivalent New/Revised Course)
MTM110S	Engineering Mathematics 115	MTM110S	Engineering Mathematics 115
AMC110S	Engineering Mechanics 114	AMC110S	Engineering Mechanics 114
APH120S	Engineering Physics 115	APH120S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
MTM210S	Engineering Mathematics 125	MTM210S	Engineering Mathematics 125
ACHI110S	Engineering Chemistry 123	ACHI110S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS120S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM120S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC520S	Electrical Circuits 124
	None	IIN521S	Introduction to Industry 4.0 124
WPR120S	Workshop Practice120	WPR120S	Workshop Practice 120
MTM301S	Engineering Mathematics 215	MTM310S	Engineering Mathematics 215
ANE510S	Analogue Electronics 215	ADS611S	Analogue Electronics Devices and Systems 215
ANE620S	Analogue Electronics 225		
DSA610S	Data Structure & algorithm	PEF610S	Programming for Engineers 214
IPG120S	Applied Computer Programming 424		
ACP710S	Applied Computer Programming 424		
EMC510S	Electrical Machines 215	EMC611S	Electrical Machines 214
MTM720S	Engineering Mathematics 225	NMS620S	Numerical Methods 224
DEL510S	Digital Electronics 215	DEC621S	Digital Electronic Circuits 225
DEL620S	Digital Electronics 225		
PAS620S	Probability and Statistics 324	SSS220S	Statistics 224
SAS620S	Signals and Systems 224	SAS620S	Signals and Systems 225
ICN210S	Introduction to Computer Networking	CCN611S	Computer Communication Networks 315
CMN620S	Communication Networks		
TCE720S	Telecommunication Engineering 325	ACT711S	Analogue Communication Techniques and Systems 315
TCE610S	Telecommunication Engineering 315		
CAR710S	Computer Architecture 315	CAM711S	Computer Architecture and Microprocessors 315
SYM710S	Systems Modelling 313	CNS720S	Control Systems 324
CNS720S	Control Systems 324		
MCA720S	Microcontroller Applications 325	MCA720S	Microcontroller Applications 325
MAI620S	Measurements and Instrumentation 224	TBCMAI711S	Measurements and Instrumentation 315
DIC810S	Digital Communication 415	DCT721S	Digital Communication Techniques and systems 324
EEM720S	Engineering Electromagnetics 324	EEM720S	Engineering Electromagnetics 325
DSP820S	Digital Signal Processing 425	DSP721S	Digital Signal Processing 324
EMT810S	Engineering Management 415	ETM810S	Engineering and Technology Management 414

REG810S	Radio Engineering 415	MWE811S	Microwave Engineering 414
ESD820S	Electronic Systems Design 425	ECD811S	Electronic Design Project 415
OPC820S	Optical Communications 425	OCS811S	Optical Communication Systems 424
ERM810S	Engineering Research Methodology 414	ERM810S	Engineering Research Methodology 414
DCS820S	Digital Control Systems 425	DCS820S	Digital Control Systems 425
INR820S	Intelligent Robotics 425	INR820S	Intelligent Robotics 425
RNE820S	Renewable Energy 425	RNE820S	Renewable Energy 425
ETP830S	Electronics & Telecommunications Project 511	ETP821S	Electronics and Telecommunications Project 421
MCS820S	Mobile Communication Systems 425	MCS821S	Mobile Communication Systems 424
TSN820S	Telecommunication Switching and Network Systems 425		
EIS820S	Engineer-in-Society: Ethics, Professionalism 424	EIS820S	Engineer-in-Society: Ethics, Professionalism 424

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the new curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the new curriculum.

Please Note:

Table 15.2 above, only highlights new/revised core courses in Electronics and Telecommunications Engineering that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12
Introduction to Engineering Drawing 115	IED511S	None	5	15
Computing for Engineers 114	CEN510S	None	5	12
English for Academic Purposes	EAP511S	English in Practice	5	14

Semester 2

Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Engineering Chemistry 123	ACH521S	None	5	9
Materials Science 124	MLS521S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114 Engineering Mathematics 115	5	12
Introduction to Industry 4.0 124	IIN521S	None	5	12
Workshop Practice 120	WPR421S	None	4	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM611S	Engineering Mathematics 125	5	15
Analogue Electronics Devices and Systems 215	ADS611S	Engineering Mathematics 125 Electrical Circuits 124	6	12
Programming for Engineers 214	PFE610S	Computing for Engineering Mathematics 125	6	12
Advanced Electrical Principles 215	AEP611S	Electric Circuits 124 Engineering Mathematics 125	6	12
Electrical Machines 214	EMC611S	Electric Circuits 124	6	12
Energy Conversion 215	ECV611S	Engineering Physics 114, Engineering Mathematics 125, Electrical Circuits 124	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Information Competence	ICT521S	None	5	10
Statistics 224	SSS621S	Engineering Mathematics 215	6	12
Digital Electronic Circuits 225	DEC621S	Electric Circuit 124, Analogue Electronics Devises and Systems 215	6	12
Analogue Electronic Design 225	AED621S	Analogue Electronics Devised and Systems 215	6	12
Signals and Systems 225	SAS620S	Electrical Circuits 124 Engineering Mathematics 215	6	12

YEAR 3

Semester 5

Computer Communication Networks 315	CCN611S	Digital Electronics Circuits 225	6	12
Sustainability and Development	SYD611S	None	6	12
Commercial Law 1A	CML111S	None	5	12
Analogue Communication Techniques and Systems 315	ACT711S	Analogue Electronic Design 225 Numerical Methods 224	7	12
Systems Modelling 313	SYM710S	Electrical Machines 214	7	9
Computer Architecture and Microprocessors 315	CAM711S	Digital Electronics Circuit 225	7	12
Measurements and Instrumentation 315	MAI711S	Electric Circuits 124	7	12
Work Integrated Learning (WIL) Electronics and Telecommunications	WET711S	None	7	36

Semester 6

Innovation Creativity and Entrepreneurship	ICE712S	None	7	15
Control Systems 324	CNS720S	System Modelling 313	7	12
Microcontroller Applications 325	MCA721S	Computer Architecture and Microprocessors	7	12
Digital Communication Techniques and Systems 324	DCT721S	Analogue Communication Techniques and Systems 315 and Statistics 224	7	12
Engineering Electromagnetics 325	EEM721S	Electrical Circuits 124, Engineering Mathematics 125	7	12
Digital Signal Processing 324	DSP721S	Signals and Systems 225	7	12

YEAR 4

Semester 7

Engineering and Technology Management 414	ETM810S	None	8	12
Microwave Engineering 414	MWE811S	Digital Communication Techniques and Systems 324	8	12
Electronic Design Project 414	ECD811S	Microcontroller Applications 325	8	20
Optical Communication systems 424	OCS811S	Analogue Communication Techniques and Systems 315	8	12
Engineering Research Methodology 414	ERM810S	None	8	12

Plus ONE of the following Electives

Renewable Energy 415	RAE811S	Electrical Circuits 124, Electrical Machines 214	8	12
Digital Control Systems 425	DCS811S	Electrical Circuits 124, Electrical Machines 214	8	12
Intelligent Robotics	INR820S	Microcontroller Applications 325 Programming for Engineers 214	8	12

Semester 8

Electronics & Telecommunications Project 421	ETP821S	Engineering Research Methodology 414 Electronic Design Project 325	8	40
Engineer-in-Society: Ethics & Professionalism 424	EIS820S	None	8	12
Mobile Communication Systems 414	MCS821S	Microwave Engineering 325	8	40

**BACHELOR OF ENGINEERING IN ELECTRICAL POWER ENGINEERING
(Phased in 2017)**

08BEEP

NQF Level: 8

NQF Credits: 594

NQF Qualification ID: Q1027

Description

The revised Bachelor of Engineering in Electrical Power Engineering is a professional degree, designed for registration at level 8 on the National Qualifications Framework (NQF). This programme builds to a level of conceptual sophistication, specialised knowledge and intellectual autonomy in accordance with requirements at NQF level 8. The programme will equip students with cognitive and intellectual skills, key transferable skills, and professional/technical/practical skills that would enable them to plan, design, measure, model, and solve electrical power systems problems in real-life situations. The programme includes a substantial element of Work Integrated Learning and requires the conduct and reporting of supervised research, design project in order to adequately prepare students for entry into the profession.

On completion, the Bachelor of Engineering degree in Electrical Power Engineering is designed to enable the graduates to register as Engineers-in Training, upon graduation, and subsequently they can be registered as Professional Engineers with the Engineering Council of Namibia (ECN) upon fulfilment of post qualification requirements.

This revised programme has been endorsed by members of the Programme Advisory Committee and has been submitted to the Engineering Council of Namibia, ECN, for endorsement (attached, please find evidence of consultation, benchmarking and support).

Mode of Delivery

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

Criteria for Admission

In addition to meeting the University's General Admission Requirements as spelt out in the General Information and Regulations Yearbook, candidates must have at least 37 points in five subjects on the University's Engineering Evaluation Scale with a minimum:

a) 3 symbol in Mathematics and Physical Science at Grade 12 NSSC Higher level, "D" Symbol in English at NSSC Ordinary level and any other two subjects using a combination of both NSSCH and NSSCO (out-phasing

OR

Candidates must have successfully completed the Introduction to Science, Technology, Engineering and Mathematics programme offered at the Namibia University of Science and Technology (NUST) with at least 60% in Introduction to Mathematics B (ITM402S), an average of 60% in Introduction to Physics B (IPH402S), 60% in Introduction to Chemistry B (ICH402S) and 60% in English in Practice (EPR511S). However a score of 60% in the above courses will not guarantee automatic entry into the programmes as selection will be based on merit and the number of places available.

Students with foreign qualifications that are different from the National Qualifications Framework in Namibia or the SADC Qualifications Framework will be assessed by member(s) of the prospective Department on a case-by-case basis in accordance with the University's 2020 revised Engineering Evaluation Scale.

Exceptions

Holders of the National Diploma in either Electronic or Power Engineering from the Namibia University of Science and Technology will be required to have obtained an average of 70% for all prescribed final year courses and a minimum of 75% in both Mathematics 2 and Mathematics 3. Students who satisfy these criteria will be admitted into the second year of the B.Eng Programme.

These students will be exempted from the following second year, semester 1 courses:

DEL510S – Digital Electronics 215

ANE510S – Analogue Electronics 215

EWP510S – Electrical Workshop Practice 214

EMC510S – Electrical Machines 215

However, they will be required to take the following extra first year courses in their first year of enrolment:

MLS120S – Materials Science 124

APH120S – Engineering Physics 114

ACH110S – Engineering Chemistry 123

CAD120S – Computer Aided Drawing 124

MOM120S – Mechanics of Materials 124

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.

Students who complete the Bachelor of Engineering in the Electrical Power Programme will ordinarily be able to pursue further studies at NQF Level 9 in the same, or a related cognate area of learning.

Teaching, 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 including a series of lectures, assignments; classroom exercises tutorials and laboratory-work based or classroom-based group assignments. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The Bachelor degree student must undertake compulsory Work Integrated Learning as a pre-condition for graduation. Students will participate fully in a wide range of electrical power engineering activities that will give them the required practical experience in industry. They do not only have to record all duties performed but also have to participate in the electrical power engineering projects so as to come up with optimal solutions for continual improvement of the electrical power processes. Their work performance is evaluated in terms of preliminary and final technical reports they submit at the end of the second and third years of their studies. Such reports must include technical, practical, attitude and work ethics that must be endorsed by their industrial supervisors/mentors and approved by the Department's Evaluation Committee members.

Assessment Strategies

The Department of Electrical and Computer Engineering follows a system of assessment known as a 'Continuous and Diversified Evaluation' system. In this system there are no final examinations, rather a course is divided into 'modules' according to the number of summative examinations (herein referred to as Examinations) that the lecturer intends to give and which are specified in the course outline. All assessment elements (assignments, quizzes, tutorial assignments, group work, laboratory exercises, etc.) also known as formative assessments (herein referred to as Continuous Assessment (CA) are given in the run-up to a summative examination and build the body of knowledge given to the student in preparation for the examination. All the elements mentioned above contribute to the overall assessment in a ratio determined by the lecturer and specified in the course outline of the course. In general, formative assessment is weighted at 40% and all the summative examinations taken collectively are weighted at 60% of the overall mark.

For any piece of work that is given to the students and which contributes to the overall assessment mark for the course, feedback must be given to the students immediately after the lecturer has marked the work. The students are required to moderate their scripts with the assistance of the lecturer concerned before the final mark is recorded.

Transition Arrangements

The Bachelor of Engineering: Electrical Power (old curriculum) will be phased out systematically until 2020 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 2015, as in 2017 when the revised programme (curriculum) would have its second 1st year intake. The revised programme (new curriculum) will transition both 1st year and 2nd year students in 2017 with the credit table 15.1 being used to determine on course-by-course basis the courses to be credited for any student who will be repeating 2nd year.

Students who are registered in 2016 for the 1st year of the out-phasing programme (old curriculum), and who meet the rules for the programme for progression to the 2nd year at the end of 2016 will transition into the revised programme (new curriculum) in 2017. Students who are registered in 2016 for the 1st year and who do not meet the rules of the programme for progression to the 2nd year at the end of 2016, will be required to change their registration to the revised programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in Table 15.1, below.

Students who are registered in 2016 for the 2nd year of the out-phasing programme (old curriculum) and who do not meet the rules of the programme for progression into the 3rd year of the out-phasing programme would be required to change their registration into the revised programme (new curriculum) in 2017 and will be granted credits on a course-by-course basis in accordance with information on the credit table in table 15.1. Students who are registered in 2016 for the 2nd ,3rd or 4th year of the out-phasing programme (old curriculum), will be required to complete their studies based on the requirements of the old curriculum.

The revised Bachelor of Engineering in Electrical Power Engineering (new curriculum) takes effect from January 2017 with the implementation of the 1st and 2nd years. 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 the Table below, for information on the new/revised corresponding courses to be done, if courses on the old curriculum are failed).

The deadline for the complete phasing out of the Bachelor of Engineering programme in Electrical Power Engineering (old curriculum) is 2020 after which students must automatically change registration to the revised programme (new curriculum) and fulfill all requirements of the new curriculum.

Year courses to be credited

Code	Bachelor of Engineering: Electrical Power (Old Courses)	Course Code	Bachelor of Engineering in Electrical Power Engineering (Equivalent New/Revised Course)
1st YEAR COURSES TO BE CREDITED			
MTM110S	Engineering Mathematics 115	MTM110S	Engineering Mathematics 115
CUS411S	Computer User Skills	CEN510S	Computing for Engineers 114
AMC110S	Engineering Mechanics 114	AMC110S	Engineering Mechanics 114
APH120S	Engineering Physics 114	APH120S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 114
CEM510S	Computing for Engineers 114	CEM510S	Computing for Engineers 114
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
MTM210S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
ACH110S	Engineering Chemistry 123	ACH110S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS120S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM120S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC520s	Electrical Circuits 124
	None	IIN521S	Introduction to Industry 4.0
WPR120S	Workshop Practice120	WPR120S	Workshop Practice120
2nd YEAR COURSES TO BE CREDITED			
MTM301S	Engineering Mathematics 215	MTM611S	Engineering Mathematics 215
ANE510S	Analogue Electronics 215	ADS611S	Analogue Electronics Devices and Circuits 215
ANE620S	Analogue Electronics 225		
ADI111S	Introduction to Algorithm Design	PFE610S	Programming for Engineers 214
IPG120S	Introduction to Programming		
ACP710S	Applied Computer Programming 424		
PSE610S	Power Systems Engineering 315	AEP611S	Advanced Electrical Principles 215
EWP510S	Electrical Workshop Practice 214		
EMC510S	Electrical Machines 214	EMC611S	Electrical Machines 214
MTM720S	Engineering Mathematics 225	NMS620S	Numerical Methods 224
DEL510S	Digital Electronics 215	DEC621S	Digital Electronic Circuits 225
DEL620S	Digital Electronics 225		
TDN620S	Thermodynamics 225	TDN620S	Thermodynamics 225
PAS620S	Probability and Statistics 324	SSS220S	Statistics 224
3rd YEAR COURSES TO BE CREDITED			
EMC720S	Electrical Machines 315	EMC711S	Electrical Machines 315
CAR710S	Computer Architecture 315	MMS721S	Microprocessor and Microcontroller Systems 325
CNS610S	Control Systems 315	SYM710S	Systems Modelling 313
CNS720S	Control Systems 325	CNS720S	Control Systems 324
MAI620S	Measurements and Instrumentation 224	MAI711S	Measurements and Instrumentation 315
PSE720S	Power System Engineering 325	PST711S	Power Systems 315
PEL610S	Power Electronics 325	PSD721S	Power Semiconductor Devices and Converters 325
EEM720S	Engineering Electromagnetics 325	EEM721S	Engineering Electromagnetics 325
ICE712S	Innovation, Creativity & Entrepreneurship	ICE712S	Innovation, Creativity & Entrepreneurship
AMA720S	Automations 415	ATM711S	Automation 315
PSE810S	Power System Engineering 415	PST721S	Power Systems 325

4th YEAR COURSES TO BE CREDITED			
EMT810S	Engineering Management 415	ETM810S	Engineering and Technology Management 414
ETD820S	Electric Drives 415	ET811S	Electric Drives 415
ERM810S	Engineering Research Methodology 414	ERM810S	Engineering Research Methodology 414
ESD820S	Electrical Systems Design 425	EDP811S	Electrical Design Project 419
RNE820S	Renewable Energy 425	RAE811S	Renewable Energy 415
AMA820S	Automation 425	ATS811S	Automation Systems 415
TDN820S	Transmission & Distribution Networks 425	TDN811S	Transmission & Distribution Networks 415
EMD820S	Electrical Machine Design 425	ETM811S	Electrical Machine Design 415
HVE820S	High Voltage Engineering 425	HVE811S	High Voltage Engineering 415
PSC820S	Power System Operation & Control 425	POS811S	Power System Operation & Control 415
EPP830S	Electrical Power Project 511	EPP821S	Electrical Power Project 421
PSP820S	Power Systems Protection 425	PSP821S	Power Systems Protection 425

Please Note:

Students who have passed Computer User Skills (CUS411S), and are required to transition to the revised programme (new curriculum): will be offered an upgrading module to Computing for Engineers (CEN510S) at no additional cost. Students will be granted credit for Computing for Engineers upon successful completion of this upgrading course.

Corresponding Courses to be done, if Failed – this is not a Credit Table

Course Code	Bachelor of Engineering: Electrical Power (Old Courses)	Course Code	Bachelor of Engineering in Electrical Power Engineering (Equivalent New/Revised Course)
MTM110S	Engineering Mathematics 115	MTM110S	Engineering Mathematics 115
AMC110S	Engineering Mechanics 114	AMC110S	Engineering Mechanics 114
APH120S	Engineering Physics 115	APH120S	Engineering Physics 114
END111S	Engineering Drawing 114	END111S	Engineering Drawing 114
CUS411S	Computer User Skills	CEN510S	Computing for Engineers
MTM210S	Engineering Mathematics 125	MTM210S	Engineering Mathematics 125
ACHI110S	Engineering Chemistry 123	ACHI110S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS120S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM120S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC520S	Electric Circuits 124
CAD120S	Computer Aided Drawing 124	CAD120S	Computer Aided Drawing 124
WPR120S	Workshop Practice120	WPR120S	Workshop Practice 120
MTM301S	Engineering Mathematics 215	MTM611S	Engineering Mathematics 215
ANE510S	Analogue Electronics 215	ADS611S	Analogue Electronics Devices and Circuits 215
ANE620S	Analogue Electronics 225		
ADI111S	Introduction to Algorithm Design		
IPG120S	Introduction to Programming	PFE610S	Programming for Engineers 214
ACP710S	Applied Computer Programming 424		
PSE610S	Power Systems Engineering 315	AEP611S	Advanced Electrical Principles 215
EWP510S	Electrical Workshop Practice 214		
EMC510S	Electrical Machines 214	EMC611S	Electrical Machines 214
MTM720S	Engineering Mathematics 225	NMS620S	Numerical Methods 224
DEL510S	Digital Electronics 215	DEC621S	Digital Electronic Circuits 225
DEL620S	Digital Electronics 225		
TDN620S	Thermodynamics 225	TDN620S	Thermodynamics 225
PAS620S	Probability and Statistics 324	SSS220S	Statistics 224
EMC720S	Electrical Machines 315	EMC711S	Electrical Machines 315
CAR710S	Computer Architecture 315	MMS721S	Microprocessor and Microcontroller Systems 325
CNS610S	Control Systems 315	SYM710S	Systems Modelling 313
CNS720S	Control Systems 325	CNS720S	Control Systems 324
MAI620S	Measurements and Instrumentation 224	MAI711S	Measurements and Instrumentation 315
PSE720S	Power System Engineering 325	PST711S	Power Systems 315
PEL610S	Power Electronics 325	PSD721S	Power Semiconductor Devices and Converters 325
EEM720S	Engineering Electromagnetics 325	EEM721S	Engineering Electromagnetics 325
ICE712S	Innovation, Creativity & Entrepreneurship	ICE712S	Innovation, Creativity & Entrepreneurship

CIS610S	Contemporary Issues	SYD611S	Sustainability and Development
AMA720S	Automations 415	ATM711S	Automation 315
EMT810S	Engineering Management 415	ETM810S	Engineering and Technology Management 414
PSE810S	Power System Engineering 415	PST721S	Power Systems 325
ETD820S	Electric Drives 415	ETD811S	Electric Drives 415
ERM810S	Engineering Research Methodology 414	ERM810S	Engineering Research Methodology 414
ESD820S	Electrical Systems Design 425	EDP811S	Electrical Design Project 419
RNE820S	Renewable Energy 425	RAE811S	Renewable Energy 415
AMA820S	Automation 425	ATS811S	Automation Systems 415
TDN820S	Transmission & Distribution Networks 425	TDN811S	Transmission & Distribution Networks 415
EMD820S	Electrical Machine Design 425	ETM811S	Electrical Machine Design 415
HVE820S	High Voltage Engineering 425	HVE811S	High Voltage Engineering 415
PSC820S	Power System Operation & Control 425	POS811S	Power System Operation & Control 415
EPP830S	Electrical Power Project 511	EPP821S	Electrical Power Project 421
PSP820S	Power Systems Protection 425	PSP821S	Power Systems Protection 425

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the new curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the new curriculum.

Please Note:

The table above, only highlights new/revised core courses in engineering that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Engineering Mathematics 115	MTM511S	None	5	15
Engineering Mechanics 114	AMC511S	None	5	12
Engineering Physics 114	APH511S	None	5	12
Introduction to Engineering Drawing 115	IED511S	None	5	15
Computing for Engineers 114	CEN510S	None	5	12
English for Academic Purposes	EAP511S	English in Practice	5	14

Semester 2

Engineering Mathematics 125	MTM521S	Engineering Mathematics 115	5	15
Engineering Chemistry 123	ACH521S	None	5	9
Materials Science 124	MLS521S	None	5	12
Mechanics of Materials 124	MOM521S	Engineering Mechanics 114	5	12
Electrical Circuits 124	ELC520S	Engineering Physics 114 Engineering Mathematics 115	5	12
Introduction to Industry 4.0 124	IIN521S	None	5	12
Workshop Practice 120	WPR421S	None	4	NCB

YEAR 2

Semester 3

Engineering Mathematics 215	MTM611S	Engineering Mathematics 125	5	15
Analogue Electronics Devices and Systems 215	ADS611S	Engineering Mathematics 125 Electrical Circuits 124	6	12
Programming for Engineers 214	PFE610S	Computing for Engineering Mathematics 125	6	12
Energy Conversion 215	ECV611S	Engineering Physics, Engineering Mathematics 125, Electrical Circuits 124	6	12
Electrical Machines 214	EMC611S	Electric Circuits 124	6	12
Advanced Electrical Principles 215	AEP611S	Electric Circuits 124, Engineering Mathematics 125	6	12

Semester 4

Numerical Methods 224	NMS620S	Engineering Mathematics 215	6	12
Information Competence	ICT521S	None	5	10
Statistics 224	SSS621S	Engineering Mathematics 215	6	12
Digital Electronic Circuits 225	DEC621S	Electric Circuit 124, Analogue Electronics Devices and Systems 215	6	12
Thermodynamics 224	TDN620S	Engineering Mathematics 115	6	12
Analogue Electronics Design 224	AED621S	Analogue Electronic Devices and Systems 215	6	12

YEAR 3

Semester 5

Measurement and Instrumentation 315	MAI711S	Electric Circuits 124	7	12
Commercial Law 1A	CML111S	None	5	12
Power System 315	PST711S	Advanced Electrical Principles 215 Numerical Methods 224	7	12
Electrical Machines 315	EMC711S	Electrical Machines 214, Numerical Methods 224	7	12
Systems Modelling 313	SYM710S	Engineering Mechanics 114, Electrical Machines 214	7	9
Automation 315	ATM711S	Digital Electronics Circuits 225	7	12
Sustainability and Development	SYD611S	None	6	12
Work Integrated Learning (WIL)	WEP711S	None	7	36
Electrical Power Engineering				

Semester 6

Engineering Electromagnetics 325	EEM721S	Electric Circuits 124, Engineering Mathematics 125	7	12
Control Systems 324	CNS720S	Systems Modelling 313	7	12
Microprocessor and Microcontroller System 325	MMS721S	Digital Electronics	7	12
Innovation Creativity and Entrepreneurship	ICE712S	None	7	15
Power Semiconductor Devices and Converters 325	PSD721S	Advanced Electrical Principles 215 Analogue Electronics Devices and Systems 215	7	12
Power Systems 325	PST721S	Power Systems 315	7	12

YEAR 4

Semester 7

Electrical Design Project 419	EDP811S	All courses up to Semester 6	8	20
Engineering Research Methodology 414	ERM810S	None	8	12
Engineering and Technology Mgt 414	ETM810S	None	8	12
Electric Devices 415	ETD811S	Power Semiconductor Devices and Converters 325, Electrical Machines	8	12

Any TWO of the Following Electives from any Strand

Electric Power & Energy Systems Strand

Transmission and Distribution Networks 415	TDN811S	Power Systems 325, Engineering Mathematics 215	8	12
Power System Operation & Control 415	POS811S	Power Systems 325	8	12
Energy Management 415	EMM811S	Power Systems 325	8	12
High Voltage Engineering 415	HVE811S	Power Systems 325	8	12
Renewable Energy 415	RAE811S	Electric Circuits 124, Electrical Machines 214	8	12

Electric Drives, Automation And Control Strand

Electrical Machines 415	ETM811S	Electrical Machines 315 Engineering Electromagnetics 325	8	12
Automation Systems 415	ATS811S	Control Systems 324, Engineering Mathematics 215	8	12
Digital Control Systems 425	DCS811S	Electric Circuits 124, Electrical Machines 214	8	12

Semester 8

Electrical Power Project 421	EPP821S	Engineering Research Methodology 414	8	40
Engineering-in-Society: Ethics & Professionalism	EIS820S	None	8	12
Power Systems Protection 425	PSP821S	Power Systems 315, Electrical Machines 315	8	12

SCHOOL OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

CODE: 95

ARCHITECTURE

QUALIFICATIONS OFFERED

Bachelor of Architecture

07BARC

BACHELOR OF ARCHITECTURE

07BARC

NQF Level: 7

NQF Credits: 388

NQF Qualification ID: Q0993

Description

The programme is designed to provide students with comprehensive and systematic knowledge of the principles, theories and methodologies of the architectural profession. The programme also intends to provide a diverse range of skills and competencies that are both discipline specific and job related and facilitate the development of generic cognitive and intellectual skills, enabling a graduate to adapt to a continuously changing environment. The programme provides for Work Integrated Learning (WIL) during which students are expected to work in industry and build up a portfolio according to criteria set by the Department.

Successful completion of the Bachelor of Architecture will enable registration as Candidate Architectural Technologists with the Namibia Council for Architects and Quantity Surveyors (NCAQS) in terms of Act 13 of 1979, and Act 11 of 1992.

Criteria for Admission

The admission of students to the programme is via three routes: General Admission by means of a 3-stage selection process, admission via the Mature Age Entry Scheme and admission with Advanced Standing or Recognition of Prior Learning as set out below.

First Stage

Candidates are to be assessed on academic merit only. Candidates apply for this stage with their latest Grade 12 / NSSC Ordinary Level (NSSCO) and / or NSSC Higher Level (NSSCH) results. Candidates are required to meet the following minimum academic criteria to be considered:

- At least 12 points on the NUST evaluation scale for English and Mathematics using a combination of NSSCH and / or NSSCO, provided that no symbol lower than a C on NSSCO will be accepted.
- A minimum of 18 points on the NUST evaluation scale for any three other subjects out of the following (or their equivalent): Technical Drawing, Physical Science, Physics, Chemistry, Biology, Geography, Fine Art, Arts and Crafts, Literature, and Economics, using a combination of NSSCH and NSSCO, provided that no symbol lower than a C on NSSCO will be accepted.

Second Stage – Selection Test

Candidates who meet the minimum academic requirements for admission will be invited for a selection test set by the Department. The selection test will assess candidates in terms of their general knowledge, knowledge of technical and scientific principles, free hand and technical drawing skills as well as English language skills. Based on the outcome of the selection test, the Department will compile a selection shortlist. Prior learning in technical / geometrical drawing provides an extremely advantageous foundation for students entering all programmes leading to an architectural qualification.

Final Stage – Selection Interview

Shortlisted candidates will be invited for selection interviews with the Selection Committee, after which a final selection list and ranked waiting list will be compiled. The results of the Selection Process 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 final admission to the programme will be withheld.

Mature Age Entry Scheme

Admission into the programme may be considered according to the NUST regulations on the Mature Age Entry Scheme as per NUST Yearbook. Candidates must adhere to regular NUST application deadlines. In addition to meeting the requirements set out in the NUST regulations, candidates will have to submit a portfolio of relevant work experience with their application which will be evaluated as per requirements set out by the Department. Candidates whose portfolio meets the expected requirements will be invited to the selection test as set out above and will follow the general admissions process from there onwards. International applicants will be accommodated by distance. The decision of the Selection Committee is final and no discussion of the results with the candidates will be entertained.

Admission with Advanced Standing or Recognition of Prior Learning

For candidates who have partially completed an equivalent qualification at another institution admission into the programme may be considered according to the NUST regulations on Admission with Advanced Standing (evaluation of credits by volume) or Recognition of Prior Learning (evaluation of credits on a course-by-course basis) as per Part 1 of the NUST Yearbook. Candidates must adhere to regular NUST application deadlines. In addition to meeting the requirements set out in the NUST regulations, candidates will have to submit a portfolio of works of their previous studies with their application which will be evaluated as per requirements set out by the Department. Eligible candidates will be invited for an interview with the Selection Committee, including a portfolio review. International applicants will be accommodated by distance. The decision of the Selection Committee is final and no discussion of the results with the candidates will be entertained.

Articulation Arrangements

Transfer of credits will be dealt with according to the 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. Students who complete the Bachelor of Architecture successfully will typically be able to undertake further studies in architecture or related disciplines at NQF Level 8.

Mode of Delivery

This programme is offered on the full-time mode in accordance with NUST's rules and regulations.

Requirements for Qualification Award

The Bachelor of Architecture will be awarded to candidates credited with a minimum of 388 NQF credits, and who have met the detailed requirements set out below. In addition, students should meet the administrative and financial requirements in accordance with Yearbook Part 1 of the NUST Yearbook, General Information and Regulations.

Additional Progression Rule

In addition to Rule AC5.2 of the Institutional Yearbook Part 1: General Information and Regulations: Exclusion of students who do not make satisfactory Academic Progress, **students who receive a "Fail" result code for the same Architectural Design Studio Course in two consecutive years will be deregistered from the programme.** Such students may re-apply for admission to the programme. Upon receipt of such re-application for admission, the application will be referred to the Head of Department for special consideration and engagement with the student to determine the causes for the lack of academic progress and to advice on the re-admission of the student.

Transition Arrangements

Once approved, the revised programme (new curriculum) will become effective in January 2017. Students, registered in their first and second years in 2016, will be transitioned to the new curriculum. They will receive credits for old curriculum courses passed as per table 15.1 below, and will need to do equivalent courses for their outstanding courses as per the table 15.2 below.

In addition to the registering for all courses of the new curriculum as from 2017, the following cohorts of students need to register for the following courses:

- Students registered in their first year in 2016 are required to register for Landscape and Context course in 2017.
- Students registered in their second year in 2016 will have to register for Introduction to Survey and Mapping course in 2017.

The old curriculum will be phased out by the end of 2017, so that students who have failed a course of the old curriculum in 2016 can repeat such course in 2017. Students who are registered in their third year in 2016 who still fail to complete their old curriculum courses by the end of 2017 will be transitioned to the new curriculum. They will receive credits for old curriculum courses passed as per table below, and will need to do equivalent courses for their outstanding courses as per the table below.

Old curriculum Courses to be credited

Course Code	OLD Curriculum	NQF Level	Credits	NEW Curriculum Courses	NQF Level	Credits
HTA501Y	History & Theory of Architecture	5	12	Architecture in Context	5	10
CMT501Y	Construction Mat & Tech	5	25	Construction Technology 1	5	10
ABS501Y	Applied Building Science	5	10	Applied Building Science	5	16
BST501Y	Building Structures 1	5	6			
FCD501Y	Fundamentals of Contract Documentation	5	16	Architectural Drafting	5	16
PTE501Y	Presentation Techniques	5	10	Graphics and Communication	5	10
LSS602Y	Landscape Studies	6	10	Landscape and Context	5	10

HAU602Y	History & Theory of Architecture and Urbanism	6	15	Architecture and Discourse	6	10
CMT602Y	Construction Materials and Technology II	6	19	Construction Technology 2	6	16
CAD602Y	Computer Aided Design II	6	5	Computer Aided Drafting and Visualisation	6	10
DPT602Y	Digital Presentation Techniques	6	6			
WIL713S	Work Integrated Learning	7	60	Work Integrated Learning: Architecture	7	60
ARD723S	Architectural Design III	7	25	Architectural Design 3	7	20

Please Note:

If students have failed any of the two old curriculum courses that give credit to one new curriculum course they are required to register for the new curriculum course as per table below.

Corresponding Courses (if Failed). This is not a credit table

Course Code	OLD Curriculum	NQF Level	Credits	Equivalent NEW Curriculum Courses	NQF Level	Credits
ARD501Y	Architectural Design I	5	25	Architectural Design 1A	5	20
				Architectural Design 1B	5	20
HTA501Y	History & Theory of Architecture	5	12	Architecture in Context	5	10
EOA501Y	Elements of Architecture	5	8	None		
CMT501Y	Construction Materials and Technology I	5	25	Construction Technology 1	5	10
ABS501Y	Applied Building Science	5	10	Applied Building Science	5	16
BST501Y	Building Structures I	5	6			
FCD501Y	Fundamentals of Contract Documentation	5	16	Architectural Drafting	5	16
CAD501Y	Computer Aided Design I	5	5	None		
PTE501Y	Presentation Techniques	5	10	Graphics and Communication	5	10
ARD602Y	Architectural Design II	6	30	Architectural Design 2A	6	20
				Architectural Design 2B	6	20
LSS602Y	Landscape Studies	6	10	Landscape and Context	5	10
HAU602Y	History & Theory of Architecture and Urbanism	6	15	Architecture and Discourse	6	10
CMT602Y	Construction Materials and Technology II	6	19	Construction Technology 2	6	16
BSE602Y	Building Services	6	10	Environment and Services	6	16
BST602Y	Building Structures II	6	10	Building Structures	6	16
CAP602Y	Contract Documentation and Architectural Practice	6	20	None		
CAD602Y	Computer Aided Design II	6	5	Computer Aided Drafting and Visualisation	6	10
DPT602Y	Digital Presentation Techniques	6	6			
WIL713S	Work Integrated Learning	7	60	Work Integrated Learning	7	60
ARD723S	Architectural Design III	7	25	Architectural Design 3	7	20
HEL723S	Housing and Everyday Life	7	8	Housing and Everyday Life	6	10
CMT723S	Construction Materials and Technology III	7	19	None		
PQS723S	Principles of Quantity Surveying	7	5	None		
SFA723S	Surveying for Architecture	7	5	None		

Please Note:

The table above, only highlights new/revised core courses in Architecture that should be done if courses on the old curriculum are failed. Where students have failed one old curriculum course that is equivalent to two new curriculum courses they are required to register for both new curriculum course as per table above.

Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well. Old courses that do not have corresponding courses in the revised curriculum will continue to be offered in 2017 until the old programme is completely phased out.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Architectural Design 1A	ARD511S	None	5	20
Applied Building Science	ABS511S	None	5	16
Architecture in Context	ACC511S	None	5	10
Graphics and Communication	GPC511S	None	5	10
Computer User Skills	CUS411S	None	4	10

Semester 2

Architectural Design 1B	ARD521S	None	5	20
Construction Technology 1	CST521S	None	5	10
Landscape and Context	LSC521S	None	5	10
Architectural Drafting	ATD521S	None	5	16
Information Competence	ICT521S	None	5	10
Vertical Studio 1	VTS521S	None	5	4

YEAR 2

Semester 3

Architectural Design 2A	ARD611S	Architectural Design 1A + 1B	6	20
Construction Technology 2	CST611S	Construction Technology 1	6	16
Architecture and Discourse	AAD611S	None	6	10
Computer Aided Drafting and Visualisation	CAD611S	None	6	10
English for Academic Purposes	EAP511S	English in Practice	5	14

Semester 4

Architectural Design 2B	ARD621S	None	6	20
Building Services	BDS621S	None	6	16
Housing and Everyday Life	HEL621S	None	6	10
Introduction to Survey and Mapping	ISM520S	*None	5	12
Vertical Studio 2	VSD521S	None	5	4

**In consultation with the Dept: Geo-Spatial - Senate Approved to exempt Architecture Students from the pre-requisite for ISM520S.*

YEAR 3

Semester 5

Work Integrated Learning: Architecture	WIA711S	Architectural Design 2A and 2B Construction Technology 2	7	60
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Semester 6

Architectural Design 3	ARD721S	Work Integrated Learning: Architecture	7	20
Environment and Services	EAS621S	None	6	16
Principles of Urban Design	PUD721S	None	7	10
Computer Generated Imagery	CGI721S	None	7	10
Vertical Studio 3	VTS621S	None	6	4

QUANTITY SURVEYING

QUALIFICATIONS OFFERED

Bachelor of Quantity Surveying

07BOQS

BACHELOR OF QUANTITY SURVEYING

07BOQS

NQF Level: 7

NQF Credits: 392

NQF Qualification ID: Q0985

Description

The Bachelor of Quantity Surveying was developed against this background for students who intend to pursue careers in quantity surveying and related fields. The programme is designed to provide students with comprehensive and systematic knowledge and skills in the field of quantity surveying using the principles, theories and methodologies of the profession.

Through this programme, students will be able to acquire cognitive/intellectual skills, practical skills and key transferable skills in relation to the various aspects and interdisciplinary nature of quantity surveying at all levels. The programme also intends to provide a diverse range of skills and competencies that are both discipline specific and job related and facilitate the development of generic cognitive and intellectual skills, enabling a graduate to adapt to a continuously changing environment. Additionally, the skills acquired enable students to absorb a wider range of knowledge, adapt to various conditions, and to solve problems creatively and innovatively.

The programme includes a Work Integrated Learning (WIL) component through which students are expected to work in industry and build up a portfolio according to criteria set by the Department.

Criteria for Admission

Candidates are to be assessed on academic merit only. Candidates apply with their latest Grade 12 / NSSC Ordinary Level (NSSCO) and /or NSSC Higher Level (NSSCH) results. Candidates are required to meet the following minimum academic criteria to be considered:

- At least 12 points on the NUST evaluation scale for English and Mathematics using a combination of NSSCH and / or NSSCO, provided that no symbol lower than a C on NSSCO will be accepted.
- A minimum of 18 points on the NUST evaluation scale for any three other subjects out of the following (or their equivalent): Technical Drawing, Physical Science, Physics, Chemistry, Biology, and Economics, using a combination of NSSCH and NSSCO, provided that no symbol lower than a C on NSSCO will be accepted. An advanced Diploma in any of the building trades could be considered favourably by the selection committee.
- INSTEM results will be evaluated on a course-by-course basis according to NUST regulations.

If the final Grade 12 and/or INSTEM results of candidates who were selected provisionally do not meet the minimum requirements then final admission to the programme will be withheld. The decision of the Selection Committee is final and no discussion of the results with the candidates will be entertained.

Mature Age Entry Scheme

Admission into the programme may be considered according to the NUST regulations on the Mature Age Entry Scheme as per NUST Yearbook. Candidates must adhere to regular NUST application deadlines. In addition to meeting the requirements set out in the NUST regulations, candidates will have to submit a portfolio of relevant work experience with their application, which will be evaluated as per requirements set out by the Department. Candidates whose portfolio meets the expected requirements will be invited for an interview with the Selection Committee, including a portfolio review. An advanced Diploma in any of the building trades could be considered favourably by the Selection Committee. The decision of the Selection Committee is final and no discussion of the results with the candidates will be entertained.

Admission with Advanced Standing or Recognition of Prior Learning

For candidates who have partially completed an equivalent qualification in Quantity Surveying or any other related building trade at another Institution, admission into the programme may be considered according to the NUST regulations on Admission with Advanced Standing (evaluation of credits by volume) or Recognition of Prior Learning (evaluation of credits on a course-by-course basis) as NUST Yearbook, General Information and Regulations. Candidates must adhere to regular NUST application deadlines.

In addition to meeting the requirement set out in the NUST regulations, candidates will have to submit a portfolio of works of their previous studies with their application which will be evaluated as per requirements set out by the Department. Eligible candidates will be invited for an interview with the Selection Committee, including a portfolio review. An advanced Diploma in any of the building trades could be considered favourably by the Selection Committee. The decision of the Selection Committee is final and no discussion of the results with the candidates will be entertained.

Articulation Arrangements

Transfer of credits will be dealt with according to the 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.

Students who complete the Bachelor of Quantity Surveying successfully will ordinarily be able to undertake further studies in Quantity Surveying or related disciplines at NQF Level 8.

Mode of Delivery

This programme is offered on the full-time mode in accordance with NUST rules and regulations.

Requirements for Qualification Award

The Bachelor of Quantity Surveying will be awarded to candidates credited with a minimum of 392 NQF credits, and who have met the detailed requirements set out below. In addition, students should meet the administrative and financial requirements in accordance with Yearbook Part 1 of the NUST Yearbook, General Information and Regulations.

Transition Arrangements

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

Teaching / 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, including lectures, practical classes, workshops and seminars, site visits and Work Integrated Learning. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

Assessment Strategies

Learning and assessment are integrated throughout the programme. Diversified continuous assessment is applied to ensure that students receive feedback on their progress towards the achievement of specific learning outcomes. This will normally apply to practical assignments to be carried out individually or in groups, tests, class seminars, as well as technical and project site reports.

The brief for the assignment must clearly explain the aim of the assignment as well as the expected learning competencies relative to the course. In accordance with NUST policy on diversified continuous assessment, each course will have a minimum of six assessment events.

Assignments, designed to meet the requirements of integrated assessment, accomplish / deliver:

- Integration of qualification outcomes in a way that demonstrates that the purpose of the qualification as a whole has been achieved, either totally or within the components of the study programme;
- Demonstration of student competence through evaluation;
- Criterion-referenced assessment, which has been clearly explained to and is understood by students.

In the assessment of whether the desired outcomes have been achieved (or not), recognition is given to criteria and evaluation methods that adequately and appropriately achieve such assessment.

Quality Assurance of Assessment

Each course 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. 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 purpose, therefore, ensuring quality of the assessment and the qualification as a whole. All courses at exit level (NQF Level 7) will be externally moderated as per NUST regulations.

Assessment of competence of students by external organisations, in particular the Namibia Council for Architects and Quantity Surveyors, established in terms of the Architects' Act, 1979 (Act 13 of 1979 and Act 11 of 1992), will normally be done through scheduled, mutually arranged periodic validation visitations of frequency not more than 5 years.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Applied Building Science	ABS511S	None	5	16
Mathematics and Statistics for Spatial Sciences	MSS511S	None	5	12
Principles of Architectural Design	PAD511S	None	5	10
Principles of Microeconomics	PMI511S	None	5	12
Theory of Quantity Surveying	TQS511S	None	5	16

Semester 2

Business Accounting 1A	BAC1100	None	5	10
Construction Technology 1	CST521S	None	5	10
Construction Legislation and Regulations	CLR521S	None	5	10
Principles of Management	POM521S	None	5	10
English for Academic Purposes	EAP511S	English in Practice	5	14
Computer User Skills	CUS411S	None	4	10

YEAR 2

Semester 3

Building and Engineering Law	BEL611S	Construction Legislation and Regulations	6	10
Construction Economics	CSE611S	None	6	10
Construction Technology 2	CST611S	Construction Technology 1	6	16
Measurement 1	MSM511S	None	5	20
Information Competence	ICT521S	None	5	10

Semester 4

Building Structures	BDS621S	None	6	16
Computer Applications for Quantity Surveying	CAQ621S	None	6	10
Introduction to Survey and Mapping	ISM520S	None	5	12
Environment and Services	EAS621S	None	6	16
Measurement 2	MSM621S	Measurement 1	6	20

YEAR 3

Semester 5

Work Integrated Learning	WQS711S	Measurement 2	7	60
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Semester 6

Construction Project Management	CPM721S	None	7	10
Measurement 3	MSM721S	Measurement 2	7	10
Quantity Surveying Project	QSP721S	Work Integrated Learning	7	20
Construction Accounting	CSA621S	*None	6	10
Sustainability and Development	SYD611S	None	6	12

* In consultation with the Department of Geo-Spatial Science and Technology (DGST), Senate approved to exempt Quantity Surveying students from the pre-requisite for ISM520S

SPATIAL PLANNING

QUALIFICATIONS OFFERED

Bachelor of Urban and Regional Planning (Revised Curriculum - Phasing in 2024)	07BURP
Bachelor of Town and Regional Planning (Old Curriculum – Phasing out 2028)	07BTAR
Bachelor of Regional and Rural Development (New Curriculum – Phasing in 2024)	07BORR
Bachelor of Regional and Rural Development (Old Curriculum – Phasing out 2028)	07BRAR

BACHELOR OF URBAN AND REGIONAL PLANNING (Revised Curriculum – Phasing in 2024)

07BURP

NQF Credits: 376

Description

The Bachelor of Urban and Regional Planning is designed to enable students to pursue careers as Technicians or Officers in urban and regional planning as well as land use management. The programme equips students with the necessary skills to be able to plan, design, manage and regulate change in the built and natural environment as well as shape, organise and change natural and built environments to secure an agreed range of social, economic, and environmental objectives.

The programme further capacitate students with cognitive, intellectual, practical, and key transferable skills to deal with various aspects of urban and regional planning at all levels. The programme is further designed to provide a diverse range of skills and competencies that are both discipline-specific and job related and facilitate the development of generic cognitive and intellectual skills, enabling a graduate to adapt to a continuously changing environment.

Criteria for Admission

Candidates may be admitted to the Bachelor of Urban and Regional Planning if they meet the General Admission Requirements of the Namibia University of Science and Technology and comply with the additional requirements below:

- A **minimum of 11 points for English and Mathematics** based on the Namibia University of Science and Technology Admission Point System, using a combination of NSSC Ordinary Level and/or Advance Subsidiary or equivalent, **provided that the symbol for both subjects should not be lower than a C** on NSSC(O) or 4 at NSSC(H) or an “e” symbol on the NSSC(AS) level or equivalent.
- A **minimum of 19 points for three** other non-language subjects on the Namibia University of Science and Technology Admission Point System, using a combination of NSSC(O) and/or Advance Subsidiary or equivalent provided that **no symbol be lower than D** on NSSC Ordinary, or an “e” symbol on the NSSC(AS) level for the other subjects.

At the discretion of the Department, a more in-depth selection process could be followed, which may include a test or an interview.

- Candidates who meet the Mature Age Entry Requirements of the Namibia University of Science and Technology may be considered for admission but will be required to provide proof of a minimum of 3 years of work experience in the field of urban and regional planning completed under the appropriate supervision of a registered urban and regional planner.

Articulation Arrangements

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

Graduates of this programme will be able to pursue further studies in Urban and Regional Planning, or related disciplines, at NQF Level 8.

Mode of Delivery

The programme will be offered on the full-time mode of study using a flexible delivery mode in accordance with NUST rules and regulations.

Requirements for Qualification Award

The Bachelor of Urban and Regional Planning will be awarded to students credited with a minimum of 376 NQF credits. In addition, students must meet the administrative and financial requirements as contained in the Prospectus of the Namibia University of Science and Technology.

Transition Arrangements

The revised Bachelor of Urban and Regional Development will be implemented on a year-to-year transition basis, beginning with the first year in 2024. The last intake of 1st-year students for the out-phasing programme (old curriculum) was in January 2023.

Students who are registered in 2023 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 programme (new curriculum) in 2024 and will be granted credits on a course-by-course basis in accordance with the information in the Table below.

In addition, students who were registered in 2023 for the 1st and 2nd year of the out-phasing programme (old curriculum), and who meet all requirements for progression to the 2nd and 3rd year in 2024 will be required to complete their studies based on the requirements of the old curriculum.

Students who are admitted into the examination but fail any of the courses on the old curriculum at the end of 2023 will only be granted two opportunities to pass such courses in accordance with NUST rules. The 3rd year students who fail any courses on the old curriculum at the end of 2023 will be required to complete their studies based on the requirements of the old curriculum, they will further be required to repeat the failed courses based on the syllabi of new and revised corresponding courses.

Please refer to the Table below for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

The revised Bachelor of Urban and Regional Planning (new curriculum) will take effect from January 2024 with the implementation of the 1st year in 2024, 2nd year in 2025 and 3rd year in 2026.

The deadline for the complete phasing out of the Bachelor of Urban and Regional Planning (old curriculum) is the end of 2028, after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum.

Courses to be Credited

Course Code	Bachelor of Town and Regional Planning (Old Courses)	Course Code	Bachelor of Urban and Regional Planning (Equivalent New/Revised Courses)
RDT620S	Rural Development Tools and Techniques	PAR610S	Participatory Planning Methods
WPM601Y	WIL Planning Participatory Methods	PAR610S INS710S	Participatory Planning Methods Introduction to Spatial Planning Research
DPS610S	Demographics and Population Studies	DSS710S	Demographic and Statistics for Spatial Planners
PMI511S	Principles of Micro Economics	DVE510S	Development Economics
LED520S	Local Economic Development	LHC520S	Livelihoods and Community Development
LUD721S	Land Use and Development Mgt Practice	WUR701Y	WIL-Urban and Regional Planning Practice
WLD711S	Wil- Layout Drafting Studio	WLD701Y	WIL- Layout Drafting Studio

Corresponding Courses (if Failed). This is not a credit table

Course Code	Bachelor of Town and Regional Planning (Old Courses)	Course Code	Bachelor of Urban and Regional Planning (Equivalent New/Revised Courses)
ILP511S	Introduction to Land Use Planning and Mgt	ILP511S	Introduction to Land Use Planning and Management
LED520S	Local Economic Development	LHC520S	Livelihoods and Community Development
CCS611S	Critical City Structure and Components	CCS611S	Critical City Structure and Components
CEP610S	Civil Engineering for Planning	CEP610S	Civil Engineering for Planning
IRF620S	Institutional and Regulatory Framework	IRF620S	Institutional and Regulatory Framework
ISP620S	Introduction to Society and Planning	ISP620S	Introduction to Society and Planning
PLP621S	Principles and Guidelines for Layout Planning	PLP621S	Principles and Guidelines for Layout Planning
SHP621S	Settlement History and Planning Theory	SHP621S	Settlement History and Planning Theory
RDT620S	Rural Development Tools and Techniques	PAR610S	Participatory Planning Methods
PNH610S	Planning for Housing	PNH610S	Planning for Housing
CAC610S	Comparative African Cities	CAC610S	Comparative African Cities
EVP510S	Environmental Planning	EVP510S	Environmental Planning
WLD711S	Wil- Layout Drafting Studio	WLD701Y	WIL- Layout Drafting Studio
DPS610S	Demographics and Population Studies	DSS710S	Demographic and Statistics for Spatial Planners
WCB701S	WIL – Community-Based Project	WCB701S	WIL – Community-Based Project
LUD721S	Land Use and Development Mgt Practice	WUR701Y	WIL-Urban and Regional Planning Practice

WPM601S	WIL – Planning Participatory Methods	PAR610S	Participatory Planning Methods
		INS710S	Introduction to Spatial Planning Research
SSP720S	Sustainable Settlement Planning	SSP720S	Sustainable Settlement Planning
DPP720S	Development Policies and Processes	DPP720S	Development Policies and Processes
	None	GFP510S	Geography for Planners
	None	DVE510S	Development Economics
	None	PUD721S	Principles of Urban Design
	None	IGD411S	Introduction to Geospatial Data
	None	GPS511S	Graphics and Communications
	None	GES521S	Geographical Information System 1
	None	ISM520S	Introduction to Surveying and Mapping
	None	LTS520S	Land Tenure Systems
	None	CAD510S	Computer Aided Drafting
	None	CTM611S	Cartography and Map Visualisation
	None	GES612S	Geographical Information System 2

Please Note

The table above only highlights new/revised core courses in the Bachelor of Urban and Regional Planning that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of those departments apply to this Programme as well.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
English in Practice	EPR511S	None	5	NCB
Introduction to Geospatial Data	IGD411S	None	4	8
Introduction to Land Use Planning and Management	ILP511S	None	5	12
Graphics and Communications	GPC511S	None	5	10
Geography for Planners	GFP510S	None	5	12

Semester 2

English for Academic Purposes	EAP511S	English in Practice	5	14
Geographical Information Systems 1	GES512S	Computer User Skills Introduction to Geospatial Data	5	12
Introduction to Surveying and Mapping	ISM520S	Introduction to Geospatial Data	5	12
Land Tenure Systems	LTS520S	None	5	12
Livelihoods and Community Development	LHC520S	None	5	12

YEAR 2

Semester 3

Professional Writing	PWR611S	English for Academic Purposes	6	14
Civil Engineering for Planning	CEP610S	None	6	6
Critical City Structure and Components	CCS611S	None	6	10
Computer Aided Drafting	CAD510S		5	12
Cartography and Map Visualisation	CTM611S	Geographical Information Systems 1	6	12
Development Economics	DVE510S	None	6	12

Semester 4

Geographical Information Systems 2	GES612S	Geographical Information Systems 1	6	12
Institutional and Regulatory Framework	IRF620S	None	6	10
Principle and Guidelines for Layout Planning	PLP621S	Critical City Structure and Components	6	10
Settlement History and Planning Theory	SHP621S	None	6	12
Introduction to Society and Planning	ISP620S	None	6	12
Participatory Planning Methods	PAR610S	None	6	12

YEAR 3

Semester 5

Planning for Housing	PNH610S	None	6	10
Introduction to Spatial Planning Research	INS710S	None	6	12
Environmental Planning	EVP510S	None	5	10
Comparative African Cities	CAC610S	None	6	10
Demography and Statistics for Spatial Planners	DSS710S	None	6	10

Semester 6

Sustainable Settlement Planning	SSP720S	Environmental Planning	7	12
Development Policies and Processes	DPP720S	None	7	12
Principles of Urban Design	PUD721S	None	7	10

YEAR COURSES

WIL - Layout Drafting Studio	WLD701Y	Principles and Guidelines for Layout Planning	7	14
WIL – Urban and Regional Planning Practice	WUR701Y	Civil Engineering for Planners Introduction to Land Use Planning and Management	7	12
WIL – Community Based Project	WCB701Y	Institutional and Regulatory Framework Participatory Planning Methods Introduction to Spatial Planning Research Development Economics Demographics and Statistics for Spatial Planners	7	16

Progression Rules:

1. Unless otherwise determined by Senate, a student shall not be admitted to a second or subsequent level course if he/she has not fulfilled the pre-requisites for that course. If a course is a prescribed course, students who obtained a final mark of at least 50% shall be deemed to have satisfied the pre-requisite.
2. A student shall not be permitted to re-register for the same qualification after exceeding the maximum period of study for a qualification in line with institutional rules and procedures. Students may appeal to Senate for an extension of this period.

**BACHELOR OF TOWN AND REGIONAL PLANNING
(Old Curriculum – Phasing out 2028)**

07BTAR

NQF Level: 7

NQF Credits: 396

NQF Qualification ID: Q0228

Description

The Bachelor of Town and Regional Planning is designed to enable students to pursue a career as Planning Technicians in the field of town and regional planning. As an academic and professional discipline, planning is the study of the way societies plan, design, manage and regulate change in the built and natural environment. The programme, therefore, includes the study of why and how (and with what consequences) societies intervene, shape, organise and change natural and built environments, in order to secure an agreed range of social, economic and environmental objectives.

The programme will enable students to acquire cognitive/intellectual skills, practical skills and key transferable skills in relation to the various aspects and interdisciplinary nature of town and regional planning at all levels. The programme also intends to provide a diverse range of skills and competencies that are both discipline specific and job related and facilitate the development of generic cognitive and intellectual skills, enabling a graduate to adapt to a continuously changing environment. In addition, the programme fosters an understanding of how learnt competencies affect development of the human living environment taking into consideration international best practices and standards. The programme includes Project Based Learning in which students are expected to take part in a community based project having relevance to a real life situation.

Criteria for Admission

Candidates may be admitted to the Bachelor of Town and Regional Planning, if they meet the General Admission Requirements of the Namibia University of Science and Technology and comply with the additional requirements below:

- A **minimum of 11 points for English (Second Language - Ordinary Level) and Mathematics** based on the Namibia University of Science and Technology Admission Point System, using a combination of NSSC Ordinary Level and/or NSSC Higher Level, **provided that the symbol for both subjects should not be lower than a C** on NSSC(O) or 4 at NSSC(H);
- A **minimum of 19 points for three** other subjects on the Namibia University of Science and Technology Admission Point System, using a combination of NSSC(O) and/or NSSC(H), provided that **no symbol be lower than D** on NSSC Ordinary for the other subjects.

At the discretion of the Department, a more in-depth selection process could be followed which may include either a test or an interview.

Candidates who meet the Mature Age Entry Requirements of the Namibia University of Science and Technology may be considered for admission, but will be required to comply with the additional requirement below:

- A minimum of 3 years work experience in the field of town and regional planning completed under appropriate supervision of a registered town and regional planner.

Candidates who hold the current National Diploma in Land Use Planning may be considered for admission, if they have passed the courses Land Use Planning 3, Natural Resource Management 3 and Legal and Institutional Framework with a combined minimum of at least 60%.

Articulation Arrangements

Transfer of credits will be dealt with according to the Namibia University of Science and Technology'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 be able to pursue further studies in Town and Regional Planning, or related disciplines, at NQF Level 8.

Mode of Delivery

The programme will only be offered on the full-time mode of study mode of study in accordance with NUST rules and regulations. This may also be offered in a flexible delivery mode depending on the needs of students and availability of technology.

Requirements for Qualification Award

The Bachelor of Town and Regional Planning will be awarded to students credited with a minimum of 396 NQF credits. In addition, students must meet the administrative and financial requirements as contained in the Prospectus of the Namibia University of Science and Technology.

Transition Arrangements

The Bachelor of Town and Regional Planning (old curriculum) will be phased out systematically until 2019, 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 2016.

Students who are registered in 2016 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 programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in Table 15.1 below.

In addition, all second year students in 2017 (students who are registered in 2016 for the 1st year of the out-phasing programme (old curriculum), and who meet all requirements for progression to the 2nd year in 2017 and those who fail the second year in 2016), will also be required to transition to the revised programme (new curriculum) but will be required to take-up Local Economic Development (LED520S) (if not already passed) in order to make-up for deficiency in accordance with the detailed requirements for the revised curriculum.

Students who will be registered for the 3rd year of the out-phasing programme (old curriculum) in 2017 will be allowed to complete the programme based on the requirements of the old curriculum.

The revised Bachelor of Town and Regional Planning (new curriculum) will take effect from January 2017 with concurrent implementation of the 1st and 2nd year (2017), while implementation of the 3rd year is scheduled for 2018.

Courses will only be offered based on the new and revised syllabi in 2017 (1st and 2nd year) and 2018 (3rd year). The 3rd year students who fail any of the courses on the old curriculum will be required to repeat the failed courses based on syllabi of new and revised corresponding courses. Please refer to the Table 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 Town and Regional Planning (old curriculum) is 2019, after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum.

Courses to be credited

Bachelor of Town and Regional Planning (Old Courses)		Bachelor of Town and Regional Planning (Equivalent Revised Course)	
Course Code	Course Name	Course code	Course Name
CUS411S	Computer User Skills	CUS411S	Computer User Skills
IGD411S	Intro to Geospatial Data	IGD411S	Intro to Geospatial Data
EPR511S	English in Practice	EPR511S	English in Practice
ISO511S	Intro to Sociology	ISO511S	Intro to Sociology
PMI511S	Principles of Micro Economics	PMI511S	Principles of Micro Economics
ILP510S	Intro to Land Use Planning & Management	ILP510S	Intro to Land Use Planning & Management
BSC410S	Basic Science	BSC410S	Basic Science
ISM520S	Intro to Survey & Mapping	ISM520S	Intro to Survey & Mapping
LTS520	Land Tenure Systems	LTS520	Land Tenure Systems
GES512S	Geographical Information Systems 1	GES512S	Geographical Information Systems 1
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
ICT521S	Information Competence	ICT521S	Information Competence
LED520S	Local Economic Development	LED520S	Local Economic Development

Corresponding Courses (if Failed). This is not a credit table

Bachelor of Town and Regional Planning (Old Courses)		Bachelor of Town and Regional Planning (Corresponding New/Revised Courses)	
Course Code	Course Title	Course code	Course Title
IGD411S	Intro to Geospatial Data	IGD411S	Intro to Geospatial Data
ILP510S	Intro to Land Use Planning and Management	ILP510S	Intro to Land Use Planning and Management
ISM520S	Introduction to Surveying	ISM520S	Introduction to Surveying
LED520S	Local Economic Development	LED520S	Local Economic Development
EVP510S	Environmental Planning	EVP510S	Environmental Planning
CCS510S	Critical City Structure and Components	CCS611S	Critical City Structure and Components
CEP610S	Civil Engineering for Planning	CEP610S	Civil Engineering for Planning
CAD510S	Computer Aided Drafting	CAD510S	Computer Aided Drafting
IRF620S	Institutional and Regulatory Framework	IRF620S	Institutional and Regulatory Framework
ISP620S	Introduction to Society and Planning	ISP620S	Introduction to Society and Planning
PLP520S	Principles and Guidelines for Layout Planning	PLP621S	Principles and Guidelines for Layout Planning
RDT620S	Rural Development Tools & Techniques	RDT620S	Rural Development Tools & Techniques
PNH610S	Planning for Housing	PNH610S	Planning for Housing
CAC610S	Comparative African Cities	CAC610S	Comparative African Cities
DPS610S	Demography and Population Studies	DPS610S	Demography and Population Studies
SHP520S	Settlement History and Planning Theories	SHP621S	Settlement History and Planning Theories
LUS710S	Land Use Management Practices	LUD721S	Land Use and Development Management Practise-WIL
DPP720S	Development Policies and Processes	DPP720S	Development Policies and Processes
SSP720S	Sustainable Settlement Planning	SSP720S	Sustainable Settlement Planning
LDD720S	Layout Drafting Design Studio	WLD711S	Layout Drafting Design Studio-WIL
PWP520S	Planning Workshop A	WPM601Y	Planning Participatory Methods-WIL
PWP720S	Planning Workshop B		Year Course
CBP7140S	Community Based Project A	WCB701Y	Community Based Project-WIL Year Course
CBP720S	Community Based Project B		

Please Note:

The Table above only highlights new/revised core courses in Bachelor of Town and Regional Planning that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well. Core courses in Town and Regional Planning which do not have corresponding new/revised courses in the revised curriculum, will be offered until the old curriculum is phased out completely in 2019.

Progression Rules:

(i) Unless otherwise determined by Senate, a student shall not be admitted to a second or subsequent level course if he/she has not fulfilled the pre-requisites for that course. If a course is prescribed as a pre-requisite course, students who obtain a semester mark of at least 50% shall be deemed to have satisfied the pre-requisite.

(ii) A student shall not be permitted to register for the same qualification after double the minimum period of study from first registration. Students may appeal to Senate for extension of this period.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Introduction to Sociology	ISO511S	None	5	12
Introduction to Geospatial Data	IGD411S	None	4	8
English in Practice	EPR511S	Principles of English Language Use	5	NCB
Principles of Micro Economics	PMI511S	None	5	12
Introduction to Land Use Planning and Mgt	ILP511S	None	5	12
Basic Science	BSC410S	None	4	8

Semester 2

Introduction to Survey and Mapping	ISM520S	Introduction to Geospatial Data	5	12
Land Tenure Systems	LTS520S	None	5	12
Geographical Information Systems 1	GES512S	Introduction to Geospatial Data Computer User Skills	5	12
Local Economic Development	LED520S	None	5	12
English for Academic Purposes	EAP511S	English in Practice	5	14
Information Competence	ICT521S	None	5	10

YEAR 2

Semester 3

Professional Writing	PWR611S	English for Academic Purposes	6	14
Critical City Structure and Components	CCS611S	None	6	10
Civil Engineering for Planning	CEP610S	None	6	6
Computer Aided Drafting	CAD510S	Introduction to Geospatial Data Computer User Skills	5	12
Introduction to Applied Statistics	IAS501S	None	4	12
WIL – Planning Participatory Methods	WPM601S	None	6	16

Semester 4

Institutional and Regulatory Framework	IRF620S	None	6	10
Introduction to Society and Planning	ISP620S	Introduction to Sociology	6	12
Principles and Guidelines for Layout Planning	PLP621S	Critical City Structure and Components	6	10
Settlement History and Planning Theory	SHP621S	None	6	12
Rural Development Tools & Techniques	RDT620S	Introduction to Sociology	6	12

YEAR 3

Semester 5

Planning for Housing	PNH610S	None	6	10
Comparative African Cities	CAC610S	None	6	10
Environmental Planning	EVP510S	None	5	12
WIL-Layout Drafting Studio	WLD711S	All courses for Semester 1-4	7	15
Demography and Population Studies	DPS610S	Introduction to Statistics	6	10
WIL-Community Based Project	WCB701S	All courses for Semester 1-4	7	16

Semester 6

Sustainability and Development	SYD611S	None	6	12
Principles of Urban Design	PUD721S	None	7	10
Land Use and Development Mgt Practice-WIL	LUD721S	Introduction to Land Use Planning and Mgt Institutional and Regulatory Framework	7	12
Sustainable Settlement Planning	SSP720S	Environmental Planning	7	15
Development Policies and Processes	DPP720S	None	7	14

**BACHELOR OF REGIONAL AND RURAL DEVELOPMENT
(Revised Curriculum – Phasing in 2024)**

07BRR

NQF Credits: 365

Description

The Bachelor of Regional and Rural Development is designed to equip graduates with a broad range of contemporary and relevant knowledge and skills to deal with complex regional and rural development issues.

The programme will impart the students with theoretical and applied knowledge of regional and rural development issues, public administration and management tasks, as well as natural resource protection and management while contributing to sustainable development. Graduates will be equipped with tools, methods and a theoretical grounding in the theories of regional analysis as well as concepts and approaches of integrated development promotion and management. They will be capacitated to participate in grass-root decision-making (joint planning, implementation and monitoring) processes that affect their lives and well-being, as well to solve challenges facing the regions and rural areas.

Criteria for Admission

Candidates may be admitted to the Bachelor of Regional and Rural Development if they meet the General Admission Requirements of the Namibia University of Science and Technology and comply with the additional requirements below:

- **A minimum of 30 points based on the Namibia University of Science and Technology Admission Point System**, using a combination of NSSC Ordinary Level/ Advance Subsidiary (AS) and/or NSSC Higher Level or equivalent, provided that no symbol lower than a “D” on NSSCO will be accepted for English and Mathematics

At the discretion of the Department, a more in-depth selection process could be followed, which may include a test or an interview.

Candidates who meet the Mature Age Entry Requirements of the Namibia University of Science and Technology may be considered for admission but will be required to comply with the additional requirement below:

- Proof of a minimum of 3 years of work experience in the regional and rural development or related field.

Articulation Arrangements

The transfer of credits will be dealt with according to the Namibia University of Science and Technology’s regulations on Recognition of Prior Learning. These provide course-by-course credits and 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 degree will be able to pursue further studies in Regional and Rural Development or a related cognate learning area at NQF Level 8.

Mode of Delivery

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

Requirements for Qualification Award

The Bachelor of Regional and Rural Development qualification will be awarded to students credited with a minimum of 365 credits and those who have met the following detailed qualification requirements:

- Students must complete all the compulsory courses, including the Work Integrated Learning— worth 38 credits.
- Additionally, students should meet the administrative and financial requirements of NUST.

Transition Arrangements

The last intake of 1st-year students for the out-phasing programme (old curriculum) should be in January 2023. This means students who are registered in 2023 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 programme (new curriculum) in 2024 and will be granted credits on a course-by-course basis in accordance with the information in the Table below.

In addition, students who were registered in 2023 for the 1st year of the out-phasing programme (old curriculum) and who meet all requirements for progression to the 2nd year in 2024 will also be required to transition to the revised programme (new curriculum). All other courses will be credited in accordance with the information in the Table below.

Students who will be registered for the 3rd year of the out-phasing programme (old curriculum) in 2023 will be allowed to complete the programme based on the requirements of the old curriculum.

The revised Bachelor of Regional and Rural Development (new curriculum) will take effect from January 2024 with concurrent implementation of the 1st, 2nd and 3rd-year syllabus.

Students who are admitted into the examination but fail any of the courses on the old curriculum at the end of 2023 will only be granted two opportunities to pass such courses in accordance with NUST rules. The 3rd year students who fail any courses on the old curriculum at the end of 2023 will be required to repeat the failed courses based on the syllabi of new and revised corresponding courses. Please refer to the Table below for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

The deadline for the complete phasing out of the Bachelor of Regional and Rural Development (old curriculum) is the end of 2023, after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum as of January 2024.

Courses to be credited

Bachelor of Regional and Rural Development (Old Curriculum) – Old Courses		Bachelor of Regional and Rural Development (Revised Curriculum) – Equivalent New/Revised Course	
Course Code	Course Name	Course code	Course Name
IGE420S	Introduction to Geography	GFP510S	Geography for Planners
AEM520S	Agricultural Economics	APD721S	Agricultural Policy and Rural Development
PTY510S	Planning Theory 1	RDT520S	Regional Development Theory
RDT620S	Rural Development Tools and Techniques	PAR610S	Participatory Planning Methods
RLC620S	Rural Livelihoods and Community Development	LHC520S	Livelihoods and Community Development
SRP520S	Statistics for Regional Planners	DSS710S	Demography and Statistics for Spatial Planners
LUP610S	Land Use Planning 2	LUP610S	Land Use Planning 2
NRS711S	Natural Resources Management and Sustainable Development	SRD710S	Sustainability for Regional Development
ASP720S	Applied Spatial Planning	RDI710S	Regional Development Interventions
ARR7250S	Applied Regional and Rural Economic Development	DVE510S	Development Economics

Corresponding Courses (if Failed). This is not a credit table

Bachelor of Regional and Rural Development (Old Curriculum) – Old Courses		Bachelor of Regional and Rural Development (Revised Curriculum) – Equivalent New/Revised Course	
Course Code	Course Name	Course code	Course Name
ILP510S	Introduction to Land Use Planning and Mgt	ILP510S	Introduction to Land Use Planning and Mgt
PTY510S	Planning Theory 1	RDT520S	Regional Development Theory
	None	DEV520S	Development Planning
IGE420S	Introduction to Geography	GFP510S	Geography for Planners
CEP610S	Civil Engineering for Planning	CEP610S	Civil Engineering for Planning
LUP610S	Land Use Planning 2	LUP610S	Land Use Planning 2
NRM511S	Natural Resources Management	NRM511S	Natural Resources Management
RLC620S	Rural Livelihoods and Community Development	LHC520S	Livelihoods and Community Development
IRF620S	Institutional and regulatory Framework	IRF620S	Institutional and regulatory Framework
IEM621S	Integrated Environmental Management	IEM621S	Integrated Environmental Management
RDT620S	Rural Development Tools and Techniques	PAR610S	Participatory Planning Methods
ASP720S	Applied Spatial Planning	RDI710S	Regional Development Interventions
ARR7250S	Applied Regional and Rural Economic Devel.	DVE510S	Development Economics
NRS711S	Natural Resources Management and Sustainable Development	SRD710S	Sustainability for Regional Development
WIR710S	Work Integrated Learning for Regional	WIR710S	Work Integrated Learning for Regional
SRP520S	Statistics for Regional Planners	DSS710S	Demography and Statistics for Spatial Planners
	None	INS710S	Introduction to Spatial Planning Research
	None	IGD411S	Introduction to Geospatial Data
	None	ITM111S	Introduction to Mathematics

	None	ITP511S	Introduction to Public Management
	None	GES511S	Geographical Information System 1
	None	ISM520S	Introduction to Surveying and Mapping
	None	RLG611S	Regional and Local Government Management
	None	CTM611S	Cartography and map Visualisation
	None	GES612S	Geographical Information System 2
	None	APD721S	Agricultural Policy and Rural Development
	None	DRM721S	Disaster Risk Management

Please Note:

The Table above only highlights new/revised core courses in Bachelor of Regional and Rural Development that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments also apply to this programme. Core courses in Bachelor of Regional and Rural Development which do not have corresponding new/revised courses in the revised curriculum will be offered until the old curriculum is phased out completely in December 2023.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Principles of English Language Use	PLU411S	None	5	NCB
Introduction to Geospatial Data	IGD411S	None	4	8
Introduction to Mathematics	ITM111S	None	5	10
Introduction to Land Use Planning and Management	ILP510S	None	5	12
Introduction to Public Management	ITP511S	None	5	12
Geography for Planners	GFP510S	None	5	12

Semester 2

English in Practice	EPR511S	Principles of English Language Use	5	NCB
Geographical Information System 1	GES511S	Introduction to Geospatial Data Computer User Skills	5	12
Introduction to Surveying and Mapping	ISM520S	Introduction to Geospatial Data	5	12
Regional Development Theory	RDT520S	None	5	10
Development Planning	DEV520S	None	6	12
Natural Resources Management	NRM520S	None	5	12
Livelihoods and Community Development	LHC520S	None	5	12

YEAR 2

Semester 3

Civil Engineering for Planning	CEP610S	None	6	6
Land Use Planning	LUP510S	Introduction to Land Use Planning and Management	6	12
Integrated Environmental Management	IEM621S	None	6	12
Regional and Local Government Management	RLG611S	None	6	13
Cartography and Map Visualisation	CTM611S	Geographical Information Systems 1	6	12
Development Economics	DVE510S	None	6	12

Semester 4

English for Academic Purposes	EAP511S	English in Practice	5	14
Geographical Information System 2	GES612S	Geographical Information System 1	6	12
Institutional and Regulatory Framework	IRF620S	None	6	10
Agricultural Policy and Rural Development	APD721S	None	7	12
Participatory Planning Methods	PAR610S	None	6	12

YEAR 3

Semester 5

Sustainability for Regional Development	SRD710S	None	7	15
Regional Development Interventions	RDI710S	Development Planning Participatory Planning Methods	7	15
Introduction to Spatial Planning Research	INS710S	None	6	12
Demography and Statistics for Spatial Planners	DSS710S	Introduction to Mathematics	6	10

Semester 6

Disaster Risk Management	DRM721S	None	7	14
Work Integrated Learning for Regional and Rural Development	WIR710S	All courses from semester 1-5. However, a student can be allowed to have a maximum of two (Having obtained a minimum of 40% final mark obtained) being repeated.	7	38

Progression Rules:

1. Unless otherwise determined by Senate, a student shall not be admitted to a second or subsequent level course if he/she has not fulfilled the pre-requisites for that course. If a course is prescribed as a pre-requisite, students who obtain a final mark of at least 50% shall be deemed to have satisfied the pre-requisite.
2. A student shall not be permitted to re-register for the same qualification after exceeding the maximum period of study for a qualification in line with institutional rules and procedures. Students may appeal to the Registrar for an extension of this period.

**BACHELOR OF REGIONAL AND RURAL DEVELOPMENT
(Old Curriculum – Phasing out 2028)**

07BRAR

NQF Level: 7

NQF Credits: 392

NQF Qualification ID: Q0231

Description

Regional and Rural Development is the study of regions of predominantly rural and agriculturally based economies and the processes of regional change. This programme aims at providing training opportunities for students who are interested in and motivated to work as development generalists, especially in rural areas of the country. It will provide skilful, competent and motivated graduates for the increasing and numerous challenging tasks of rural development in the country. The programme will equip students with tools, methods and a theoretical grounding in the theories of regional analysis as well as concepts and approaches of integrated development promotion and management.

Applied concepts and techniques are provided by a wide range of scientific disciplines such as economics, physical and social geography, sociology, agriculture and biology. Graduates will be given a theoretical and applied knowledge of regional and rural development issues, public administration and management tasks as well as natural resource protection and management. Due to the highly cross sectoral nature of the study programme, the graduates will be true “generalists”.

Criteria for Admission

Candidates may be admitted to this programme, if they meet the General Admission Requirements of the Namibia University of Science and Technology (GI2.1 in the Prospectus) and comply with the additional requirements below:

- A **minimum of 30 points** based on the Namibia University of Science and Technology Admission Point System, using a combination of NSSC Ordinary Level and/or NSSC Higher Level subjects, provided that the symbol for the **English, as Second language, should not be lower than an D** on NSSC (O) and the symbol for **Mathematics should not be lower than a E** on NSSC (O) level.

At the discretion of the Department, a more in-depth selection process could be followed which may include either a test or an interview.

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.

Articulation Arrangements

The transfer of credits will be dealt with according to the Namibia University of Science and Technology’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.

Upon completing the Bachelor of Regional and Rural Development, students will be able to pursue further studies in the same, or a related cognate area of learning, at NQF Level 8.

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 Regional & Rural Development will be awarded to students credited with a minimum of 392 NQF credits. The Diploma in Regional & Rural Development (first exit level) will be awarded to students credited with a minimum of 263 credits.

Transition Arrangements

The Bachelor of Regional and Rural Development (old curriculum) will be phased out systematically until 2019, 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 2016.

Students who are registered in 2016 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 programme (new curriculum), and will be granted credits on a course-by-course basis in accordance with information in the Table below. In addition, students who are registered in 2016 for the 1st year of the out-phasing programme (old curriculum), and who meet all requirements for progression to the 2nd year in 2017, will also be required to transition to the revised programme (new curriculum). All other courses will be credited in accordance with information in the table below.

Students who will be registered for the 3rd year of the out-phasing programme (old curriculum) in 2017 will be allowed to complete the programme based on the requirements of the old curriculum.

The revised Bachelor of Town and Regional Planning (new curriculum) will take effect from January 2017 with concurrent implementation of the 1st and 2nd year (2017), while implementation of the 3rd year is scheduled for 2018. Courses will only be offered based on the new and revised syllabi in 2017 (1st and 2nd year) and 2018 (3rd 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 NUST rules. The 3rd year students who fail any of the courses on the old curriculum will be required to repeat the failed courses based on syllabi of new and revised corresponding courses. Please refer to the table 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 Regional and Rural Development (old curriculum) is 2019, after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum.

Year Courses to be credited

Bachelor of Regional and Rural Development (Old Courses)		Bachelor of Regional and Rural Development (Equivalent Revised Course)	
Course Code	Course Name	Course code	Course Name
IGD411S	Intro to Geospatial Data	IGD411S	Intro to Geospatial Data
LIP411S	Language in Practice	LIP411S	Language in Practice
CUS411S	Computer User Skills	CUS411S	Computer User Skills
ILP510S	Intro to Land Use Planning and Management	ILP510S	Intro to Land Use Planning and Management
ITP510S	Intro to Public Management	ITP510S	Intro to Public Management
BSC410S	Basic Science	BSC410S	Basic Science
GES512S	Geographical Information Systems 1	GES512S	Geographical Information Systems 1
EPR511S	English in Practice	EPR511S	English in Practice
IGE420S	Intro to Geography	IGE420S	Intro to Geography
PMN112S	Public Management in Namibia	PMN112S	Public Management in Namibia
SRP520S	Statistics for regional Planners	SRP520S	Statistics for regional Planners
ICT521S	Information Competence	ICT521S	Information Competence

Corresponding Courses (if Failed). This is not a credit table

Bachelor of Town and Regional Planning (Old Courses)		Bachelor of Town and Regional Planning (Equivalent Revised Course)	
Course Code	Course Title	Course code	Course Title
BMS411s	Basic Mathematics	ITM111S	Intro to Mathematics
NRT520S	Natural Resource Management 1	NRM511S	Natural Resource Management in Namibia
ISO511S	Intro to Sociology	ISO511S	Intro to Sociology
NRT610S	Natural Resource Management 2	IEM621S	Integrated Environmental Management for Regional and Rural Development
ISS510S	Infrastructure & Services	CEP610S	Civil Engineering for Planners
NRT720S	Natural Resource Management 3	NRS711S	Natural Resource Management & Sustainable Development
WIR710S	Work Integrated Learning for Regional and Rural Development	WIR710S	Work Integrated Learning for Regional and Rural Development

Please Note:

The table above only highlights new/revised core courses in Bachelor of Regional and Rural Development that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of relevant Departments apply to this programme as well. Core courses in Regional and Rural development which do not have corresponding new/revised courses in the revised curriculum, will be offered until the old curriculum is phased out completely in 2019:

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Principles of English Language Use	PLU411S	None	4	NCB
Introduction to Geospatial data	IGD411S	None	4	8
Introduction to Mathematics	ITM111S	None	5	10
Introduction to Land Use Planning and Mgt	ILP510S	None	5	12
Introduction to Public Management	ITP511S	None	5	12
Basic Science	BSC410S	None	4	8

Semester 2

English in Practice	EPR511S	None	5	NCB
Information Competence	ICT521S	None	5	10
Geographical Information Systems 1	GES512S	Introduction to Geospatial Data Computer User Skills	5	12
Introduction to Geography	IGE420S	None	5	10
Agricultural Economics	AEM520S	Introduction to Mathematics	5	10
Public Management in Namibia	PMN521S	Introduction to Public Management	5	12
Statistics for Regional Planners	SRP520S	Introduction to Mathematics Introduction to Geospatial Data	5	12

YEAR 2

Semester 3

Planning Theory 1	PTY510S	None	5	10
Civil Engineering for Planning	CEP610S	None	6	6
Land Use Planning 2	LUP610S	Introduction to Land Use Planning and Mgt	6	12
Natural Resource Management	NRM511S	None	5	12
Regional and Local Government Management	RLG611S	Public Management in Namibia	6	13
Rural Livelihoods and Community Development	RLC620S	None	6	12

Semester 4

English for Academic Purposes	EAP511S	English in Practice	5	14
Geographical Information Systems 2	GES612S	Geographical Information Systems 1	6	12
Institutional and Regulatory Framework	IRF620S	None	6	10
Integrated Environmental Management	IEM621S	None	6	12
Rural Development Tools and Techniques	RDT620S	None	6	12

YEAR 3

Semester 5

Applied Spatial Planning	ASP720S	Planning Theory 1, Institutional and Regulatory Framework	7	15
Applied Regional and Rural Economic Dev.	ARR720S	Agricultural Economics Rural Livelihoods and Community Development	7	15
Innovation, Creativity and Entrepreneurship	ICE712S	None	7	15
Natural Resource Mgt & Sustainable Dev.	NRS711S	None	7	12

Plus ONE of the Electives

Development Management	DMA711S	Introduction to Public Management	7	14
Urban development and Management	UDM711S	Regional and Local Government Mgt	7	15

Semester 6

Sustainability and Development	SYD611S	None	6	12
Work Integrated Learning	WIR710S	All courses for Semester 1-4	7	45

Plus ONE of the Electives

Disaster Risk Management	DRM721S	None	7	14
Organisation and Operational Management	OOM420S	None	7	15

DEPARTMENT OF LAND AND SPATIAL SCIENCES

CODE: 96

LAND AND PROPERTY SCIENCES

QUALIFICATIONS OFFERED

Diploma in Property Studies (Revised-Phasing in 2023-2026)	06DIPS
Diploma in Property Studies (Phasing out from 2022)	06DPRS
Bachelor of Property Studies (Revised-Phasing in 2023)	08BOPS
Bachelor of Property Studies (OLD - Phasing out 2022-2027)	08BPRS
Bachelor of Land Administration	07BLAM

PROPERTY STUDIES PROGRAMMES (Offered FULL-TIME MODE Only)

Programmes Description

The primary aim of the Diploma and Bachelor of Property Studies programmes is to train and produce graduates employable respectively at the technical and professional levels of the property industry. The graduates of the programmes will be equipped with competencies in advanced property valuation methods, facilities managerial skills of buildings and be capable of making sound and well-informed judgements regarding relevant legislation. It focuses on a comprehensive and analytical understanding of property valuation, property management, property investment and finance and develops the knowledge and skills to value and manage real property.

These programmes also aims at developing capacity and human resource needs of Namibia in the real estate sector to facilitate the implementation of the Namibian Land Reform programme. Graduates are employable as property managers and assistant valuers in the central and local government property offices and a variety of private business.

The degree programme offers graduates who have successfully completed their Diploma in Property Studies, or any other relevant equivalent Diploma, the opportunity to pursue a degree qualification programme in the property profession at the Namibia University of Science and Technology.

DIPLOMA IN PROPERTY STUDIES

06DIPS

NQF Credits: 258

Criteria for Admission

Applicants may be considered for admission into the Diploma in Property Studies (Level 6) programme if they meet NUST's General Admission Requirements (GI2.1 in Part 1 of the Yearbook). In addition, students should have at least an "E" in NSSC (O) for Mathematics.

Candidates admitted with an English Language grade other than a minimum "B" symbol must enrol for the appropriate English communication course at lower levels within the first year of studies to acquire the competencies. Preference will be given to candidates with a minimum of B (Ordinary level) or 4 (Higher level) or e (NSSCAS) in the English Language.

Mature age applicants may be considered for admissions according to NUST's Mature Age Entry Scheme.

Mode of Delivery

The programme will be offered on a full-time mode of study in accordance with NUST rules and regulations. This may also be offered in a flexible delivery mode depending on the prevailing exigencies, needs of students and availability of technology. The use of blended or hybrid learning strategies using digital technologies may also be resorted to under a defined circumstance(s).

Transition arrangements

The revised Diploma in Property Studies programme will be implemented incrementally (year-by-year transition) beginning with 1st year in 2023.

Students registered in 2022 for the 1st year of the current programme (old curriculum) who fail more than 50% of the courses at the end of 2022, will be required to transition to the revised curriculum in 2023, and will be required to fulfil all the requirements of the revised programme, if any. These students will be granted credits on a course-by-course basis in accordance with information in the table below

Students registered in 2022 for the 1st year of the current programme (old curriculum), and who meet the minimum requirements for progression to 2nd year at the end of 2022, will be required to complete their studies based on the requirements of the old curriculum. Students who fail any of the courses in the old (existing) curriculum will be required to repeat such courses based on the syllabi of new corresponding courses (please refer to the table below, for detailed information on the new corresponding courses to be done if courses in the old curriculum are to be repeated).

Students who are admitted into examination in 2023 for courses in the old curriculum will be granted both the first and second opportunities to pass such course(s). Students who fail any of the courses in the old (existing) curriculum will be required to repeat such courses based on syllabi of new corresponding courses (please refer to the table below for detailed information on the new corresponding courses to be done if courses in the old curriculum are to be repeated).

The revised Diploma in Property Studies (new curriculum) will take effect from January 2023 with the implementation of the 1st in (2023), and 2nd year (2024). Courses will only be offered based on the new/revised syllabi as from 2023.

The deadline for complete phasing out of the Diploma in Property Studies (old curriculum) (06DPRS) is end of 2026, after which students must automatically switch to the new programme and fulfil all requirements based on the new curriculum.

Courses to be credited

This programme contains courses that are replacements of earlier courses. For the purpose of this programme, students who have gained credit for any of the expiring/phasing out course(s) will be exempt from the requirements to gain credit from the replacement course(s).

Diploma in Property Studies (06DPRS) (Old Courses)		Diploma in Property Studies (NQF Level 6) (Equivalent New/Revised Course)	
Course Code	Course Name	Course code	Course Name
BCS520S	Building Construction and Services	BCS512S	Building Construction
		BSS511S	Building Services
LLA520S	Law for Land Administration	LLR611S	Law for Land Registration
LEM621S	Land Economics	LET621S	Land Economics and Taxation
UEN621	Urban Economics	EUR612S	Elements of Urban and Rural Economics

Corresponding Courses (if failed). This is not a credit table

Diploma in Property Studies (06DPRS) (Old Courses)		Diploma in Property Studies (NQF Level 6) (Corresponding New/Revised Courses)	
Course Code	Course Title	Course code	Course Title
BCS520S	Building Construction and Services	BCS512S	Building Construction
		BSS511S	Building Services
LLA520S	Law for Land Administration 1	LLR611S	Law for Land Registration
LEM621S	Land Economics	LET621S	Land Economics and Taxation
UEN621	Urban Economics	EUR612S	Elements of Urban and Rural Economics
PMT611S	Property Maintenance	PMM611S	Property Management and Maintenance
PMV611S	Principles and Methods of Valuation	PMV611S	Principles and Methods of Valuation
PDM611S	Property Development and Marketing	PDM611S	Property Development and Marketing
REP621S	Real Estate Practice	REP621S	Real Estate Practice

Please Note:

In cases where more than one course in the old curriculum is replaced by one course in the new programme, students who have failed any one of the old courses must do the whole new course. Exemption cannot be granted for less than a whole course.

The table above only highlights new/revised core courses in the Diploma in Property Studies (Level 6) that should be done in the event of a student failing a course(s) on the old curriculum. Service courses from other Departments are excluded, but the rules of the relevant Department apply to this programme as well.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Introduction to Geospatial Data	IGD411S	None	4	8
Basic Science	BSC410S	None	4	8
Mathematics and Statistics for Spatial Sciences	MSS511S	None	5	12
Principles of Microeconomics	PMI511S	None	5	12
Introduction to Land Use Planning and Mgt	ILP510S	None	5	10

Semester 2

Building Construction	BCS512S	None	5	12
Introduction to Valuation	ITV521S	None	5	12
Information Competence	ICT521S	None	5	10
Land Economics and Taxation	LET621S	None	6	12
English for Academic Purposes	EAP511S	English in Practice	5	14

YEAR 2

Semester 3

Business Accounting 1A	BAC1100	None	5	12
Building Services	BSS511S	Building Construction	5	12
Law for Land Registration	LLR611S	None	6	12
Property Management and Maintenance	PMM611S	None	6	12
Principles and Methods of Valuation	PMV611S	Introduction to Valuation	6	12
Property Development and Marketing	PDM611S	None	6	12

Semester 4

Geographic Information Systems 1	GES512S	Computer User Skills Introduction to Geospatial Data	5	12
Land Tenure Systems	LTS520S	None	5	12
Legal and Institutional Framework	LIF521S	None	5	12
Elements of Urban and Rural Economics	EUR612S	Principles of Microeconomics	6	12
Real Estate Practice	REP621S	Building Construction Building Services Principles and Methods of Valuation Property Management and Maintenance	6	15

DIPLOMA IN PROPERTY STUDIES

06DPRS

NQF Level: 6

NQF Credits: 230

NQF Qualification ID: Q0942

Criteria for Admission

Applicants may be considered for admission to the Diploma in Property Studies programme if they meet the NUST’s General Admission Requirements (GI2.1 in Part 1 of the Yearbook). In addition, students should have at least an E in NSSC (O) for Mathematics. Preference will be given to candidates with a minimum B (Ordinary level) or 4 (Higher level) in English Language. If a candidate does not have a minimum B in English, he/she must acquire the competencies within the first year of studies by enrolling for the appropriate English communication course at lower levels.

Mature age applicants may be considered for admissions according to NUST’s Mature Age Entry Scheme.

Requirements for Qualification Award

The Diploma in Property Studies will be awarded to students credited with a minimum of 230 NQF credits, and who have met the detailed requirements as set out below. In addition, students should meet the administrative and financial requirements as spelt out in the Part 1 of the NUST Yearbook.

Transition Arrangements

The revised Diploma in Property Studies (NQF Level 6) programme will be implemented incrementally (year-by-year transition) beginning with 1st year in 2017, thus the 2016 first and second year cohorts will all be allowed to proceed with the existing programme (old curriculum). Students registered in 2016 for the 1st year of the existing programme (old curriculum) who fail more than 50% of the courses at the end of 2016, will be transferred to the revised programme and be required to fulfil all the requirements of the revised programme. The Diploma in Property Studies (27DPRS) programme will be completely phased out in 2020.

Students who are admitted into examination in 2017 for courses in the old curriculum will be granted only one opportunity to pass such courses. Students who fail any of the course(s) in the old curriculum will be required to repeat such course(s) based on syllabi of the revised corresponding courses (please refer to the table below, for detailed information on the revised corresponding courses to be done if courses in the old curriculum are failed).

Courses to be credited

Diploma in Property Studies (Old Courses)		Diploma in Property Studies (Equivalent Revised Course)	
Course Code	Course Name	Course code	Course Name
PPM610S	Property Management	PMT611S	Property Maintenance
PDM610S	Property Development and Marketing 2	PDM611S	Property Development and Marketing
VAL520S	Valuation 1	ITV521S	Introduction to Valuation
VAL610S	Valuation 2	PMV611S	Principles and Methods of Valuation
REP610S	Real Estate Practice 1	PFI721S	Real Estate Practice

Corresponding Courses (if Failed). This is not a credit table

Diploma in Property Studies (Old Courses)		Diploma in Property Studies (Equivalent Revised Course)	
Course Code	Course Title	Course code	Course Title
LEC520S	Land Economics	LEM621S	Land Economics
PFN620S	Property Finance 1	PFI721S	Property Finance and Investment
VAL520S	Valuation 1	ITV521S	Introduction to Valuation
VAL610S	Valuation 2	PMV611S	Principles and Methods of Valuation
IDB220S	Introduction to Databases 1B	DBF5140S	Database Fundamentals
PPM610S	Property Management	PMT611S	Property Maintenance
PDM520S	Property Development and Marketing 1	PDM611S	Property Development and Marketing
PDM610S	Property Development and Marketing 2	PDM611S	Property Development and Marketing
UBE510S	Urban Economics	UEN621S	Urban Economics

Please Note: The table above only highlights new/revised core courses in Property Studies that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of the relevant Department apply to this programme as well.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Introduction to Geospatial Data	IGD411S	None	4	8
Basic Science	BSC410S	None	4	8
Mathematics and Statistics for Spatial Sciences	MSS511S	None	5	12
Principles of Microeconomics	PMI511S	None	5	12

Semester 2

Building Construction & Services	BCS520S	None	5	12
Introduction to Valuation	ITV521S	None	5	12
Information Competence	ICT521S	None	5	10
Land Economics	LEM621S	None	6	12
Land Tenure Systems	LTS520S	None	5	12

YEAR 2

Semester 3

Legal and Institutional Framework	LIF511S	None	5	12
Introduction to Land Use Planning and Mgt	ILP510S	None	5	12
Property Maintenance	PMT611S	None	6	12
Principles and Methods of Valuation	PMV611S	Introduction to Valuation	6	12
Property Development and Marketing	PDM611S	None	6	12

Semester 4

English for Academic Purposes	EAP511S	English in Practice	5	14
Geographic Information Systems 1	GES512S	Computer User Skills Introduction to Geospatial Data	5	12
Law for Land Registration	LLR611S	None	5	12
Urban Economics	UEN621S	Principles of Microeconomics	6	12
Real Estate Practice	REP621S	Principles and Methods of Valuation Building Construction and Services	6	12

**BACHELOR OF PROPERTY STUDIES
(Revised-Phasing in 2023)**

08BOPS

NQF Credits: 492

Criteria for Admission

Applicants may be considered for admission to the Bachelor of Property Studies programme provided they meet the NUST's General Admission Requirements. In addition, candidates must have obtained 30 aggregate points on the evaluation scale over the best five (5) subjects.

Applicants must comply with the following additional requirements:

- Must have obtained an E in Mathematics and English Language. Preference will be given to candidates with a minimum of B (Ordinary level) or 4 (Higher level) or E (NSSCAS) in the English Language. If an applicant does not have this minimum prescribed grade in English, he/she must acquire the competencies within the first year of studies by enrolling for the appropriate English communication course at lower levels.

Graduates with the National Diploma qualification in Land Valuation and Estate Management from the then Polytechnic of Namibia may apply for "admission with advanced standing" and may be admitted into the Bachelor of Property Studies programme at the discretion of the department. These applicants, if admitted, will qualify to be awarded the Bachelor of Property Studies (NQF level 8) degree after successful completion of the following courses:

- | | |
|--|--|
| * Principles of Quantity Surveying | * Professional Practice (Property Studies) |
| * Facilities Management and Procurement | * Applied Valuation |
| * Real Estate Market Analysis | * Research Methodology |
| * Computer Applications to Real Estate | * Land Administration Theory and Practice |
| * Property Finance and Investment | * Advanced Project Management |
| * Advanced Property Finance and Investment | * Mini-Thesis |

Graduates in possession of a Diploma qualification in Property Studies (NQF Level 6) from the NUST / Polytechnic of Namibia or equivalent qualification from recognised institutions may apply for admission "with advanced standing" into the Bachelor of Property Studies (NQF Level 8) programme. If successful, these applicants may be admitted into Year 3 semester 5 of the Bachelor's programme. In this regard, acceptance of applicants into the Bachelor's degree programme would be considered on a case-by-case basis on the recommendation of the Departmental Board in consultation with the Registrar. Courses completed under the Diploma qualification will be credited. However, students will be required to complete all outstanding courses as per the requirements of the Bachelor's programme.

NUST students pursuing the Diploma in Property Studies (NQF Level 6) may be admitted, upon transfer application, into the Bachelor of Property Studies (NQF Level 8) programme provided that they have obtained at least 60% in Introduction to Valuation (ITV521S) and Building Construction (TBC) at the end of Year 1 Semester 2. Courses completed under the Diploma will be credited, but students will be required to complete all outstanding courses as per the curriculum requirements of the Bachelor of Property Studies (NQF Level 8) programme. However, acceptance of these applicants into the Bachelor's degree programme would be considered on a case-by-case basis on the recommendation of the Head of Department in consultation with the Registrar.

Articulation Arrangements

The 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 Bachelor's programme will under normal circumstances be able to pursue further studies in Property Studies, or a related cognate area of learning, at NQF Level 9.

Mode of Delivery

The programme will be offered on a full-time mode of study in accordance with NUST rules and regulations. This may also be offered in a flexible delivery mode depending on the needs of students and the availability of technology. The use of blended or hybrid learning strategies using digital technologies may also be resorted to should under a defined circumstance(s).

Transition arrangements

The revised Bachelor of Property Studies programme will be implemented incrementally (year-by-year transition) beginning with 1st year 2023. The last intake for the 1st year cohort for Bachelor of Property Studies (old curriculum) was in January 2022. The revised curriculum will phase in completely in 2026.

Students registered in 2022 for the 1st year of the current programme (old curriculum) who fail more than 50% of the courses at the end of 2022, will be required to transition to the revised curriculum in 2023, and will be required to fulfil all the requirements of the revised programme, if any. These students will be granted credits on a course-by-course basis in accordance with information in the table below.

Students registered in 2022 for the 1st, and 2nd year of the current programme (old curriculum), and who meet the minimum requirements for progression to 2nd and 3rd year at the end of 2022, will be required to complete their studies based on the requirements of the old curriculum. In addition, students registered in 2022 for 3rd year of the current programme (old curriculum), and who meet the minimum requirements for progression to 4th year at the end of 2022, will be required to complete their studies based on the requirements of the old curriculum.

Year 2 students who are admitted into the examination in 2023 for courses in the old curriculum will be granted only two opportunities to pass such courses. Students who fail any of the courses in the old (existing) curriculum will be required to repeat such courses based on the syllabi of new corresponding courses (please refer to the table below, for detailed information on the new corresponding courses to be done if courses in the old curriculum are to be repeated).

The revised Bachelor of Property Studies (new curriculum) will take effect from January 2023 with the implementation of the 1st in (2023) 2nd year (2024), 3rd year (2025), and 4th year (2026). Courses will only be offered based on the new and revised syllabi in 2023.

The deadline for complete phasing out of the Bachelor of Property Studies (old curriculum) is 2028, after which students must automatically switch to the new programme and fulfil all requirements based on the revised curriculum.

Corresponding Courses to be credited

Bachelor of Property Studies (08BPRS) (Old Courses)		Bachelor of Property Studies (NQF Level 8) (equivalent revised Course)	
Course Code	Course Name	Course Code	Course Name
BCS520S	Building Construction and Services	BCS512S	Building Construction
		BSS511S	Building Services
LLA520S	Law for Land Administration	LLR611S	Law for Land Registration
LEM621S	Land Economics	LET621S	Land Economics and Taxation
UEN621	Urban Economics	EUR612S	Elements of Urban and Rural Economics
FMM821S	Facilities Management	FMP812S	Facilities Management and Procurement

Corresponding Courses (if failed). This is not a credit table

Bachelor of Property Studies (08BPRS) (Old Courses)		Bachelor of Property Studies (NQF Level 8) (New/Revised Corresponding Courses)	
Course Code	Course Title	Course Code	Course Title
BCS520S	Building Construction and Services	BCS512S	Building Construction
		BSS511S	Building Services
ITV521S	Introduction to Valuation	ITV521S	Introduction to Valuation
LLA520S	Law for Land Administration 1	LLR611S	Law for Land Registration
LEM621S	Land Economics	LET621S	Land Economics and Taxation
UEN621	Urban Economics	EUR612S	Elements of Urban and Rural Economics
PMT611S	Property Maintenance	PMM611S	Property Management and Maintenance
PMV611S	Principles and Methods of Valuation	PMV611S	Principles and Methods of Valuation
PDM611S	Property Development and Marketing	PDM611S	Property Development and Marketing
PSP711S	Professional Practice (Property Studies)	PSP711S	Professional Practice (Property Studies)
CAR720S	Computer Applications to Real Estate	CAR720S	Computer Applications to Real Estate
PQS721S	Principles of Quantity Surveying	PQS721S	Principles of Quantity Surveying
PFI721S	Property Finance and Investment	PFI721S	Property Finance and Investment

REM821S	Real Estate Market Analysis	REM821S	Real Estate Market Analysis
AVT811S	Applied Valuation	AVT811S	Applied Valuation
APF811S	Adv. Property Finance and Investment	APF811S	Advanced Property Finance and Investment
RMD811S	Research Methodology	RMD811S	Research Methodology
WPS821S	Work Integrated Learning (Property Studies)	WPS821S	Work Integrated Learning (Property Studies)
MPS821S	Mini-Thesis	MPS821S	Mini-Thesis

Please Note:

The table above only highlights new/revised core courses in Property Studies that should be done if courses on the old curriculum are failed. Service courses from other Departments are excluded, but the rules of the relevant Department apply to this programme as well.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Introduction to Geospatial Data	IGD411S	None	4	8
Basic Science	BSC410S	None	4	8
Mathematics and Statistics for Spatial Sciences	MSS511S	None	5	12
Principles of Microeconomics	PMI511S	None	5	12
Introduction to Land Use Planning and Mgt	ILP510S	None	5	10

Semester 2

Building Construction	BCS512S	None	5	12
Introduction to Valuation	ITV521S	None	5	12
Information Competence	ICT521S	None	5	10
Principles of Macroeconomics	PMA512S	None	5	12
English for Academic Purposes	EAP511S	English in Practice	5	14

YEAR 2

Semester 3

Law for Land Registration	LLR611S	None	5	12
Business Accounting 1A	BAC1100	None	5	12
Building Services	BSS511S	Building Construction	6	12
Property Management and Maintenance	PMM611S	None	6	12
Principles and Methods of Valuation	PMV611S	Introduction to Valuation	6	12
Property Development and Marketing	PDM611S	None	6	12

Semester 4

Geographic Information Systems 1	GES512S	Computer User Skills Introduction to Geospatial Data	5	12
Land Tenure Systems	LTS520S	None	5	12
Legal and Institutional Framework	LIF511S	None	5	12
Land Economics and Taxation	LET621S	None	6	12
Elements of Urban and Rural Economics	EUR612S	Principles of Microeconomics	6	12

YEAR 3

Semester 5

Sustainability and Development	SYD611S	None	6	12
Land Information Systems	LIS611S	Geographic Information Systems 1	6	12
Land Administration Theory and Practice	LAT710S	Land Tenure Systems	7	12
Principles of Quantity Surveying	PQS721S	Building Construction Building Services	7	12
Computer Applications to Real Estate	CAR720S	Computer User Skills	7	12

Semester 6

Professional Practice (Property Studies)	PSP711S	Principles and Methods of Valuation Building Construction Building Services Property Management and Maintenance	7	15
Property Finance and Investment	PFI721S	Introduction to Valuation	7	15
Real Estate Market Analysis	REM821S	Property Development and Marketing	8	15
Facilities Management and Procurement	FMP812S	Property Management and Maintenance	8	15

YEAR 4

Semester 7

Applied Valuation	AVT811S	Principles and Methods of Valuation	8	15
Advanced Property Finance and Investment	APF811S	Property Finance and Investment	8	15
Research Methodology	RMD811S	None	8	15
Advanced Project Management	APM811S	None	8	15

Semester 8

Work Integrated Learning	WPS821S	Not repeating more than 1 course	8	30
Mini-Thesis	MPS821S	Research Methodology	8	30

BACHELOR OF PROPERTY STUDIES

08BPRS

NQF Level: 8

NQF Credits: 498

NQF Qualification ID: Q0941

Criteria for Admission

Applicants may be considered for admission to the Bachelor of Property Studies programme provided they meet the NUST's General Admission Requirements. In addition, candidates must have obtained 30 aggregate points on the evaluation scale over the best five (5) subjects.

Applicants must comply with the following additional requirements:

- Must have obtained E in Mathematics and English Language. Preference will be given to candidates with a minimum B (Ordinary level) or 4 (Higher level) in English Language. If a candidate does not have a minimum B in English, he/she must acquire the competencies within the first year of studies by enrolling for the appropriate English communication course at lower levels.

Graduates with the Diploma qualification in Land Valuation and Estate Management from the then Polytechnic of Namibia (category A) may apply for "admission with advanced standing" and may be admitted into the Bachelor of Property Studies programme at the discretion of the department.

These applicants, if admitted, will qualify to be awarded the Bachelor of Property Studies (NQF level 8) degree after successful completion of the following courses:

- Principles of Quantity Surveying
- Facilities Management
- Real Estate Market Analysis
- Procurement and Logistics for Property Management
- Computer Applications to Real Estate
- Property Finance and Investment
- Mini-Thesis
- Professional Practice (Property Studies)
- Advanced Property Finance and Investment
- Applied Valuation
- Research Methodology
- Land Administration
- Project Leadership & Management

Graduates with a Diploma qualification in Property Studies (NQF Level 6) 27DPRS from the NUST / Polytechnic of Namibia or equivalent qualification from recognised institutions with an overall average of at least 60% (category B) may apply for admission into the Bachelor of Property Studies (NQF Level 8) programme. If successful these applicants may be admitted into Year 3 semester 5 of the Bachelor programme. In this regard, acceptance of applicants into the Bachelor degree programme would be considered on a case by case basis on the recommendation of the Departmental Board in consultation with the Registrar. Courses completed under the Diploma qualification will be credited, but students will be required to complete all outstanding courses as per the requirements of the Bachelor programme.

NUST students pursuing the Diploma in Property Studies (NQF Level 6) (category C) may be admitted, after application for transfer to the Bachelor of Property Studies (NQF Level 8) programme provided that they have obtained at least 60% in Introduction to Valuation, Property Development and Marketing, and Building Construction and Services at the end of Year 1 Semester 2. Courses completed under the Diploma will be credited, but students will be required to complete all outstanding courses as per the requirements of the Bachelor of Property Studies NQF Level 8 programme. However, acceptance of these applicants into the Bachelor degree programme would be considered on a case by case basis on the recommendation of the Head of Department in consultation with the Registrar.

Articulation Arrangements

The 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 Property Studies, or a related cognate area of learning, at NQF Level 9.

Mode of Delivery

The programme will only be offered on a full-time mode of study in accordance with NUST rules and regulations. This may also be offered in a flexible delivery mode depending on the needs of students and availability of technology.

Transition Arrangements

The programme will be implemented incrementally (year-by-year transition) beginning with 1st year in 2017, thus the 2016 first, second and third year cohorts will all be allowed to proceed with the existing programme (old curriculum). Students registered in 2016 for the 1st year of the existing programme (old curriculum) who fail more than 50% of the courses at the end 2016, will be transferred to the new programme and thus be required to fulfil all the requirements of the new programme. The old curriculum Bachelor of Property Studies Honours (27BPRS) programme will be completely phased out in 2021.

Students who are admitted into examination in 2017 for courses in the old curriculum will be granted only one opportunity to pass such courses. Students who fail any of the courses in the old (existing) curriculum will be required to repeat such courses based on syllabi of new corresponding courses (please refer to the table below, for detailed information on the new corresponding courses to be done if courses in the old curriculum are to be repeated).

Bachelor of Property Studies credit table: Reflecting which old course grants credit for which new course

Bachelor of Property Studies Honours (Old Courses)		Bachelor of Property Studies (NQF Level 8) (Equivalent New/Revised Course)	
Course Code	Course Name	Course code	Course Name
PPM610S	Property Management	PMT611S	Property Maintenance
PDM610S	Property Development and Marketing 2	PDM611S	Property Development and Marketing
VAL520S	Valuation 1	ITV521S	Introduction to Valuation
VAL610S	Valuation 2	PMV611S	Principles and Methods of Valuation
VAL810S	Valuation 3	AVT811S	Applied Valuation
PFN810S	Property Finance 2	PFI721S	Property Finance and Investment
PPI820S	Property Investment	APF811S	Advanced Property Finance and Investment
REP810S	Real Estate Practice 2	PSP711S	Professional Practice (Property Studies)
LEC520S	Land Economics	LEM621S	Land Economics
LTX520S	Land Taxation		
UBE510S	Urban Economics	UEN621S	Urban Economics
BEC620S	Building Economics	PQS721S	Principles of Quantity Surveying
RPB820S	Research Project	MPS821S	Mini-Thesis
ISB720S	In-Service Training	WPS821S	Work Integrated Learning (Property Studies)

Bachelor of Property Studies transition table with corresponding courses to be done if a course is failed

Bachelor of Property Studies Honours (Old Courses)		Bachelor of Property Studies (NQF Level 8) (Equivalent New/Revised Course)	
Course Code	Course Title	Course code	Course Title
BEC620S	Building Economics	PQS721S	Principles of Quantity Surveying
LEC520S	Land Economics	LEM621S	Land Economics
LTX520S	Land Taxation	LEM621S	Land Economics
ISP720S	In Service Training	WPS821S	Work Integrated Learning
RPB820S	Research Project	MPS821S	Mini-Thesis
VAC520S	Valuation Casework	PSP711S	Professional Practice (Property Studies)
REP820S	Real Estate Practice 2	PSP711S	Professional Practice (Property Studies)
VAL520S	Valuation 1	ITV521S	Introduction to Valuation
VAL610S	Valuation 2	PMV611S	Principles and Methods of Valuation
VAL810S	Valuation 3	AVT811S	Applied Valuation
PFN620S	Property Finance 1	PFI721S	Property Finance and Investment
PFN810S	Property Finance 2	APF811S	Advanced Property finance and Investment
PPI810S	Property Investment	APF811S	Advanced Property Finance and Investment

The following courses do not have corresponding courses in the Diploma and Bachelor of Property Studies (revised curricula) and therefore will be offered until the old curricula completely phases out in 2020 and 2021 respectively.

- * In-Service Training (IPS620S)
- * Introduction to Survey and Mapping (ISM520S)
- * Project Leadership and Management (PLM811S)
- * Innovation, Creativity and Entrepreneurship (ICE710S)

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Introduction to Geospatial Data	IGD411S	None	4	8
Basic Science	BSC410S	None	4	8
Mathematics and Statistics for Spatial Sciences	MSS511S	None	5	12
Principles of Microeconomics	PMI511S	None	5	12
Business Accounting 1A	BAC1100	None	5	10

Semester 2

Building Construction & Services	BCS520S	None	5	12
Introduction to Valuation	ITV521S	None	5	12
Information Competence	ICT521S	None	5	10
Principles of Macroeconomics	PMA512S	None	5	12
Land Tenure Systems	LTS520S	None	5	12

YEAR 2

Semester 3

Legal and Institutional Framework	LIF511S	None	5	12
Introduction to Land Use Planning and Mgt	ILP510S	None	5	12
Property Maintenance	PMT611S	None	6	12
Principles and Methods of Valuation	PMV611S	Introduction to Valuation	6	12
Property Development and Marketing	PDM611S	None	6	12

Semester 4

Geographic Information Systems 1	GES512S	Computer User Skills	5	12
English for Academic Purposes	EAP511S	English in Practice	5	14
Law for Land Registration	LLR611S	None	5	12
Land Economics	LEM621S	None	6	12
Urban Economics	UEN621S	Principles of Microeconomics	6	12

YEAR 3

Semester 5

Sustainability and Development	SYD611S	None	6	12
Land Information Systems	LIS611S	Geographic Information Systems 1	6	12
Land Administration Theory and Practice	LAT710S	Land Tenure Systems	7	12
Professional Practice (Property Studies)	PSP711S	Principles and Methods of Valuation	7	12

Computer Applications to Real Estate	CAR720S	Building Construction and Services Computer User Skills	7	12
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Semester 6

Principles of Quantity Surveying	PQS721S	Building Construction & Services	7	12
Procurement and Logistics for Property Mgt	PLP721S	None	7	12
Property Finance and Investment	PFI721S	None	7	12
Real Estate Market Analysis	REM821S	Property Development and Marketing	8	15
Facilities Management	FMM821S	Property Maintenance	8	15

YEAR 4

Semester 7

Applied Valuation	AVT811S	Principles and Methods of Valuation	8	15
Advanced Property Finance and Investment	APF811S	Property Finance and Investment	8	15
Research Methodology	RMD811S	None	8	15
Advanced Project Management	APM811S	None	8	15

Semester 8

Work Integrated Learning	WPS821S	Pass in all courses from Semester 1-7	8	30
Mini-Thesis	MPS821S	Research Methodology	8	42

BACHELOR OF LAND ADMINISTRATION

07BLAM

NQF Level: 7

NQF Credits: 360

NQF Qualification ID: Q0739

Description

The Bachelor of Land Administration aims to provide a skilful and competent labour force for the land administration and management industry in Namibia. The programme provides a systematic and coherent introduction to the knowledge principles, concepts, data, theories and problem-solving techniques of the land administration sector. The programme further aims at capacitating graduates with the practical and theoretical skills necessary for successful land administration and applied technologies that can be used as decision supporting tools. The focus of the programme is on the development of essential practical skills alongside training in contemporary land administration practices, concepts and theories.

Overall, the Bachelor of Land Administration aims to:

- Introducing students to subject disciplines, including theory and methods, so they acquire a broad professional knowledge and ability;
- Providing students with the academic knowledge and the theoretical skills to independently formulate, and solve problems within the field of land administration;
- Providing a structured and flexible learning framework with an appreciation for further and life-long learning;
- Providing an educational foundation for a range of land management and land administration careers;
- Developing systematic and coherent range of skills and techniques, necessary for the successful performance in the land administration work place;
- Formulating integrated and interdisciplinary solutions that relate to practical challenges in the design and operation of Land Administration Systems across a variety of tenure regimes in formal and informal sectors;
- Disseminating project results and workflows in a clearly structured, coherent, and concise manner, both in writing, graphically and orally.

On completion, of this programme graduates will be qualified to serve in a wide range of activities involving land management and administration. Graduates will be able to take up positions in public and private sectors in positions such as land administrators (of urban and rural land), land registration officers (of land rights in the different land tenure systems in place in Namibia), property officers, land technicians, social survey clerks, land project administrators, land analysts, land development administrators and advisors in the public sector (national, regional and local level) as well as in large engineering, architecture, conveyancing and town planning companies and non-governmental organisations. Due to the multi-disciplinary nature of this programme, this degree presents a gateway to academic careers in cognate areas for some students, and for others it will facilitate career advancement in their current fields of employment, in either the public or private sector.

Criteria for Admission

Applicants may be considered for admission to the Bachelor of Land Administration programme provided they meet the Namibia University of Science and Technology's General Admission Requirements. In addition, candidates must have passed at least five subjects and have obtained a total score of at least 25 points on the evaluation scale. Where candidates offer more than five subjects, the best five, including English language, will be counted. Applicants must comply with the following additional requirements:

- Must have obtained an E symbol in Mathematics and English Language. Preference, however, will be given to candidates with a minimum B (Ordinary level) or 4 (Higher level) in English Language. If applicants do not have minimum B in English, such candidates must acquire the competencies within the first year of studies by enrolling for the appropriate English communication courses at lower levels.
- Candidates with a National Diploma in Land Management and Registration (27DLMR) may apply for advanced standing into Year 3 of the Bachelor of Land Administration programme.

Candidates with a Diploma in Land Administration (27DLAD or 06DLAD) may apply for advanced standing into Year 2 of the Bachelor of Land Administration programme on condition that they take the following first year courses to make up for the deficiencies:

- Environmental Planning (EVP510S), (to be taken by 27DLAD holders);
- Principles of Microeconomics (PMI511S);
- Introduction of Valuation (ITV521S);
- Database Fundamentals (DBF510S);
- Legal and Institutional Framework (TBC), (to be taken by 06DLAD holders).

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.

Articulation Arrangements

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 credit that can be granted is 50% of the credits for a qualification.

Graduates of the Bachelor of Land Administration programme will ordinarily be able to pursue further studies in land administration, or a related cognate area of learning, at NQF level 8.

Mode of Delivery

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

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 as well as practical skills.

The programme espouses a socio-constructivist approach to learning in which learning is viewed as an active, constructive process rather than a passive, reproductive process. This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student. The learning facilitation will make use of student-centred, engaging and active learning methods which include lectures, seminars, practical assignments, workshops, study visits, discussions and debates, as well as problem based learning and structured (unsupervised) self-study and/or group work, case studies, lecturer feedback, projects and guest lectures. The progress of learning will be monitored, recorded and assessed.

Assessment strategies

Students will be assessed through formative and summative assessment. These assessments will focus on the achievement of qualification outcomes, take the form of problem-solving exercises, individual and group assignments and presentations, case studies, essay, and report writing, practical application of skills and competencies 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 four assessment events, unless otherwise specified in the course syllabus. Courses that are assessed using a combination of continuous assessment and end-of-term examination will have at least two assessments.

Quality Assurance requirements

Each course 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 specialist in the field. Lecturing staff will set and mark assessments 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 purpose, thereby, ensuring quality of the assessment and the qualification as a whole. Courses at NQF level 7 and above will be quality assured by a person external to the institution.

Transition Arrangements

The revised Bachelor of Land Administration programme will be implemented in the academic year 2020 and will be effective for all new students admitted. The existing Bachelor of Land Administration programme curriculum will phase-out latest by the end of 2020.

Students currently registered in the first year of studies of the old Bachelor of Land Administration (07BLAD) programme will, by the implementation of the revised Bachelor of Land Administration programme in 2020, be transferred on mass to the revised Bachelor programme. Students currently registered in the old Bachelor of Land Administration (07BLAD) programme will be allowed to complete the programme latest by the end of 2020. All students who have not completed all the courses in the programme by the end of 2020 will be transitioned to the new Bachelor of Land Administration programme. Courses completed under the old Bachelor programme will be credited, but students will be required to complete all outstanding courses as per the requirements of the revised Bachelor of Land Administration qualification.

Students will be credited for courses completed in the old curriculum as per Table 15.1 below. For outstanding courses they have to do corresponding courses as per Table below. The short transition period is due to human resource constraints.

Students currently registered in the Diploma in Land Administration (06DLAD) programme will be allowed to complete the programme latest by the end of 2020. All students who have not completed all the courses in the programme by the end of 2020 will be transitioned to the new Bachelor of Land Administration programme. Courses completed under the Diploma programme will be credited, but students will be required to complete all outstanding courses as per the requirements of the revised Bachelor of Land Administration qualification.

Courses not covered in the Diploma in Land Administration programme such as Database Fundamentals (DBF510S) and Principles of Microeconomics (PMI511S) should be taken by students transferred to the Bachelor of Land Administration programme. Students will be credited for courses completed in the Diploma in Land Administration curriculum as per Table below. For outstanding courses they have to do corresponding courses as per table below.

Bachelor of Land Administration courses to be credited

Bachelor of Land Administration (07BLAD) (Old Courses)		Bachelor of Land Administration (New/ revised Courses)	
Course Code	Course Title	Course code	Bachelor of Land Administration (Equivalent New/Revised Courses)
PFI721S	Property Finance and Investment	ITV521S	Introduction to Valuation
DRL520S	Deeds Registration Law 1	LLR611S	Law for Land Registration
LLA520S	Law for Land Administration 1	LLR611S	Law for Land Registration
LTS520S	Land Tenure Systems	LTS520S	Land Tenure Systems
UEN621S	Urban Economics	LEM621S	Land Economics
DRL620S	Deeds Registration Law 2	MLR620S	Mortgages and Other Land Rights
LTM621S	Land Tenure Management	LIF511S	Legal and Institutional Framework
CMT620S	Conflict Management	CMT620S	Conflict Management
MNL711S	Management and Leadership	MAL710S	Management and Leadership
ISL720S	Information Systems Law	ISL720S	Information Systems Law
LAD710S	Land Administration	LAT710S	Land Administration Theory and Practice
GMN621S	Geo-information Management	GSI720S	Governance and Spatial Information Management
WLA721S	Work Integrated Learning: Land Administration	WLA721S	Work Integrated Learning: Land Administration

Bachelor of Land Administration Corresponding Courses (if Failed). This is not a credit table

Bachelor of Land Administration (07BLAD) (Old Courses)		Bachelor of Land Administration (New/ revised Corresponding Courses)	
Course Code	Course Title	Course code	Bachelor of Land Administration (Equivalent New/Revised Courses)
PFI721S	Property Finance and Investment	PFI721S	Property Finance and Investment
LTS520S	Land Tenure Systems	LTS520S	Land Tenure Systems
CMT620S	Conflict Management	CMT620S	Conflict Management
LLA520S	Law for Land Administration 1	LLR611S	Law for Land Registration
DRL520S	Deeds Registration Law 1	LLR611S	Law for Land Registration
UEN621S	Urban Economics	UEN621S	Urban Economics
DRL620S	Deeds Registration Law 2	MLS620S	Mortgages and Other Land Rights
LTM621S	Land Tenure Management	LIF511S	Legal and Institutional Framework
LAD710S	Land Administration	LAT710S	Land Administration Theory and Practice
ISL720S	Information Systems Law	ISL720S	Information Systems Law
MNL711S	Management and Leadership	MNL711S	Management and Leadership

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

Please Note: The table above highlights core courses in the Bachelor of Land Administration programme that should be done if courses are failed. Service courses and elective courses delivered by other Faculties and Departments are excluded, but the rules of relevant Faculties and Departments apply to this programme as well.

The following old courses do not have corresponding courses in the Bachelor of Land Administration programme (new curriculum) and will be offered for such further period depending on the need of the students and at the discretion of the Department of Land and Property Sciences.

- Law for Land Administration 2 (LLA610S);
- Sectional Titles Legislation (STL620S);
- Deeds Registration Law 3 (DRL720S).

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Computer User Skills	CUS411S	None	4	10
Mathematics and Statistics for Spatial Science	MSS511S	None	5	12
Database Fundamentals	DBF510S	None	5	10
Introduction to Geo-Spatial Data	IGD411S	None	4	8
Introduction to Land Use Planning and Mgt	ILP510S	None	5	12
Principles of Microeconomics	PMI511S	None	5	12

Semester 2

Geographic Information Systems 1	GES512S	Computer User Skills Intro to Geo-Spatial Data	5	12
Legal and Institutional Framework	LIF511S	None	5	12
English in Practice	EPR511S	Principles of Language Use	5	12
Introduction to Survey & Mapping	ISM520S	Introduction to Geo-Spatial Data	5	12
Introduction to Valuation	ITV521S	None	5	12
Land Tenure Systems	LTS520S	None	5	12

Elective

Property Finance and Investment	PFI721S	None	7	12
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YEAR 2

Semester 3

Information Competence	ICT521S	None	5	10
English for Academic Purposes	EAP511S	English in Practice	5	14
Environmental Planning	EVP510S	None	5	12
Land Information Systems	LIS611S	Geographic Information Systems 1	6	12
Law for Land Registration	LLR611S	None	6	12

Semester 4

Information Systems Law	ISL720S	None	7	12
Innovative Approaches to Land Administration	IAL620S	None	6	12
Land Economics	LEM621S	None	6	12
Conflict Management	CMT620S	None	6	12
Mortgages and Other Land Rights	MLR620S	None	6	12

Elective

Disaster Risk Management	DRM721S	None	7	14
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YEAR 3

Semester 5

Management and Leadership	MNL711S	None	7	12
Land Administration Theory and Practice	LAT710S	Land Tenure Systems	7	12
Governance and Spatial Information Management	GSI720S	None	7	12
Land Use Planning 2	LUP610S	Introduction to Land Use Planning & Mgt	6	12

Plus ONE of the following Electives

Computer Applications to Real Estate	CAR720S	Computer User Skills	7	12
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Geographic Information Systems 3	GES711S	Geographic Information Systems 2	7	12
Disaster Risk Management	DRM721S	None	7	14
Development Management	DMA711S	None	7	14

Semester 6

Sustainability and Development	SYD611S	None	6	12
Project Management for Land Administration	PML720S	Geographic Information Systems 1	7	12
Work Integrated Learning: Land Administration	WLA721S	Pass in all courses from Semester 1-5	7	38

GEO-SPATIAL SCIENCE AND TECHNOLOGY

QUALIFICATIONS OFFERED

Diploma in Geomatics (Revised Programme)	06DGEO
Bachelor of Geomatics (Revised Programme)	07BGEO
Bachelor of Geoinformation Technology (Revised Programme)	07BGEI

GEOMATICS PROGRAMMES (Offered FULL-TIME MODE Only)

Main Features and Structure of the Geomatics Programmes

Most students will register for the Diploma in Geomatics in Year 1, and may be allowed to transfer to the Bachelor of Geomatics in Year 2, if they passed the necessary bridging courses and/or meet the admission requirements for the Bachelor programme. These students will take a minimum period of four years to complete the Bachelor of Geomatics.

Exceptional candidates may apply for exemption from the bridging courses, which will allow them to complete the Bachelor of Geomatics in a minimum of three years.

The **Progression Rule** for transfer from the **Diploma to the Bachelor of Geomatics** are as follows:

- Students enrolled for the Diploma in Geomatics may transfer to the Bachelor of Geomatics programme, if they passed the InSTEM courses Introduction to Mathematics B and Introduction to Physics B.
- Students who fail either Introduction to Mathematics B or Introduction to Physics B will be allowed to continue with the Diploma in Geomatics, but will not be admitted into the Bachelor of Geomatics programme.
- Students will not be allowed to repeat the courses Introduction to Mathematics B or Introduction to Physics B. In exceptional cases, upon application by the student and recommendation by the lecturer, Head of Department, and Dean the Registrar may allow a student to repeat the courses Introduction to Mathematics B or Introduction to Physics B and/or admit a student into the Bachelor of Geomatics Programme.

Students who do not meet the full admission requirements for the Bachelor programme, should be able to complete the Diploma in Geomatics programme in a minimum period of two and half years.

DIPLOMA IN GEOMATICS

06DGEO

NQF Credits: 286

Description

The Diploma in Geomatics programme is designed to equip students with specialised knowledge and skills in the acquisition, processing, presentation, and management of geospatial data. The programme provides a systematic and coherent introduction to the main theories, broad principles, concepts, data, and problem-solving techniques in the main cognate area, i.e. Geomatics. It will enable students to acquire cognitive skills, practical problem-solving skills, and key transferable skills that are necessary for addressing challenges in the field of Geomatics. In addition, the Diploma in Geomatics will enable students to develop a sense of social responsibility, and an understanding of the role they can play in land reform and sustainable development in Namibia and globally.

Graduates from this programme should have full regard for achieving excellence and maintaining the highest standards of ethical conduct in the practice of their profession.

Criteria for Admission

Candidates may be admitted to the Diploma in Geomatics programme if they meet the NUST General Admission Requirements, and comply with the following additional requirements:

- A Grade 12 Certificate (or equivalent) with a combined total of at least 25 points on the Engineering Evaluation Scale, counting up to five subjects that must include Mathematics and English, in NSSC Higher or Ordinary, or a combination of the two examinations;
- Minimum C-symbol on NSSC Ordinary (or 4-symbol at NSSC Higher) for Mathematics;
- Minimum D-symbol on NSSC Ordinary for Physical Science;

Or, as of the beginning of 2021

- A Grade 11 Certificate (NSSCO or equivalent) with a combined total of at least 25 points on the Engineering Evaluation Scale, counting up to five subjects that must include Mathematics and English;
- Minimum C-symbol on NSSCO for Mathematics;
- Minimum D-symbol on NSSCO for Physics;

Or, as of the beginning of 2022

- A combination of a Grade 11 Certificate (NSSCO) and a Grade 12 Certificate (NSSCAS) with a combined total of at least 25 points on the Engineering Evaluation Scale, counting up to five subjects that must include Mathematics and English;
- Minimum C-symbol on NSSCO for Mathematics (or e-symbol on NSSCAS);
- Minimum D-symbol on NSSCO for Physics;

A pass (minimum D-symbol on NSSCO, or equivalent) in Geography is highly recommended, and preference may be given to these candidates, additional to the above admission requirements.

Mature Age Students may be admitted in terms of the Mature Age Entry Scheme. Selection for mature age entry will be by means of appropriate written entrance tests, three years’ work experience, satisfactory references, as well as gaining entry into the English course Principles of English Language Use.

Note: The above are minimum admission requirements. Admission is subject to availability of space in the programme and only the best applicants will be admitted. A pass in Grade 12 Geography or related subject and a minimum B-symbol in Mathematics is highly recommended and preference may be given to candidates with these results, additional to the above admission requirements.

Articulation Arrangements

Transfer of credits will be dealt with according to the 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.

Students enrolled for the Diploma in Geomatics may be admitted to the Bachelor of Geomatics programme, if they passed the InSTEM courses Introduction to Mathematics B and Introduction to Physics B.

Students who fail either of Introduction to Mathematics B or Introduction to Physics B, will be allowed to continue with the Diploma in Geomatics, but will not be admitted into the Bachelor of Geomatics programme. Students will not be allowed to repeat the courses Introduction to Mathematics B or Introduction to Physics B.

In exceptional cases, upon application by the student and recommendation by the course lecturer, Head of Department, and Dean, the Registrar may allow a student to repeat the courses Introduction to Mathematics B or Introduction to Physics and/or admit a student into the Bachelor of Geomatics programme.

Mode of Delivery

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

Transition Arrangements

The revised Diploma in Geomatics programme will be implemented as from January 2020. The last intake of 1st year students on the current (old) curriculum was in January 2019.

Existing Diploma in Geomatics students will be allowed to transfer to the new programme or to complete the current programme, subject to the transition arrangements below.

- The revised Diploma in Geomatics (new curriculum) will take effect from January 2020 and will be completely phased in by 2022. Courses will only be offered based on the new/revised syllabi in 2020 (1st year), 2021 (2nd year) and 2022 (3rd year).
- Students who fail any of the courses on the out-phasing programme (old curriculum), will be required to repeat such failed courses based on the revised syllabi or corresponding courses in accordance with the table below.
- Students who are registered in 2019 for the 1st year of the old programme, and who fail more than 50% of the courses at the end of 2019 and/or 2020, will be required to change their registration to the revised Diploma in Geomatics programme (new curriculum) and will be granted credits for the relevant courses passed.

Diploma in Geomatics credit table reflecting which Old Courses grant credit for which new courses:

Current Diploma in Geomatics (Old Course)		Revised Diploma in Geomatics (New/Revised Course)	
Course Code	Course Name	Course Code	Course Name
DCV512S	Digital Cartography & Visualisation	CMV611S	Cartography and Map Visualisation
SUP520S	Survey Project	SUP522S	Survey Project 1

Corresponding Courses (if failed). This is not a credit table

Current Diploma in Geomatics (Old Course)		Revised Diploma in Geomatics (New/Revised Course)	
Course Code	Course Name	Course code	Course Name
ILP510S	Introduction to Land Use Planning and Management	ILP510S	Introduction to Land Use Planning and Management
ITM401S	Introduction to Mathematics A	ITM401S	Introduction to Mathematics A
BSV521S	Basic Surveying	BSV521S	Basic Surveying
CAS520S	Cadastral Surveying 1	CAS520S	Cadastral Surveying 1
GES512S	Geographic Information Systems 1	GES512S	Geographic Information Systems 1
LTS520S	Land Tenure Systems	LTS520S	Land Tenure Systems
SDR420S	Survey Drafting	SDR420S	Survey Drafting
SUP520S	Survey Project	SUP522S	Survey Project 1
CAD510S	Computer Aided Drafting	CAD510S	Computer Aided Drafting
ENS610S	Engineering Surveying	ENS610S	Engineering Surveying
PGI520S	Programming for Geoinformatics	PGI520S	Programming for Geoinformatics
RES511S	Remote Sensing 1	RES511S	Remote Sensing 1
SUR610S	Surveying 2	SUR610S	Surveying 2
DTM620S	Digital Terrain Modelling	DTM620S	Digital Terrain Modelling
STS621S	Sectional Title Surveying	STS621S	Sectional Title Surveying
SUR620S	Surveying 3	SUR620S	Surveying 3
CAS610S	Cadastral Surveying 2	CAS610S	Cadastral Surveying 2
DCV512S	Digital Cartography & Visualisation	SUP522S	Cartography and Map Visualisation
MSV610S	Mine Surveying	MSV610S	Mine Surveying

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

Please Note: The table above highlights core courses in the Diploma in Geomatics programme that should be done if courses are failed. Some service courses and elective courses delivered by other faculties and departments are excluded, but the rules of relevant faculties and departments apply to this programme as well.

The courses *Introduction to Geospatial Data*, *Database Fundamentals*, and *Land Information Systems* do not have corresponding courses in the revised Diploma in Geomatics programme, and no credits will, therefore, be granted for it for students who transfer to the revised programme. These courses are service courses, and will still be available under the old programme until it is phased out at the end of 2022.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Principles of English Language Use	PLU411S	None	4	NCB
Basic Surveying	BSV521S	None	5	12
Survey Project 1	SUP520S	Co-Requisite: Basic Surveying	5	8
Introduction to Land Use Planning and Mgt	ILP510S	None	5	12
Introduction to Mathematics A	ITM401S	None	4	14
Computer User Skills	CUS411S	None	4	10

Semester 2

Basic Science	BSC410S	None	4	8
Survey Drafting	SDR420S	Basic Surveying	4	6
Surveying 2	SUR610S	Basic Surveying, Survey Project 1	6	12
Land Tenure Systems	LTS520S	None	5	12
Geographic Information Systems 1	GES512S	Basic Surveying, Computer User Skills	5	12

YEAR 2

Semester 3

Computer Aided Drafting	CAD510S	Basic Surveying, Computer User Skills	5	12
Remote Sensing 1	RES511S	GIS1, Intro to Mathematics A	5	12
Cadastral Surveying 1	CAS520S	Basic Surveying	5	12
Mine Surveying	MSV610S	Basic Surveying, Survey Project 1	6	12
Engineering Surveying	ENS610S	Basic Surveying, Survey Project 1	6	12
English in Practice	EPR511S	Principles of Language Use	5	NCB

Semester 4

Digital Terrain Modelling	DTM620S	Engineering Surveying, Surveying 2	6	12
Sectional Title Surveying	STS621S	Survey Drafting, Surveying 2 Computer Aided Drafting	6	12
Surveying 3	SUR620S	Engineering Surveying, Surveying 2	6	12
Geomatics Adjustment Theory	GAT621S	Surveying 2	6	12
English for Academic Purposes	EAP511S	English in Practice	5	14

YEAR 3

Semester 5

Information Competence	ICT521S	None	5	10
Cadastral Surveying 2	CAS610S	Cadastral Surveying 1	6	12
Photogrammetry	PGY611S	GIS1, Remote Sensing 1	6	12
Cartography and Map Visualisation	CMV611S	GIS1	6	12
Survey Project 2	SUP611S	Surveying 3, Digital Terrain Modelling	6	12

NQF Credits: 390

Description

The Bachelor of Geomatics programme is purposefully designed to prepare students for a career as geomatics practitioner or technical surveyor, with high-level knowledge and skills in the acquisition, processing, presentation, and management of geospatial data. The aim of the programme is to train geomatics practitioners who are better qualified than survey technicians but not necessarily with an NQF Level 8 Professional Bachelor or Honours degree. These practitioners will typically work in mining, construction, or geoinformatics environments. On successful completion of this programme, graduates will be eligible for registration with SURCON as technical surveyors.

The Bachelor of Geomatics programme provides a systematic and coherent introduction to the main theories, broad principles, concepts, data, and problem-solving techniques in the main cognate area, i.e. Geomatics. The programme will enable students to acquire cognitive skills, practical problem-solving skills, and key transferable skills that are necessary for addressing pressing geomatics challenges. In addition, the Bachelor of Geomatics will enable students to develop a sense of social responsibility, and an understanding of the role they can play in land reform and sustainable development in Namibia and the Southern African Region.

Graduates from this programme should have full regard for achieving excellence and maintaining the highest standards of ethical conduct in the practice of their profession. Upon completion of this programme, graduates of this programme will be able to contribute significantly to the attainment of national development objectives in the economy by taking up jobs as technical surveyors and geomatics professionals in the public and private sectors of Namibia.

Criteria for Admission

Candidates may be admitted to the Bachelor of Geomatics programme if they meet the NUST General Admission Requirements, and comply with the following additional requirements:

Applicants must have a Grade 12 Certificate with a combined total of at least 30 points on the Evaluation Scale, counting up to five subjects as follows:

- Minimum A-symbol on NSSC Ordinary (or 4-grade at NSSC Higher) for Mathematics;
- Minimum B-symbol on NSSC Ordinary (or 4-grade at NSSC Higher) for Physical Science;
- Minimum C-symbol on NSSC Ordinary (or 4-grade at NSSC Higher) for English First Language OR Minimum B-symbol on NSSC Ordinary (or 4-grade on NSSC Higher) for English Second Language;

OR, as of the beginning of 2021 and 2022:

- Minimum A-symbol on NSSCO for Mathematics (or d-symbol on NSSCAS);
- Minimum B-symbol on NSSCO for Physics (or e-symbol on NSSCAS);
- Minimum C-symbol on NSSCO for English First Language (or e-symbol on NSSCAS) OR Minimum B-symbol on NSSCO for English Second Language (or e-symbol on NSSCAS).

A pass (minimum D-symbol on NSSCO, or equivalent) in Geography is highly recommended, and preference may be given to these candidates, additional to the above admission requirements.

Candidates who do not have proof of competency for *Computer User Skills*, but who meet all other admission requirements, may be admitted conditionally to the Bachelor of Geomatics programme. They will be allowed to do all the first semester course of Year 1 of the Bachelor programme, on condition that they also register for the institutional core course *Computer User Skills* in the same semester.

OR

Candidates who passed the *Introduction to Science, Technology, Engineering and Mathematics (InSTEM)* courses *Computer User Skills*, *Introduction to Mathematics B*, *Introduction to Physics B*, and *English in Practice* may be admitted into the first year of the Bachelor of Geomatics programme. Preference will be given to candidates who passed all *InSTEM* courses.

OR

Students enrolled for the Diploma in Geomatics may transfer to the Bachelor of Geomatics programme, if they passed the *InSTEM* courses *Introduction to Mathematics B* and *Introduction to Physics B*. Students who fail either *Introduction to Mathematics B* or *Introduction to Physics B*, will be allowed to continue with the Diploma in Geomatics, but will not be admitted into the Bachelor of Geomatics programme. Students will not be allowed to repeat the courses *Introduction to Mathematics B* or *Introduction to Physics B*. In exceptional cases, upon application by the student and recommendation by the course lecturer, Head of Department, and Dean, the Registrar may allow a student to repeat the courses *Introduction to Mathematics B* or *Introduction to Physics* and/or admit a student into the Bachelor of Geomatics programme.

OR

Holders of the National Diploma in Surveying from the Polytechnic of Namibia, with a mark of at least 70% for the courses Mathematics & Statistics for Land Management, Basic Surveying and Adjustment of Observations, may be admitted into the Bachelor of Geomatics programme with advanced standing, and will be granted credits on a course-by-course basis at the discretion of the Department.

OR

Holders of the National Diploma in Surveying or Diploma in Geomatics from the Polytechnic of Namibia or NUST at NQF Level 6, an equivalent qualification at NQF Level 6 from a recognised institution, or a pre-NQF approved 3-year Diploma in the field of surveying/geomatics, may be admitted into the Bachelor of Geomatics programme with advanced standing, subject to the above admission requirements. Such applicants will be granted credits on a course-by-course basis 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.

Applicants may be required to attend a pre-selection interview and/or test at the discretion of the Department.

Articulation Arrangements

The Bachelor of Geomatics will provide access to further studies in Geomatics or a related cognate area, at NQF Level 8. Transfer of credits will be dealt with according to the 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.

Mode of Delivery

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

Transition Arrangements

The revised Bachelor of Geomatics programme will be implemented as from January 2020. The last intake of 1st year students on the current (old) curriculum was in January 2019.

Existing Bachelor of Geomatics students will be allowed to transfer to the new programme, or to complete the current programme, subject to the following transition arrangements:

- The revised Bachelor of Geomatics (new curriculum) will take effect as from January 2020 and will be completely phased in by 2022. Courses will only be offered based on the new/revised syllabi in 2020 (1st year), 2021 (2nd year) and 2022 (3rd year).
- Students who fail any of the courses on the out-phasing programme (old curriculum), will be required to repeat such failed courses based on the revised syllabi or corresponding courses in accordance with the table below.
- Students who are registered in 2019 for the 1st year of the old programme, and who fail more than 50% of the courses at the end of 2019, will be required to change their registration to the revised Bachelor of Geomatics programme (new curriculum) and will be granted credits for the relevant courses passed in accordance with the Table below.

Bachelor of Geomatics credit table reflecting which old courses grant credit for which new courses

Current Bachelor of Geomatics (Old Course)		Revised Bachelor of Geomatics (New/Revised Course)	
Course Code	Course Name	Course Code	Course Name
DCV512S	Digital Cartography & Visualisation	CMV611S	Cartography and Map Visualisation
CIS610S	Contemporary Issues	SYD611S	Sustainability and Development
SUP520S	Survey Project	SUP520S	Survey Project 1
DPG710S	Digital Photogrammetry	PGY611S	Photogrammetry
PPE621S	Professional Practice	MNL711S	Management and Leadership
CIS610S	Contemporary Issues	SYD611S	Sustainability and Development

Corresponding Courses (if failed). This is not a credit table

Bachelor of Geomatics (Old Courses)		Bachelor of Geomatics (New/revised Corresponding Courses)	
Course Code	Course Title	Course code	Course Title
ILP510S	Introduction to Land Use Planning and Management	ILP510S	Introduction to Land Use Planning and Management
MAT111S	Mathematics 1	ENM510S	Engineering Mathematics 1

BSV521S	Basic Surveying	BSV521S	Basic Surveying
CAS520S	Cadastral Surveying 1	CAS520S	Cadastral Surveying 1
GES512S	Geographic Information Systems 1	GES512S	Geographic Information Systems 1
IPH402S	Introduction to Physics B	IPH402S	Introduction to Physics B
LTS520S	Land Tenure Systems	LTS520S	Land Tenure Systems
SDR420S	Survey Drafting	SDR420S	Survey Drafting
SUP520S	Survey Project	SUP522S	Survey Project 1
CAD510S	Computer Aided Drafting	CAD510S	Computer Aided Drafting
ENS610S	Engineering Surveying	ENS610S	Engineering Surveying
PGI520S	Programming for Geoinformatics	PGI520S	Programming for Geoinformatics
RES511S	Remote Sensing 1	RES511S	Remote Sensing 1
SUR610S	Surveying 2	SUR610S	Surveying 2
DTM620S	Digital Terrain Modelling	DTM620S	Digital Terrain Modelling
GES612S	Geographic Information Systems 2	GES612S	Geographic Information Systems 2
GTE710S	Geomatics Theory of Errors	GAT621S	Geomatics Adjustment Theory
MAT120S	Mathematics 2	ENS611S	Engineering Mathematics 2
STS621S	Sectional Title Surveying	STS621S	Sectional Title Surveying
SUR620S	Surveying 3	SUR620S	Surveying 3
CAS610S	Cadastral Surveying 2	CAS610S	Cadastral Surveying 2
DCV512S	Digital Cartography and Visualisation	CMV611S	Cartography and Map Visualisation
DPG710S	Digital Photogrammetry	PGY611S	Photogrammetry
GES711S	Geographic Information Systems 3	GES711S	Geographic Information Systems 3
MSV610S	Mine Surveying	MSV610S	Mine Surveying
SUR710S	Surveying 4	SUR710S	Surveying 4
	None	ODC721S	Geodesy
PPE621S	Professional Practice	MNL711S	Management and Leadership
WGE711S	Work Integrated Learning	WGE711S	Work Integrated Learning

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

Please Note: The table above highlights core courses in the Bachelor of Geomatics programme that should be done if courses are failed. Some service courses and elective courses delivered by other faculties and departments are excluded, but the rules of relevant faculties and departments apply to this programme as well.

The following old courses do not have corresponding courses in the Bachelor of Geomatics programme (new curriculum) and will be offered for such further period depending on the need of the students and at the discretion of the Department:

- The course *Digital Photogrammetry* is currently an NQF Level 7 course (old programme) but will be replaced with *Photogrammetry (NQF Level 6)* in the revised programme, as from 2022. Students on the old curriculum who need to repeat *Digital Photogrammetry (NQF Level 7)* after 2021, will be allowed to do so and will be accommodated in the *Photogrammetry (NQF Level 6)* classes, with additional teaching and assessments at NQF Level 7.
- The courses *Introduction to Geospatial Data*, *Database Fundamentals*, and *Land Information Systems* do not have corresponding courses in the revised Bachelor of Geomatics programme, and no credits will, therefore, be granted for it for students who transfer to the revised programme. These courses are service courses, and will still be available under the old programme until it is phased out at the end of 2022.
- The course *Geomatics Theory of Errors* is currently an NQF Level 7 course (old programme) but will be replaced by *Geomatics Adjustment Theory (NQF Level 6)* in the revised programme, as from 2021. Students on the old curriculum who need to repeat *Geomatics Theory of Errors (NQF Level 7)* after 2020, will be allowed to do so and will be accommodated in the *Geomatics Adjustment Theory (NQF Level 6)* classes, with additional teaching and assessments at NQF Level 7.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
English for Academic Purposes	EAP511S	English in Practice	5	14
Basic Surveying	BSV521S	None	5	12
Survey Project 1	SUP520S	Co-Requisite: Basic Surveying	5	8
Introduction to Land Use Planning and Mgt	ILP510S	None	5	12
Engineering Mathematics 1	ENM510S	None	5	12

Semester 2

Survey Drafting	SDR420S	Basic Surveying	4	6
Surveying 2	SUR610S	Basic Surveying, Survey Project 1	6	12
Land Tenure Systems	LTS520S	None	5	12
Geographic Information Systems 1	GES512S	Basic Surveying, Computer User Skills	5	12
Information Competence	ICT521S	None	5	10
Engineering Mathematics 2	ENM520S	Engineering Mathematics 1	6	12

YEAR 2

Semester 3

Computer Aided Drafting	CAD510S	Basic Surveying, Computer User Skills	5	12
Remote Sensing 1	RES511S	GIS1, Introduction to Mathematics A	5	12
Mine Surveying	MSV610S	Basic Surveying, Survey Project 1	6	12
Cadastral Surveying 1	CAS520S	Basic Surveying	5	12
Engineering Surveying	ENS610S		6	12

Semester 4

Digital Terrain Modelling	DTM620S	Engineering Surveying, Surveying 2	6	12
Sectional Title Surveying	STS621S	Survey Drafting, Computer Aided Drafting	6	12
		Surveying 2		
Surveying 3	SUR620S	Engineering Surveying, Surveying 2	6	12
Geomatics Adjustment Theory	GAT621S	Surveying	6	12
Geographic Information Systems 2	GES612S	GIS1	6	12
Introduction to Physics B	IPH402S	None	4	12

YEAR 3

Semester 5

Cadastral Surveying 2	CAS610S	Cadastral Surveying 1	6	12
Photogrammetry	PGY611S	GIS1, Remote Sensing 1	6	12
Cartography and Map Visualisation	CMV611S	GIS1	6	12
Surveying 4	SUR710S	Surveying 3, Geomatics Adjustment Theory	7	12
Geographic Information Systems 3	GES711S	GIS2	7	12
Management and Leadership	MNL711S	None	7	12

Semester 6

Sustainability and Development	SYD611S	None	6	12
Programming for Geoinformatics	PGI520S	Computer User Skills	5	12
		Introduction to Mathematics		
Work Integrated Learning (Geomatics)	WIG721S	Surveying 4, Digital Terrain Modelling	7	28
		Cadastral Surveying 2		

Description

The revised Bachelor of Geoinformation Technology aims to provide a skillful and competent labour force for the growing Geographic Information Systems (GIS) and Remote Sensing (RS) industry in Namibia. The programme provides a systematic and coherent introduction to the main theories, broad principles, concepts, data, and problem-solving techniques in the main cognate area, i.e. Geoinformation Technology. The programme is designed to provide graduates with a blend of cognitive and intellectual skills, as well as practical and theoretical skills necessary to successfully design, implement and apply geoinformation technologies that can be used as decision-supporting tools in solving spatial problems.

Criteria for Admission

Applicants may be admitted to the Bachelor of Geoinformation Technology programme if they meet the following requirements. Applicants must have a combined total of at least 30 points on the Evaluation Scale, counting up to five subjects as follows:

- Minimum C-symbol on NSSC Ordinary (or 4-symbol at NSSC Higher) for Mathematics;
- Minimum C-symbol on NSSC Ordinary (or 4-symbol at NSSC Higher) for Physical Science;
- Minimum C-symbol on NSSC Ordinary (or 4-symbol at NSSC Higher) for Geography

Preference will be given to candidates with a Minimum C-symbol on NSSC Ordinary (or 4-symbol at NSSC Higher) for English First Language or Minimum 3-symbol on NSSC Higher for English Second Language; If a candidate does not have a minimum of B-symbol (or equivalent at NSSC Higher) required for English, such candidate must acquire the competencies within the first year of studies by enrolling for the appropriate English communication courses at lower levels.

OR

- Minimum C-symbol on NSSCO for Mathematics (or e-symbol on NSSCAS);
- Minimum C-symbol on NSSCO for Physics and/or Chemistry (or e-symbol on NSSCAS);
- Minimum C-symbol on NSSCO for Geography (or E-symbol on NSSCAS);

Preference will be given to candidates with a Minimum C-symbol on NSSCO for English First Language (or e-symbol on NSSCAS); or Minimum D-symbol for English Second Language on NSSCAS; If a candidate does not have a minimum of B-symbol (or equivalent at NSSC Higher) required for English, such candidate must acquire the competencies within the first year of studies by enrolling for the appropriate English communication course at lower levels.

Candidates who passed the Introduction to Science, Technology, Engineering and Mathematics (InSTEM) courses Computer User Skills, Introduction to Mathematics A, Introduction to Physics A, and English in Practice may be admitted into the first year of the Bachelor of Geoinformation Technology programme. Preference will be given to candidates who passed all InSTEM courses.

Holders of the Diploma in Geoinformation Technology from Polytechnic of Namibia at NQF Level 6, an equivalent qualification at NQF Level 6 from a recognised institution or a pre-NQF approved Diploma over 3 years in the field of geoinformation technology may be admitted into the Bachelor of Geoinformation Technology programme with advanced standing on a course by course credit basis 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.

Applicants may be required to attend a pre-selection interview and/or test at the discretion of the Department.

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 credits that can be granted is 50 % of the credit for a qualification.

The Bachelor of Geoinformation Technology will provide access to further studies in Geoinformation Technology or a related cognate area, at NQF Level 8.

Mode of Delivery

The programme will be offered on full-time mode only, in accordance with Namibia University of Science and Technology rules and regulations.

Requirements for Qualification Award

The Bachelor of Geoinformation Technology degree will be awarded to students credited with a minimum of 368 NQF credits, and who have met the detailed qualification requirements for the programme as set out below. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the Namibia University of Science and Technology 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 an interactive learning process, with focus on face-to-face, supervised and directed learning modes 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 and practical skills.

The learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student, including the following:

- Formal weekly face-to-face (interactive) sessions and presentation using PowerPoint slides, smart boards, whiteboards and handouts;
- Formal weekly laboratory exercises and practice;
- Student portfolios;
- Tutorial and supervised self-study sessions;
- Self-learning through online links;
- Team learning through group projects;
- Use of e-learning platform (including emails and blog/forum);
- Discussion and student presentations (assignment results and other activities);
- Individual assignments;
- Case studies;
- Seminars.
- Guest lecturers with open discussion, when appropriate;

Work Integrated Learning

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

- Execute tasks related to Geoinformation Technology at the workplace;
- Network with professionals and build relationships that can help students in their future endeavours;
- Have access to companies for full-time positions after graduation once good rapport has been established between the students and the companies;
- Interact with people from diverse backgrounds and develop interpersonal skills that are not possible in a classroom environment.

During WIL, students will be linked to ongoing practically-orientated and interdisciplinary projects executed in industry and Government (off/on campus) to effectively develop the student's core capabilities in the field of GIT and to enhance the utilisation of 'state of the art' GIT work procedures in alignment with available proprietary and possible open-source software solutions. The two courses that are done in the same semester as WIL, will be taught interactively and will be done through an accelerated teaching approach.

Assessment Strategies

Continuous Assessment with Feedback (CAF) and written Final Theoretical Examination (FTE) will be used for most of the courses, except a few that are fully practical based (please refer to syllabi for individual courses) and will not use a final theoretical examination. CAF will focus on the use of progressive, sufficient assessment events and evidence as a feedback tool to promote and improve learning and teaching approaches, and attaining the competencies required to demonstrate exit level outcomes rather than an accumulation of final pass marks through a series of assessment events.

Research has shown that it is more difficult to demonstrate all exit outcomes associated with job/professional competencies solely in a written final examination (Akkermans, *et al.*, 2013). Intra-semester assessments will require prompt and constructive feedback.

Quality assurance requirements

Each course (please refer to the detailed Qualification Requirements) will have one or more examiner/s and one or more moderator/s. Moderators will be identified both internally and externally. The required minimum qualification of the moderator should be a Bachelor Honours degree in Geoinformation Technology or a related field of studies. Lecturing staff will set and mark tests and/or examinations which will, together with relevant study material for 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, thus, 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

The Bachelor of Geoinformation Technology (old curriculum) will be phased out systematically until 2024 with minimum disruption to existing students' learning progression. The last intake of 1st year students on the 2014 curriculum was in January 2019.

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 2019, will be required to change their registration to the revised programme (new curriculum) and will be granted credits on a course-by-course basis in accordance with the information in the Table below.

The revised Bachelor of Geoinformation Technology (new curriculum) will take effect as from January 2020 and will be completely phased in by 2022. Courses will only be offered based on the new/revised syllabi in 2020 (1st year), 2021 (2nd year) and 2022 (3rd year). Students who fail any of the courses on the 2014 curriculum will be required to repeat such failed courses based on the syllabi of new/revised corresponding courses. Please refer to the Table below, for detailed information on the new/revised corresponding courses to be done if courses on the 2014 curriculum (old curriculum) are failed.

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

First year courses to be credited

Bachelor of Geoinformation Technology (Old Courses)		Bachelor of Geoinformation Technology (New/Revised Courses)	
Course Code	Course Name	Course Code	Course Name
IGD411S	Introduction to Geospatial Data	IGD411S	Introduction to Geospatial Data
CUS411S	Computer User Skills	CUS411S	Computer User Skills
ILP510S	Introduction to Land Use Planning & Mgt	ILP510S	Introduction to Land Use Planning & Management
MSS511S	Mathematics and Statistics for Spatial Science	MSS511S	Mathematics and Statistics for Spatial Science
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
GES512S	Geographic Information Systems 1	GES512S	Geographic Information Systems 1
WDF521	Web Development Fundamentals	WDF521S	Web Development Fundamentals
OSN521S	Introduction to Operating Systems and Networks	OSN521S	Introduction to Operating Systems and Networks
ISM520S	Introduction to Survey and Mapping	ISM520S	Introduction to Survey and Mapping
CIS610S	Contemporary Issues	SYD611S	Sustainability and Development
PLU411S	Principles of English Language Use		None
BSC410S	Basic Science		None
EPR511S	English in Practice		None
Second year: Courses to be credited			
BWC511S	Basic Web Cartography	WBG511S	Web GIS
DCV512S	Digital Cartography & Visualisation	CTM611S	Cartography and Map Visualisation
RES511S	Remote Sensing 1	RES511S	Remote Sensing 1
DBF510S	Database Fundamentals	DBF510S	Database Fundamentals
ICT512S	Information Competence	ICT512S	Information Competence
GMN621S	Geoinformation Management	GMN621S	Geoinformation Management
SEH621S	Software Engineering 1 and HCI	SEH621S	Software Engineering 1 and HCI
DPT621S	Database Programming and Techniques	DPT621S	Database Programming and Techniques
PGI520S	Programming for Geoinformatics	PGI520S	Programming for Geoinformatics
GES612S	Geographic Information Systems 2	GES612S	Geographic Information Systems 2
RES612S	Remote Sensing 2	RES612S	Remote Sensing 2
	None	GCP511S	GIT Camp 2
LIS611S	Land Information Systems		None

Third year: Courses to be credited			
GDB611S	Geodatabases	GDB611S	Geodatabases
GDG621S	Geodemographics	GDG621S	Geodemographics
	None	PGY611S	Photogrammetry
GES711S	Geographic Information Systems 3	GES711S	Geographic Information Systems 3
GIP710S	GIS Programming	GIP710S	GIS Programming
SPS721S	Spatial Statistics	SPS721S	Spatial Statistics
AWG721S	Advanced Web GIS	AWG721S	Advanced Web GIS
WOK721S	Work Integrated Learning	WOK721S	Work Integrated Learning

Corresponding course (if failed). This is not a credit table!

Bachelor of Geoinformation Technology (Old Courses)		Bachelor of Geoinformation Technology (New/Revised Corresponding Courses)	
Course Code	Course Name	Course Code	Course Name
CIS610S	Contemporary Issues	SYD611S	Sustainability and Development
BWC511S	Basic Web Cartography	WBG511S	Web GIS
DCV512S	Digital Cartography & Visualisation	CTM611S	Cartography and Map Visualisation

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Introduction to Geospatial Data	IGD411S	None	4	8
Computer User Skills	CUS411S	None	4	10
Introduction to Land Use Planning & Mgt	ILP511S	None	5	12
Mathematics and Statistics for Spatial Science	MSS511S	None	5	12
English for Academic Purposes	EAP511S	English in Practice	5	14

Semester 2

Geographic Information Systems 1	GES512S	Introduction to Geospatial Data Computer User Skills	5	12
Web Development Fundamentals	WDF521S	None	5	10
Introduction to Operating Systems and Networks	OSN521S	Computer User Skills	5	10
Introduction to Survey and Mapping	ISM520S	Introduction to Geospatial Data	5	12
Sustainability and Development	SYD611S	None	6	12

YEAR 2

Semester 3

Web GIS	WBG511S	Computer User Skills	5	12
Cartography and Map Visualisation	CTM611S	Geographic Information Systems 1	6	12
Remote Sensing 1	RES511S	Mathematics and Statistics for Spatial Sc	5	12
Database Fundamentals	DBF510S	None	5	10
Information Competence	ICT521S	None	5	10
Geoinformation Management	GMN621S	Geographic Information Systems 1	6	12

Semester 4

Software Engineering 1 and HCI	SEH620S	Web Development Fundamentals	6	12
Database Programming and Techniques	DPT621S	Database Fundamentals	6	12
Programming for Geoinformatics	PGI520S	Maths & Statistics for Spatial Sciences	5	12
Geographic Information Systems 2	GES612S	Geographic Information Systems 1	6	12
Remote Sensing 2	RES612S	Remote Sensing 1	6	12
GIT Camp	GCP511S	Geographic Information Systems 1 Remote Sensing 1	5	8

YEAR 3

Semester 5

Geodatabases	GDB611S	Database Fundamentals Geographic Information Systems 2	6	12
Geodemographics	GDG621S	Geographic Information Systems 2	6	12
Photogrammetry	PGY611S	Remote Sensing 1	6	12
Geographic Information Systems 3	GES711S	Geographic Information Systems 2	7	12
GIS Programming	GIP710S	Geographic Information Systems 2 Programming for Geoinformatics	7	12

Semester 6

Spatial Statistics	SPS721S	Geographic Information Systems 3 Remote Sensing 2	7	12
Advanced Web GIS	AWG721S	Web GIS, Geodatabases	7	12
Work Integrated Learning	WOK721S	All courses up to and including Semester 5	7	36

POSTGRADUATE PROGRAMMES



POSTGRADUATE PROGRAMMES

SCHOOL OF ENGINEERING

DEPARTMENT OF CIVIL, MINING AND PROCESS ENGINEERING

CODE: 97

CIVIL ENGINEERING

QUALIFICATIONS OFFERED

Master of Integrated Water Resources Management

09MIWR

Master of Engineering in Civil Engineering

09MECE

Master of Environmental Engineering

09MEEN

MASTER OF INTEGRATED WATER RESOURCES MANAGEMENT

09MIWR

NQF Level: 9

NQF Credits: 240

NQF Qualification ID: Q0896

Description

The Master of Integrated Water Resources Management is a postgraduate degree designed for registration at NQF Level 9 and is purposefully designed to create a fertile niche area where applied research in water resources can be enhanced in future. This Master degree aims at producing middle and high level professionals who are able to demonstrate mastery of theoretically sophisticated subject matter of the Integrated Water Resources Management; evaluate and produce practical solutions to the water related problems of this country and beyond. Further, the programme will enable graduates to play a significant role in the management of water resources as individuals and as part of a team. Students will also be capacitated to work and study independently synthesis knowledge at the forefront of Integrated Water Resources Management and conduct research using the scientific method. The programme will be combination of coursework and a thesis.

Admission Criteria

The Master of Integrated Water Resources Management seeks to recruit suitably qualified students who are capable of benefiting from, contributing to and successfully completing the programme. The admission requirements for the programme are as follows:

- A relevant 4-year Bachelor's degree from a recognised institution or an equivalent qualification at NQF Level 8, that shall include a component of independent research or a recognised graduate degree with a research component.
- Any other equivalent qualifications and experience as agreed by Senate.

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.

The Master of Integrated Water Resources Management will provide access to further studies at Doctoral level or any other qualification at NQF Level 10.

Mode of Delivery

The programme will be offered on the part-time block mode of study in accordance with the University's rules and procedures. The full-time delivery mode may be adopted in future depending on availability of resources.

Requirements for Qualification Award

This degree will be awarded to students credited with a minimum of 240 credits (all at NQF Level 9) and who have met the detailed qualification requirements as set out below. In addition, students should meet the administrative and financial requirements as spelt out in the Postgraduate Prospectus of the Namibia University of Science and Technology. Students are required to complete 8 compulsory courses (worth 140 credits) and a thesis (worth 100 credits) in order to qualify for this award.

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. This programme/qualification, therefore 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 practical skills. Facilitation will make use *inter alia* of lectures, laboratory work, field work, seminars, case studies, group discussions and presentation of project and/or individual/group assignments in class. The progress of learning, embedded in such tasks will be monitored, recorded and assessed.

Assessment Strategies

Students will be assessed through diversified continuous 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 semester 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. The thesis will be assessed in accordance with the University's rules on postgraduate studies.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Integrated Water Resource Management	IWR910S	None	9	20
Water Quality & Environmental Management	QEM910S	None	9	20
Hydrogeology	HDG910S	None	9	20

Semester 2

Water Resources Analysis and Planning	RAP920S	None	9	20
Environmental Water Quality Processes	EQP920S	None	9	15
Research Methodology	REM920S	None	9	15

YEAR 2

Semester 3

Wastewater Management	WWM910S	None	9	15
Water Supply Management	WSM910S	None	9	15

Semester 4

Thesis - Integrated Water Resources Management	TWM911S	Research Methodology	9	100
Thesis Extension - Integrated Water Resources Management	TWM912X	Research Methodology		

Note: Students should only register for TWM912X (Thesis Extension) if s/he fails to complete the Integrated Water Resources Management Thesis TWM911S (Thesis) within the minimum prescribed period.

MASTER OF ENGINEERING IN CIVIL ENGINEERING

09MECE

NQF Level: 9

NQF Credits: 240

NQF Qualification ID:

Description

The Master Engineering in Civil Engineering (M. Eng: Civil) is a post-graduate degree designed to have 240 credits at NQF Level 9, and replaces the Master of Transport Engineering. The programme on the outcomes of the Bachelor of Engineering in Civil Engineering (BEng: Civil) aims at providing practice-oriented education for high-level engineers and specialists that are able to provide practical solutions to real-world civil engineering related problems in Namibia and beyond. The curriculum is structured to facilitate specialisation in the areas of Structures, Transportation and Water.

The programme will furthermore enable students to evaluation and design complex and innovative systems in the above mentioned areas of specialisation using advanced analytical design as well as management tools and techniques in order to address societal needs. Students will also be capacitated to work and study independently, synthesis knowledge at the forefront of Civil Engineering and conduct research using the scientific method. This programme will be a combination of coursework and a thesis.

Graduates of this programme will be able to contribute significantly to national economic development in positions such as Engineering Managers, Senior Engineers, Consultants, Researchers, Academics etc.

Programme Outcomes at Exit Level (Qualification Outcomes)

Upon completing this programme, students will be able to:

- Demonstrate mastery of theoretically sophisticated subject matter in the areas of specialisation i.e. Structure, transportation or Water;
- Solve complex Civil Engineering problems to improve organisational performance and enhance national competitiveness;
- Design Civil Engineering models to fit particular industries by evaluating information and appraising the degree to which the model fit the industry;
- Work in goal-orientated and self-directed ways;
- Plan and carry out a substantial piece of original research to internationally recognised standards using the scientific method;
- Present research outcomes in a professional and effective way, catering for a wide range of specialist and non-specialists audiences.

Admission Criteria

The Master of Engineering: Civil Engineering seeks to recruit suitably qualified students who are capable of benefitting from, contributing to, and successfully completing the programme. In order to be considered for admission into this programme, applicants must:

- Hold a Bachelor of Engineering degree in Civil Engineering or an equivalent qualification at NQF Level 8 from a recognised institution; or a pre-NQF professional or four-year Bachelor degree with a professional project or research component from a recognised institution evaluated as appropriated by the Department.
- Demonstrate proficiency in English Communication at post-graduate level as demonstrated by the fact that the undergraduate degree was done in the medium of English. If the undergraduate degree was not obtained in the medium of English, then the applicant will be required to show proficiency in the medium of English through achieving at least band 7 of the International English Language Testing System (IELTS) or an equivalent.

Final Selection of candidates will be approved by the Postgraduate Studies Committee.

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 qualification. No articulation is provided for the research component of this degree.

The Master of Engineering: Civil Engineering will ordinarily provide access to further studies at NQF level 10 in the same/similar cognate area of learning.

Mode of Delivery

The programme will be offered on the full-time and part-time modes of study in accordance with University's rules. Lectures are likely to be offered as "block release" during non-working or on-line.

Requirements for Qualification Award

The Master of Engineering: Civil Engineering will be awarded to candidates credited with a minimum of 240 NQF credits (all at level 9) and who have met the detailed requirements as set out below. In addition, students must meet the administrative and financial requirements of the University as set out in the Yearbook (Part 1).

Students are able to specialise in Structures, Transportation or Water and are required to complete core compulsory courses, including a thesis. Core courses and the thesis are worth 140 credits and the strand compulsory courses are worth 100 credits.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Construction Management and Methods	CMM911S	None	9	15
Sustainable Development and Institutional Framework	SDF911S	None	9	15

STRUCTURES

Advanced Structural Analysis and Structural Dynamics	AAD911S	None	9	20
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TRANSPORTATION

Quantitative Methods	QTM911S	None	9	20
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WATER

GIS and Data Management	GDM911S	None	9	20
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Semester 2

STRUCTURES

Finite Element Analysis	FEA921S	None	9	20
Advanced Design of Steel Structure	ADS921S	None	9	20
Advanced Design of Concrete Structures	ADC921S	None	9	20

TRANSPORTATION

Advanced Transport Modelling	ATM921S	None	9	20
Railway Engineering and Transport	RET921S	None	9	20
Advanced Pavement Technology and Design	APT921S	None	9	20

WATER

Flood Control and Water Resources Utilisation	FCU921S	None	9	20
Advanced Water and Wastewater Systems	AWS921S	None	9	15
Hydrogeology	HDG921S	None	9	20

YEAR 2

Semester 3

Research Methodology and Techniques	RTM920S	None	9	20
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Plus ONE of the following Strands depending on specialisation i.e. Structures, Transportation or Water

STRUCTURES

Topics in Advanced Structural Engineering	TAS911S	None	9	15
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TRANSPORTATION

Topics in Advanced Transportation Engineering	TAT911S	None	9	15
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WATER

Topics in Advanced Water Engineering	TAW911S	None	9	15
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MASTER OF ENVIRONMENTAL ENGINEERING

09MEEN

NQF Level: 9

NQF Credits: 240

NQF Qualification ID: Q0990

Description

The Master of Environmental Engineering is a postgraduate degree designed for registration at NQF level 9. The programme aims to providing practice-oriented education for high level engineers/specialists that can provide practical solutions to real-world environmental engineering related problems in Namibia and beyond. The curriculum is structured to facilitate specialisation in the areas of Energy Systems and Water Engineering.

This programme will, furthermore, enable students to evaluate and design complex and innovative systems in the abovementioned areas of specialisation using advanced analytical design as well as management tools and techniques to address societal needs. Students will also be capacitated to work and study independently synthesise knowledge at the forefront of Environmental Engineering and conduct research using scientific methods. The programme will be a combination of coursework and a thesis.

Graduates of this programme will be able to contribute significantly to the national development goals and will be able to take up employment positions such as Engineering Managers, Senior Engineers, Consultants, Researchers and Academics both in public and private sectors.

The programme has been endorsed by members of the Programme Advisory Committee, while institutions of higher learning have been consulted for purposes of benchmarking.

Criteria for Admission

The Master of Environmental Engineering seeks to recruit suitably qualified candidates who are capable of benefitting from, contributing to and successfully completing the programme. To be considered for admission to this programme, applicants must:

- Hold a Bachelors of Engineering degree (e.g. agricultural, chemical, civil, electrical, industrial mechanical, metallurgy, mining, process etc. to mention just a few) or an equivalent qualification at NQF Level 8 from a recognised institution 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.
- Demonstrate proficiency in English communication at post graduate level as demonstrated by the fact that the undergraduate degree was done in the medium of English. If the undergraduate degree was not obtained in the medium of English, then the applicant will be required to show proficiency in the medium of English through achieving at least band 7 of the International English Language Testing System (IELTS) or an equivalent.

Final selection of candidates will be approved by the Postgraduate Studies Committee.

Articulation Arrangements

The 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. No articulation is provided for the research component of this degree.

The Master of Environmental Engineering will ordinarily provide access to further studies at NQF level 10 in the same/similar cognate area of learning.

Mode of Delivery

This programme will be offered on full-time and or part-time modes of study in accordance with Namibia University of Science and Technology rules. Lectures are likely to be offered in "block mode", during non-working hours or on-line.

Requirements for Qualification Award

The Masters of Environmental Engineering will be awarded to candidates credited with a minimum of 240 NQF credits (all at NQF level 9) and who met the detailed requirements as set out below. In addition, students must meet the administrative and financial requirements of NUST as set out in the Prospectus.

Students can specialise in Energy Systems and Water Engineering and are required to complete core compulsory courses, including a thesis. Core and strand courses are worth 140 credits and a thesis worth 100 credits.

The department will offer the programme in a flexible mode. The courses are nonetheless listed per semester to fit the normal curriculum structure.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Environmental Systems and Analysis Tools	ESA911S	None	9	20
Solid Waste Engineering and Cleaner Production	SWE911S	None	9	20
Environmental Fluid Mechanics	EFM911S	None	9	20

Semester 2

Research Techniques and Methodology	RTM920S	None	9	20
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Plus TWO of the following Strand courses depending on Specialisation, Energy Systems and Water Engineering

ENERGY SYSTEMS

Renewable Energies & Energy System Engineering	REE921S	None	9	20
Energy Efficiency Technology	EET921S	None	9	20

WATER ENGINEERING

Hydraulic Structures	HDS921S	None	9	20
Hydrogeology	HDG921S	None	9	20

YEAR 2

Semester 3

ONE of the following Strand courses depending on Specialisation, Energy Systems and Water Engineering

ENERGY SYSTEMS

Bio-Energy	BEG911S	None	9	20
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WATER ENGINEERING

Advanced Water and Wastewater Engineering	AWW911S	None	9	20
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Semester 4

Thesis – Environmental Engineering	TEE911S	Research Techniques and Methodology	9	100
Thesis Extension – Environmental Engineering	TEE912X	Research Techniques and Methodology		

Note: Students should only register for TEE912S if s/he fails to complete the Environmental Engineering Thesis (TEE911S) within the prescribed minimum prescribed period.

MINING AND PROCESS ENGINEERING

QUALIFICATIONS OFFERED

Master of Engineering in Metallurgy

09MMET

MASTER OF ENGINEERING IN METALLURGY

09MMET

NQF Level: 9

NQF Credits: 240

NQF Qualification ID:

Description

The Master of Engineering in Metallurgy (MEng: Metallurgy) is a postgraduate degree designed to develop specialists in metallurgy and to provide practice-oriented education for high level metallurgists who are able to provide practical solutions to real-world metallurgy related problems in Namibia and throughout the world.

This programme will, furthermore produce world-class professionals who are experts in metallurgy, equipped with advanced knowledge, specialised skills and analytical attributes required in the innovative design, development, construction and operation of industries in which mineral ores are processed to products of higher economic value. The programme will be a combination of coursework and a thesis.

Graduates of this programme will be able to contribute significantly to national, regional and global economic development and wealth creation, through the generation of sustainable metallurgical solutions. They will be equipped to drive and spearhead beneficiation and value addition of minerals for economic growth and improved quality of life.

Criteria for Admission

In order to be considered for admission to this programme, applicants must:

- Hold a Bachelor of Engineering degree in Metallurgy, or an equivalent qualification at NQF Level 8, from a recognised institution; 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.
- Demonstrate proficiency in English communication at postgraduate level, as demonstrated by the fact that the undergraduate degree was undertaken with English as the medium of instruction. If the undergraduate degree was not obtained in the medium of English, then the applicant will be required to show proficiency in the medium of English through achieving at least band 7 of the International English Language Testing System (IELTS), or an equivalent.

Final selection of candidates will be approved by the Postgraduate Studies Committee.

Articulation Arrangements

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 credit that can be granted is 50% of the credits for a qualification. No articulation is provided for the research component of this degree.

Students who graduate with a Master of Engineering in Metallurgy will ordinarily be able to pursue further studies in Metallurgy or a related cognate area of learning, at NQF level 10.

Mode of Delivery

The programme will be offered on a full time and part-time basis in accordance with the NUST's rules. Lectures may be offered on a block-release mode or during non-working hours or online.

Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 240 NQF credits (all NQF level 9) and who have met the detailed qualification requirements as set out below.

In addition, students should meet the administrative and financial requirements as outlined in the NUST general rules and regulations.

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

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
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Students are required to choose ONE of the following Strands depending on Specialisation

MINERAL PROCESSING STRAND

Advanced Mineral Processing	AMP910S	None	9	20
Comminution and Classification	CCL910S	None	9	20
Mineral Separation Process	MSP910S	None	9	20

PYROMETALLURGY STRAND

Thermodynamics and Kinetics	TKN910S	None	9	20
Refractory Principles and Selection	RPS910S	None	9	20
Fuels and Energy	FEN910S	None	9	20

PHYSICAL METALLURGY AND ADVANCED MATERIALS STRAND

Physical Metallurgy	PHM910S	None	9	20
Corrosion Engineering	CEN910S	None	9	20
Materials Selection	MSE910S	None	9	20

HYDROMETALLURGY STRAND

Leaching of Ores and Concentrates	LOC910S	None	9	20
Advanced Electrometallurgy	AEL910S	None	9	20
Hydrometallurgical Separation Techniques & Processes	HST910S	None	9	20

Semester 2

Research Techniques and Methodology	RTM920S	None	9	20
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Plus any TWO Elective Courses (based on demand)

Modelling and Simulation of Processes	MSP920S	None	9	20
Cleaner Production and Sustainability	CPS920S	None	9	20
Process Control and Optimisation	PCO920S	None	9	20
Mineral Value Chain Management	MVC920S	None	9	20
Bulk Materials Handling	BMH920S	None	9	20
Risk and Project Management	RPM920S	None	9	20
Materials Characterisation	MCH920S	None	9	20

YEAR 2

Semester 3 and 4

Thesis	MTE940S	Research Techniques and Methodology	9	120
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DEPARTMENT OF MECHANICAL, INDUSTRIAL AND ELECTRICAL ENGINEERING

CODE: 98

**MECHANICAL AND INDUSTRIAL ENGINEERING
QUALIFICATIONS OFFERED**

Master of Industrial Engineering

09MIEN

MASTER OF INDUSTRIAL ENGINEERING

09MIEN

NQF Level: 9

NQF Credits: 240

NQF Qualification ID: Q0268

Description

The Master of Industrial Engineering is designed to have 240 credits at NQF Level 9. The programme is designed to produce graduates who can evaluate processes in complex systems (organisations) by competitive variables using the tools and techniques of Industrial Engineering, Business and Economics so as to design new or improved processes. They will demonstrate capacity for self-directed study, working independently to assemble knowledge in the forefront of fields in Industrial Engineering and research them using the scientific methods in an industrial situation. The programme targets engineers working across the whole spectrum of industry. The programme will be a combination of coursework and a thesis.

Graduates of this programme will be able to find employment in industry (e.g. mining, manufacturing, service, transport and construction) in positions such as Operations Managers/Consultants/Researchers, Project Managers, Quality Assurance Managers, Supply Chain Managers, and Productivity Analysts etc. and be in a position to start or expand their own businesses.

Admission Criteria

The Master of Industrial Engineering seeks to recruit 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:

- Hold a Bachelor of Engineering degree or a four-year Bachelor degree in a discipline that includes professional studies of the underlying subject matter in engineering with a component of supervised research or an equivalent qualification at NQF level 8 from a recognised institution.
- Demonstrate proficiency in English communication at post graduate level as demonstrated by the fact that the undergraduate degree was done in the medium of English. If the undergraduate degree was not obtained in the medium of English then the applicant will be required to show proficiency in the medium of English through achieving at least band 7 of the International English Language Testing System (IELTS) or an equivalent test.
- Be employed or self-employed for the duration of the programme.

An evaluation of the applicant's academic record and a letter of motivation providing reasons for wishing to enrol for the Master of Industrial Engineering will be used for initial short listing purposes. All candidates on the final shortlist will be invited to a selection panel interview. As places are limited all short listed candidates will be interviewed to:

- Clarify expectations to students e.g. regarding work place research (e.g. enrolling in the programme assumes that they are employed and likely to remain so for the duration of the programme); and
- To measure performance in potentially weak areas. A student presenting with a B.Eng is likely to be asked questions testing their communication skills, whereas a person presenting with a degree in a related cognate area is likely to be asked about their mathematical statistical and design skills.

This preliminary process is necessary to provide admitted students with the best potential of success.

Articulation Arrangements

The 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. No articulation is provided for the research (thesis) component of this degree.

The Master of Industrial Engineering will ordinarily provide access to further studies at NQF Level 10 in the same/similar cognate area of learning.

Mode of Delivery

This programme will be offered on the full-time and part-time modes of study in accordance with University's rules. As students for the degree should be employed, the lectures are likely to be offered either as "block release" or during non-working hours.

Requirements for Qualification Award

The Master of Industrial Engineering will be awarded to candidates credited with a minimum of 240 credits (all at NQF level 9). Students are required to complete six compulsory courses (worth 120 credits). In addition, students must meet the administrative and financial requirements of the University as set out in the NUST Prospectus.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Industrial Engineering Methods	IEM910S	None	9	20
Work Science	WSC910S	None	9	20
Applied Economics for Engineers	AEE910S	None	9	20

Semester 2

Quality and Reliability	QRE920S	None	9	20
Business Analysis	BAN920S	None	9	20
Research Techniques & Methodology	RTM920S	Pass at least 2 courses	9	20

YEAR 2

Semester 3 and 4

Thesis	IET911S	Research Techniques and Methodology	9	120
Thesis	IET912S	Research Techniques and Methodology		
Thesis Extension	IET913X	Research Techniques and Methodology		

Note: Students should only for IET913X if s/he fails to complete the Industrial Engineering Thesis (IET912S) within the minimum prescribed period.

ELECTRICAL AND COMPUTER ENGINEERING

QUALIFICATIONS OFFERED

Postgraduate Diploma in Space Technology	08PGDS
Postgraduate Diploma in Space and Atmospheric Science	08PGDA
Master of Sustainable Energy Systems	09MSES

POSTGRADUATE DIPLOMA IN SPACE TECHNOLOGY (Phased in 2016)

08PGDS

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q0987

Description

The Postgraduate Diploma in Space Technology programme 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 experiments of an applied nature. The main objective of the programme is to impart broad knowledge of different disciplines of Space Technology, Space regulations and Space applications. The Postgraduate Diploma in Space Technology is of interdisciplinary nature that prepares graduates to become scientific researchers and technologist in various fields of study related to space technology.

The programme will enable students to acquire skills and knowledge through rigorous theory, experimental application, field exercises and projects in the field of space technology. Projects will be conducted under supervision to enhance the understanding of the students. The Postgraduate Diploma in Space Technology focuses on Satellite Mission Analysis and Design (SMAD) of a satellite, satellite communication, international space regulations, space science and space applications. Students will develop competencies in the application of qualitative and quantitative experimental methods through participation in advanced design projects under supervision of experienced staff members.

Graduates of this programme will be able to make a sustained contribution to national economic development by finding employment primarily in the public and private sector in positions such as researchers, scientists' space engineering, weather forecasting and satellite communication engineers, resource management and risk assessment.

Admission Criteria

In order to be admitted to this programme, candidates must have a Bachelor degree in Electrical, Electronic and Mechanical Engineering or an equivalent qualification, from a recognised institution, evaluated by the department as an appropriate admission qualification.

Applicants may be required to attend a pre-selection interview and/or test at the discretion of the department.

Articulation Arrangements

Transfer of credits will be dealt with in accordance with 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.

The Postgraduate Diploma in Space Technology is an interdisciplinary programme. It will ordinarily provide access to further studies in the same or a related cognate area at NQF Level 9.

Mode of Delivery

The qualification will be delivered on a full-time and part-time mode in accordance with University rules.

Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 120 credits at NQF Level 8 and who have met the detailed qualification requirements as outlined below. In addition, students should meet the administrative and financial requirements as spelt out in the NUST Prospectus.

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.

The learning process will be facilitated both in and outside the classroom requiring specific tasks to be carried out by the student including the following:

- Formal weekly face-to-face (interactive) contact and presentation using Power Point slides, smart boards, whiteboards and hand-outs;
- Formal weekly laboratory exercises and practice;
- Development and use of student portfolios;
- Promotion of self-learning through online links;
- Promotion of advanced engineering design skills;
- Promotion of team learning through group projects and workshops;
- Introduction of topics for individual and home assignments;
- Use of e-learning platform (Moodle systems, emails and blog/forum);
- Discussion and student presentation (assignment results and other activities);
- Participation in seminars and workshops;
- Guest lectures with open discussion;
- Seminars

To impart “values and attitudes”, students will be encouraged to attend related seminars and workshops nationally and internationally, of which they will be requirements to write a self-reflective short page summary to be submitted to the programme coordinator.

There will be special arrangements and agreements in consultation with collaborating institutions and observatories close to Namibia University of Science and Technology where the students will be assisted in their research, design project and laboratory assignments.

Thus 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.

Assessment Strategies

Students will be assessed through diversified continuous assessment. These assessments will focus on the achievement of qualification outcomes for e.g. problem solving exercise, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations) etc All courses will be assessed using diversified continuous assessment methods.

The Advanced Design Project will be assessed in accordance with the University’s rules for studies at postgraduate level.

Transition Arrangements

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

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Space Environment	SEV811S	None	8	15
Mission Architecture	MAT811S	None	8	15
Space Applications	SAP811S	None	8	15
Satellite Mission Analysis and Design	SMA811S	None	8	20

Semester 2

Space Policy and Management	SPM821S	None	8	10
Satellite Architecture	SAT821S	Mission Architecture	8	15
Advanced Design Project	ADP821S	Satellite Mission Analysis and Design; Space Applications	8	30

**POSTGRADUATE DIPLOMA IN SPACE AND ATMOSPHERIC SCIENCE
(Phased in 2016)**

08PGDA

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q0986

Description

The Postgraduate Diploma in Space and Atmospheric Science programme is primarily designed to provide students with deeper insight, intellectual and cognitive skills related to their professional field and area of employments and help them to advance their career of choice. This programme will further expose students to advanced concepts, theories, tools and methods Space and Atmospheric Science. The post graduate programme in Space and Atmospheric science is of interdisciplinary nature. The overarching aim of this programme is to prepare students for a career in the Space Science and Atmospheric Science fields.

The programme will enable students to acquire skills and knowledge through rigorous theory, experimental application, field exercises and pilot project in the fields of space science and atmospheric science. Pilot projects will be conducted under supervision to enhance social and economic development in Namibia. Students will develop a thorough understanding of relevant instrumentation and data analysis approach and will develop competence in the application of qualitative and quantitative experimental methods through participation in project under supervision of experienced staff members. The fields of study include space and atmospheric science, space orbital science, space applications and international space regulations.

Graduates of this programme will be able to make a sustained contribution to national economic development by finding employment primarily in the public and private sector in positions such as researchers, space science scientists and analysis of atmospheric information for a broad range of applications including environmental assessment, resource management and risk assessment.

Criteria for Admission

In order to be admitted to this programme, candidates must have a Bachelor's degree at NQF level 7 with majors in Physics or Mathematics or an equivalent degree in Science, Technology, Engineering or Mathematics, which is evaluated by the Department as being an appropriate undergraduate degree for admission.

(Note that degrees with only the biological sciences as a major would not be appropriate for admission).

Applicants may be required to attend a pre-selection interview and/or test at the discretion of the Department.

Articulation Arrangements

Transfer of credits will be dealt with in accordance with 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.

The Post Graduate Diploma in Space and Atmospheric Science is an interdisciplinary program. It will ordinarily provide access to further studies in the same or a related cognate area at NQF Level 9.

Mode of Delivery

The qualification will be delivered on full-time and part-time modes in accordance with University rules.

Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 120 credits at NQF Level 8 and who have met the detailed qualification requirements as outlined below. In addition, students should meet the administrative and financial requirements spelt out in the NUST Prospectus.

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. The learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student, including the following:

- Formal weekly face-to-face (interactive) contact and presentation using Power Point slides, smart boards, whiteboards and handouts;
- Formal weekly laboratory exercises and practice;

- Development and use of student portfolios;
- Promotion of self-learning through online links;
- Promotion of experimental skills;
- Promotion of team learning through group projects and workshops;
- Introduction of topics for individual and home assignments;
- Use of e-learning platform (Moodle system; emails and blog/forum);
- Discussion and student presentations (assignment results and other activities);
- Participation in seminars and workshops;
- Guest lecturers with open discussion;
- Seminars

To impart “values and attitudes”, students will be encouraged to attend related seminars and workshops nationally and internationally, of which they will be required to write a self-reflective short page summary to be submitted to the programme coordinator.

There will be special arrangements and agreements in consultation with collaborating institutions and observatories close to Namibia University of Science and Technology where the students will be assisted in their research project and laboratory assignments. Thus 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.

Assessment Strategies

Students will be assessed through diversified continuous assessment. These assessments will focus on the achievement of qualification outcomes for e.g. problem solving exercises, individual/group assignments and presentations, case studies, report writing, laboratory practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations). All courses will be assessed using diversified continuous assessment methods.

The Project will be assessed in accordance with the University’s rules for studies at postgraduate level.

Transition Arrangements

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

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Space Environment	SEV811S	None	8	15
Mission Architecture	MAT811S	None	8	15
Space Applications	SAP811S	None	8	15
Instrumentation Measurement and Data Analysis Techniques	IMD811S	None	8	20

Semester 2

Space Policy and Management	SPM821S	None	8	10
Atmospheric Science	AMS821S	Space Environment	8	15
Advanced Design Project	ADP821S	Instrumentation Measurement and Data Analysis Techniques Space Applications	8	30

MASTER OF SUSTAINABLE ENERGY SYSTEMS

09MSES

NQF Level: 9

NQF Credits: 240

NQF Qualification ID: Q0992

Description

The Master of Sustainable Energy Systems programme is designed to provide contemporary education in the field of energy by emphasising sustainability in the energy resource assessment, exploitation, development, delivery and applications. To ensure sustainability this programme will focus on economically and environmentally friendly technologies and systems while placing a strong emphasis on the energy engineering tasks with due consideration of technical, environmental and socio-economic issues. In the same vein, the programme expose students to advanced methods required to identify, quantify and find solutions to a diverse range of energy problems. Students will gain proficiency in sustainable and renewable energy project design, implementation, operation and maintenance, as well as in crucial phases of policy generation.

The programme is structured to facilitate specialisation in the areas of Energy Technologies and Energy Management. Students will also be equipped with skills to work and study independently, synthesise knowledge at the forefront of Sustainable Energy, and conduct research using the scientific method. The programme is purposefully designed to create a fertile niche area where applied research in sustainable energy systems and technologies can be enhanced in the future. Thus, the programme will be a combination of coursework and a master thesis.

Criteria for Admission

The Master of Sustainable Energy Systems programme seeks to recruit suitably qualified students who are capable of benefitting from, contributing to, and successfully completing the programme. Students will be considered for admission into the programme if they have:

- A Bachelor's degree (Hons) degree in Mechanical Engineering, Industrial Engineering, Electrical Engineering, Mining Engineering, Metallurgy, processing, Agriculture engineering, Chemical Engineering, or an equivalent qualification at NQF Level 8 from a recognised institution, or a pre- NQF professional or any other engineering field assessed by the admission committee and (Applied) Physics or a field closely related to these programmes.
- Also other professionals who may prove long term track experience in the energy industry and must have completed Bachelor's degrees (Hons) in Economics, Social Sciences, Environmental studies, or any equivalent as approved by the admission committee.
- Demonstrate proficiency in English communication at post graduate level, as demonstrated by the fact that the undergraduate degree was done in the medium of English. If the undergraduate degree was not obtained in the medium of English, then the applicant will be required to show proficiency in the medium of English through achieving at least band 7 of the International English Language Testing System (IELTS), or an equivalent.

Final selection of candidates will be approved by the Postgraduate Studies Committee.

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.

The Master of Sustainable Energy Systems will provide access to further studies at Doctoral level at NQF Level 10 in the same or similar cognate area of learning.

Mode of Delivery

This programme will be offered on full-time and or part-time modes of study in accordance with Namibia University of Science and Technology rules. Lectures are likely to be offered in "block mode", during non-working hours or On-line.

Requirements for Qualification Award

The Master of Sustainable Energy Systems programme will be awarded to students credited with a minimum of 240 credits (all at NQF Level 9). In addition, students must meet the administrative and financial requirements of NUST as set out in the Yearbook (Part 1). Students are able to specialise in either Energy Technologies or Energy Management and must complete five core compulsory courses (worth 100 credits); one strand compulsory course (worth 20 credits); one strand elective course (worth 20 credits); as well as a thesis (worth 100 credits).

The programme should be accomplished with in a minimum period of 2 years and a maximum period as prescribed by NUST requirements, if registered on full - time mode. And/or a minimum of 3 years and a maximum period as prescribed by NUST requirements, if registered on the part – time mode.

Transition Arrangements

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

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Energy Systems	EST911S	None	9	20
Socio-Ecological Impact Assessment	SEI911S	None	9	20
Sustainable Development	SDE911S	None	9	20

Semester 2

Research Techniques and Methodology	RTM920S	None	9	20
Participatory Mapping and Geographic Information Systems (GIS)	PMG921S	None	9	20

Plus ONE of the following Strands compulsory depending on specialisation

ENERGY TECHNOLOGIES STRAND

Solar Energy Resources and Technologies	SER921S	Energy Systems	9	20
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ENERGY MANAGEMENT STRAND

Energy Economics	ECO921S	None	9	20
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YEAR 2

Semester 3

Energy Storage Technologies	ENS911S	None	9	20
Wind and Ocean Energy Technologies	WOE911S	None	9	20
Bio-Energy	BEG911S	None	9	20

Plus ONE of the following Strand Elective Courses for Specialisation in Energy Management

Energy Policy	EPO911S	None	9	20
Energy Management	EMM911S	None	9	20
Project Management	PJM911S	None	9	20

Semester 3 and 4 (Year Course)

Thesis	TSE911S	Research Techniques and Methodology	9	10
Thesis	TSE912S	Research Techniques and Methodology		
Thesis Extension	TSE913X	Research Techniques and Methodology		

Note: Students should only register for TSE913X if s/he fails to complete the Sustainable Energy Systems Thesis (TSE912S) within the minimum prescribed period.

ALL ENGINEERING PROGRAMMES

DOCTOR OF PHILOSOPHY IN ENGINEERING

10DRPE

NQF Level: 10

NQF Credits: 360

NQF Qualification ID: Q1034

Description

The Doctor of Philosophy (PhD) in Engineering was conceptualised against the back-drop of the above imperatives and aims at producing scientific researchers in various sub-fields of learning related to engineering. This PhD will be offered in all Departments in the Faculty of Engineering where the necessary capacity exists or can be sourced.

Students will develop a thorough understanding of relevant methodological approaches, and develop competence in the application of qualitative design mixed-mode and quantitative research methods through participation in research projects under supervision of experienced staff members. The precise focus of the research will be determined through dialogue between the candidate and supervising staff and will fall within the scope of the approved research clusters of the Faculty of Engineering.

The research output of students in the form of a thesis must be an original and substantive contribution to the existing body of knowledge in the relevant engineering sub-field of learning/area of specialisation.

Admission Criteria

Applicants who hold qualifications from recognised institutions at NQF Level 9 or equivalent in relevant sub-fields of Engineering may be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at master degree level and may be required to make up specific deficiencies. In addition, applicants may be required to attend a pre-selection interview. The final selection and admission of candidates will be approved by the Postgraduate Studies Committee.

Applicants from other institutions must submit detailed information on all courses in their previous qualifications, as well as contact details of three referees. The later also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications. Exceptions may be approved by the Postgraduate Studies Committee and all admissions are at the discretion of the Postgraduate Studies Committee.

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.

Articulation Arrangements

The PhD in Engineering is a terminal qualification, hence no articulation arrangements are proposed.

Mode of Delivery

The programme will be delivered in full-time and part-time modes in accordance with the University rules.

Requirements for Qualification Award

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 spelt out in the NUST Prospectus.

Students have a minimum period of three years and a maximum period of six years to complete the programme in full-time mode.

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 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.

The possibility to gain international experience by doing research in a foreign context or by participating in an international workshop will be promoted. Candidates are encouraged to pursue part of their research within industry in Namibia or at other recognised and established tertiary institutions abroad.

Any other special arrangements will be done in accordance with the University's rules and procedures for postgraduate studies, particularly at PhD level.

Assessment Strategies

Students are required to submit a research proposal after 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 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 appropriately constituted committee in accordance with the rules for postgraduate studies at the University. The thesis will be returned to students for correction before final binding and archiving.

Transition Arrangements

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

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
PhD Thesis	PHD101S	None	10	360

Semester 2

PhD Thesis	PHD102S	None		
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YEAR 2

Semester 3

PhD Thesis	PHD103S	None		
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Semester 4

PhD Thesis	PHD104S	None		
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YEAR 3

Semester 5

PhD Thesis	PHD105S	None		
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Semester 6

PhD Thesis	PHD106S	None		
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YEAR 4

Semester 7

PhD Thesis	PHD107X	None		
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Note: Students should only register for PHD107X if s/he fails to complete the Thesis (PHD106S) within the minimum prescribed period.

SCHOOL OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

CODE: 95

ARCHITECTURE

QUALIFICATIONS OFFERED

Bachelor of Architecture Honours

08BARH

Master of Architecture

09MARC

BACHELOR OF ARCHITECTURE HONOURS

08BARH

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q0994

Description

The Bachelor of Architecture Honours (B. Arch. Hons) is developed for students who intend to pursue careers in Architecture and related fields. The programme is designed to provide students with deepened comprehensive and systematic knowledge and skills in the field of architecture and to develop their research capacity using the principles, theories and methodologies of the profession.

Criteria for Admission

Applicants holding a Bachelor of Architecture degree, obtained from the Namibia University of Science and Technology or any other recognised institutions, at NQF level 7 worth a minimum of 360 credits or holders of an equivalent pre-NQF 3-year qualification in the field of architecture, of a recognised Tertiary Education Institution are eligible for admission for the B. Arch. Hons programme. Qualifications from other institutions will be evaluated by the Departmental Postgraduate Selection Committee to determine equivalence in terms of core competencies, acceptable to the Department.

Applicants holding a Bachelor of Architecture degree obtained from any other recognised Tertiary Education Institution at NQF Level 7 worth a minimum of 360 credits or holders of an equivalent pre-NQF 3-year qualification in the field of architecture of a recognised Tertiary Education Institution are eligible for admission for the "B" Arch Hons Programme. Such qualifications will be evaluated by the Departmental Postgraduate Selection Committee to determine equivalence in terms of core competencies, acceptable to the Department.

In addition, candidates must have obtained a minimum average mark of 60% in Year 3 courses. Candidates, who fail to obtain the required grades in Architectural Design, are advised to gain a minimum of one year work experience in an architectural office in order to develop a portfolio of works, with which they are encouraged to re-apply in the next available academic year.

The admission of students will be by means of a selection interview with the Departmental Postgraduate Selection Committee, during which candidates will be required to present a portfolio of work, which might include work from previous studies as well as industry work.

The results of the selection process are final and no discussion or correspondence will be entered into

Articulation Arrangements

Transfer of credits will be dealt with according to the 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.

Students who complete the Bachelor of Architecture Honours successfully will ordinarily be able to undertake further studies at NQF Level 9.

Mode of Delivery

This programme is offered on the full-time mode in accordance with NUST's rules and regulations.

Requirements for Qualification Award

The Bachelor of Architecture Honours will be awarded to candidates credited with a minimum of 120 NQF credits, and who have met the detailed requirements set out below. In addition, students should meet the administrative and financial requirements in accordance with Part 1 of the NUST Yearbook General Information and Regulations.

Transition Arrangements

Once approved, the revised programme (new curriculum) will become effective in January 2017. The old curriculum will be phased out by the end of 2017, so that students who have failed a course of the old curriculum in 2016 can repeat such course in 2017. Students who still fail to complete their old curriculum courses by the end of 2017 will be transitioned to the new curriculum. They will receive credits for old curriculum courses passed as per table below, and will need to register for equivalent courses to their outstanding courses as per the table below.

In addition to the above, students who have completed their Bachelor of Architecture Degree at NUST in 2016 will have to do an Urban Design bridging module as part of the Honours Design Project 1 in 2017 in addition to the new courses.

Old Curriculum Courses to be credited.

Code	OLD Courses	NQF Level	Credits	NEW Curriculum Courses	NQF Level	Credits
ARD 814S	Architectural Design IV	8	20	Honours Design Project 1	8	20
GDP 824S	Graduation Design Project	8	30	Honours Design Project 2	8	30
BLC 824S	Building Law and Contract Administration	8	10	Building Law and Contract Management	8	10
PMA 804Y	Project Management	8	15	Construction Economics and Works Estimation	8	10
BST 804Y	Building Structures III	8	10	Integrated Construction Technology	8	16

Corresponding Courses (if Failed). This is not a credit table

Code	OLD Courses	NQF Level	Credits	Equivalent NEW Curriculum Courses	NQF Level	Credits
ARD 814S	Architectural Design IV	8	20	Honours Design Project 1	8	20
GDP 824S	Graduation Design Project	8	30	Honours Design Project 2	8	30
RME 814S	Research Methodology	8	6	Research Methodology	8	15
AUG 804Y	African Urbanisation in Global Perspective	8	5	Global South Urbanism	8	15
ETE 804Y	Environmental Technology	8	6	Environmental Design and Technology	8	10
BLC 824S	Building Law and Contract Administration	8	10	Building Law and Contract Management	8	10
PMA 804Y	Project Management	8	15	Construction Economics and Works Estimation	8	10
CMT 804Y	Construction Materials & Technology IV	8	15	Integrated Construction Technology	8	16

Additional Progression Rule

In addition to the Exclusion of Students Rule in the General Rules of NUST “ Students who do not make satisfactory Academic Progress, **students who receive a “Fail” result code for the same Honours Design Project Course in two consecutive years, will be deregistered from the programme.** Such students may re-apply for admission to the programme. Upon receipt of such re-application for admission, the application will be referred to the Head of Department special consideration and engagement with the student to determine the causes of the lack of academic progress and to advice on the re-admission of the student.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Honours Design Project 1	HDP811S	None	8	20
Global South Urbanism	GSU821S	None	8	15
Construction Economics and Works Estimation	CEW811S	None	8	10
Research Methodology	RMR810S	None	8	15

Semester 2

Honours Design Project 2	HDP821S	Research Methodology Honours Design Project 1	8	30
Integrated Construction Technology	ICT821S	None	8	10
Environmental Design and Technology	EDT811S	None	8	10
Building Law and Contract Management	BLC821S	None	8	10

MASTER OF ARCHITECTURE

09MARC

NQF Level: 9

NQF Credits: 240

NQF Qualification ID: Q1103

Description

Architecture is acknowledged worldwide as an independent profession within the context of the built environment. It is often defined as the art and science of creation of functional and comfortable space, structurally stable and aesthetically pleasing environments. The Master of Architecture (M. Arch) was developed against this background for students who intend to pursue careers in architecture and related fields in the built environment.

This programme is designed to provide students with the requisite knowledge and independent research and design skills to enable them to register as Architects with the Namibia Council for Architects and Quantity Surveyors (NCAQS) established in terms of the Architects' Act, 1979 (Act 13 of 1979 and Act 11 of 1992) after satisfying the mandatory requirements for professional registration, or equivalent professional bodies.

Admission Criteria

Applicants holding a Bachelor of Architecture Honours Degree obtained at the Polytechnic of Namibia/Namibia University of Science and Technology, or holders of an equivalent qualification at NQF level 8 worth 480 Credits of a recognised Tertiary Education Institution are eligible for admission for the M.Arch programme. Qualifications from other institutions will be evaluated by the Departmental Postgraduate Selection Committee to determine equivalence in terms of core competencies acceptable to the Department.

The admission of students will be by means of an interview with the Postgraduate Selection Committee, during which candidates will be required to present a portfolio of work, which might include work from previous studies as well as practical work carried out. The results of the selection process are final and no discussion or correspondence will be entered into.

Articulation Arrangements

Transfer of credits will be dealt with according to the University's regulations on Recognition of Prior Learning.

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

Mode of Delivery

The programme is offered on the full-time mode in accordance with the University's rules and procedures.

Requirements for Qualification Award

The Master of Architecture will be awarded to candidates credited with a minimum of 240 NQF credits at NQF level 9, completed by thesis and coursework, and who have met the detailed requirements set out below. Furthermore, students must meet the administrative and financial requirements as spelt out in NUST Prospectus.

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 and professional competencies for this level of qualification. 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 project specific professional design and applied skills.

The core of the curriculum is studio-based. Accordingly the learning process will be facilitated both in and outside the studio/classroom, requiring specific design and project-based tasks to be carried out by the student. This facilitation will make use of inter alia formal lecturing applied practical projects, tutorials, case study research, problem based learning and individual and group assignments. The progress of learning embedded in such tasks will be monitored recorded and assessed.

Assessment Strategies

Assessment in the programme will be diversified continuous assessment. For each of the courses, there will be a minimum of four assessment events per semester and the general strategy will be to assess students through continuous and summative assessment.

These assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises through design, individual/group assignments and presentations, case and precedent studies, report writing practical application of skills and competencies tutorials, practical projects and tests.

Additional Progression Rule

In addition to the Exclusion of Students Rule in the General Rules of NUST “ Students who do not make satisfactory Academic Progress, **students who receive a “Fail” result code for the same Honours Design Project Course in two consecutive years, will be deregistered from the programme.** Such students may re-apply for admission to the programme. Upon receipt of such re-application for admission, the application will be referred to the Head of Department special consideration and engagement with the student to determine the causes of the lack of academic progress and to advice on the re-admission of the student.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Integrated Design Studio 1	IDS911S	None	9	30
Advanced Building Construction	ABC911S	None	9	20

Choose ONE of the following Elective Courses

Sustainable Materials Lab	SML911S	None	9	10
Housing Design	HSD911S	None	9	10
Building Heritage and Conservation	BHC911S	None	9	10

Semester 2

Integrated Design Studio II	ISD921S	Integrated Design Studio 1	9	30
Applied Research Methodology	ARM921S	None	9	10
Professional Practice Management	PPM921S	None	9	10

Choose ONE of the following Elective Courses

African Urbanism	AUB921S	None	9	10
Applied Urban Ecology	AUE911S	None	9	10

YEAR 2

Semester 3

Critical Urban Theory	CUT911S	None	9	10
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Semester 3 and 4

Master Design Thesis	MDT911S	Integrated Design Studio II Applied Research Methodology	9	10
Master Design Thesis	MDT912S			

**QUANTITY SURVEYING
QUALIFICATIONS OFFERED**

Bachelor of Quantity Surveying Honours

08BOQH

BACHELOR OF QUANTITY SURVEYING HONOURS

08BOQH

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q2020

Description

The Bachelor of Quantity Surveying Honours degree is designed to provide students with comprehensive and systematic knowledge and skills in the field of quantity surveying using the principles, theories and methodologies of the profession. The programme is intended to expose students to competencies that enable them to provide economic, cost, contractual, and technical advice on all aspects of the construction process and managerial skills. Thus, the programme gives students a thorough understanding of the roles of a Quantity Surveyor at every stage of infrastructure development process, from the project brief issued to the lead consultant through all the design and planning stages to the construction, completion, occupation and maintenance of the facilities to meet the objective of value for money.

The Bachelor of Quantity Surveying Honours therefore, aims at producing quantity surveying graduates who are capable of discharging their roles competently, professionally and ethically in a competitive global environment. Additionally, this Honours degree programme serves as a fulfilling requisite requirement for professional registration for students pursuing their career in quantity surveying.

Criteria for Admission

Applicants holding a Bachelor of Quantity Surveying Degree, obtained from the Namibia University of Science and Technology, are eligible for admission into the Bachelor of Quantity Surveying Honours programme. Additionally, a candidate must obtain a minimum average mark of 60% for third-year courses, excluding institutional courses. Candidates who do not meet these requirements are advised to gain a minimum of one-year work experience in a quantity surveying consultant firm or an equivalent construction related firm in order to develop a portfolio of works, with which they are encouraged to re-apply in the next available academic year.

In this case, admission will be by means of a selection interview with the Departmental Postgraduate Selection Committee, during which candidates will be required to present a satisfactory portfolio of work, which may include work from previous studies or industry work experience.

Applicants holding a Bachelor of Quantity Surveying Degree obtained from any other recognised Tertiary Education Institution, at NQF Level 7 worth a minimum of 360 credits, or equivalent pre-NQF 3-year qualifications are eligible for admission. Qualifications from other institutions will be evaluated by the Departmental Postgraduate Selection Committee to determine equivalence in terms of core competencies, acceptable to the Department.

Candidates who do not meet these requirements are advised to gain a minimum of one-year work experience in a quantity surveying consultant firm or an equivalent construction related firm in order to develop a portfolio of works, with which they are encouraged to re-apply in the next available academic year.

In this case, admission will be by means of a selection interview with the Departmental Postgraduate Selection Committee, during which candidates will be required to present a satisfactory portfolio of work, which may include works from previous studies or industry work experience.

The decision of the Departmental Postgraduate Selection Committee is final and no discussion of the results with the candidates will be entertained.

Articulation Arrangements

Transfer of credits will be dealt with according to the 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.

Students who complete the Bachelor of Quantity Surveying Honours successfully will ordinarily be able to undertake Master of Quantity Surveying, Msc. in Construction Project Management or related disciplines at NQF Level 9.

Mode of Delivery

This programme is offered on the full-time mode in accordance with NUST rules and regulations.

Requirements for Qualification Award

The Bachelor of Quantity Surveying Honours will be awarded to candidates credited with a minimum of 120 NQF credits, and who have met the detailed requirements set out below. In addition, students should meet the administrative and financial requirements in accordance with Yearbook Part 1 of the NUST Yearbook, General Information and Regulations.

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

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Research Methodology	RMR810S	None	8	15
Measurement	MSM811S	None	8	15
Construction Finance	CSF811S	None	8	15
Professional Practice and Procedures	PPP811S	None	8	15

Semester 2

Construction Costing and Feasibility Study	CLS821S	None	8	15
Contract Management	CCM821S	None	8	15
Mini-Thesis	MIT821S	None	8	30

SPATIAL PLANNING

QUALIFICATIONS OFFERED

Bachelor of Regional and Rural Development Honours

08BRDH

Bachelor of Urban and Regional Planning Honours

08BURH

BACHELOR OF REGIONAL AND RURAL DEVELOPMENT HONOURS

08BRDH

NQF Level: 8

NQF Credits: 120

NQF Qualification ID:

Description

The Bachelor of Regional and Rural Development Honours is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and skills of students in the main cognate area of learning and capacitate them to conduct research of an applied nature. It builds upon the outcomes of the Bachelor's degree in the same subject fields / cognate area of learning.

The programme is purposefully designed to equip students with a deepened theoretical grounding in the theories, concepts and approaches of integrated development planning and management, supported by knowledge of contemporary development issues and challenges experienced in rural areas. The programme aims to prepare students with the necessary knowledge, tools, techniques and skills to plan and manage regional and rural development projects and local economic initiatives, to manage complex rural issues and contribute to development outcomes, within the context of national and regional development priorities and environmental, social and economic sustainability. In addition, the programme equips students to conduct applied research, communicate results successfully and make appropriate decisions based on research findings.

Criteria for Admission

Applicants may be admitted to this programme if they have a Bachelor of Regional and Rural Development (NQF Level 7) degree from NUST.

Applicants with an equivalent, relevant qualification at NQF Level 7, worth at least 360 credits, from recognised tertiary education institutions, may be accepted or may be required to enrol for selected undergraduate courses if the Department deems it necessary to address critical gaps in the core competencies of regional and rural development. These courses may be taken concurrently with the Bachelor of Regional and Rural Development Honours programme.

Applicants with a Polytechnic of Namibia National Diploma in Land Use Planning may be considered for admission, provided they had completed undergraduate courses in the core competencies of regional and rural development. They may be exempted from the above-mentioned undergraduate courses if they have at least three years of applicable working experience and 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 Departmental Selection Committee.

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 development studies, regional and rural development, public management, or similar/related cognate areas of learning, at NQF level 9. Graduates may also articulate horizontally into related programmes at NQF level 8.

Mode of Delivery

The 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 Regional and Rural Development Honours will be awarded to candidates credited with a minimum of 120 credits at NQF Level 8. In addition, students should meet the administrative and financial requirements as stipulated in Part 1 of the NUST Yearbook – General Information and Regulations.

Assessment Strategies

Courses will be assessed using diversified continuous assessment methods, with the exception of the service course Project Planning and Management, which will have both continuous and examination-based assessments. All courses require a final mark of at least 50% to pass. Both formative and summative assessments will focus on the achievement of qualification outcomes and take the form of, *inter alia*, individual and group assignments, problem-solving exercises, presentations, report writing, practical application of skills and competencies, practical projects and questioning (tests). In addition, quizzes, self- and peer evaluation, and timely feedback from lecturers will be employed in formative assessments, for students to assess their own progress.

Quality Assurance Arrangements

Each course will have one or more examiners and one or more external moderators. The required minimum qualification of the moderator will be at least a Master's degree in Development Studies or Regional and Rural Development or a related field of study, or the person must be a knowledgeable and acknowledged expert in his/her field. Moderators will be appointed on approval by the Board of Studies of the Faculty of Natural Resources and Spatial Sciences. All assessments, whether verbal, graphic or written, will be moderated in accordance with NUST's rules and guidelines on moderation. Lecturing staff will set and mark tests and assignments in accordance with set memoranda. Students will provide feedback on courses and lecturers by anonymous online evaluation. Peer evaluation of lecturers will be carried out through class visits by Department of Architecture and Spatial Planning (DASP) colleagues. The programme will be reviewed every 5 years.

Transition Arrangements

The Bachelor of Regional and Rural Development Honours (old curriculum) (08BRRH) will be phased out completely by the end of 2019. The last cohort of students have until the end of 2019 to complete the out-phasing programme (old curriculum), after which students must automatically switch to and fulfil all requirements of the revised Bachelor of Regional and Rural Development Honours programme. These students will receive credits for old curriculum courses passed as per Table below.

Students who are registered on the out-phasing programme (old curriculum) and fail more than 50% of the courses at the end of 2019, will be required to change their registration to the revised programme and will be granted credits on a course-by-course basis, as per Table below.

The revised Bachelor of Regional and Rural Development Honours (revised curriculum) will take effect from January 2020, with courses only offered according to the new/revised syllabi. Students who fail any of the courses on the old curriculum will be required to register for the new/revised corresponding courses, as per Table below.

Credit table: Old curriculum (08BRRH) courses to be credited.

Course code	Bachelor of Regional and Rural Development Honours (Old Courses)	Course code	Bachelor of Regional and Rural Development Honours (Equivalent New/Revised Courses)
AAS810S	Advanced Applied Spatial Planning	RDP811S	Rural Development Planning
RMR810S	Research Methodology (RRD)	RMY811S	Research Methodology
ARL820S	Advanced Regional and Local Economic Development	SLE811S	Sustainable Local Economic Development
EIR820S	Environmental Issues in Regional and Rural Development	END821S	Environment and Development
MTR820S	Mini-Thesis	MNR821S	Mini-Thesis

Corresponding courses (if failed). This is not a credit table.

Course code	Bachelor of Regional and Rural Development Honours (Old Courses)	Course code	Bachelor of Regional and Rural Development Honours (Corresponding New/Revised Courses)
AAS810S	Advanced Applied Spatial Planning	RDP811S	Rural Development Planning
ARL820S	Advanced Regional and Local Economic Development	SLE811S	Sustainable Local Economic Development
RMR810S	Research Methodology (RRD)	RMY811S	Research Methodology
RRP810S	Rural Development Practice	RDM821S	Rural Development Methods and Practice
MRR810S	Methods in Regional and Rural Development		
EIR820S	Environmental Issues in Regional and Rural Development	END821S	Environment and Development
MTR820S	Mini-Thesis	MNR821S ARP821S	Mini-Thesis OR Applied Research Project

Please note: Exemption may not be granted for part of a course. Hence, students who have failed either the Methods in Regional and Rural Development course or Rural Development Practice course in the old curriculum will have to do the entire new Rural Development Methods and Practice course in the revised curriculum.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Rural Development Planning	RDP811S	None	8	15
Sustainable Local Economic Development	SLE811S	None	8	15
Project Planning and Management	PPG811S	None	8	15
Research Methodology	RMY811S	None	8	15

Semester 2

Rural Development Methods and Practice	RDM821S	None	8	15
Environment and Development	END821S	None	8	15

Plus ONE of the following Electives

Mini-Thesis	MNR821S	Research Methodology	8	30
Applied Research Project	ARP821S	Research Methodology	8	30

BACHELOR OF URBAN AND REGIONAL PLANNING HONOURS

08BURH

NQF Level:

NQF Credits: 125

NQF Qualification ID:

Description

The Bachelor of Urban and Regional Planning Honours is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and skills of students in the main cognate areas of learning and capacitate them to conduct applied research. It builds upon the outcomes of the Bachelor's degree in the same subject fields / cognate area of learning.

The programme is purposefully designed to produce students with a deepened theoretical grounding in the historical development and contemporary theories, concepts and approaches of urban and regional planning, as well as the requisite tools, methods and skills to analyse and solve spatial planning, urban design, urban mobility and transportation planning problems, and to prepare various spatial planning interventions. In addition, the programme equips students to conduct applied research, communicate results successfully and make appropriate decisions based on research findings.

Criteria for Admission:

Applicants may be admitted to this programme if they have a Bachelor of Town and Regional Planning degree (NQF Level 7) from NUST.

Applicants with an equivalent, relevant qualification at NQF Level 7, worth at least 360 credits, from other recognised tertiary education institutions, will be evaluated in terms of the minimum core competencies of urban and regional planning imbedded in their curricula – moral and ethical dimensions of planning; demonstrating theoretical and contextual dimensions; linking knowledge of spatial plans and policies; linking theory and practise of integrated development; executing academic research; and demonstrating effective managerial and communication skills. Such applicants may be required to enrol for selected undergraduate courses if the Department deems it necessary to address critical gaps in the core competencies. These courses may be taken concurrently with the Bachelor of Urban and Regional Planning Honours programme.

Applicants may be required to attend a pre-selection interview and/or test at the discretion of the Departmental Selection Committee.

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 ordinarily be able to pursue further studies in urban and regional planning or a related cognate area of learning at NQF level 9. Graduates may also articulate horizontally into related existing or new programmes at NQF level 8.

Mode of Delivery

The 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 Urban and Regional Planning Honours will be awarded to candidates credited with a minimum of 125 credits at NQF Level 8. In addition, students should meet the administrative and financial requirements as stipulated in Part 1 of the NUST Yearbook – General Information and Regulations.

Teaching and Learning Strategies

The requirements of the NQF underline the acquisition of cognitive skills and competencies beyond subject-specific and professional/technical knowledge, understanding and skills. Teaching and learning strategies for this programme are designed to equip students with the necessary knowledge and expertise regarding urban and regional planning, to conduct research, retrieve information, think critically, solve problems, engage actively in the steps of a spatial planning process and present and communicate academic or professional work effectively.

As learning is viewed as an active, constructive process – rather than a passive, reproductive process – student-centred, engaging and active-learning pedagogical approaches and methods will be employed to foster deep learning, with lecturers in the role of learning facilitators. These methods will include reading, reflection, discussions, debates, case studies, individual and group problem- and project-based work, tutorials, studios, fieldwork, lectures and guest lectures. Social media and eLearning facilities will be employed to engage students.

Assessment Strategies

Courses will be assessed using diversified continuous assessment methods, with the exception of the service course Project Planning and Management, which will have both continuous and examination-based assessments. All courses require a final mark of at least 50% to pass.

Both formative and summative assessments will focus on the achievement of qualification outcomes and take the form of, *inter alia*, individual and group assignments, problem-solving exercises, presentations, report writing, practical application of skills and competencies, practical projects and questioning (tests). In addition, quizzes, self- and peer evaluation, and timely feedback from lecturers will be employed in formative assessments, for students to assess their own progress.

Quality Assurance Arrangements

Each course will have one or more examiners and one or more external moderators. The required minimum qualification of the moderator will be at least a Master's degree in Town/Urban and Regional Planning or a related field of study, or the person must be a knowledgeable and acknowledged expert in his/her field. Moderators will be appointed on approval by the Board of Studies of the Faculty of Natural Resources and Spatial Sciences. All assessments, whether verbal, graphic or written, will be moderated in accordance with NUST's rules and guidelines on moderation.

Transition Arrangements

The Bachelor of Town and Regional Planning Honours (old curriculum) (08BTRH) will be phased out completely by the end of 2019. The last cohort of students have until end of 2019 to complete the out-phasing programme (old curriculum), after which students must automatically switch to and fulfil all requirements' of the revised Bachelor of Urban and Regional Planning Honours programme. These students will receive credits for old curriculum courses passed, as per Table below.

Students who are registered on the out-phasing programme (old curriculum) and fail more than 50% of the courses at the end of 2019 will be required to change their registration to the revised programme and will be granted credits on a course-by-course basis, as per Table below.

The revised Bachelor of Urban and Regional Planning Honours (revised curriculum) will take effect from January 2020, with courses only offered according to the new/revised syllabi. Students who fail any of the courses on the old curriculum will be required to register for the new/revised corresponding courses, as per Table 15.2.

Credit table: Old curriculum (08BTRH) courses to be credited.

Course code	Bachelor of Town and Regional Planning Honours (Old Courses)	Course code	Bachelor of Urban and Regional Planning Honours (Equivalent New/Revised Courses)
PPG811S	Project Planning and Management	PPG811S	Project Planning and Management
ARP811S	Advanced Theory of Town and Regional Planning	ATU811S	Advanced Theory of Urban and Regional Planning
URD804Y	Urban Design	UDN811S	Urban Design Studio
RMT810S	Research Methodology	RMY811S	Research Methodology
ARL821S	Advanced Regional and Local Economic Development		None
ASP821S	Advanced Integrated Spatial Planning	SPP821S	Spatial Planning Practice
MTR821S	Mini Thesis	MTS822S	Mini Thesis

Corresponding courses (if failed). This is not a credit table.

Course code	Bachelor of Town and Regional Planning Honours Old Courses)	Course code	(Corresponding Bachelor of Urban and Regional Planning Honours New/Revised Courses)
PPG811S	Project Planning and Management	PPG811S	Project Planning and Management
ARP811S	Advanced Theory of Town and Regional Planning	ATU811S	Advanced Theory of Urban and Regional Planning
URD804Y	Urban Design	UDN811S	Urban Design Studio
RMT810S	Research Methodology	RMY811S	Research Methodology
ASP821S	Advanced Integrated Spatial Planning	SPP821S	Spatial Planning Practice
MTR821S	Mini-Thesis	MTS822S ARP822S	Mini-Thesis Applied Research Project

Please note: The old curriculum course *Advanced Regional and Local Economic Development (ARL821S)*, which does not have a corresponding new/revised course, will be offered until all current students have passed it.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Advanced Theory of Urban and Regional Planning	ATU811S	None	8	15
Project Planning and Management	PPG811S	None	8	15
Urban Design Studio	UDN811S	None	8	20
Research Methodology	RMY811S	None	8	15

Semester 2

Integrated Transportation Planning	ITP821S	None	8	15
Spatial Planning Practice	SPP821S	None	8	15

Plus ONE of the following Elective Courses

Mini-Thesis	MTS822S	Research Methodology	8	30
Applied Research Project	ARP822S	Research Methodology	8	30

DEPARTMENT OF LAND AND SPATIAL SCIENCES

CODE: 96

**LAND AND PROPERTY SCIENCES
QUALIFICATIONS OFFERED**

Bachelor of Land Administration Honours

08BHLA

BACHELOR OF LAND ADMINISTRATION HONOURS

08BHLA

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q0582

Description

The Bachelor of Land Administration Honours is an initial postgraduate specialisation degree that links the undergraduate Bachelor degree with studies at level 9. The Bachelor Honours degree builds on the outcomes of a Bachelor degree in the same subject area or career-focused cognate area of learning. The programme aims at consolidating and deepening the knowledge and skills of students in land administration, as well as developing their capacity to conduct research of an applied nature.

Namibia has developed a number of national plans to achieve the goals set in the Namibian Vision 2030. The country has also committed to work towards the achievement of the Sustainable Development Goals (SDGs) by 2030. Following Independence a number of land recording projects were initiated to provide tenure security, housing and basic services. However the projects have largely fallen short of achieving the goals due to slow or poor implementation progress. Achieving national goals as well as international commitments calls for enhanced provision of tenure security for further development of the country to avoid civil unrest due to unequal and unfair distribution of land rights. This calls for much enhanced programme implementation and governance to improve the success rate. It also requires a review of current land policies and that urban land issues are paid particular attention. Those challenges are sought to be addressed in the courses offered as part of the Bachelor of Land Administration Honours programme.

The elective courses offered as part of the Bachelor of Land Administration Honours programme are highly relevant to the global agenda and are closely linked to the field of land administration. With the above described issues on weak programme implementation in mind the Bachelor of Land Administration Honours programme therefore offers an elective course on advanced project management for students interested in strengthening their skills in project management.

The programme is purposefully designed to equip the students with the requisite tools, subject methods and a deepened theoretical grounding in the theories of land administration. Students will be capacitated to independently identify formulate and solve complex problems within the subject area and its relevant components.

Overall, the programme places specific emphasis on the competencies and attributes that will enable students to assume a career path as advisors for land administration projects, in supervisory/middle management and applied research positions in government (national, regional and local level), and other organisation, including with the SADC region. On completion of this programme, graduates will be able to apply integrated land administration and management approaches in both public and private sectors i.e. Ministry of Land Reform, Ministry of Urban and Rural Development and various local government authorities and NGOs.

Criteria for Admission

To be admitted to the Bachelor of Land Administration Honours programme candidates should have a Bachelor of Land Administration at NQF Level 7, worth at least 360 credits from the Namibia University of Science and Technology. Alternatively candidates should have a Bachelor Degree in a cognate area from Namibia University of Science and Technology or from another recognised higher learning institution. If admitted such applicants will be required to register for *Land Administration Theory and Practice* (formerly Land Administration) course in addition to courses in the Bachelor of Land Administration Honours curriculum in order to make-up for the deficiency in their undergraduate programme. Candidates with a foreign bachelor degree in Land Administration or another cognate area may also be considered for admission. All decisions about admission of candidates is at the discretion of the Head of Department of Land and Spatial Sciences.

At the discretion of the Head of Department of Land and Spatial Sciences candidates can be required to conduct an admission assessment prior to the final selection and admission to the programme.

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. Students will be

assessed using diversified continuous assessment methods only. To promote mastery learning, the use of formative assessment will also form an integral part of the learning.

The assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual and/or group assignments and presentation, case studies, report and essay writing, application of theories and methods. The use of validating end of term assessments will be minimised in order to free students' intellectual capacity for broader cognitive development. In accordance with Namibia University of Science Technology's policy on diversified continuous assessment each course will have a minimum of four assessment events. All courses require a final mark of at least 50% to pass. The mini-thesis will be assessed according to the Namibia University of Science and Technology's rules for studies at postgraduate level.

Quality Assurance Requirements

Each course will have one or more examiners and one moderator. Moderators was identified externally and approved by the Board of Studies. The required minimum qualification of the moderator will be at least a Master's degree in Land Administration, or a related field of study or the person must be a knowledgeable and acknowledged specialist in his/her field. External moderators will also moderate oral examinations and the mini-thesis. This ensures quality and equity of assessments and the qualifications as a whole. The mini-thesis was moderated in accordance with the Namibia University of Science and Technology rules for postgraduate studies.

Transition Arrangements

The revised Bachelor of Land Administration Honours programme was implemented in the academic year 2020 and will be effective for all students registered in the old as well as in the new programme. The old Bachelor of Land Administration Honours programme curriculum was offered for the last time in 2019, after which all students will be required to transition to the new programme.

NUST students admitted into and pursuing the old Bachelor of Land Administration Honours will by the implementation of the revised programme in 2020, be transferred to the new Bachelor Honours programme. Courses completed under the old Bachelor of Land Administration Honours programme will be credited, but students will be required to complete all outstanding courses as per the requirements of the revised curriculum. Students will be credited for courses completed in the old curriculum as Table 40. For outstanding courses students have to do equivalent courses as per Table below.

Bachelor of Land Administration Honours courses to be credited

Course code	Bachelor of Land Administration Honours (Old Courses)	Course code	Bachelor of Land Administration Honours (Equivalent New/Revised Courses)
LAU811S	Land Administration and Urban Development	LAU811S	Land Administration and Urban Development
RMD811S	Research Methodology	RMD811S	Research Methodology
LPD811S	Land Policy and Development	LPD811S	Land Policy and Development
EOI821S	Emerging and Open Issues in Land Administration	EOI821S	Emerging and Open Issues in Land Administration
MTH821S	Mini-Thesis	MTH821S	Mini-Thesis

Bachelor of Land Administration Honours corresponding courses (if failed)

Course code	Bachelor of Land Administration Honours (Old Courses)	Course code	Bachelor of Land Administration Honours (Equivalent New/Revised Courses)
LAU811S	Land Administration and Urban Development	LAU811S	Land Administration and Urban Development
RMD811S	Research Methodology	RMD811S	Research Methodology
LPD811S	Land Policy and Development	LPD811S	Land Policy and Development
EOI821S	Emerging and Open Issues in Land Administration	EOI821S	Emerging and Open Issues in Land Administration
MTH821S	Mini-Thesis	MTH821S	Mini-Thesis

Please note: The above table highlights core courses in the Bachelor of Land Administration Honours programme that should be done if courses are failed. Elective courses from other Faculties and Departments are excluded but the rules of relevant Faculties and departments apply to this programme as well. The courses in the Bachelor of Land Administration Honours (Old programme) are basically the same as the courses in the new revised Bachelor of Land Administration Honours hence all compulsory courses in the old curriculum have corresponding courses in the revised curriculum.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Land Administration and Urban Development	LAU8114S	None	8	15
Research Methodology	RMD811S	None	8	15
Land Policy and Development	LPD811S	None	8	15

Plus ONE of the following Elective courses

Advanced Project Management	APM811S	None	8	15
Community Resource Management	CRM820S	None	8	15
Environmental Issues in Regional and Rural Development	EIR820S	None	8	15

Semester 2

Emerging and open issues in Land Administration	EOI821S	None	8	15
Mini-Thesis	MTH821S	Research Methodology	8	45

GEO-SPATIAL SCIENCE AND TECHNOLOGY

QUALIFICATIONS OFFERED

Bachelor of Geomatics Honours (Revised Programme)

08GEOH

Bachelor of Geoinformation Technology Honours

08HBGI

BACHELOR OF GEOMATICS HONOURS

08GEOH

NQF Level:

NQF Credits: 120

NQF Qualification ID:

Description

The main aim of the Bachelor of Geomatics Honours is to equip students with high level knowledge and skills in the acquisition, processing, presentation, and management of geospatial data. Graduates from this programme will be eligible to apply for registration as professional land surveyors, subject to conditions as prescribed by the Namibian Council for Professional Land Surveyors, Technical Surveyors and Survey Technicians (SURCON).

Criteria for Admission

In order to be admitted to this programme, applicants must have a Bachelor of Geomatics degree from NUST, or an equivalent qualification from a recognised institution, with an average mark of at least 60% for the following (or equivalent) courses: *Engineering Mathematics 2*, *Surveying 4*, *Geodesy*, and *Geographic Information System 3*.

Applicants from other institutions must submit detailed information on 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 geomatics field subsequent to obtaining their previous qualifications.

Holders of a Bachelor of Science in Geomatics from the Polytechnic of Namibia may be admitted into this Honours programme but will have to pass the additional course *Engineering Mathematics 2*, before they can register for the Honours programme.

Holders of the old NUST Bachelor of Geomatics (phasing out end of 2022), Bachelor of Science in Geomatics, or equivalent qualification from other recognised institutions that did not include Geodesy as a course at an undergraduate level, may be admitted into this programme. Applicants in these categories will be required to register for the out-phasing *Geodetic Surveying (GDS811S)* course instead of *Environmental Remote Sensing (ERS810S)*, if they wish to be eligible for registration with SURCON as *Professional Land Surveyor* on successful completion of the Honours programme.

Applicants may be required to pass a pre-selection interview and/or test at the discretion of the Department. All admissions are at the discretion of the Department. Exceptions may be approved by the Department.

Articulation Arrangements

Transfer of credits will be dealt with according to the 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.

Upon successful completion of the Bachelor of Geomatics Honours, students will ordinarily be able to pursue further studies in the Geomatics or related cognate area of learning, at NQF Level 9.

Mode of Delivery

The programme will be delivered in full-time and part-time modes over a period of one or two years, depending on the number of students registered for the respective courses, in accordance with NUST rules and regulations.

Requirements for Qualification Award

The Bachelor of Geomatics Honours will be awarded to students credited with a minimum of 120 NQF credits all at NQF Level 8. Students are required to complete five compulsory courses (worth 75 credits), and a thesis (worth 45 credits). In addition, students should meet the administrative and financial requirements spelt out in Part 1 of the NUST Yearbook.

Transition Arrangements:

The revised Bachelor of Geomatics Honours programme will be implemented as from January 2020. The last intake of new students on the old curriculum was, therefore, January 2019. Existing Bachelor of Geomatics Honours students who registered for the old programme in 2019 or earlier, will be allowed to transfer to the new programme or complete the old programme, subject to the following transition arrangements:

- Students who fail any of the courses of the out-phasing programme (old curriculum), will be required to repeat such failed courses based on the revised syllabi or corresponding courses in accordance with the Tables below. The courses *Geomatics Programming* and *Geodetic Surveying* are not listed in the transition table, as all existing and former student have passed these courses.
- Students who transfer to the new programme will be granted credits for courses passed on the old programme in accordance with the Table below.
- The old Bachelor of Geomatics Honours course *Geodetic Surveying* has essentially been moved to the revised Bachelor of Geomatics programme, and renamed *Geodesy* (12 credits at NQF Level 7). The revised Honours and old Bachelor programmes, therefore, do not contain geodesy as a course. Candidates admitted to the revised Bachelor of Geomatics Honours programme with an old NUST Bachelor of Geomatics, Bachelor of Science in Geomatics, or equivalent qualification which did not include a course in geodesy, may be allowed to do the course *Geodetic Surveying (GDS811S)* instead of *Environmental Remote Sensing*, in order for the combined qualification (Bachelor plus Honours) to be recognised by SURCON for registration as Professional Land Surveyor. The course *Geodetic Surveying* will continue to be offered for this purpose until 2022. As from 2023, students may be allowed to register for *Geodetic Surveying*, but will be accommodated in the *Geodesy* (NQF Level 7) classes, with additional teaching and assessments at NQF Level 8 and will be granted credit for *Geodetic Surveying* upon successful completion of the *Geodesy* course.

Credit Table – Reflecting which Old Courses grant credit for which New/Revised Courses

Bachelor of Geomatics Honours (Old Course)		Revised Bachelor of Geomatics Honours (New/Revised Equivalent Courses)	
Course Code	Course Name	Course Code	Course Name
AVG820S	Advanced Geovisualisation	GSV820S	Geodata Science and Visualisation
GMP811S	Geomatics Programming	AGT811S	Advanced Geodesy and Adjustment Theory
RMG810S	Research Methodology	RMG810S	Research Methodology (Geoinformatics)

Corresponding course (if failed). This is not a credit table!

Revised Bachelor of Geomatics Honours (Corresponding New/Revised Courses to be done, if failed)			
Course Code	Course Name	Course Code	Course Name
GMP811S	Geomatics Programming	AGT811S	Advanced Geodesy and Adjustment Theory
AVG820S	Advanced Geovisualisation	GSV820S	Geodata Science and Visualisation
ACS811S	Advanced Cadastral Surveying	ACS811S	Advanced Cadastral Surveying
RMG810S	Research Methodology	RMG810S	Research Methodology (Geoinformatics)
MTG821S	Mini-Thesis	MTG821S	Mini-Thesis

Please Note: The following old courses do not have new/revised corresponding courses in the Bachelor of Geomatics Honours (revised curriculum) and will be offered until the Bachelor of Geomatics Honours (old curriculum) is phased out completely in 2022.

The course(s) are as follows:

- Geodetic Surveying (GDS811S)

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Advanced Cadastral Surveying	ACS811S	None	8	15
Advanced Geodesy and Adjustment Theory	AGT811S	None	8	15
Environmental Remote Sensing	ERS810S	None	8	15
Research Methodology (Geoinformatics)	RMG810S	None	8	15

Semester 2

Geodata Science and Visualisation	GSV820S	None	8	15
Mini-Thesis	MTG821S	Research Methodology, Advanced Geology Advanced Cadastral Surveying	8	45

BACHELOR OF GEOINFORMATION TECHNOLOGY HONOURS

08HBGI

NQF Level: 8

NQF Credits: 120

NQF Qualification ID: Q0294

Description

The Bachelor of Geoinformation Technology Honours is an initial postgraduate specialisation degree, designed for registration at NQF level 8. This programme builds on the outcomes of the Bachelor of Geoinformation Technology 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 research of an applied nature. Students will be capacitated to do independent study in this field, evaluate issues pertaining to Geoinformation Technology (GIT) critically, and to become expert practitioners in the theory, methods and applications of GIT to natural, socio-economic and rural or urban development.

Overall, the programme places specific emphasis on the competencies and attributes that will enable students to assume supervisory or middle management and applied research positions in Government, or other organisations, such as mapping agencies in the field of GIS and remote sensing in Namibia, specifically, and more broadly within the SADC region. The programme focuses on niche areas in Geoinformation Technology through coursework and a mini-thesis.

Criteria for Admission

In order to be admitted to this programme, candidates must have a Bachelor's degree in Geoinformation Technology from NUST, or an equivalent qualification at NQF Level 7 from a recognised institution, worth at least 360 NQF credits, in both cases with a minimum average of 60% in the core courses at exit level. Exceptions may be approved by the Departmental Board, and all admissions are at the discretion of the Departmental Board. Holders of other qualifications with GIS and/or Remote Sensing component(s) may be considered for admission and will be required to register for specific courses to make-up for the deficiency in their undergraduate programmes.

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 references. The latter also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications. Students with a background in a research methodology course at NQF Level 8 or above will be entitled to exemption/credit recognition in those cases where a research proposal related to GIT was part of the assessment criteria and the submission of a research proposal was required.

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 ordinarily be able to pursue further studies in Geoinformation Science and Technology, or a similar/related cognate area of learning, at NQF level 9.

Mode of Delivery

The programme will be offered (not simultaneously) on the full-time and part-time modes of study in accordance with NUST's rules.

NB: In cases this programme is offered in part-time mode, students will be required to enrol for Research Methodology over two semesters (Semester 1 and 2) of this programme.

Requirements for Qualification Award

The Bachelor of Geoinformation Technology Honours will be awarded to students credited with a minimum of 120 NQF credits at NQF Level 8. Students are required to complete six compulsory courses (worth 90 credits) and a mini-thesis (worth 30 credits). In addition, students should meet the administrative and financial requirements 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 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, lectures, practical projects, tutorials, case studies, problem based learning, and individual and/or group work as well as excursions. The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The teaching and learning strategies for this programme are designed not only to equip students with the necessary knowledge and expertise regarding Geoinformation Technology, but also to enable them to present and communicate academic or professional work effectively, conduct research, retrieve information efficiently, plan strategically, solve problems, and facilitate innovation as well as independent process evaluation. 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 Geoinformation Technology.

Transition Arrangements

The Bachelor of Geoinformation Technology Honours (old curriculum) will be phased out systematically until 2018 with minimal disruption to existing students' learning progression. These last cohorts of students have until end of 2018 to complete the out-phasing programme (old curriculum) after which students must automatically switch to the revised programme Bachelor of Geoinformation Technology Honours and fulfil all requirements based on the revised curriculum in 2019.

Students who are registered on the out-phasing programme (old curriculum), and who fail more than 50% of the courses at the end of 2018, 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 below.

The revised Bachelor of Geoinformation Technology Honours (revised curriculum) will take effect from January 2019. Courses will only be offered based on the new/revised syllabi in 2019. 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 below, for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

Courses to be credited

Code	Bachelor of Geoinformation Technology Honours (Old Courses)	Course Code	Bachelor of Geoinformation Technology Honours (Equivalent New/Revised Courses)
SDI810S	Spatial Data Infrastructures	SDI810S	Spatial Data Infrastructures
AGA810S	Applied Geostatistical Analysis	ASA810S	Advanced Spatial Analysis
NAG810S	Network Analysis and Geocoding		
ERS810S	Environmental Remote Sensing	ERS810S	Environmental Remote Sensing
AGV820S	Advanced Geovisualisation	GSV820S	Geodata Science and Visualisation
GAD820S	GIS Application Development	GAD820S	GIS Application Development
MAD810S	Mobile Application Development		
CRM820S	Community Resources Management		None

Corresponding Courses (if Failed) Cognate area table

Code	Bachelor of Geoinformation Technology Honours (Old Courses)	Course Code	Bachelor of Geoinformation Technology Honours (Equivalent New/Revised Courses)
SDI810S	Spatial Data Infrastructures	SDI810S	Spatial Data Infrastructures
AGA810S	Applied Geostatistical Analysis	ASA810S	Advanced Spatial Analysis
NAG810S	Network Analysis and Geocoding		
ERS810S	Environmental Remote Sensing	ERS810S	Environmental Remote Sensing
RMG810S	Research Methodology (Geoinformation Technology)	RMG810S	Research Methodology (Geoinformation Technology)
MNS820S	Mini-Thesis	MNS820S	Mini-Thesis
AGV820S	Advanced Geovisualisation	GSV820S	Geodata Science and Visualisation
GAD820S	GIS Application Development	GAD820S	GIS Application Development
MAD810S	Mobile Application Development		
CRM820S	Community Resources Management		None

Please Note:

The following old courses do not have new/revised corresponding courses in the Bachelor of Geoinformation Technology Honours (revised curriculum) and will be offered until the Bachelor of Geoinformation Technology Honours (old curriculum) is phased out completely.

NB: Exemption may not be granted for part of a course. Hence, in cases where more than one course in the old curriculum is replaced by one course in the revised curriculum, students who have failed any of the corresponding courses in the old curriculum will have to do the entire new course in the revised curriculum.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Spatial Data Infrastructures	SDI810S	None	8	15
Advanced Spatial Analysis	ASA810S	None	8	15
Environmental Remote Sensing	ERS810S	None	8	15
Research Methodology (Geoinformatics)	RMG810S	None	8	15

Semester 2

Mini-Thesis	MNS820S	Research Methodology (Geoinformatics)	8	30
Geodata Science and Visualisation	GSV820S	None	8	15
GIS Application Development	GAD820S	None	8	15

ALL SCHOOL OF THE BUILT ENVIRONMENT PROGRAMMES

QUALIFICATIONS OFFERED

Master of Spatial Sciences	09MOSS
Doctor of Philosophy in Spatial Sciences	10DPSS

MASTER OF SPATIAL SCIENCE

09MOSS

NQF Credits: 260

Description

The Master of Spatial Science programme is interdisciplinary and aims at student interested in and adequately qualified and motivated for graduate education to become scientific researchers in various fields of study related to spatial sciences. This programme will address the national need for capacity building in the Spatial Science cognate area.

Graduates will engage in research within the field of management and analysis Namibia's built environment and natural resources within the framework of contemporary national and international research projects that align with Namibia's development agendas and will produce graduates who are skills in spatial science investigations, evaluation and synthesis.

Criteria for Admission

Applicants who hold qualifications from recognised institutions at NQF level 8, or equivalent, in disciplines directly or broadly related to the listed spatial sciences specialisations may be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research and may be required to make up specific deficiencies at the discretion of the Faculty Higher Degrees Committee, with advice from the respective department linked to the specialisation of the proposed research.

Applicants from other institutions must submit detailed information on all courses in their previous qualifications, as well as the contact details of three referees. The latter also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications. Exceptions may be approved by the Higher Degrees Committee, and all admissions are at the discretion of the Higher Degrees Committee in accordance with the regulations as specified in the Rules for postgraduate Studies at NUST.

Articulation Arrangements

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

Mode of Delivery

The qualification will be offered by supervised research on a full-time mode of study. The research methods course will be delivered as a block release mode each semester.

Requirements for Qualification Award

This qualification will be awarded to candidates credited with a minimum of 240 credits at NQF Level 9, and who have complied with all the requirements laid down in the University's rules and procedures for postgraduate studies leading to the award of research degrees.

Students are required to complete a master thesis worth 240 credits, and an elective course worth an additional 20 credits is available for those that wish to (or have been recommended to) attend a research methods course. The thesis will be assessed and must meet the NUST requirements as detailed in the rules for postgraduate studies.

Transition arrangements

This is a revised programme, and it is aligned with the old curricula. The Master of Spatial Science (old curriculum) will be completely phased out by the end of 2022 with seamless disruption to existing students' learning progression, and therefore, all students enrolled in the old curriculum will be required to transition to the revised curriculum and fulfil the requirements based on the new curriculum.

The stipulation of the maximum study period will be maintained, and candidates will be required to complete their studies in the same time frame from as they started their studies. The revised curriculum of the Master of Spatial Science will be phased in, in 2023.

CURRICULUM

YEAR 1

Semester 1

Course Title	Course Code	Pre-Requisite	NQF Level	NQF Credit
Research Methodology	RMS911S	None	9	20
Thesis	MSP911S	None	9	240

Semester 2

Thesis	MSP912S	None		
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YEAR 2

Semester 3

Thesis	MSP913S	None		
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Semester 4

Thesis	MSP914S	None		
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YEAR 3

Semester 5

Thesis	MSP915X	None		
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DOCTOR OF PHILOSOPHY IN SPATIAL SCIENCES

10DPSS

NQF Level: 10

NQF Credits: 360

NQF Qualification ID: Q0974

Description

The Doctor of Philosophy (PhD) in Spatial Science 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 spatial sciences. The programme focuses on the broad, deepening and research based learning in the area of Spatial Sciences.

The programme will enable students to develop a thorough understanding of relevant methodological approaches, and develop competence in fields of one or more of the subfields specified in Spatial 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 prospective students will be mainly graduates of the Master Programmes of the Faculty of Natural Resources and Spatial Sciences and graduates of similar master programmes at other universities. Master programmes in cognate areas may also qualify for admission to the programme under certain conditions.

Criteria for Admission

Applicants who hold qualifications from recognised institutions at NQF level 9 in Spatial Science related subjects and / or related cognate areas can be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at master degree level. In addition, applicants will be requested to attend a pre-selection interview at the discretion of the FNRSS.

The applicants may be requested to make up specific deficiencies at the discretion of the Dean, through 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).

The Postgraduate Studies Committee (PGSC) 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 Prospectus (Volume 1). Hence, registration prior to the approval of a research proposal is provisional and will be made official only after the Postgraduate Studies Committee approves the proposal. 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*.

Articulation Arrangements

The PhD in Spatial Science is a terminal qualification, hence no articulation arrangements are proposed.

Mode of Delivery

The qualification will be delivered on a full-time or part-time basis in accordance with the NUST *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

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 and the Guidelines for the Implementation of Master and Doctoral Programmes.

In addition, students should meet the administrative and financial requirements as spelt out in the Namibia University of Science and Technology rules and regulations. Students have a minimum of three years to complete the programme in full-time mode. The minimum and maximum duration for completing the programme in part-time mode will depend on the respective NUST regulations as defined in the section *Rules for Postgraduate Studies* of the NUST Yearbook (Volume 1).

Teaching and learning strategies

The Postgraduate Studies Committee will appoint supervisor(s) and / or co-supervisor(s) for each student. Students will be required to work independently in accordance with a pre-agreed research plan that has to be submitted according to the time-frame as specified by the *Rules for Postgraduate Studies* of the NUST Yearbook (Volume 1) 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. 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 even any identified technical, methodical and subject matter deficiencies of the student.

Such course work may be done within existing NUST programmes or at another recognized 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. The possibility to gain international experience by participating in international conferences will be promoted.

Candidates are encouraged to pursue part of their research within industry in Namibia, or at other recognised and established tertiary institutions abroad. Any other special arrangements will be done in accordance with the NUST *Guidelines for the Supervision and Examination of Masters and Doctoral Programmes*, and the *Rules for Postgraduate Studies* of Part 1 of the NUST Yearbook.

Assessment Strategies

Students are required to submit a research proposal for approval by the Postgraduate Studies Committee (PSGC), in accordance with the details as 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*. 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 Postgraduate Studies* of Part 1 of the NUST Prospectus and the NUST *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 these regulations 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* of Part 1 of the NUST Yearbook and the NUST *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 must 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 recommended by the FPGSC and appointed by the PGSC 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*.

Transition arrangements

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

CURRICULUM

Full Time			Part Time		
Course Code	Course Title	Pre-Requisite	Course Code	Course Title	Pre-Requisite
YEAR 1					
Semester 1			Semester 1		
PSS101S	Thesis	None	PSS101P	Thesis	None
Semester 2			Semester 2		
PSS102S	Thesis	None	PSS102P	Thesis	None
YEAR 2					
Semester 3			Semester 3		
PSS103S	Thesis	None	PSS103P	Thesis	None
Semester 4			Semester 4		
PSS104S	Thesis	None	PSS104P	Thesis	None
YEAR 3					
Semester 5			Semester 5		
PSS104S	Thesis	None	PSS105P	Thesis	None
Semester 6			Semester 6		
PSS106S	Thesis	None	PSS106P	Thesis	None
YEAR 4					
Semester 7			Semester 7		
PSS107X	Thesis	None	PSS107P	Thesis	None
			Semester 8		
			PSS108P	Thesis	None
YEAR 5					
			Semester 9		
			PSS109P	Thesis	None
			Semester 10		
			PSS110P	Thesis	None
YEAR 6					
			Semester 11		
			PSS111P	Thesis	None
			Semester 12		
			PSS112P	Thesis	None
YEAR 7					
			Semester 13		
			PSS113X	Thesis	None



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