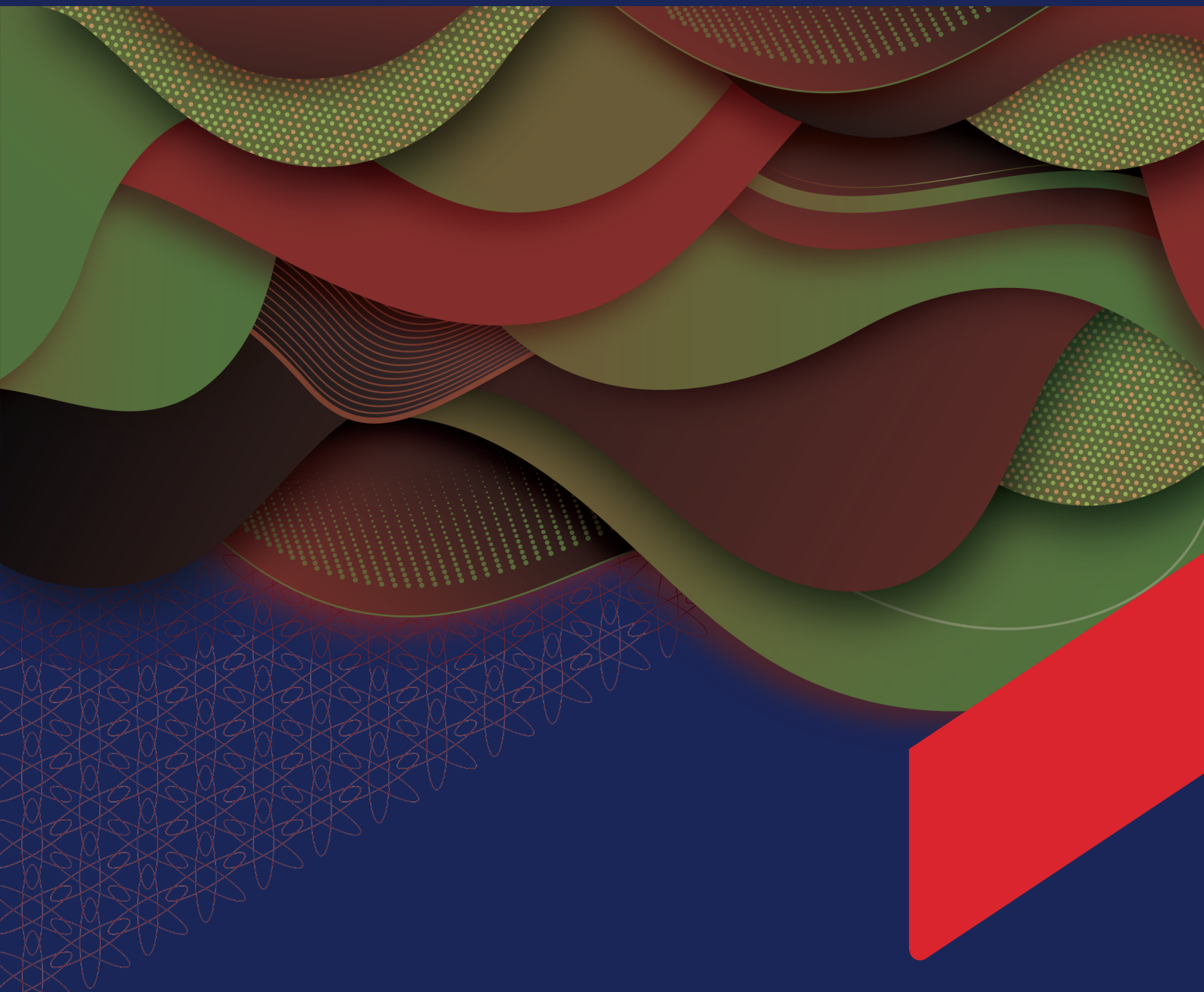
NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Office of the Registrar

2023 Yearbook - Part 4

Faculty of Engineering and the Built Environment



NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

YEARBOOK 2023

PART 4

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

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

NOTE

The ***Yearbook for the Faculty of Engineering and the Built Environment is*** valid for 2023 only. Curricula and syllabi may be amended for 2024. It is obtainable free of charge from:

The Registrar
Namibia University of Science and Technology (NUST)
Private Bag 13388
Windhoek
Namibia

Location: 13 Jackson Kaujeua Street, Windhoek
Telephone: (+264 61) 207 2008/2118
Fax: (+264 61) 207 9113
Website: www.nust.na
E-mail: registrar@nust.na

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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 Yearbook. 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 Yearbook does not necessarily mean that such a programme, field of study, subject, or course will be offered in the academic year 2023.

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POSTGRADUATE PROGRAMMES

SCHOOL OF ENGINEERING

SCHOOL OF THE BUILT ENVIRONMENT

GENERAL CONTACT DETAILS

Central Administration and Lecturers' Offices

Postal Address:	Private Bag 13388, Windhoek, Namibia
Street Address:	13 Jackson Kaujeua Street, Windhoek, Namibia
Student post to:	Private Bag 13388, Windhoek, Namibia
Website:	www.nust.na
Email:	registrar@nust.na

Centre for Open and Lifelong Learning

Postal Address:	Private Bag 13388, Windhoek, Namibia
Street Address:	13 Jackson Kaujeua Street, Windhoek, Namibia
Tel:	207 2081/2206
Fax:	207 9208
Website:	www.nust.na/col
E-mail:	lcoll@nust.na

Telephone Numbers

NUST Switchboard Operator:		207 9111
Office of the Vice Chancellor:	Vice Chancellor	207 2000/1-3
	Deputy Vice Chancellor: Administration and Finance	207 2004/5
	Deputy Vice Chancellor: Academic Affairs	207 2280/1
	Deputy Vice Chancellor: Research and Innovation	207 2181
Office of the Registrar:	Registrar	207 2008/2118
	Assistant Registrar: Academic Administration	207 2351/2667
	Examinations Office	207 2027/2412
	Student Enquiries, Registrations, and Records	207 2056
Office of the Bursar:	Bursar	207 2066
Department of Student Services:	Director	207 2165
	Students Councillor	207 2270
	Cultural Department	207 2070
	Sports Department	207 2298
Students Representative Council:		207 2457
Information & Communications Technology:	Director	207 2275
Library & Information Services:	Library, Enquiries and Loan Counter	207 2022/2621
Hostels:		
Men: Shangri-La	Superintendent	207 2132
House Committee		207 2375
Call Office		229413/233130
Ladies: Mon Resa	Superintendent	207 2131
House Committee		207 2127
Call Office		229 405/234 193/233 100
Ladies: Höpker	Superintendent	207 2131
House Committee		207 2130

NB: The international code in all numbers is +264 61

FACULTY CONTACT DETAILS AND STAFF

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT — FACULTY CODE: 8

OFFICE OF THE DEAN

Executive Dean : **Prof Harmony Musiyarira**, PhD.Eng (Wits), MSc.Eng. (UZ), BSc.Eng Metallurgy (Hons.)(UZ)
Telephone Number : 061 207 2076
Fax Number : 061 207 90176
E-mail Address : hmusiyarira@nust.na

Secretary : **Ms Melanie V Kandjavera**
(Office of the Executive Dean)
Telephone Number : 061 207 2531
Fax Number : 061 207 9531
E-mail Address : mkandjavera@nust.na

Faculty Officer : **Ms Sonja Samuels**
(School of Engineering)
Telephone Number : 061 207 2016
Fax Number : 061 207 9016
E-mail Address : ssamuels@nust.na

Faculty Officer : **Mr Phen Ilukena**
(School of the Built Environment)
Telephone Number : 061 207 2835
Fax Number : 061 207 9016
E-mail Address : pilukena@nust.na

PC Support Officer : Phillip Howoseb
Telephone Number : 061 207 2409
Fax Number : 061 207 9409
E-mail Address : phowoseb@nust.na

Assistant Human Resources Business Partner : **Ms Jean Kazimbu**, B. Industrial Psychology (Hons)
Telephone Number : 061 207 2829
Fax Number : 061 207 9829
E-mail Address : jkazimbu@nust.na

Centre of Excellence for Mineral Beneficiation (CEMB)

Director : **Prof Godfrey Dzinomwa**, PhD Minerals Process (UA), BSc.Eng Metallurgy (Hons) (UZ), PGC. National Development Economics (UR)
Telephone Number : 061 207 2463
Fax Number : 061 207 9463
E-mail Address : gdzinomwa@nust.na

Material Testing Institute (MTI)

Coordinator : **Mr Rian Uusizi**, M.Eng Engineering Management (UJ) B.Tech Civil Eng (NUST), ND Civil and Project Management (NUST)
Telephone Number : 061 207 2375
Fax Number : 061 207 9375
E-mail Address : ruusizi@nust.na

Namibia Energy Institute (NEI)

Acting Director : **Ms Helvi Ileka** ,
Telephone Number : 061 207 2551
Fax Number : 061 207 9551
E-mail Address : hileka@nust.na

Institute for Land, Livelihood and Housing (ILLH)

Acting Director : **Dr Guillermo Delgado**, PhD.Arch (UCT), M.Arch (TU Delft), B.Arch (Hons)
Telephone Number : 061 207 2156
Fax Number : 061 207 9156
E-mail Address : gdelgado@nust.na

INTRODUCTION TO SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS

Coordinator : **Ms Ilana Malan**, B.Sc Physics (Hons) (UFS). B.Sc.Med Biomedical Eng. (Hons) (UCT)
Telephone Number : 061 207 2552
Fax Number : 061 207 9552
E-mail Address : imalan@nust.na

Academic Staff : **Ms Oksana Kachepa**, M.Ed Physics (UZ), MBA (URPS),B.Ed Physics (MSPU)
: **Ms E Van Wyk,** B. Education (Hons) (Rhodes), B.Sc Education (UNAM), PGD Education (UNAM)
: **Mr Victor Nwagbara**, B.Sc Chemistry (RSUST)

SCHOOL OF ENGINEERING

Associate Dean : **Dr Veikko Shalimba,** PhD.Eng Mechanical (UJEP), M.Sc.Eng Mechanical (UJEP), B.Eng Mechanical (UJEP)

Secretary : **Mrs Romarica Descande**, B. Office Management and Technology (NUST), Adv.Dip Office Administration
Telephone Number : 061 207 2947
Fax Number : 061 207 9947
E-mail Address : rdescande@nust.na

DEPARTMENT OF CIVIL, MINING AND PROCESS ENGINEERING

Head of Department : **Prof Mallikarjun Pillalamarry**, PhD.Eng Mining (IIT), M.Tech.Eng Mining (IIT), B.Eng Mining (KU)
Deputy Head of Department : **Ms Beatha Nakamela**, M.Eng Transportation (UAS), B.Eng Civil (NUST), PGCH Education (NUST)

Secretary : **Ms Emma Jario,** B. Communications & Public Governance (Hons)
Telephone Number : 061-207-2362
Fax Number : 061-207-9362
E-mail : ejario@nust.na/ adminmining@nust.na

CIVIL ENGINEERING

Academic Staff **: Prof Victor Kamara**, PhD.Eng Structural (TU), M.Eng Structural (NJU), B.Eng Structural (Hons) (USL)
: **Dr Gert Cloete**, PhD.Eng Civil (SU), MSc.Eng Civil (SU), B.Eng Civil (SU), NHD Civil (CT), ND Civil (CT)
: **Dr Bushira Kedir Mohammed**, PhD.Eng Water (UABC), M.Sc. Eng Geotechnical (AMU), B.Sc.Eng Irrigation (AMU), A.D GIS (UT)
: **Dr Shiva Kumar Kodicheria,** PhD.Eng Civil (UL), M.Tech Geoenvironmental Eng. (JNTUH), B.Sc.Eng Civil (OU)
: **Mr Gabriel Neliwa**, M.Sc.Eng Structural (CUAS), B.Tech Civil Eng. (NUST)
: **Mr Chandrasekar Muthukameswaran**, M.Eng Structural (AU), B.Eng Civil (MKU)
: **Mr Andrea Vushe**, MIWRM (UZ), B.Sc Agricultural Eng. (Hons) (UZ)
: **Mr Daniel Lufuma**, M.Sc Geo Science (EMNU), B.Sc Physics & Geology (UNAM)
: **Mr Candidus Tomeka**, M. Infrastructure Planning (US), B.Sc.Eng Civil (Hons) (UDSM)
: **Ms Truddy Theron-Beukes**, M.Sc Environmental Eng. (ICST), B.Eng Chemical (US), MDP (SBS)
: **Mr Gideon Kalumbu**, MIWRM (NUST), B.Sc Water Utilisation (Hons) (UP), B.Sc Natural Resources (UNAM)
: **Mr Mervin Muukua**, M.Eng Structures (UCT), B.Sc.Eng Civil (Hons) (UCT), ND.Eng Civil (NUST)
: **Mr Theunis J Duvenhage**, B.Eng Structural (Hons) (UP), B.Eng Civil (UP)
: **Mr Abner Kalaputse Shifula**, B.Eng Civil (NUST)

MINING AND PROCESS ENGINEERING

Academic Staff	: **Prof Benjamin Mapani**, PhD Geodynamics (UoM), DESS (Mines Nancy) M.Sc. Geostatistics B.Sc. Mineral Sciences (UNZA)
	: **Prof Godfrey Dzinomwa**, PhD Minerals Process (UQ), B.Sc.Eng Metallurgy (Hons) (UZ), PGC National Development Economics (UR)
	: **Dr Thabo Falayi**, PhD Civil Eng. (UJ), M.Tech Chemical Eng (UJ), B.Sc Applied Chemistry (Hons) (NUST,Z)
	: **Mr Bernard Sililo**, M.Sc Metallurgy (UP), B.Sc Applied Sciences (Hons) (UP), B.Sc Chemistry and Mathematics (UNAM)
	: **Ms Adeltraud Mughongora**, M.Sc Safety & Env. Mgmt. in Mine Sites (Ecole de Mines), B.Sc Geology and Microbiology (Hons) (UNAM)
	: **Ms Foibe Uahengo**, M.Sc Extractive Metallurgy (SUN), B.Sc Molecular and Physiological Biology and Chemistry
	: **Ms Jaquiline Kurasha**, M.Sc.Eng Metallurgy (Wits), MBA (MCSA), B.Sc.Eng Metallurgy (Hons) (UZ)
	: **Ms Kemi Jegede**, M.Sc Chemical Eng. (UCT), B.Sc Chemical Eng. (Hons) (UCT)
	: **Mr Lawrence Madziwa**, M.Phil Mining (UZ), B.Sc.Eng Mining (Hons) (UZ)
	: **Mr Privilege Shava**, M.Eng Mining (Wits), B.Sc.Eng Mining (Hons) (UZ)
	: **Mr Ruben Mwalwange**, M.Eng Industrial (NUST), B.Eng Mining (NUST), BETD (UNAM)
	: **Mr Himeezembi Hengari**, B.Eng Mining (NUST)
Laboratory Manager	: **Dr Kayini Chigayo**, PhD Chemistry (UoV) M.Sc Chemistry (UoV), B.Sc Chemistry (Hons) (UoV), B.Sc Chemistry (UZ)
Laboratory Technicians	: **Mr Sackaria Kanalelo**, B.Sc Chemistry (UNAM)
	: **Ms Martha Amwaana**, M.Sc.Eng Mining (Wits), B.Sc Geoscience (Hons) (Wits), B.Sc Geology and Chemistry (UNAM)

DEPARTMENT OF MECHANICAL, INDUSTRIAL AND ELECTRICAL ENGINEERING

Head of Department	: Mr **Kalaluka Kanyimba**, M.Eng Power Systems and its Automation (SEU), B.Eng EMP (UNZA)
Deputy Head of Department	: **Mr Benjamin Nghidinwa**, M.Sc.Eng Mechanical (UJEP), B.Eng Mechanical (UJEP)
Secretary	: **Josia Hilifavali**, B. Communications (NUST)
Telephone Number	: 061 207 2694
Fax Number	: 061 207 9694
E-mail Address	: jhilifavali@nust.na

MECHANICAL AND INDUSTRIAL ENGINEERING

Academic Staff	: **Prof Samuel John**, PhD.Eng Mechanical (Wits), M.Th (SATS), M.Sc.Eng Mechanical (ABU), B.Eng Mechanical (ABU)
	: **Prof Johannes van der Walt**, PhD (Wits)
	: **Prof Michael Mutingi**, D.Eng Engineering Management (UJ), M.Eng Industrial (NUST,Z), B.Eng Industrial (NUST,Z)
	: **Dr Fillemon Nangolo**, PhD.Eng (UJEP), M.Sc.Eng Mechanical (UJEP), B.Eng Mechanical (UJEP)
	: **Dr Okorie Maduako Emmanuel**, PhD.Eng Mechanical (UKZN), M.Eng Mechanical (SU), B.Eng Mechanical (NAU), PGCE (UNISA), CAPPM (UNISA)
	: **Ms Hileni Kandjeke**, M.Sc.Eng Mechanical (UJEP), B.Eng Mechanical (UJEP)
	: **Mr Andrew Zulu**, M.Sc.Eng Mechanical (UCT), B.Eng Mechanical (UNZA)
	: **Mr Nikanor Abiatar**, M.Eng Mechanical (UB), B.Tech.Eng Mechanical (NUST), LLC Production, Technology and Management (UJEP)
	: **Mr Tulipale Kaputu**, M.Sc Financial Eng. (UR), M.Sc. Control Systems Eng. (US), B.Eng Electronics Control and Systems (US)
	: **Mr Frans Hanghome**, M.Tech Thermal Eng. (NIT), B.Eng Mechanical (NUST)
Laboratory Manager	: **Mr David Shikulo**, B.Tech.Eng Mechanical (NUST), ND.Eng Mechanical (NUST), CAMT (CTTC), CPTM (UJEP), CPM (UNISA)
Laboratory Technicians	: **Mr Conrad January**, ND.Eng Mechanical (PE Tech.)
	: **Mr Gelasius Kashweka**, B.Tech.Eng Mechanical (NUST), ND.Eng Mechanical (NUST), CPTM (UJEP)
	: **Mr Fellemon Kaitungwa**, M.Eng Industrial (NUST), B.Tech.Eng Mechanical (NUST)

ELECTRICAL AND COMPUTER ENGINEERING

Academic Staff	: **Prof James Katende**, PhD. Eng Electrical (UL), M.Sc.Eng Electrical (UL), B.Sc.Eng Electrical (Hons) (UL)
	: **Prof. Kameswara Musti**, PhD.Eng Electrical (NIT), M.Tech.Eng Power Systems (NIT), B.Tech.Eng Electrical and Electronics (JNTU)
	: **Prof Joshua Abolarinwa**, PhD.Eng Electrical (UTM), M.Eng Electrical and Electronics (UPH), B.Eng Electrical and Computer Eng. (Hons) (FUTM)
	: **Dr Smita A Francis**, D.Eng Electrical (CPUT), M.Sc Physics (Electronics, Radio and Acoustics) (UN), PGD in Strategic Management and Leadership(LSIB), B.Sc Physics (UN)
	: **Mr Epafras P. Shilongo**, MSES (NUST), B.Tech.Eng Power (NUST), ND.Eng Power (NUST), D. Tax and Management (UNAM)
	: **Mr Samuel Dipura**, M.Sc.Eng Electrical
	: **Mr David Kapali**, B.Tech.Eng Power (NUST), ND.Eng Power (NUST)
	: **Mr Pieter J Wasserfall**, NHD.Eng Electrical (Wits)
	: **Mr Pradeep Kumar**, M.Tech.Eng Electrical (MNNIT), B.Eng Electrical (IE), D.Eng Electrical (IERT)
	: **Mr Wilbard Mbadeka**, M.Eng Industrial (NUST), B.Tech.Eng Electronics (CPUT), PGCHE (NUST)
	: **Mr Elifas Ngonga**, B.Tech.Eng Power (NUST), NC.Eng Electrical (NTA)
	: **Mr Penti Paulus**, M.Eng Industrial (NUST), B.Tech.Eng Power (NUST), ND.Eng Power (NUST), PGCHE (NUST)
	: **Ms Hilde Amushembe**, M.Tech.Eng Electrical (CPUT), B.Tech.Eng Power (NUST), ND IT (NUST), ND.Eng Power (NUST), CHS (CPUT)
	: **Ms Aili Ashipala**, M.Eng Telecommunications (UCT), B.Eng Electronics (NUST)
Lab Manager	: **Mr Anthony Apata**, MBA (MSU), B.Sc.Eng. Electrical (UI), ND.Eng Mechanical (FPI)
Laboratory Technicians (Power)	: **Mr Robby Tjiwemu,** M.Eng Industrial (NUST), B.Tech.Eng Electrical (CPUT)
Laboratory Technicians (Electronics)	: **Ms Rut Shiwambi,** B.Tech.Eng Electrical (CPUT), ND.Eng Electronics (NUST)
	: **Ms Shilongo Amupolo,** B.Tech.Eng Electronics (NUST), ND.Eng Electronics (NUST)
Store-Keeper	**: Ms Victoria Shafombabi**, B.Sc Software Development (Hons) (NUST), B.IT Software Eng. (NUST), A.D Telecommunications (C&G), D.IT (NUST)

SCHOOL OF THE BUILT ENVIRONMENT

Associate Dean	: **Dr Phillip Lühl**, PhD Arch. (UW) M.Sc Arch. (TU Delft) B.Sc Arch. (TU Delft)
Secretary	: **Ms Paulina Pius**, D. Office Administration, D. Human Resources
Telephone Number	: 061 207 2945
Fax Number	: 061 207 9945
E-mail Address	: ppius@nust.na

DEPARTMENT OF LAND AND SPATIAL SCIENCES

Head of Department	: **Ms Celeste Espach**, M. GISEO (Rural Land Ecology) (UASS), ND Nat. Cons. (NUST), C. LUP (NUST)
Secretary	: **Ms Taimi Amunyela,** B. Bus. Mgmt. (Hons) (NUST), B.Tech OMT (NUST) ND OMT (NUST)
Telephone number	: +264 61 207 2342
Fax number	: +264 61 207 9342
Email Address	: tamunyela@nust.na

LAND AND PROPERTY SCIENCES

Academic Staff	: **Prof Uchendu Eugene Chigbu,** PhD Land Management M.Sc Land Management (TUM), MA Business and Management (UR), B.Sc Estate Management (ASU)
	: **Dr Guillermo Delgado**, PhD Arch. (UCT), M. Arch. (TU Delft), B. Arch. (Hons) (UI)
	: **Ms Celina Awala**, M.Sc GISEO (UT), B.Tech Land Management (NUST), PGCHE (NUST)
	: **Ms Menare Royal Mabakeng,** M.Sc GISEO (UT), BA Land Administration (NUST)
	: **Mr Samuel Hayford**, M.Sc Geoinformation Management (ITC), B.Sc Land Economy (KNUST)
	: **Mr Amin Issa**, M.Sc GIS Cadastre (ITC), PGD GIS Cadastre (ITC), A.D LMV (UCLAS)
	: **Mr Uaurika Kahireke**, M.Sc Real Estate (UA), BA Property Studies (Hons) (NUST)
	: **Verinjaerako Kangotue**, M.Sc Spatial Sciences (Property Studies) (NUST), MBA (UN), B.Sc Property Studies (Hons) (NUST), A.D Property Financing (UNISA)
	: **Mr Sam Mwando**, M.Sc Land Mgmt. and Land Tenure (UTM), B.Sc Land Economy (CBU)
	: **Mr Malcon Mazambani**, M.Sc Land Mgmt. and Land Tenure (TUM), B.Tech Land Mgmt. (NUST), ND Land Mgmt. and Registration (NUST),
	: **Ms Elina David-Teodol**, B.Sc Property Studies (Hons) (NUST), ND Land Valuation and Estate Mgmt. (NUST)

GEO-SPATIAL SCIENCE AND TECHNOLOGY

Academic Staff	: **Dr Oluibukun Gbenga Ajayi,** PhD Surveying and Geoinformatics (FUT), M.Sc Surveying and Geoinformatics (FUT), B.Tech Surveying and Geoinformatics (FUT)
	: **Mr Joe Lewis**, M.Sc Geoinformatics (ITC), PM GIS (ITC), B.Sc Survey (UCT), B.Eng Industrial (US)
	: **Mr Kaleb Negussie**, M.Sc Photogrammetry and Geoinformatics (HFT), B.Sc Geographical Information Systems (Hons) (UCT), B.Sc Environmental and Geographical Science (UCT)
	: **Mr Miguel Vallejo Orti**, M.Sc Photogrammetry and Geoinformatics (SUAS), B.Sc Forest Eng. (UH)
	: **Mr Frikkie Louw**, M. Environment and Development-LIM (UKZN), ND Surveying (CPUT)
	: **Mr Erich Naoseb**, M.Sc GISS (UNIGIS), B.IT Business Computing (Hons) (NUST), B.IT Systems Administration and Networks (NUST)
	: **Mr Taruwona Makaza**, B.Sc Surveying Eng. (Hons) (UNB), PGCHE (NUST)
	: **Mr Sinambao Sinvula**, B.Sc Land Surveying (Hons) (UKZN), C. Land Measuring (NUST)
	: **Ms Desire Husselmann**, B. Geoinformation Technology (Hons) (NUST), B.Sc Geomatics (NUST)
Laboratory Technicians	: **Mr David Varges**, B. Geomatics (Hons) (NUST), B.Sc Geomatics, B. Geoinformation Technology (NUST), ND Land Surveying (NUST)
	: **Mr Paulus Nashidengo**, ND: Land Surveying (NUST), C. Geo-IT (NUST)

DEPARTMENT OF ARCHITECTURE PLANNING AND CONSTRUCTION

Head of Department	: **Dr Laudika Kandjinga**, PhD Town and Reg. Plan. (UP), M. Town and Reg. Plan. (UP), B.Tech LM (NUST), ND: LUP (NUST)
Secretary	: **Sisi Kaapehi**, BBA (Hons) UNAM)
Telephone Number	: 061-207 2940
Fax Number	: 061-207 9940
E-mail Address	: skaapehi@nust.na
Academic Staff	: **Prof Jaco Wasserfall**, PhD Arch. (UC), B Arch. (UP)
	: **Dr Eric Yankson**, PhD Urban and Public Affairs (UoL), M.Sc (UA), BA (UG)
	: **Dr Madelein Stoffberg**, PhD Arch. (UFS), M Arch. (UFS)
	: **Ms Marina Coetzee**, M.Sc Agric. in Soil Sci. (US), B.Sc Chemistry (Hons) (US), B.Sc Chemistry and Physics (US)
	: **Ms Jennilee Kohima**, M. Urban and Reg. Plan (UFS), M.Sc. Land Mgmt. and Land Tenure (TUM), B Spatial Plan. (Hons) (UFS), B.Tech LM (NUST), ND LUP (NUST), NC ULUM (NUST)
	: **Ms Geraldine van Rooi**, M. City and Reg. Plan. (UCT), BA Urban Geography (Hons) (UNAM), BA Geography and Sociology (UNAM)
	: **Ms Jane Gold**, M. City & Reg. Plan. (UCT), B.Sc Science (UKZN)
	: **Ms Nadine Korrubel**, M. Town and Reg. Plan. (UFS), BA (US)
	: **Ms Waseela Parbhoo**, B.Arch (UCT), BAS (UCT)
	: **Ms Gaby Hansen**, MLA (Prof) (UCT), B.Tech Arch. (CPUT), ND Arch. (CPUT)
	: **Ms Sophia van Greunen**, M.Arch (UP), B.Arch (Hons) (UP), B.Sc Arch (UP)
	: **Ms Esther Calunga**, M.Arch (Prof) (UFS), B.Arch (Hons) (NUST), B.Arch (NUST)
	: **Ms Ndeshipanda Iita**, M.Tech Arch. (Prof) (UJ), B.Arch (Hons) (NUST), B.Arch (NUST)
	: **Mr Tinoapei Dhliwayo**, M.Sc Cons. Project Mgmt. (NUST,Z), B. QS (Hons) (NUST,Z)
	: **Mr Pieter Genis**, B. Town and Reg. Plan. (UP)
	: **Mr Deharno Kloppers**, M.Arch (Prof) (UFS), B.Arch (Hons) (UFS), B.Tech (CPUT)
	: **Mr Jacques Korrubel**, M. Town and Reg. Plan. (UFS), B. Admin. (Urban Geography) (UFS)
	: **Mr Conrad Stoffberg**, M.Arch (Prof) (UFS), B.Arch (Hons) (UFS), B.Arch (UFS)
	: **Mr Cyrlius Tjipetekera**, M. Urban and Reg. Plan. (UFS), B. Spatial Plan (Hons) (UFS), B.Tech LM (NUST)
	: **Mr Jens Wiedow**, M.Arch (Prof) (NMMU), B.Arch (Hons) (UPE)
	: **Mr Alaric Britz**, B.Sc QS (Hons) (LSBU), ND Building (CPUT)
	: **Mr Elao Martin**, M.Tech.Arch (Prof) (UJ), B.Arch (Hons) (NUST), B.Arch (NUST)
Laboratory Technicians	: **Mr Gunther Matzner**, M. Arch. (NUST), B.Sc Arch. (Hons) (UP), B.Sc Arch. (UP)

EVALUATION SCALES

Table 1: English Modules

Grade 12		Namibia University of Science and Technology
Level	**Result**	**English module to do**
Higher level First Language	1 OR 2 OR 3 OR 4	EAP511S
Ordinary level First Language	A OR B	EAP511S
Higher level Second Language	1 OR 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

Table 2: 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)**			
								NSSCO Namibia Senior Secondary Certificate Ordinary (Grade 10-11)	**NSSCAS Namibia Secondary School Certificate Advanced Subsidiary**	**N3 (%)**	**InSTEM (%)**
APS	**Higher Level (NSSCH)**	**Ordinary Level (NSSCO)**	**A LEVEL**	**AS LEVEL**	**O LEVEL**	**HIGCSE**	**IGCSE**	**NSSCO**	**NSSCAS**		
12			A								
11			B	A					a		
10	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			

Table 3: 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 (3 & 4)	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			D	D (7)	50- 59	12- 13		5 (55-59)
4					E	E (8)	45- 49	10-11		6 (45-54)
3					F	F	40- 44	08- 09		7 (35-44)
2										

Table 4: Evaluation Scale 3

Malawi / Botswana			IEB Independent Examination Board	Kenya / Tanzania
APS	**Botswana**	**Malawi**		*Based on USA Scale*
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

INTRODUCTION TO SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (InSTEM) 04SMET
(Bridging programme)
(Revised Curriculum) (Phasing in 2023)

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 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 the relevant Faculties.

Admission Requirements
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/NCCS Ordinary Level will be admitted into the programme on condition that such candidate enrolled for the missing subjects (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, Statistics and Actuarial Science must pass Introduction to Mathematics A and B.

Students who wish to apply to the Department of Geospatial 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.

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

Table 5: InSTEM Exemption Arrangements

InSTEM Course	NSSC/Grade 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
English in Practice	English as a Second Language English as a First Language	AS level d NSSCO c

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 University, 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:

Table 6: 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
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	IPB412S	Introduction to Physics B
IPH402S	Introduction to Physics B	IPA411S	Introduction to Physics A

CURRICULUM

Year 1

Semester 1

Course Code	Course Name	Pre-requisite	NQF Level	NQF Credit
IMA411S	Introduction to Mathematics A	None	4	14
IPA411S	Introduction to Physics A	None	4	16
Plus ANY of the Elective Courses				
ICA411S	Introduction to Chemistry A	None	4	16
PLU411S	Principles of English Language Use	None	4	10
CUS411S	Computer User Skills	None	4	10
IBA411S	Introduction to Biology A	None	4	12
Semester 2				
IMB412S	Introduction to Mathematics B	Introduction to Mathematics A	4	14
IPB412S	Introduction to Physics B	Introduction to Physics A	4	16
Plus ANY of the Elective Courses				
ICB412S	Introduction to Chemistry B	None	4	16
PLU411S	Principles of English Language Use	None	4	NCB
ESS502S	Engineering Skills and Safety	None	4	12
IBB412S	Introduction to Biology B	None	4	12

Requirements for Qualification Award

There will be no formal award, but to complete the InSTEM bridging programme successfully students must have passed 100% 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 five (5) courses per semester.

SCHOOL OF ENGINEERING

GENERAL PROVISIONS AND RULES

(Applicable to Undergraduate programmes in 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 subjects, with at least 40 % in each, including Mathematics and a Physics equivalent subject, as well asgain 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 individualbasis.

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 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

Alternative1

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 courses. 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 course 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 courses 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 prerequisites.

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 course before enrolling for any course. Enrolment for any course shall additionally be subject to attainment of necessary prerequisites.

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 course before enrolling for any course. Enrolment for any course shall additionally be subject to attainment of necessary prerequisites.

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 assessed 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 thehead 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 requirement of four (4) assessments excludes the final year project courses whose assessment shall be determined by the Head of the 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 (≥ 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 principalcourse 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 thesupplementary 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 a student who misses the supplementary examination are retained in the calculation of thefinal 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 completionof the relevant portion(s).

C.4 No supplementary opportunity 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 reportas 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 partof a group.

A student who misses a laboratory practical has to apply in writing to the head of department in which the course resides to obtain permission for the missed practical to be undertaken at a later stage. Depending on the unique circumstances describedin 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 principle course lecturer in liaison with the head of the department in whichthe 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 for 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.

A 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/sheobtains a fail mark in more than the total number of scheduled assignments but one. This rule is waived if only one assignmentis 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).

DEPARTMENT OF CIVIL, MINING AND PROCESS ENGINEERING
CIVIL ENGINEERING

QUALIFICATIONS OFFERED

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 transition arrangement for both programmes are discussed on page 19.

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING 07BECV
(REVISED PROGRAMME)

NQF Level 7 **NQF credits 581**

Programme Aims/Purpose:
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. With Semester 7 courses. Holders of a three year National Diploma in Civil Engineering who plan to apply for the revised BTech programme, may enrol for these co-requisite course prior to registering for the new BTech. 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, Semester 3, Semester 5 and Bachelor of Technology Degree Semester 7 are semester courses and will only be presented in the first semester of the year.

Semester 2, Semester 4, Semester 6 and Bachelor of Technology Degree Semester 8 are semester courses and will only be presented in the second semester of the 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.

Note: 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.

The Bachelor of Technology in Civil Engineering has one major subject/cognate area of learning that are developed in increasing complexity across relevant NQF levels in accordance with NQF principles as follows:

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: Urban (old curriculum) will be phased out systematically until 2025. The last intake of Semester 7 students for the out-phasing Bachelor of Technology in Civil Engineering: Urban was in January 2022. The first intake of the revised Bachelor of Technology in Civil Engineering will be in 2020 with Semester 7 of the revised programme being offered for the first time in 2023.

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 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 Table 1 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: 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.

Table 7: 1st year courses to be credited

Semester	Course Code	Bachelor of Technology: Civil Engineering (Old Courses)	Semester	Course Code	Bachelor of Technology in Civil Engineering (Equivalent New/ Revised Courses)
S1	EAP511S	English for Academic Purposes	S1	EAP511S	English for Academic Purposes
S1	APC100S	Applied Physics and Chemistry	S1	APC510S	Applied Physics and Chemistry
S1	CMT110S	Construction Material Technologies1	S2	EMT520S	Engineering Material Technologies
S1	SUR110S	Surveying 1	S2	ENS521S	Engineering Surveying
S1	EDG110S	Engineering Descriptive Geometry	S2	IED520S	Introduction to Engineering Drawing
S2	CDR110S	Civil Engineering Drawing Auto-CAD			
S1	MAT111S	Mathematics 1	S2	ENM510S	Engineering Mathematics 1
S2	MAT120S	Mathematics 2	S2	ENM520S	Engineering Mathematics 2
S2	TST110S	Theory of Structures	S2	EMS520S	Engineering Mechanics (Statics)
S2	SOM110S	Strength of Materials			

Students who were 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 programming in 2020, will also be required to complete their studies based on the requirements of the old curriculum. Similarly, students who were 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.

Table 8: Corresponding courses to be done, if failed – this is not a Credit Table

Semester	Course Code	Bachelor of Technology: Civil Engineering (Old Courses)	Semester	Course Code	Bachelor of Technology in Civil Engineering (Equivalent New/ Revised Courses)
S1	APC110S	Applied Physics and Chemistry	S1	APC510S	Applied Physics and Chemistry
S1	CMT110S	Construction Material Technologies	S2	EMT520S	Engineering Material Technologies
S1	EDG110S	Engineering Descriptive Geometry	S2	IED520S	Introduction to Engineering Drawing
S2	CDR110S	Civil Engineering Drawing Auto-CAD			
S1	MAT111S	Mathematics 1	S1	ENM510S	Engineering Mathematics 1
S1	CUS411S	Computer User Skills	S1	CFT510S	Computing for Technologists
S2	MAT120S	Mathematics 2	S2	ENM520S	Engineering Mathematics 2
S1	TST110S	Theory of Structures	S2	EMS520S	Engineering Mechanics (Statics)
S3	QSV110S	Quantity Surveying	S3	FQS611S	Fundamental of Quantity Surveying
S1	SUR110S	Surveying 1	S2	ENS521S	Engineering Surveying
S3	WAE110S	Water Engineering 1	S4	WEG621S	Water Engineering
S5	WAE310S	Water Engineering 2			
S6	WAE320S	Water Engineering 3			
S4	CPR210S	Civil Engineering Practical Training	S6	WCE620S	Work Integrated Learning
S5	GDE310S	Geometric Design 1	S4	GMD621S	Geometric Design 1
S7	GDE411S	Geometric Design 2			
S5	GET310S	Geo-technical Engineering 3A	S3	GTE611S	Geotechnical Engineering 1
S5	SAN310S	Structural Analysis 3A	S3	STA611S	Structural Analysis 1
S5	SDE311S	Structural Design 3A	S5	SST611S	Structural Steel and Timber Design
S6	CAS310S	Computer Application in StructuralAnalysis	S7	CAE711S	Computer Application in StructuralEngineering
S5	SAN320S	Structural Analysis 3B	S4	STA621S	Structural Analysis 2
S6	DOC310S	Documentation	S4	DCT621S	Documentation
S6	SDE321S	Structural Design 3B	S5	RFC611S	Reinforced Concrete Design
S8	WDP410S	Water Engineering Design Project	S8	CED721S	Civil Engineering Project
S8	UDP410S	Urban Engineering Design Project			
S8	TEN411S	Traffic Engineering	S3	TFE611S	Traffic Engineering

S7	RCD411S	Reinforced Concrete Design	S5	RFC611S	Reinforced Concrete Design
S8	RCD421S	Reinforced Concrete Design 2			
S7	WWT411S	Wastewater Treatment 1	S5	WWT611S	Water and Wastewater Treatment 1
S8	WWT421S	Wastewater Treatment 2	S8	WWT721S	Water and Wastewater Treatment 2
S7	PTN411S	Pavement Technology 1	S5	PTT611S	Pavement Technology
S8	PTN421S	Pavement Technology 2			
S7	SWM411S	Solid Waste Management 1	S7	SWM711S	Solid Waste Management
S8	SWM421S	Solid Waste Management 2			
S7	PJM411S	Project Management 1	S8	PJM721S	Project Management
S8	PJM421S	Project Management 2			
S7	UDP411S	Urban Planning and Design 1	S7	UPD711S	Urban Planning and Design
S8	UDP421S	Urban Planning and Design 2			
S7	RMD411S	Reticulation Design andManagement 1	S7	RDM711S	Reticulation Design andManagement
S8	RMD421S	Reticulation Design andManagement 2			
S7	WTT411S	Water Treatment Technology 1	S5	WWT611S	Water and Wastewater TreatmentTechnology 1
S8	WTT421S	Water Treatment Technology 2	S8	WWT721S	Water and Wastewater TreatmentTechnology 2
S7	CMT411S	Construction Material Technology 2	S8	CMT721S	Construction Material Technologies

CURRICULUM

Semester 1

Code	Course Title	Prerequisite
APP510S	Applied Physics and Chemistry	None
CFT510S	Computing for Technologists	None
EAP511S	English for Academic Purposes	English in Practice or Language in Practice B, or Module 3, or Exemption
FET510S	Fundamentals of Electrical Technology	None
ENM510S	Engineering Mathematics 1	None
WSP510S	Workshop Practice	None

Semester 2

Code	Course Title	Prerequisite
ENS521S	Engineering Surveying	None
EMT520S	Engineering Material Technologies	None
EMS520S	Engineering Mechanics (Statics)	Engineering Mathematics 1
IED520S	Introduction to Engineering Drawing	None
ENM520S	Engineering Mathematics 2	Engineering Mathematics 1
ENH521S	Engineering Hydrology	None

Semester 3

Code	Course Title	Prerequisite
TFE611S	Traffic Engineering	None
ENM 610S	Engineering Mathematics 3	Engineering Mathematics 2
GTE611S	Geotechnical Engineering 1	None
FQS611S	Fundamental of Quantity Surveying	None
STA611S	Structural Analysis 1	Engineering Mechanics (Statics)
FDM610S	Fluid Mechanics	None

Semester 4

Code	Course Title	Prerequisite
WEG621S	Water Engineering	Engineering Hydrology
GTE621S	Geotechnical Engineering 2	Geotechnical Engineering 1
GMD621S	Geometric Design 1	Traffic Engineering
ICT521S	Information Competence	None
DCT621S	Documentation	None
STA621S	Structural Analysis 2	Structural Analysis 1

Semester 5

Code	Course Title	Prerequisite
ICE712S	Innovation, Creativity and Entrepreneurship	None
SYD611S	Sustainability and Development	None
WWT611S	Water and Wastewater Treatment 1	Water Engineering
SST611S	Structural Steel and Timber Design	Structural Analysis 2
RFC611S	Reinforced Concrete Design	Structural Analysis 2
PTT611S	Pavement Technology	Geometric Design 1

Semester 6

Code	Course Title	Prerequisite
WCE620S	Work Integrated Learning	A pass in all second-year courses and at least 80% of total NQF credits at semester 5

Semester 7

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

Plus any ONE of the following Electives

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

Semester 8

Code	Course Title	Prerequisite
CED721S	Civil Engineering Design Project	None
PJM721S	Project Management	None

Plus any ONE of the following Electives

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

BACHELOR OF ENGINEERING IN CIVIL ENGINEERING **08BCEN**

NQF Level: 8 **NQF Credits: 678** **NQF Qualification ID:Q0418**

Programme aims/Purpose:
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 are 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:
    I. Life-long learning,
    II. Critical thinking,
    III. A wide range of issues which are crucial to the welfare of society, for example, upliftment, 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.

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 the University's National Diploma in Civil Engineering who are admitted into this programme will be granted credits for the following second year courses:

Table 9: National Diploma in Civil Engineering credits

National Diploma in Civil Engineering (35DCPM)	**Bachelor of Engineering: Civil**
Water Engineering 1: WAE110S (Sem 3) Water Engineering 2: WAE310S (Sem 5) Waster 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 MPC110S (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 the University's Bachelor of Technology in Civil Engineering degree with a minimum overall average of 60% will be admitted to the third year of the programme on condition that they take the following second year courses:

- Engineering Mathematics 215
- Engineering Geology 214
- Surveying 214
- Statistics 224
- Project & Facility Management 224

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

Table 10: Bachelor of Technology in Civil Engineering degree credits

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 Raticulation Design and Management 324
Pavement Technology 1&2 PTN411S/421S (Sem 7 &8)	Pavement Technology 325 (for BTech 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 Qualifications 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 then the required practical experience in industry7. They do not only have to record all duties performed but also have to participate in the civil engineering projects to as to come up with optimal solutions for continual improvement of the civil process. 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 supervisor/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 and 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 is no significant change between the current curriculum of the Bachelor of Engineering in Civil Engineering (implemented in 2014) and 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 were registered in 2019 for the 1st year of the out-phasing programme (old curriculum), and who did not meet the rules of the School 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. Similarly, students who were registered in 2019 for the 1st, 2nd 3rd and 4th year of the out-phasing programme (old curriculum), and who met the minimum requirements for progression at the end of 2019, will also be required to transition tothe 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 inthe Yearbook (Part 1) of the Namibia University of Science and Technology.

Students are required to do a 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 Code	Course Title	Prerequisite(s)	NQF Level	NQF Credits
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
CEN510S	Computing for Engineers 114	None	5	12
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption	5	14
Semester 2				
MTM521S	Engineering Mathematics 125	Engineering Mathematics 115	5	15
ACH521S	Engineering Chemistry 123	None	5	9
MLS521S	Material Science 124	None	5	12
MOM521S	Mechanics of Materials 124	Engineering Mechanics 114	5	12
ELC520S	Electrical Circuits 124	Engineering Physics 114 and Engineering Mathematics 115	5	12
IIN521S	Introduction to Industry 4.0 124	None	5	12
WPR421S	Workshop Practice 120	None	4	NCB
Year 2				
Semester 3				
MTM611S	Engineering Mathematics 215	Engineering Mathematics 125	6	15
FMC610S	Fluid Mechanics 214	Engineering Mechanics 114	6	12
TST610S	Theory of Structures 214	Mechanics of Materials 124	6	12
EGY610S	Engineering Geology 214	None	6	12
BMI511S	Introduction to Business Management 214	None	5	10
ENS611S	Engineering Surveying 214	None	6	12
Semester 4				
STA620S	Structural Analysis 224	Theory of Structures 214	6	12
GMS620S	Geomechanics 224	None	6	12
SSS621S	Statistics 224	Engineering Mathematics 215	6	12
ENH521S	Engineering Hydrology 224	None	6	12
TEM620S	Traffic Engineering 223	None	6	9
ICT521S	Information Competence	None	5	10
Year 3				
Semester 5				
GDT711S	Geometric Design of Transport Infrastructure 315	None	7	15
STA710S	Structural Analysis 314	Structural Analysis 224	7	12
GET710S	Geotechnical Engineering 314	Geomechanics 224	7	12
RCM710S	Reinforced Concrete and Masonry Design 315	Structural Analysis 224	7	15
SYD611S	Sustainability and Development	None	6	12
WEG711S	Water Engineering 314	Engineering Hydrology 224	7	12
Year 3				
Semester 6				
ICE712S	Innovation, Creativity and Entrepreneurship	None	7	15
WRD720S	Water Reticulation Design and Management 324	Water Engineering 314	7	12
PTN720S	Pavement Technology 325	None	7	15
GET720S	Geotechnical Engineering 324	Geotechnical Engineering 314	7	12
STD720S	Structural Design of Steel and Timber 324	Structural Analysis 314	7	12
CCC720S	Construction Cost Calculation 324	None	7	12

Year 4
Semester 7

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

Plus any ONE of the following Electives

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

Year 4
Semester 8

CET820S	Civil Engineering Research Project 420	Engineering Research Methodology 414	8	35
BCT820S	Building Contract & Tendering 424	None	8	12
EIS820S	Engineer in Society: Ethics Professionalism 424	None	8	12
PFM821S	Project & Facility Management 425	None	8	15
WCN821S	Work Integrated Learning	All first year courses and at least 80% of NQF credits at second year	8	27

Plus any ONE of the following Electives

TSS820S	Transport Systems and Structures 424	Geometric Design of Transport Infrastructure 315	8	12
EID820S	Irrigation and Drainage Engineering 424	Water Engineering 314	8	12
GEN821S	Geotechnical Engineering 424	Geotechnical Engineering 324	8	12
RCD821S	Reinforced Concrete Design 424	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 (Phased in 2019)	08BECE

Bachelor of Engineering in Mining (Revised - Phased in 2021) — 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).

Admission Requirements

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 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.

CURRICULUM

Year 1

Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption	5	14
CEN510S	Computing for Engineers 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12

Semester 2

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

Year 2

Semester 3

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

Semester 4

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

Year 3

Semester 5

ORC711S	Operations Research 313	Statistics 224	7	9
RMC711S	Rock Mechanics 314	Soil Mechanics 224	7	12
UDM711S	Underground Mining 315	Introduction to Mining and Metallurgy 214	7	15
SUM710S	Surface Mining 315	Introduction to Mining and Metallurgy 214	7	15
GSS711S	Geo Statistics 314	Mining Geology 224; Statistics 224	7	12
MPC711S	Mineral Separation Processes 314	Introduction to Mining and Metallurgy 214	7	12

Semester 6

MVT721S	Mine Ventilation 324	Fluid Mechanics 214; Thermodynamics 225	7	12
MHD721S	Materials Handling 324	Fluid Mechanics 214; Thermodynamics 225	7	12
REE720S	Rock Engineering 324	Rock Mechanics 314.	7	12
SDY611S	Sustainability and Development	None	6	12
DBS721S	Drilling and Blasting 324	Introduction to Mining and Metallurgy 214	7	12
MLL721S	Mine Laws and Licences 323	None	7	9

Year 4

Semester 7

MRE810S	Mine and Resource Engineering Management 414	None	8	12
CMD811S	Computerised Mine Design 414	Underground Mining 315; Surface Mining 315	8	12
MPD811S	Mine Planning and Design 415	Underground Mining 315; Surface Mining 31	8	15
MEF810S	Mineral Economics and Financial Valuation 413	None	8	9
EVE810S	Environmental Engineering 414	None	8	12
RSS811S	Research Seminars 400	None	8	NCB

Semester 8

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

Plus ONE of the following Electives:

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

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 Table 11, 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 Table 11, 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 Table 12, 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.

Table 11: Bachelor of Engineering in Mining 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
IMM610S	Introduction to Mining and Metallurgy 214	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

Table 12: Bachelor of Engineering in Mining 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		
ELC521S	Electrical Circuits 124	ELC521S	Electrical Circuits 124
ACH521S	Engineering Chemistry 123	ACH521S	Engineering Chemistry 123
MTM521S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
	None	IIN521S	Introduction to Industry 4.0 124
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	RMC711S	Rock Mechanics 314
UGM710S	Underground Mining 313	UDM711S	Underground Mining 315
UGM720S	Underground Mining 323		
SUM710S	Surface Mining 315	SUM710S	Surface Mining 315
ENE710S	Environmental Engineering 314	EVE810S	Environmental Engineering 314
MIP710S	Mineral Processing 314	MPC711S	Mineral Separation Processes 314
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		
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	GSS711S	Geo Statistics 324
OPR810S	Operations Research 413	ORC711S	Operations Research 313
MMG810S	Mine Management 414	MRE810S	Mine and Resource Engineering Management 414
MVE810S	Mine Ventilation 414	VMT721S	Mine Ventilation 325
MEF810S	Mineral Economics and Financial Valuation413	MEF810S	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	MPJ821S	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

BACHELOR OF ENGINEERING IN METALLURGY **CODE O8BEMT**

(Revised - Phased in 2021)

NQF Level: 8 **NQF Credits: 575** **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. The focus of this programme is consistent with the vision and commitment of the Faculty of Engineering at the Namibia University of Science and Technology and fosters competence in progressive problem solving and applied learning. Metallurgical Engineers can not only be employed within generic mining companies, but also within manufacturing/production and consulting companies, banks and insurance companies, educational and governmental institutions and many other different fields, where their versatility and ability to perform different tasks is appreciated. 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). The overall aim is to develop competent and proactive metallurgical engineers who will address diverse complex technical issues in both macro/environmental and micro/organisational settings.

Admission Requirements

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 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.

CURRICULUM

Year 1

Semester 1 Course Code	**Course Title**	**Prerequisites**	**NQF Level**	**NQF Credits**
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption	5	14
CEN510S	Computing for Engineers 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
Semester 2				
IIN521S	Introduction to Industry 4.0 124	None	5	12
ELC520S	Electrical Circuits 124	Engineering Physics 114; Engineering Mathematics 115	5	12
ACH521S	Engineering Chemistry 123	None	5	9
MTM521S	Engineering Mathematics 125	Engineering Mathematics 115	5	15
MLS520S	Materials Science 124	None	5	12
MOM521S	Mechanics of Materials 124	Engineering Mechanics 114	5	12
WPR421S	Workshop Practice 120	None	5	NCB

Year 2				
Semester 3				
MTM611S	Engineering Mathematics 215	Engineering Mathematics 125	6	15
IMM610S	Introduction to Mining and Metallurgy 214	None	6	12
CHY610S	Chemistry 215	Engineering Chemistry 123	6	12
FMC610S	Fluid Mechanics 214	Engineering Mathematics 114	6	12
EMC611S	Electrical Machines 214	Electrical Circuits 124	6	12
GMT611S	Geometallurgy 214	None	6	12
Semester 4				
NMS620S	Numerical Methods 224	Engineering Mathematics 215	6	12
TDN620S	Thermo-dynamics 225	Engineering Mathematics 115	6	12
PCH602S	Physical Chemistry	Chemistry 215	6	12
SSS621S	Statistics 224	Engineering Mathematics 215	6	12
TRP620S	Transport Phenomena 225	Engineering Physics 114	6	15
SYD611S	Sustainability and Development	None	6	12
Year 3				
Semester 5				
MPC711S	Mineral Separation Processes 314	Introduction to Mining and Metallurgy 214	7	12
HMT710S	Hydrometallurgy 314	Physical Chemistry	7	12
PNM710S	Pyrometallurgy of Non-Ferrous Metals 314	Thermodynamics 225	7	12
PPD710S	Process Plant Design and Economic 315	Introduction to Mining and Metallurgy 214	7	15
PDF711S	Phase Diagrams and Forming Processes 314	Introduction to Mining and Metallurgy 214	7	12
PIC710S	Process Instrumentation and Control 314	Engineering Mathematics 215	7	12
Semester 6				
MPT721S	Mineral Processing Techniques and Applications 324	Mineral Separation Processes 314	7	12
HMY720S	Hydrometallurgy 324	Hydrometallurgy 314	7	12
ETP720S	Experimental Techniques for Process Engineers 324	Hydrometallurgy 314	7	12
PTD720S	Process Thermodynamics 324	Physical Chemistry and Thermodynamics 225	7	12
PNM720S	Pyrometallurgy of Ferrous Metals 324	Pyrometallurgy of Non Ferrous Metals 314	7	12
MPW721S	Mine and Process Waste Management 314	None	7	12
Year 4				
Semester 7				
HTM811S	Heat Treatment of Metals 414	Phase Diagrams and Forming Processes 314	8	12
CEN810S	Corrosion Engineering 413	Hydrometallurgy 324, Phase Diagrams and Forming Processes 314	8	9
MEF810S	Mineral Economics and Financial Valuation 413	None	8	9
MRE810S	Mine and Resource Engineering Management 414	None	8	12
EVE810S	Environmental Engineering 414	None	8	12
RSS811S	Research Seminars 400	None	8	NCB

Plus any ONE of the following Electives:

CCP820S	Cement and Ceramics Processing 423	Process Thermodynamics 324	8	9
MMY820S	Mechanical Metallurgy 423	Phase Diagrams and Forming Processes 314	8	9
FFR820S	Fuels, Furnaces and Refractories 423	Pyrometallurgy of Non-Ferrous Metals 314 and Pyrometallurgy of Ferrous Metals 324	8	9
Semester 8				
SRM820	Safety and Risk Management 424	None	8	12
MPP822S	Metallurgical Engineering Research Project 420	Compulsory courses up to Semester 6	8	30
MPD821S	Metallurgical Engineering Plant Design Project 420	All compulsory courses up to Semester 6	8	30
WME821S	Work Integrated Learning 420	None	8	NCB

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 inJanuary 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 14, 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 (newcurriculum) in 2021, and will be granted credits on a course-by-course basis in accordance with information in Table 14, 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 coursesas 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.

Table 13: Bachelor of Engineering in Metallurgy 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 andMetallurgy 214
	None	IIN521S	Introductory to Industry 4.0
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
MIS720S	Metallurgy of Iron and Steel 324	PNM720S	Pyrometallurgy of Ferrous Metals 324
MIS810S	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 and Economic 315
MET720S	Metallurgical Plant Design 324		

ENE710S	Environmental Engineering 314	EVE810S	Environmental Engineering 414
MIP710S	Mineral Processing 314	MPC711S	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

Table 14: Bachelor of Engineering in Metallurgy 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 (Equivalent New/Revised 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		Process Thermodynamics 324
MIP710S	Mineral Processing 314	TBA	
MIS720S	Metallurgy of Iron and Steel 324	PNM720S	Pyrometallurgy of Non-Ferrous Metals 324
MIS810S	Metallurgy of Iron and Steel 414		
MPD710S	Metallurgical Plant Design 314		Process Plant Design 314
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	PPD710S	Process Plant Design and Economic 314
MET720S	Metallurgical Plant Design 324		
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	PNM720S	Pyrometallurgy of Ferrous Metals 324
MIS810S	Metallurgy of Iron and Steel 414		
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 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.

BACHELOR OF ENGINEERING IN CHEMICAL ENGINEERING **CODE: 08BECE**

(Phased in 2019)

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 rolesin 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 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.

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.

Special Arrangements

Teaching, Learning Strategies

Teaching and learning strategies are described in the syllabus outlines for the different courses. In broad terms, the teaching and learning strategies 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. 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.

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 Code**	**Course Title**	**Prerequisites**	**NQF Level**	**NQF Credits**
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption	5	14
CEN510S	Computing for Engineers 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
Semester 2				
IIN521S	Introduction to Industry 4.0 124	None	5	12
ELC520S	Electrical Circuits 124	Engineering Physics 114; Engineering Mathematics 115	5	12
ACH521S	Engineering Chemistry 123	None	5	9
MTM521S	Engineering Mathematics 125	Engineering Mathematics 115	5	15
MLS520S	Materials Science 124	None	5	12
MOM521S	Mechanics of Materials 124	Engineering Mechanics 114	5	12
WPR421S	Workshop Practice 120	None	5	NCB
Year 2 **Semester 3**				
MTM611S	Engineering Mathematics 215	Engineering Mathematics 125	6	15
CPI610S	Chemical Process Industry and Technologies 214	None	6	12
PCH602S	Physical Chemistry 215	Engineering Chemistry 123	6	15
FMC610S	Fluid Mechanics 214	Engineering Mathematics 114	6	12
ICE610S	Introduction to Chemical Engineering 214	None	6	12
CPP610S	Chemical Process Principles 214	Engineering Chemistry 123; Engineering Physics 114	6	12
Semester 4				
NMS620S	Numerical Methods 224	Engineering Mathematics 215	6	12
TDN620S	Thermo-dynamics 225	Engineering Mathematics 115	6	15
CHY620S	Chemistry 223	Chemistry 123	6	9
SSS621S	Statistics 224	Engineering Mathematics 215	6	12
TRP620S	Transport Phenomena 225	Engineering Physics 114	6	15
SYD611S	Sustainability and Development	None	6	12

Year 3
Semester 5

MIP710S	Mineral Processing 314	Introduction to Chemical Engineering 214	7	12
HMT710S	Hydrometallurgy 314	Chemistry 223	7	12
RER710S	Reaction Engineering & Reactor Design 314	Chemistry 223	7	12
PPD710S	Process Plant Design & Economics 315	Chemical Process Principles 214	7	15
SPC710S	Separation Processes 314	Transport Phenomena 225	7	12
PIC710S	Process Instrumentation and Control 314	Engineering Mathematics 215	7	12

Semester 6

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

Year 4
Semester 7

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

Plus ONE of the following elective courses:

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

Semester 8

SRM820S	Safety and Risk Management 424	None	8	12
PED820S	Process Engineering Design Project 420	Process Modelling, Simulation and Optimisation 324	8	30
PER820S	Process Engineering Research Project 420	Mine and Resource Engineering Management 414	8	30
WME820S	Work Integrated Learning (WIL)	None	8	NCB

Plus ONE of the following elective courses:

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

DEPARTMENT OF MECHANICAL, INDUSTRIAL AND ELECTRICAL ENGINEERING

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

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.

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 (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	Prerequisite
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*	English in Practice/Language in Practice B None
MAT111S	Mathematics 1 **	Introduction to Mathematics Module 2 English in Practice/Language in Practice B
CUS411S	Computer User Skills*	See admission requirements

** Only applicable for candidates entering S1 direct after school*
****English for Academic Purposes is available on Distance Education Mode, but if this option is taken then the Vacation Schools are compulsory*

S2 (Semester 2)

APR520S	Applied Programming	Computer User Skills Introduction to Mathematics Module 2
DEL1200	Digital Electronics 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 1. The student may not enrol for any full time courses whilst doing Engineering Practice 1 or Engineering Practice 2. In case the studentwas 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)

Code	Course	Prerequisite
LPR2100	Electronic Engineering Practice 1	See Progression Rule 2

P2 (Semester 4)

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)

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)

DPJ320S	Design Projects 3 B	15 Electrical Engineering Credits, (P1/P2 excluded), Design Projects 3A, Projects 2
ICE7125	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 3 A
PEL3300	Power Electronics 3	Electrical Machines 2, Electronics 2 Mathematics 3

BACHELOR OF TECHNOLOGY IN POWER ENGINEERING **35BPEN**
(Phasing out in 2025)

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.

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 (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)

Code	Course Title	Prerequisite
EAP511S	English for Academic Purposes	English in Practice/Language in Practice B
DEL1100	Digital Electronics 1 **	Introduction to Physics Introduction to Mathematics Module 2 English in Practice/Language in Practice B
ELE111S	Electrical Engineering 1 **	Introduction to Mathematics Module 2 Introduction to Physics English in Practice/Language in Practice B
ELC1100	Electronics 1 **	Introduction to Physics Introduction to Mathematics Module 2 English in Practice/Language in Practice B
ITD012S	Engineering Graphics*	None
MAT111S	Mathematics 1 **	Introduction to Mathematics Module 2 English in Practice/Language in Practice B
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 if this option is taken then the Vacation Schools are compulsory.*

S2 (Semester 2)

Code	Course Title	Prerequisite
APR520S	Applied Programming	Computer User Skills Introduction to Mathematics Module 2
ELE120S	Electrical Engineering 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

*** 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)

Code	Course Title	Prerequisite
EPR2100	Electrical Engineering Practice 1	See Progression Rule 2

P2 (Semester 4)

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)

EMS1100	Engineering Mechanics	Introduction to Mathematics Module 2 Introduction to Physics Co-requisite: English in Practice/ Language in Practice B Engineering Skills Module 2
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)

DPJ320S	Design Projects 3B	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	Electrical Distribution 3, Power Engineering 3 Mathematics 3
ECD320S	Electronic Design 3B	Electronic Design 3A
HFE1300	High Frequency Engineering 3	Communication Electronics 2, Mathematics 3
MIC320S	Micro controller Applications 3B	Micro controller Applications 3A
PEL3300	Power Electronics 3	Electrical Machines 2, Electronics 2 Mathematics 3

BACHELOR OF TECHNOLOGY IN ELECTRONIC ENGINEERING **35BELL**

and

BACHELOR OF TECHNOLOGY IN POWER ENGINEERING **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 willapply:

National Diploma	Course registration will be based on attained prerequisites
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 specialty 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 electivesand 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
  2-Electrical Protection 4B
- Micro controllers Sequence (Electronics only)
  1- Field Programmable Logic Device Applications 4 2- Micro controller System Applications 4
- Communications Sequence (Electronics only) 1- Electronic Communications 4
  2- Digital Communications 4
- Controls Sequence (Power and Electronics) 1- Control Systems 4
  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 dependenton 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 the 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 a part time theoretical semester course and will be presented in the first 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.*

BACHELOR OF TECHNOLOGY IN ELECTRONIC ENGINEERING **35BELL**
(Old programme, Phasing out in 2025)

Description
Graduates of this programme will acquire a sound knowledge in the area of Electronic Engineering. The programme will produce specialists in any one or more of the three options: Communication Systems, Control Systems and Micro Controller systems. 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 on part time and it 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 recourses.

S5 (Semester 7)

Code	Course Title	Prerequisite
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)

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)

Any ONE of the following (Sequence choice):

DCS410S	Digital Control Systems 4	Control Systems 3, Mathematics 4
DCM410S	Digital Communications 4	Electronic Communications 4 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 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

S6 (Semester 10)

Code	Course Title	Prerequisite
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
DCM410S	Digital Communications 4	Electronic Communications 4
EMG410S	Energy Management 4	Micro Controller Applications 3B 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 **CODE: 35BPEN**
(Old Programme) (Phasing out in 2025)

Description
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 programmeis 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.

S5 (Semester 7)

Code	Course Title	Prerequisite
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 Protection 4A	Electrical Distribution 3, Electrical Protection 3 Mathematics 3

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

CTS410S	Control Systems 4	Control Systems 3
EMA410S	Electrical Machines 4	Electrical Machines 3, Power Systems 4
EPR410S	Electrical Protection 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 ENGINEERING **07BELL**

New Programme (Phase in 2020)

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 Engineering Evaluation 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 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 Part 1 of the NUST 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.

The Bachelor of Technology in Electronic Engineering programme has one major cognate areas of learning (Electronic Engineering), developed in increasing complexity across relevant NQF levels and in accordance with NQF principles as summarised in the following tables.

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 the NUST policies 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/take home 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's Honours degree in engineering 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 were 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 Table 1.

Students who were 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 were 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 were 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 Table 16). 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.

Table 15: 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

Table 16: Bachelor of Technology in Electronic Engineering 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 (Equivalent new/revised courses – new/revised curriculum)**	
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 Projects 322
ENT3400	Entrepreneurship and Management 2	CE712S	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	IDP721S	Industrial Design Project 422
AUT3300	Automation 3	AU611S	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.

Table 16 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.

Table 17: Courses that do not have corresponding courses in the revised Bachelor of Technology in Electronic Engineering 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 Applications 4
EPR3400	Electrical Protection 3
PEL3300	Power Electronics 3
EMA3400	Electrical Machine 3
MAE410S	Maintenance Engineering 4

CURRICULUM

Year 1
Semester 1

Code	Course Title	Prerequisite
ANE511S	Analogue Electronics 115	None
EEF511S	Electrical Engineering Fundamentals 115	None
ENM510S	Engineering Mathematics 1	None
EAP511S	English for Academic Purposes	English in Practice or Language in Practice B, or Module 3, or Exemption
FPG511S	Fundamentals of Programming 114	None

Semester 2

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

Year 2
Semester 3

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

Semester 4

CCE620S	Communication Electronics 224	Analogue Electronics 125
COS620S	Control Systems	Engineering Mathematics 3
ECD621S	Electronic Circuit Design 225	Electronic Circuit Design 215
EPJ621S	Electronic Projects 223	Electronic Projects 213
IED520S	Introduction to Engineering Drawing	None
MCA621S	Microcontroller Applications 224	Applied Programming 124, Digital Electronics 125

Year 3

Semester 5

Course Code	Course Title	Prerequisite
CCE611S	Communication Electronics 314	Communication Electronics 224
IUT611S	Industrial Automation 314	Applied Programming 125, Digital Electronics 215
ICE712S	Innovation, Creativity & Entrepreneurship	None
MCA611S	Microcontroller Applications 314	Microcontroller Applications 224
SYD611S	Sustainability and Development	None

Semester 6

DPJ621S	Design Project 322	A pass in all core electronic engineering. courses up to and including Semester 5
WEL621S	Work-Integrated Learning (WIL)	A pass in all core courses up to and including. Semester 5

Year 4

Semester 7

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

Plus TWO of the following Strand elective courses depending on specialisation:

Communication Systems strand:

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

Embedded Systems strand:

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

Semester 8

ENE620S	Engineering Ethics 423	None
IDP721S	Industrial Design Project 422	Design Project 322 and successful completion of all Semester 7 courses, including electives.
PJM721S	Project Management 423	None

BACHELOR OF TECHNOLOGY IN POWER ENGINEERING **07BPEN**

New Programme (Phase in 2020)

Programme Aims/Purpose:
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 Engineering Evaluator 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 Electrical and Computer Engineering and the Dean of the Faculty of Engineering approve registration of the candidate.

Applicable to students enrolled in InSTEM programme at the Namibia University of Science and Technology:
Candidates must have successfully completed all courses in the Introduction to Science, Technology, Engineering, 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 holder 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 recognized 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 subject to the results of an evaluation of the equivalence of their qualifications to the revised Bachelor of Engineering in the 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.

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 the 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 of 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.

Quality Assurance Arrangements:

All assessments which contribute to the final course mark will be moderated prior to being administered. The marked scripts will also be moderated before the final marks are recorded for future use and/or reference. All moderation will be done according to institutional regulations on moderation. Each course, therefore, in addition to having one or more examiner(s), will have at least one moderator. Moderators will be identified both internally and externally. The required minimum qualification of the moderator is at least one NQF level of qualification above the qualification in the actual or related field of study. Alternatively, the person must be a well-respected expert in the field. All the courses that incorporate exit level outcomes of this programme, as well as exit level courses at NQF level 7, will be externally moderated.

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 were 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 Table1 3.

Students who were 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 20223. Students who would have failed the 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 Table 19.

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.

Table 18: Bachelor of Technology in Power Engineering first year courses to be credited

Bachelor of Technology in Power Engineering (Old Curriculum)		**Bachelor of Technology in Power 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	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

Table 19: Bachelor of Technology in Power Engineering corresponding Courses to be done for failed courses- this is not a Credit Table

Bachelor of Technology in Power Engineering (Old Curriculum)		**Bachelor of Technology in Power Engineering (Equivalent new/revised courses – new/revised curriculum)**	
Code	**Course**	**Code**	**Course**
EPR2100	Electrical Engineering Practices 1	WPE621S	Work Integrated Learning (WIL)
EPR2200	Electrical Engineering Practices 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 3	DPJ621S	Design Projects 322
AUT3300	Automation 3	IUT611S	Industrial Automation 314
CTS31OS	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 Projects 3		None
CTS410S	Control Systems 4A		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 a 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 new course in the revised curriculum.

Table above, only highlights 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.

Table 20: Core courses in engineering that should be done if courses on the old curriculum are failed

Code	Course
RIJ110S	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
DCM410S	Digital Communications 4

CURRICULUM

Year 1
Semester 1

Code	Course Title	Prerequisite
ANE511S	Analogue Electronics 115	None
EEF511S	Electrical Engineering Fundamentals 115	None
ENM510S	Engineering Mathematics 1	None
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, Or Module 3, or Exemption
FPG511S	Fundamentals of Programming 114	None

Semester 2

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

Year 2
Semester 3

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

Semester 4

COS620S	Control Systems	Engineering Mathematics 3
EMS521S	Electrical Machines 224	Electrical Circuit Analysis 125
MCC621S	Microcontroller Applications 224	Applied Programming 124 Digital Electronics 125
PED621S	Power Electronics and Drives 224	Analogue Electronics 125
PPL621S	Power Engineering Principles and Lighting 224	Electrical Circuit Analysis 125
IED520S	Introduction to Engineering Drawing	None

Year 3

Semester 5

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

Semester 6

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

Year 4

Semester 7

Course Code	**Course Title**	**Prerequisite**
PSS711S	Power Systems 414	Engineering Mathematics 3 and Power Engineering Principles and Lighting 224
PSA711S	Power Systems Analysis and Simulation 414	Engineering Mathematics 2 and Electrical Circuit Analysis 125
PWP711S	Power Systems Protection 414	Electrical Protection 314
RET711S	Renewable Energy Technology 414	None

Plus ONE of the following elective courses depending on demand

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

Semester 8

ENE620S	Engineering Ethics 423	None
IDP711S	Industrial Design Project 422	Design Project 322 and successful completion of all semester 7 (S7) courses, including electives.
PJM721S	Project Management 423	None

Plus ONE of the following elective courses depending on demand

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

BACHELOR OF ENGINEERING IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING CODE: 08BEET
(Revised) (Phased in 2017)

NQF Levels: 8 **NQF Credits: 594** **NQF Qualification ID: Q1032**

The Bachelor of Engineering in Electronics and Telecommunications Engineering curriculum is designed 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. 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.

Admission Requirements
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 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.

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 1 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 were 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 were 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 Table 1.
- Students who were 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) and will be granted credits on a course-by-course basis in accordance with information on the credit table in table 1.
- Students who were 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 table 15.1, as no phasing out courses in 1st and 2nd year will be offered as from 2017.
- Students who were 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) took 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 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.

Table 21: Bachelor of Engineering: Electronics and Telecommunications courses to be credited.

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	MTM511S	Engineering Mathematics 115
AMC110S	Engineering Mechanics 114	AMC511S	Engineering Mechanics 114
APH120S	Engineering Physics 115	APH511S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
MTM210S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
ACH110S	Engineering Chemistry 123	ACH521S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS521S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM521S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC611S	Electrical Circuits 124
	None	IIN521S	Introduction to Industry 4.0 124
WPR120S	Workshop Practice120	WPR421S	Workshop Practice 120
MTM611S	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	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	SAS621S	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	MCA721S	Microcontroller Applications 325
MAI62OS	Measurements and Instrumentation 224	MAI711S	Measurements and Instrumentation 315
DIC810S	Digital Communication 415	DCT721S	Digital Communication Techniques and 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 Management 414
REG810S	Radio Engineering 415	MWE811S	Microwave Engineering 414
ESD820S	Electronic Systems Design 425	EDP811S	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	INR821S	Intelligent Robotics 425
RNE820S	Renewable Energy 425	RNE820S	Renewable Energy 415

ETP830S	Electronics & TelecommunicationsProject 511	ETP821S	Electronics and Telecommunications Project 421
MCS820S	Mobile Communication Systems 425	MCS821S	Mobile Communication Systems 414
TSN820S	Telecommunication Switching and Network Systems 425		
EIS820S	Engineer-in-Society: Ethics, Professional-ism 424	EIS820S	Engineer-in –Society: Ethics ,Professionalism 424
		WET711S	Work Integrated Learning: Electronics and Telecommunications Engineering

Table 22: Bachelor of Engineering: Electronics and Telecommunications 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 Tele-communications Engineering (Equivalent New/ Revised Course)
MTM110S	Engineering Mathematics 115	MTM511S	Engineering Mathematics 115
AMC110S	Engineering Mechanics 114	AMC511S	Engineering Mechanics 114
APH120S	Engineering Physics 115	APH511S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
MTM210S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
ACHI110S	Engineering Chemistry 123	ACHI521S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS521S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM521S	Mechanics of Materials 124
EEG120S	Electrical Circuits 124	EEG120S	Electrical Engineering 125
	None	IIN521S	Introduction to Industry 4.0 124
WPR120S	Workshop Practice120	WPR421S	Workshop Practice 120
MTM301S	Engineering Mathematics 215	MTM611S	Engineering Mathematics 215
ANE510S	Analogue Electronics 215	ADS611S	Analogue Electronics Devices and Systems 215
ANE620S	Analogue Electronics 225		
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		
TCE720S	Telecommunication Engineering 325	ACT711S	Analogue Communication Techniques and Systems315
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
MAI62OS	Measurements and Instrumentation 224	MAI711S	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 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 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 NetworkSystems 425		
EIS820S	Engineer-in-Society: Ethics, Professionalism424	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 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 Code	Course Title	Prerequisite	NQF Levels	NQF Credit
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
CEN510S	Computing for Engineers 114	None	5	12
EAP511S	English for Academic Purposes or Module 3,	English in Practice, or Language in Practice B, or Exemption	5	14
Semester 2				
MTM521S	Engineering Mathematics 125	Engineering Mathematics 115	5	15
ACH521S	Engineering Chemistry 123	None	5	9
MLS521S	Materials Science 124	None	5	12
MOM521S	Mechanics of Materials 124	Engineering Mechanics 114	5	12
ELC520S	Electrical Circuits 124	Engineering Physics 114, Engineering Mathematics 115	5	12
IIN521S	Introduction to Industry 4.0 124	None	5	12
WPR421S	Workshop Practice 120	None	4	NCB
Year 2				
Semester 3				
MTM611S	Engineering Mathematics 215	Engineering Mathematics 125	5	15
ADS611S	Analogue Electronics Devices and Systems 215	Engineering Mathematics 125, Electrical Circuits 124	6	12
PFE610S	Programming for Engineers 214	Computing for Engineering Mathematics 125	6	12
AEP611S	Advanced Electrical Principles 215	Electric Circuits 124, Engineering Mathematics 125	6	12
EMC611S	Electrical Machines 214	Electric Circuits 124	6	12
ECV611S	Energy Conversion 215	Engineering Physics 114, Engineering Mathematics 125, Electrical Circuits 124	6	12

Semester 4				
NMS620S	Numerical Methods 224	Engineering Mathematics 215	6	12
ICT521S	Information Competence	None	5	10
SSS621S	Statistics 224	Engineering Mathematics 215	6	12
DEC621S	Digital Electronic Circuits 225	Electric Circuit 124, Analogue Electronics Devices and Systems 215	6	12
AED621S	Analogue Electronic Design 225	Analogue Electronics Devices and Systems 215	6	12
SAS620S	Signals and Systems 225	Electrical Circuits 124 Engineering Mathematics 215	6	12
Year 3				
Semester 5				
CCN611S	Computer Communication Networks 315	Digital Electronics Circuits 225	6	12
SYD611S	Sustainability and Development	None	6	12
CML11S	Commercial Law 1A	None	5	12
ACT711S	Analogue Communication Techniques and Systems 315	Analogue Electronic Design 225, Numerical Methods 224	7	12
SYM710S	Systems Modelling 313	Engineering Mechanics 114, Electrical Machines 214	7	9
CAM711S	Computer Architecture and Microprocessors 315	Digital Electronics Circuit 225	7	12
MAI711S	Measurements and Instrumentation 315	Electric Circuits 124	7	12
WET711S	Work Integrated Learning (WIL) Electronics and Telecommunications	None	7	36
Semester 6				
ICE712S	Innovation Creativity and Entrepreneurship	None	7	15
CNS720S	Control Systems 324	System Modelling 313	7	12
MCA721S	Microcontroller Applications 325	Computer Architecture and Microprocessors	7	12
DCT721S	Digital Communication Techniques and Systems 324	Analogue Communication Techniques and Systems 315, Statistics 224	7	12
EEM721S	Engineering Electromagnetics 325	Electrical Circuits 124, Engineering Mathematics 125	7	12
DSP721S	Digital Signal Processing 324	Signals and Systems 225	7	12
Year 4				
Semester 7				
ETM810S	Engineering and Technology Management 414	None	8	12
MWE811S	Microwave Engineering 414	Digital Communication Techniques and Systems 324	8	12
ECD811S	Electronic Design Project 414	Microcontroller Applications 325	8	20
OCS811S	Optical Communication Systems 424	Analogue Communication Techniques and Systems 315	8	12
ERM810S	Engineering Research Methodology 414	None	8	12
Plus ONE elective of the following:				
RAE811S	Renewable Energy 415	Electrical Circuits 124, Electrical Machines 214	8	12
DCS811S	Digital Control Systems 425	Electrical Circuits 124, Electrical Machines 214	8	12
INR820S	Intelligent Robotics	Microcontroller Applications 325, Programming for Engineers 214	8	12
Semester 8				
ETP821S	Electronics & Telecommunications Project 421	Engineering Research Methodology 414 Electronic Design Project 325	8	40
EIS820S	Engineer-in-Society: Ethics & Professionalism 424	None	8	12
MCS821S	Mobile Communication Systems 414	Microwave Engineering 325	8	40

BACHELOR OF ENGINEERING IN ELECTRICAL POWER ENGINEERING **08BEEP**
(Revised Programme) (Phased in 2017)

NQF Level: 8 **NQF Credits: 94** **NQF Qualification ID: Q1027**

Introduction
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 – 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 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.

Exceptions
Holders of National Diploma in either Electronic or Power Engineering from the 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 Mathematics 2. 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 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, 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 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 were 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 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 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) took 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 24, 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 fulfil all requirements of the new curriculum.

Table 23: Bachelor of Engineering: Electrical Power 1st, 2nd, 3rd and 4th year courses to be credited

Course 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	MTM511S	Engineering Mathematics 115
CUS411S	Computer User Skills	CEN510S	Computing for Engineers 114
AMC110S	Engineering Mechanics 114	AMC511S	Engineering Mechanics 114
APH120S	Engineering Physics 114	APH511S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
CEM510S	Computing for Engineers 114	CEM510S	Computing for Engineers 114
EAP511S	English for Academic Purposes	EAP511S	English for Academic Purposes
MTM210S	Engineering Mathematics 125	MTM210S	Engineering Mathematics 125
ACH521S	Engineering Chemistry 123	ACH521S	Engineering Chemistry 123
MLS521S	Materials Science 124	MLS521S	Materials Science 124
MOM521S	Mechanics of Materials 124	MOM521S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC520s	Electrical Circuits 124
	None	IIN521S	Introduction to Industry 4.0 124
WPR421S	Workshop Practice 120	WPR421S	Workshop Practice 120
2nd YEAR COURSES TO BE CREDITED			
MTM611S	Engineering Mathematics 215	MTM310S	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
MAI62OS	Measurements and Instrumentation 224	MAI711S	Measurements and Instrumentation 315
PSE720S	Power System Engineering 325	PST721S	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	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

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.

Table 24: 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	MTM511S	Engineering Mathematics 115
AMC110S	Engineering Mechanics 114	AMC511S	Engineering Mechanics 114
APH120S	Engineering Physics 115	APH511S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
CUS411S	Computer User Skills	CEN510S	Computing for Engineers
MTM210S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
ACH110S	Engineering Chemistry 123	ACH521S	Engineering Chemistry 123
MLS120S	Materials Science 124	MLS521S	Materials Science 124
MOM120S	Mechanics of Materials 124	MOM521S	Mechanics of Materials 124
EEG120S	Electrical Engineering 125	ELC520S	Electric Circuits 124
	None	IIN521S	Introduction to Industry 4.0 124
WPR120S	Workshop Practice120	WPR421S	Workshop Practice 120
MTM301S	Engineering Mathematics 215	MTM310S	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
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
MAI62OS	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
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:
Table 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 relevant Departments apply to this programme as well.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Levels	NQF Credits
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
CEN511S	Computing for Engineers 114	None	5	12
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption	5	14

Semester 2

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

Year 2
Semester 3

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

Semester 4				
NMS620S	Numerical Methods 224	Engineering Mathematics 215	6	12
DEC621S	Digital Electronic Circuits 225	Electrical Circuits 124, Analogue Electronic Devices and Systems 215	6	12
SSS621S	Statistics 224	Engineering Mathematics 215	6	12
TDN620S	Thermodynamics 224	Engineering Mathematics 115	6	12
AED621S	Analogue Electronics Design 224	Analogue Electronic Devices and Systems 215	6	12
ICT521S	Information Competence	None	5	10
Year 3				
Semester 5				
MAI711S	Measurement and Instrumentation 315	Electric Circuits 1124	7	12
CML111S	Commercial Law 1A	None	5	12
PST711S	Power System 315	Advanced Electrical Principles 215, Numerical Methods 224	7	12
EMC711S	Electrical Machines 315	Electrical Machines 214, Numerical Methods 224	7	12
SYM710S	Systems Modelling 313	Engineering Mechanics 114, Electrical Machines 214	7	9
ATM711S	Automation 315	Digital Electronics Circuits 225	7	12
SYD611S	Sustainability and Development	None	6	12
WEP711S	Work Integrated Learning (WIL) Electrical Power Engineering	None	7	36
Semester 6				
EEM721S	Engineering Electromagnetics 325	Electrical Circuits 124, Engineering Mathematics 125	7	12
CNS720S	Control Systems 324	Systems Modelling 313	7	12
MMS721S	Microprocessor and Microcontroller System 325	Digital Electronics	7	12
ICE712S	Innovation Creativity and Entrepreneurship	None	7	15
PSD721S	Power Semiconductor Devices and Converters 325	Advanced Electrical Principles 215 Analogue Electronics Devices and Systems 215	7	12
PST721S	Power Systems 325	Power Systems 315	7	12
Semester 7				
EDP811S	Electrical Design Project 419	All courses up to Semester 6	8	20
ERM810S	Engineering Research Methodology 414	None	8	12
ETM810S	Engineering and Technology Management 414	None	8	12
ETD811S	Electric Devices 415	Power Semiconductor Devices and Converters 325, Electrical Machines	8	12
Any TWO (2) of the following electives from any Strand				
Electric Power & Energy Systems Strand:				
TDN811S	Transmission and Distribution Networks 415	Power Systems 325, Engineering Mathematics 215	8	12
POS811S	Power System Operation & Control 415	Power Systems 325	8	12
EMM811S	Energy Management 415	Power Systems 325	8	12
HVE811S	High Voltage Engineering 415	Power Systems 325	8	12
RAE811S	Renewable Energy 415	Electric Circuits 124, Electrical Machines 214	8	12
Electric Drives, Automation and Control Strand:				
ETM811S	Electrical Machines 415	Electrical Machines 315, Engineering Electromagnetics 325	8	12
ATS811S	Automation Systems 415	Control Systems 324, Engineering Mathematics 215	8	12
DCS811S	Digital Control Systems 425	Electrical Circuits 124, Electrical Machines 214	8	12
Semester 8				
EPP821S	Electrical Power Project 421	Engineering Research Methodology 414	8	40
EIS820S	Engineering-in-Society: Ethics and Professionalism	None	8	12
PSP821S	Power Systems Protection 425	Power Systems 315, Electrical Machines 315	8	12

MECHANICAL AND INDUSTRIAL ENGINEERING

QUALIFICATIONS OFFERED

Bachelor of Technology in Mechanical Engineering	07BMEC
Bachelor of Technology in Mechanical Engineering (Phasing out in 2024)	35BMEC
Bachelor of Technology in Marine Engineering (Will not be offered in 2023)	07BTME
Bachelor of Engineering in Mechanical Engineering	08BEME
Bachelor of Engineering in Industrial Engineering	08BIND

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING 07BMEC
(Revised - Phasing in 2019)

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.

Admission Requirements
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 and Physics or Physical Science and with a minimum "D" symbol in English at Grade 12/NSSC Ordinary Level plus any three other subjects using a combination of NSSCH and NSSCO.

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.

Assessment Strategies
The assessment for the courses is designed to enable students to fully develop and demonstrate a practicing 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 to 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, 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 were registered in 2018 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 2018, 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.

The revised Bachelor of Technology in Mechanical Engineering (new curriculum) took 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 Table 26). 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.

Table 25: Bachelor of Technology: MechanicalEngineering 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

Table 26: 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 BodyDynamics)		
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
MOM310S	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)
- Internal Combustion Engines (ICE320S)
- Experimental Stress Analysis (ESA410S)
- Mathematics 4 (MAT410S)

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

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 Part 1 of the NUST Yearbook.

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 Code	Course Title	Prerequisite(s)
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption
ENM510S	Engineering Mathematics 1	None
FET510S	Fundamentals of Electrical Technology	None
WSP510S	Workshop Practice	None
APP510S	Applied Physics and Chemistry	None
CFT510S	Computing for Technologists	None

Semester 2

ENM520S	Engineering Mathematics 2	Engineering Mathematics 1
IED520S	Introduction to Engineering Drawing	None
EAI520S	Electronics and Instrumentation	Fundamentals of Electrical Technology
EMT520S	Engineering Materials Technologies	None
EMS520S	Engineering Mechanics (Statics)	Engineering Mathematics 1
PFT520S	Programming for Technologists	Computing for Technologists

Year 2

Semester 3

EMD610S	Engineering Mechanics (Dynamics)	Engineering Mechanics (Statics)
ENM610S	Engineering Mathematics 3	Engineering Mathematics 2
DME610S	Design of Machine Elements 1	Introduction to Engineering Drawing, Engineering Mechanics (Statics)
FDM610S	Fluid Mechanics	None
MCM610S	Mechanics of Materials 1	Engineering Mechanics (Statics)
TMD610S	Thermodynamics	None

Semester 4

DME620S	Design of Machine Elements 2	Design of Machine Elements 1
COS620S	Control Systems	Engineering Mathematics 3
MCM620S	Mechanics of Materials 2	Mechanics of Materials 1
HTR620S	Heat Transfer	Thermodynamics
ICT521S	Information Competence	None
TMC620S	Theory of Machines	Engineering Mechanics (Dynamics)

Year 3

Semester 5

WME610S	Work Integrated Learning (WIL)	A pass in all first year Engineering courses
SYD611S	Sustainability and Development	None

Semester 6

MEP720S	Mechanical Engineering Project 1	None
MDP720S	Mechanical Design Project	Design of Machine Elements 2
HVA/R720S	Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R)	Heat Transfer
ICE712S	Innovation, Creativity & Entrepreneurship	None

Plus ONE of the following Elective courses (depending on demand):

CFD720S	Computational Fluid Dynamics	Fluid Mechanics, Control Systems
MMT720S	Modern Manufacturing Technologies	Workshop Practice

Year 4

Semester 7

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

Plus ONE of the following Elective courses (depending on demand):

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

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING **35BMEC**

(Phasing out 2024)

Description

Mechanical Engineering covers a vast range of activities from simple hand tools to spacecraft. Areas of study cover mechanisms, the use of heat to deliver work and the reverse process, the factors influencing the strength of components of machines and structures, manufacturing processes and design of components. Graduates of the programme are equipped with a range of knowledge that will enable employment in a broad range of industries, from consulting engineering to mining and from industry to transport.

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 InSTEM).* The student must have completed all InSTEM.1/InSTEM.2 courses to proceed to S1.

Progression Rule No. 1B.2*: (Applicable to students in the Civil, and Mechanical programmes that qualify to enrol directly into S1).* The student must have been granted credits for 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.

Semester 1 (S1)

EMS1100	Engineering Mechanics (Statics) 1**	Introduction to Physics Introduction to Mathematics Module 2 Co-requisite: Language in Practice B/English in Practice
EAP511S	English for Academic Purposes	Language in Practice B/English in Practice
ELE111S	Electrical Engineering 1	Introduction to Mathematics Module 2Introduction to Physics Co-requisite: Language in Practice B/English in Practice
MAT111S	Mathematics 1**	Introduction to Mathematics Module 2 Co-requisite: Language in Practice B/English in Practice
CAD1100	Computer Aided Draughting**	Engineering Graphics Co-requisite: Language in Practice B/English in Practice
WPR1100	Workshop Practice	Engineering Skills Module 2 Co-requisite: Language in Practice B/English in Practice

***Communication Skills is available on Distance Education Mode, but if this option is taken than the Vacation Schools are compulsory.*

Semester 2 (S2)

FMC1200	Fluid Mechanics 2**	Engineering Mechanics 1 Mathematics 1 Co-requisite: English for Academic Purposes
EMP1200	Engineering Mechanics (Particle Dynamics) 2**	Mathematics 1 Co-requisite: English for Academic Purposes
MAT120S	Mathematics 2**	Mathematics 1 Co-requisite: English for Academic Purposes
DEM1200	Design and Manufacture 2**	Computer Aided Draughting Co-requisite: English for Academic Purposes
MOM1200	Mechanics of Materials 2**	Engineering Mechanics 1 Mathematics 1 Co-requisite: English for Academic Purposes
TDY1200	Thermodynamics 2**	Engineering Mechanics 1 Mathematics 1 Co-requisite: English for Academic Purposes

** Core S1/S2 Courses

Progression Rule No 2: The student must have passed all first year Engineering courses to proceed to relevant Engineering Practice. The student may not enrol for any full time courses whilst doing Engineering Practice. 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 per semester, subject to the written approval of employer /bursary giver.

Progression Rule No 3

The student may register for a maximum of two prescribed B.Tech. courses in addition to Mechanical Engineering Project 4A (MEP410S) or Mechanical Engineering Project 4B (MEP420S) during Semester 8, provided that the course/s registered for are actually presented by the Department of Mechanical Engineering during the respective semester.

Note: Engineering Practice could be done at any time after successful completion of first year Engineering courses.

Semester 3 (P1)

MPR2100	Mechanical Engineering Practice 1	See progression rule no 2

Semester 4 (P2)

MPR2200	Mechanical Engineering Practice 2	Mechanical Engineering Practice 1

Semester 5 (S3)

FMC310S	Fluid Mechanics 3	Fluid Mechanics 2, Mathematics 2
EMR310S	Engineering Mechanics 3A (Rigid Body Dynamics)	Engineering Mechanics (Particle Dynamics) 2, Mathematics 2
MAT311S	Mathematics 3	Mathematics 2
DEM310S	Design and Manufacture 3A	Design and Manufacture 2, Mathematics 2
MOM310S	Mechanics of Materials 3A	Mechanics of Materials 3A, Mathematics 2
TDY310S	Thermodynamics 3A	Thermodynamics 2, Mathematics 2

Semester 6 (S4)

ENT3400	Entrepreneurship and Management	None
FMC320S	Fluid Mechanics 3B	Fluid Mechanics 3A
MEP320S	Mechanical Engineering Design	Project Design and Manufacture 3A
TOM320S	Theory of Machines 3A	Engineering Mechanics (Rigid Body Dynamics)
MOM320S	Mechanics of Materials 3B	Mechanics of Materials 3A
ICE320S	Internal Combustion Engines	Thermodynamics 3A

At this level, the programme covers mainly the development of machines and systems basically for diverse application in the modern technologically advancement. Mechanical Engineering is one of the broadest of all Engineering disciplines, which ultimately provides opportunities for employment in the Industries, Research and Development, Education/Training and Government. Areas of study cover planning, analysing, evaluating, design and improvement of components and improvement of components and systems.

Semester 7 (S5)

Progression Rule No. 4: *The student must have successfully completed all courses from S3/S4-Level (ND) to proceed to B.Tech. in Mechanical Engineering.*

Code	**Course Title**	**Prerequisite**
Core courses (Compulsory)		
MVN410S	Mechanical Vibration and Noise 4	Theory of Machines
MOM410S	Mechanics of Materials 4	Mechanics of Materials 3B
HTF410S	Heat Transfer 4**	Internal Combustion Engines
MEP410S	Mechanical Engineering Project 4A	None

Semester 8 (S6)

Core Courses (compulsory)

COS420S	Control Systems 4	Theory of Machines
FMC420S	Fluid Mechanics 4**	Fluid Mechanics 3B
MEP420S	Mechanical Engineering Project 4B	Mechanical Engineering Project 4A

Electives:

ESA420S	Experimental Stress Analysis*	Mechanics of Materials 4
RAC420S	Refrigeration and Air Conditioning*	Thermodynamics 3A
MAT420S	Mathematics 4	Mathematics 3

* If presented

BACHELOR OF TECHNOLOGY IN MARINE ENGINEERING **07BTME**

(Not offered in 2023)

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.

Admission Criteria

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 and Physics or Physical Science and with a minimum "D" symbol in English at Grade 12/NSSC Ordinary Level plus any three other subjects using a combination of NSSCH and NSSCO.

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 fulfil 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 Code	Course Title	Prerequisite
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3, or Exemption
ENM510S	Engineering Mathematics 1	None
FET510S	Fundamentals of Electrical Technology	None
WSP510S	Workshop Practice	None
APC510S	Applied Physics and Chemistry	None
CFT510S	Computing for Technologists	None

Semester 2 (at NUST, Windhoek)

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

Year 2

Semester 3 (at NUST)

EMD610S	Engineering Mechanics (Dynamics)	Engineering Mathematics 2
MCM610S	Mechanics of Materials 1	Engineering Mechanics (Statics)
EPN510S	Electric Power Engineering 1	None
IAA520S	Instrumentation and Automation	None
HAP520S	Hydraulics and Pneumatics	None
PAP520S	Pumps and Piping	None
TES520s	Turbine Engineering and Operational Safety	None

Semester 4 (at NAMFI)

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

BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING **08BEME**
(Revised - Phased in 2016)

NQF Level: 8 **NQF Credits: 594** **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 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 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 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 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.

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 University rules.

Requirements for Qualification Award
This degree 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 compulsory courses (worth 570 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.

Special Arrangements

Teaching, Learning and 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.

Table 27: Bachelor of Engineering: Mechanical corresponding courses to be done, if failed

Course Code	Bachelor of Engineering: Mechanical (Old Courses)	Course Code	Bachelor of Engineering: Mechanical (New/Revised Corresponding Courses)
MTM110S	Engineering Mathematics 115	MTM511S	Engineering Mathematics 115
APH120S	Engineering Physics 114	APH511S	Engineering Physics 114
END111S	Engineering Drawing 114	IED511S	Introduction to Engineering Drawing 115
AMC110S	Engineering Mechanics114	AMC511S	Engineering Mechanics114
CSK0420S	Communication Skills	EAP511S	English for Academic Purposes
CUS411S	Computer User Skills	CEM510S	Computing for Engineers 114
ACH110S	Engineering Chemistry 123	ACH521S	Engineering Chemistry 123
MTM210S	Engineering Mathematics 125	MTM521S	Engineering Mathematics 125
MOM120S	Mechanics of Materials 124	MOM521S	Mechanics of Materials 124
	None	IIN521S	Introduction to Industry 4.0 124
EEG120S	Electrical Engineering 124	ELC520S	Electrical Circuits 124
EMC610S	Engineering Mechanics 213	EMC610S	Engineering Mechanics 214
MOM610S	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 224	TDN620S	Thermodynamics 224
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
MOM620S	Mechanics of Materials 214	MOM710S	Mechanics of Materials 314
EXM710S	Experimental Methods 315	EXM710S	Experimental Methods 314
TFL710S	Thermofluids 315	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 Methods 414	ERM810S	Engineering Research Methodology 414
DSP810S	Design Project 419	DSP810S	Design Project 419
EVE810S	Environmental Engineering 415	EVE810S	Environmental Engineering 414
CAM810S	Computer Aided Manufacturing 415	CAM810S	Computer Aided Manufacturing 415
	None	ESR810S	Renewable Energy Systems 414
MTS810S	Mechatronics 415	MTS810S	Mechatronics 414
MCP820S	Mechanical Project 424	MCP820S	Mechanical Project 424
CPN820S	Cleaner Production 424	CPN810S	Cleaner Production Technology 424
PPT820S	Power Plant Technology 425	PPT820S	Power Plant Technology 425
NTI810S	Introduction to Nanotechnology 425		None
MPA820S	Microprocessor Applications 425	MPA820S	Microprocessor Applications 425
MET830S	Mechanical Experiential Training	WME820S	Work Integrated Learning

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.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
CEN510S	Computing for Engineers 114	None	5	12
EAP511S	English for Academic Purposes	English in Practice, or Language in Practice B, or Module 3 or Exemption	5	14

Semester 2

MTM521S	Engineering Mathematics 125	Engineering Mathematics 115	5	15
ACH521S	Engineering Chemistry 123	None	5	9
MLS120S	Materials Science 124	None	5	12
MOM120S	Mechanics of Materials 124	Engineering Mechanics 114		
ELC520S	Electrical Circuits 124	Engineering Physics 114; Engineering Mathematics 115	5	12
IIN521S	Introduction to Industry 4.0 124	None	5	12
WPR421S	Workshop Practice 120	None	5	NCB

Year 2
Semester 3

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

Semester 4				
NMS620S	Numerical Methods 224	Engineering Mathematics 215	6	12
EMC620S	Engineering Mechanics 224	Engineering Mathematics 125 Engineering Mechanics 213	6	12
SSS621S	Statistics 224	Engineering Mathematics 215	6	12
TDN620S	Thermodynamics 224	Engineering Mathematics 115	6	12
ICT521S	Information Competence	None	5	10
POD620S	Principles of Design 224	Engineering Drawing 114	6	12
ETR620S	Electronics 224	Workshop Practice 120 Electrical Circuits 124	6	12
Year 3				
Semester 5				
MOM710S	Mechanics of Materials 314	Mechanics of Materials 214	7	12
TFL710S	Thermofluids 315	Fluid Mechanics 214, Thermodynamics 224	7	15
EXM710S	Experimental Methods 314	Engineering Mathematics 215 Electronics 224	7	12
SYM710S	Systems Modelling 313	Engineering Mechanics 114; Electrical Machines 214	7	9
MPS710S	Manufacturing Processes 313	Workshop Practice 120	7	9
MAD710S	Machine Design 315	Principles of Design 224	7	15
Semester 6				
CNS720S	Control Systems 324	Systems Modelling 313	7	12
TOM720S	Theory of Machines 324	Engineering Mechanics 224, Machine Design 315	7	12
HTF720S	Heat Transfer 324	Thermodynamics 225, Numerical Methods 224	7	12
ICE712S	Innovation Creativity & Enterprise	None		
VAN720S	Vibration and Noise 324	Engineering Mechanics 224	7	12
SYD611S	Sustainability and Development	Experimental Methods 315 None	7	15
Year 4				
Semester 7				
DSP810S	Design Project 419	All courses up to and including Semester 6	8	27
EVE810S	Environmental Engineering 414	None	8	12
ERM810S	Engineering Research Methodology 414	None	8	12
ETM810S	Engineering and Technology Management 414	None	8	12
Plus ONE of the following Electives courses:				
ESR810S	Renewable Energy Systems 414	Thermofluids 314, Heat Transfer 325, Control Systems 324	8	12
CAM810S	Computer Aided Manufacturing 414	Manufacturing Processes 313	8	12
MTS810S	Mechatronics 414	Electronics 224 Control Systems 324 Experimental Methods 315	8	12
Semester 8				
MCP820S	Mechanical Project 424	Engineering Research Methodology 414	8	42
EIS820S	Engineer-in-Society: Ethics, Professionalism 424	None	8	12
WME820S	Work Integrated Learning (WIL)	All courses up to and including Semester 4	8	NCB
Plus ONE of the following Electives courses:				
PPT820S	Power Plant Technology 424	Thermofluids 315, Heat Transfer 325, Control Systems 324	8	12
CPN820S	Cleaner Production 424	Environmental Engineering 414	8	12
MPA820S	Microprocessor Applications 424	Mechatronics 415	8	12

BACHELOR OF ENGINEERING IN INDUSTRIAL ENGINEERING **08BIND**
(Phased in 2016)

NQF Level: 8 **NQF Credits: 594** **NQF Qualification ID: Q0902**

Description
The Bachelor of Engineering in 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.

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 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 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.

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 Part 1 of the NUST 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.

Teaching and 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 methodology for this programme are designed to equip students with the necessary knowledge regarding industrial 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. 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 (WIL). The progress of learning embedded in such tasks will be monitored, recorded and assessed.

The Bachelor degree student must undertake compulsory Work Integrated Learning. Students have to fully participate in all the activities in industry that will give them practical experience of what to expect. They not only have to record all duties performed but also have to participate in the trouble shooting exercises and come up with workable solutions for improvement 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, 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). Transition arrangements are, therefore, not applicable.

CURRICULUM

Course Code	Course Title	Prerequisites	NQF Levels	NQF Credits
Year 1				
Semester 1				
MTM511S	Engineering Mathematics 115	None	5	15
AMC511S	Engineering Mechanics 114	None	5	12
APH511S	Engineering Physics 114	None	5	12
IED511S	Introduction to Engineering Drawing 115	None	5	15
CEN510S	Computing for Engineers 114	None	5	12
EAP511S	English for Academic Purposes	None	5	14
Semester 2				
MTM521S	Engineering Mathematics 125	Engineering Mathematics 115	5	15
ACH521S	Engineering Chemistry 123	None	5	9
MLS521S	Materials Science 124	None	5	12
MOM521S	Mechanics of Materials 124	Engineering Mechanics 114	5	12
ELC520S	Electrical Circuits 124	Engineering Physics 114, Engineering Mathematics 115	5	12
IIN521S	Introduction to Industry 4.0 124	None	5	12
WPR421S	Workshop Practice 120	None	4	NCB
Year 2				
Semester 3				
MTM310S	Engineering Mathematics 215	Engineering Mathematics 125	6	15
FMC610S	Fluid Mechanics 214	Engineering Mechanics 114	6	12
PFE610S	Programming for Engineers 214	Computing for Engineers 114	6	12
MOM610S	Mechanics of Materials 214	Mechanics of Materials 124	6	12
EMC610S	Engineering Mechanics 214	Engineering Mathematics 115, Engineering Physics 114	6	12
EMC510S	Electrical Machines 214	Electrical Circuits 124	6	12
Semester 4				
NMS620S	Numerical Methods 224	Engineering Mathematics 215	6	12
EMC620S	Engineering Mechanics 224	Engineering Mathematics 125, Engineering Mechanics 213	6	12
SSS220S	Statistics 224	Engineering Mathematics 215	6	12
TDN620S	Thermodynamics 224	Engineering Mathematics 115	6	12
POD620S	Principles of Design 224	Engineering Drawing 114, Workshop Practice 120	6	12
ETR620S	Electronics 224	Electrical Circuits 124	6	12
ICT521S	Information Competence	None		
Year 3				
Semester 5				
SSM710S	Systems Simulation Modelling 314	Statistics 224	7	12
IEM710S	Industrial Ergonomics 313	None	7	9
MFS710S	Manufacturing Systems 314	None	7	12
QEN710S	Quality Engineering 314	Statistics 224	7	12
OMM710S	Optimisation Methods 314	Computing for Engineers 114	7	12
MPS710S	Manufacturing Processes 313	Workshop Practice 120	7	9
EEC710S	Engineering Economics 313	None	7	9
Semester 6				
IED720S	Industrial Engineering Design 324	Manufacturing Processes 313	7	12
ILG720S	Industrial Logistics 323	Optimisation Methods 314	7	9
PPC720S	Process Planning and Cost Estimation 424	Manufacturing Processes 313	7	12
ACM720S	Accounting and Management 324	None	7	12
ICE712S	Innovation Creativity and Entrepreneurship	None	7	15
SYD611S	Sustainability and Development	None	6	12

Year 4
Semester 7

IDP810S	Industrial Design Project 414	All courses up to and including semester 5	8	27
EVE810S	Environmental Engineering 414	None	8	12
OMM810S	Optimisation Methods 414	Optimisation Methods 314	8	12
ERM810S	Engineering Research Methodology 414	None	8	12
ETM810S	Engineering and Technology Management 414	None	8	12

Semester 8

IEP820S	Industrial Engineering Project 420	Engineering Research Methodology 414	8	42
POM820S	Production and Operations Management 414	Optimisation Methods 314, Industrial Logistics 324, Statistics 224	8	12
EIS820S	Engineer-in-Society: Ethics, Professionalism 424	None	8	12
WME820S	Work Integrated Learning (WIL)	All courses up to and including Semester 4	8	NCB

SCHOOL OF THE BUILT ENVIRONMENT

DEPARTMENT OF LAND AND SPATIAL SCIENCES

LAND AND PROPERTY SCIENCES

QUALIFICATIONS OFFERED

Diploma in Property Studies (Revised - Phasing in 2023- 2026)	06DIPS
Diploma in Property Studies (Old - 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 judgments 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 businesses.

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**
(Revised Curriculum) - (Phasing in 2023- 2026)

NQF Credits: 258

Admission Requirements

Applicants may be considered for admission into the Diploma in Property Studies (Level 6) 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

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 in order 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.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
CUS411S	Computer User Skills	None	4	10
IGD411S	Introduction to Geospatial Data	None	4	8
BSC410S	Basic Science	None	4	8
MSS511S	Mathematics and Statistics for Spatial Sciences	None	5	12
PMI511S	Principles of Microeconomics	None	5	12
ILP510S	Introduction to Land Use Planning and Management	None	5	10
Semester 2				
BCS512S	Building Construction	None	5	12
ITV521S	Introduction to Valuation	None	5	12
ICT521S	Information Competence	None	5	10
LET621S	Land Economics and Taxation	None	6	12
EAP511S	English for Academic Purposes	English in Practice	5	14

Year 2				
Semester 3				
BAC1100	Business Accounting 1A	None	5	12
BSS511S	Building Services	Building Construction	5	12
LLR611S	Law for Land Registration	None	6	12
PMM611S	Property Management and Maintenance	None	6	12
PMV611S	Principles and Methods of Valuation	Introduction to Valuation	6	12
PDM611S	Property Development and Marketing	None	6	12
Semester 4				
GES512S	Geographic Information Systems 1	Computer User Skills Introduction to Geospatial Data	5	12
LTS520S	Land Tenure Systems	None	5	12
LIF521S	Legal and Institutional Framework	None	5	12
EUR612S	Elements of Urban and Rural Economics	Principles of Microeconomics	6	12
REP621S	Real Estate Practice	Building Construction, Building Services Principles and Methods of Valuation Property Management and Maintenance	6	15

Transition Arrangements

The programme will be implemented incrementally (Year-by-year) transition beginning with 1st year in 2023, thus the 2022 first year cohorts will all be allowed to proceed with the existing programme (old curriculum). Students registered in 2022 for the 1st year of the existing programme (old curriculum) who fail more than 50% of the courses at the end of 2022 will be transferred to the new programme and thus be required to fulfil all the requirements of the new (revised) programme, if any. The old curriculum 06DPRS will be completely phased out in 2026.

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 table 29 below for detailed information on the new corresponding courses to be done if courses in the old curriculum are to be repeated.

Table 28: Diploma in Property Studies credit table for Courses to be credited

Diploma in Property Studies (06DPRS)		**Diploma in Property Studies (06DIPS)**	
Course Code	**Course Name**	**Course Code**	**Course Name**
BCS520S	Building Construction and Services	BCC512S	Building Construction
		BSS511S	Building Services
LLA520S	Law for Land Administration	LLR611S	Law for Land Registration
LEM621S	Land Economics	LET612S	Land Economics and Taxation
UEN621S	Urban Economics	EUR612S	Elements of Urban and Rural Economics

Table 29: Diploma in Property Studies transition table: Corresponding course(s) to enrol should a student repeat a course

Diploma in Property Studies (Old Courses)		**Diploma in Property Studies (Equivalent Revised Course)**	
Course Code	**Course Title**	**Course Code**	**Course Title**
BCS520S	Building Construction and Services	BCC512S	Building Construction
		BSS511S	Building Services
LLA520S	Law for Land Administration	LLR611S	Law for Land Registration
LEM621S	Land Economics	LET612S	Land Economics and Taxation
UEN621S	Urban Economics	EUR612S	Elements of Urban and Rural Economics
PMT611S	Property Maintenance	PMT611S	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

NB: 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 courses. Exemption cannot be granted for less than a whole course. Table 29 above only highlights new/revised core courses in the Diploma of Property Studies (Level 6) that should be done in the event of a student failing a courses(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.

DIPLOMA IN PROPERTY STUDIES **06DPRS**
(Old Curriculum) (Phasing out from 2023 - 2026)

NQF Level: 6 **NQF Credits: 230** **NQF Qualification ID: Q0942**

Admission Requirements
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 and English Language. Candidates admitted with 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 in order to acquire the competencies.

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

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
CUS411S	Computer User Skills	None	4	10
IGD411S	Introduction to Geospatial Data	None	4	8
BSC410S	Basic Science	None	4	8
MSS511S	Mathematics and Statistics for Spatial Sciences	None	5	12
PMI511S	Principles of Microeconomics	None	5	12

Semester 2

BCS520S	Building Construction & Services	None	5	12
ITV521S	Introduction to Valuation	None	5	12
ICT521S	Information Competence	None	5	10
LEM621S	Land Economics	None	6	12
LTS520S	Land Tenure Systems	None	5	12

Year 2
Semester 3

LIF511S	Legal and Institutional Framework	None	5	12
ILP510S	Introduction to Land Use Planning and Management	None	5	12
PMT611S	Property Maintenance	None	6	12
PMV611S	Principles and Methods of Valuation	Introduction to Valuation	6	12
PDM611S	Property Development and Marketing	None	6	12

Semester 4

GES512S	Geographic Information Systems 1	Computer User Skills, Introduction to Geospatial Data	5	12
EAP511S	English for Academic Purposes	English in Practice, Language in Practice B, or Module 3	5 5	12 14
LLR611S	Law for Land Registration	None	5	12
UEN621S	Urban Economics	Principles of Microeconomics	6	12
REP621S	Real Estate Practice	Principles and Methods of Valuation, Building Construction and Services	6	12

Transition Arrangements
Credit and transition arrangements for courses which have been either amended or merged in the Diploma in Property Studies programme are as set out in the tables below.

Table 30: Diploma in Property Studies credit table: 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
PDM520S PDM610S	Property Development and Marketing 1 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
PFN620S	Property Finance1	PFI721S	Property Finance and Investment
REP610S	Real Estate Practice 1	REP621S	Real Estate Practice
UBE510S	Urban Economics	UEN621S	Urban Economics

Table 31: Diploma in Property Studies transition table: Corresponding course(s) to enrol should a student repeat a course

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
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
IDB220S	Introduction to Databases 1B	DBF5105	Database Fundamentals
VAL520S	Valuation 1	ITV521S	Introduction to Valuation
VAL610S	Valuation 2	PMV611S	Principles and Methods of Valuation
PFN620S	Property Finance 1	PFI721S	Property Finance and Investment

BACHELOR OF PROPERTY STUDIES **08BOPS**
(Revised- Phasing in 2023)

Admission Requirements
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 "B" (Ordinary level) or 4 (Higher level) or E (NSSCAS) in the English Language. If a candidate 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 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
* Real Estate Market Analysis
* Property Finance and Investment
* Professional Practice (Property Studies)
* Research Methodology
* Advanced Project Management
* Facilities Management and Procurement
* Computer Applications to Real Estate
* Advanced Property Finance and Investment
* Applied Valuation
* Land Administration Theory and Practice
* 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 and Services (BCS520S) 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 Health of Department in consultation with the Registrar.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
CUS411S	Computer User Skills	None	4	10
IGD411S	Introduction to Geospatial Data	None	4	8
BSC410S	Basic Science	None	4	8
MSS511S	Mathematics and Statistics for Spatial Sciences	None	5	12
PMI511S	Principles of Microeconomics	None	5	12
ILP510S	Introduction to Land Use Planning and Management	None	5	10
Semester 2				
BCS512S	Building Construction	None	5	12
ITV521S	Introduction to Valuation	None	5	12
ICT521S	Information Competence	None	5	10
PMA512S	Principles of Macroeconomics	None	5	12
EAP511S	English for Academic Purposes	English in Practice	5	12

Year 2

Semester 3

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

Semester 4

GES512S	Geographic Information Systems 1	Computer User Skills	5	12
LTS520S	Land Tenure Systems	Introduction to Geospatial Data None	5	12
LIF511S	Legal and Institutional Framework	None	5	12
LET621S	Land Economics and Taxation	None	6	12
EUR612S	Elements of Urban and Rural Economics	Principles of Microeconomics	6	12

Year 3

Semester 5

SYD611S	Sustainability and Development	None	6	12
LIS611S	Land Information Systems	Geographic Information Systems 1	6	12
LAT710S	Land Administration Theory and Practice	Land Tenure Systems	7	12
PQS721S	Principles of Quantity Surveying	Building Construction, Building Services	7	12
CAR720S	Computer Applications to Real Estate	Computer User Skills	7	12

Semester 6

PSP711S	Professional Practice (Property Studies)	Principles and Methods of Valuation Building Construction , Building Services Property Management and Maintenance	7	15
PFI721S	Property Finance and Investment	Introduction to Valuation	7	15
REM821S	Real Estate Market Analysis	Property Development and Marketing	8	15
FMP812S	Facilities Management and Procurement	Property Management and Maintenance	8	15

Year 4

Semester 7

AVT811S	Applied Valuation	Principles and Methods of Valuation	8	15
APF811S	Advanced Property Finance and Investment	Property Finance and Investment	8	15
RMD811S	Research Methodology	None	8	15
APM811S	Advanced Project Management	None	8	15

Semester 8

WPS821S	Work Integrated Learning	Not repeating more than 1 course	8	30
MPS821S	Mini-Thesis	Research Methodology	8	30

Table 32: Bachelor of Property Studies Corresponding Courses to be credited

Bachelor of Property Studies (08BPRS) (Old Courses)		**Bachelor of Property Studies (08BIPS) (Equivalent revised courses)**	
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
UEN621S	Urban Economics	EUR612S	Elements of Urban and Rural Economics
FMM821S	Facilities Management	FMP812S	Facilities Management and Procurement

Table 33: Bachelor of Property Studies corresponding courses (if failed)

Bachelor of Property Studies (Old Courses)		**Bachelor of Property Studies (New Courses – To be credited)**	
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
UEN621S	Urban Economics	EUR612S	Elements of Urban and Rural Economics
PMT611S	Property Maintenance	PMT611S	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	Advanced Property Finance and Investment	APF811S	Advanced Property Finance and Investment
WPS821S	Work Integrated Learning (Property Studies)	WPS821S	Work Integrated Learning (Property Studies)
MPS821S	Mini-Thesis	MPS821S	Mini-Thesis

Please Note

Table 33 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.

Transition Arrangements

The revised Bachelor of Property Studies programme will be implemented incrementally (year-by-year) 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 (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 fulfil all the requirements of the revised programme.

Students registered in 2022 for the 1st and 2nd year of the old curriculum and who meet the 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 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.

The revised Bachelor of Property Studies (New Curriculum) will take effect from January 2023 with the implementation of the 1st year in 2023, 2nd year in 2024, 3rd year in 2025 and the 4th year in 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.

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BACHELOR OF PROPERTY STUDIES **08BPRS**
(Old - Phasing out from 2023-2027)

NQF Level: 8 **NQF Credits: 498** **NQF Qualification ID: Q0941**

Admission Requirements
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) or E (NSSCAS) 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 Polytechnic of Namibia (category A) may apply for "admission with advanced standing" and may be admitted into Year 3 Semester 5 of the programme offered at the discretion of the department.

Graduates with a Diploma qualification in Property Studies (NQF Level 6) 27DPRS from the NUST/Polytechnic of Namibia or equivalent qualification from recognised institutions (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. Courses completed under the Diploma qualification will be credited, but students will be required to enrol for Land Tenure Systems (LTS520S) in Year 3 Semester 6 and Land Administration in Year 4 Semester 7.

Graduates with the revised Diploma qualification in Property Studies (NQF Level 6) 06DPRS from NUST (category "C") 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. 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 programme.

With regard to Categories "A", "B" and "C", 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.

NUST students pursuing the Diploma in Property Studies (NQF Level 6) 06DPRS (category "D") 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 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.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
CUS411S	Computer User Skills	None	4	10
IGD411S	Introduction to Geospatial Data	None	4	8
BSC410S	Basic Science	None	4	8
MSS511S	Mathematics & Statistics for Spatial Sciences	None	5	12
PMI511S	Principles of Microeconomics	None	5	12
BAC1100	Business Accounting 1A	None	5	10
Semester 2				
BCS520S	Building Construction & Services	None	5	12
ITV521S	Introduction to Valuation	None	5	12
ICT521S	Information Competence	None	5	10
PMA512S	Principles of Macroeconomics	None	5	12
LTS520S	Land Tenure Systems	None	5	12

Year 2				
Semester 3				
LIF511S	Legal and Institutional Framework	None	5	12
ILP510S	Introduction to Land Use Planning and Management	None	5	12
PMT611S	Property Maintenance	None	6	12
PMV611S	Principles and Methods of Valuation	Introduction to Valuation	6	12
PDM611S	Property Development and Marketing	None	6	12
Semester 4				
GES512S	Geographic Information Systems 1	Computer User Skills,	5	12
EAP511S	English for Academic Purposes	Introduction to Geospatial Data English in Practice, Language in Practice “B” or Module 3	5	14
LLR611S	Law for Land Registration	None	5	12
LEM621S	Land Economics	None	6	12
UEN621S	Urban Economics	Principles of Microeconomics	6	12
Year 3				
Semester 5				
SYD611S	Sustainability and Development	None	6	12
LIS611S	Land Information Systems	Geographic Information Systems 1	6	12
LAT710S	Land Administration Theory and Practice	Land Tenure Systems	7	12
PSP711S	Professional Practice (Property Studies)	Principles and Methods of Valuation, Building Construction and Services	7	12
CAR720S	Computer Applications to Real Estate	Computer User Skills	7	12
Semester 6				
PQS721S	Principles of Quantity Surveying	Building Construction & Services	7	12
PLP721S	Procurement and Logistics for Property Management	None	7	12
PFI721S	Property Finance and Investment	None	7	12
REM821S	Real Estate Market Analysis	Property Development and Marketing	8	15
FMM821S	Facilities Management	Property Maintenance	8	15
Year 4				
Semester 7				
AVT811S	Applied Valuation	Principles and Methods of Valuation	8	15
APF811S	Advanced Property Finance and Investment	Property Finance and Investment	8	15
RMD811S	Research Methodology	None	8	15
APM811S	Advanced Project Management	None	8	15
Semester 8				
WPS821S	Work Integrated Learning	Pass in all courses from semester 1-7 (inclusive)	8	30
MPS821S	Mini-Thesis	Research Methodology	8	42

Table 34: Bachelor of Property Studies credit table: Reflecting which old course grants credit for which new course

Bachelor of Property Studies (Old Courses)		**Bachelor of Property Studies (New Courses – To be credited)**	
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 LTX520S	Land Economics Land Taxation	LEM621S	Land Economics
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)

Table 35: Bachelor of Property Studies transition table with corresponding courses to be done if a course is failed

Bachelor of Property Studies (Old Courses)		**Bachelor of Property Studies** (New Courses – To be credited)	
Course Code	Course Name	Course Code	Course Name
BEC620S	Building Economics	PQS721S	Principles of Quantity Surveying
BEC620S	Building Economics	PQS721S	Principles of Quantity Surveying
BEC620S	Building Economics	PQS721S	Principles of Quantity Surveying
LEC520S	Land Economics	LEM621S	Land Economics
LTX520S	Land Taxation	LEM621S	Land Economics
ISB720S	In Service Training	WPS821S	Work Integrated Learning
RPB820S	Research Project	MPS821S	Mini-Thesis
VAC520S	Valuation Casework Real Estate practice 2	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 are completely phased 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)

Transition Arrangements

The revised Diploma and Bachelor of Property Studies programmes are implemented incrementally (year-by-year transition) beginning with 1st year intake in 2017 academic year. The old Bachelor and Diploma qualifications will completely phase out in 2021and 2020 respectively.

Continuing students, (second, third and final year cohorts) will all be allowed to proceed with the old curriculum.

First year students of the old curriculum who fail more than 50% of the courses at the end of 2016 academic year will have to transfer to the corresponding revised programme and thus be required to fulfil all the requirements of the new programme. They will be granted credit for courses completed under the old curriculum as set out in the table above.

BACHELOR OF LAND ADMINISTRATION **CODE: 07BLAM**

NQF Level: 7 **NQF Credit: 360** **NQF Qualification ID: Q0739**

Definition

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.

Admission Requirements

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 (LIF511S), (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 NUST (GI2.2 in Part 1 of the NUST Yearbook).

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.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
MSS511S	Mathematics and Statistics for Spatial Science		5	12
CUS411S	Computer User Skills	None	4	10
DBF510S	Database Fundamentals	None	5	10
IGD411S	Introduction to Geo-Spatial Data	None	4	8
ILP510S	Introduction to Land Use Planning and Management	None	5	12
PMI511S	Principles of Microeconomics	None	5	12
Semester 2				
GES512S	Geographic Information Systems 1	Computer User Skills, Intro to Geo-	5	12
LIF511S	Legal and Institutional Framework		5	12
EPR511S	English in Practice			
ISM520S	Introduction to Survey & Mapping	Introduction to Geo-Spatial Data	5	12
ITV521S	Introduction to Valuation	None	5	12
LTS520S	Land Tenure Systems	None	5	12
Elective				
PFI721S	Property Finance and Investment	None		

Year 2
Semester 3

ICT521S	Information Competence	None	5	10
EAP511S	English for Academic Purposes	English in Practice English in Practice B Module 3 or exemption	5	14
EVP510S	Environmental Planning	None	5	12
LIS611S	Land Information Systems	Geographic Information Systems 1	6	12
LLR611S	Law for Land Registration	None	6	12
Semester 4				
ISL720S	Information Systems Law	None	7	12
IAL620S	Innovative Approaches to Land Administration	None	6	12
LEM621S	Land Economics	None	6	12
CMT620S	Conflict Management	None	6	12
MLR62OS	Mortgages and Other Land Rights			
Elective				
DRM721S	Disaster Risk Management	None	7	14

Year 3
Semester 5

MNL711S	Management and Leadership	None	7	12
LAT710S	Land Administration Theory and Practice	Land Tenure Systems	7	12
GSI720S	Governance and Spatial Information Management	None	7	12
LUP610S	Land Use Planning 2	Introduction to Land Use Planning and Management	6	12

Plus ONE of the following electives

CAR720S	Computer Applications to Real Estate	Geographic Information-Systems 1 and Land Information Systems	7	12
GES711S	Geographic Information Systems 3	Geographic Information Systems 2	7	12
DRM721S	Disaster Risk Management	None	7	14
DMA111S	Development Management	None	7	14

Semester 6

SYD611S	Sustainability and Development	None	6	12
PML720S	Project Management for Land Administration	Geographic Information Systems 1	7	12
WLA721S	Work Integrated Learning: Land Administration	Pass in all courses from Semester 1 – 5	7	38

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 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 was 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 15.2 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 Introduction to 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 15.1 below. For outstanding courses they have to do corresponding courses as per Table 15.2

Table 36: 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

Table 37: Bachelor of Land Administration corresponding courses (if failed)

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	PFI721S	Property Finance and Investment Management
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	MLR620S	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	MAL710S	Management and Leadership
GMN621	Geo-information Management	GSI720S	Governance and Spatial Information Management
WLA721S	Work Integrated Learning: Land Administration	WLA721S	Work Integrated Learning: Land Administration

Table 37 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. All old courses have corresponding courses in the Bachelor of Land Administration (revised curriculum) and are included in Table 37 above.

GEO-SPATIAL SCIENCE AND TECHNOLOGY **CODE 92**

QUALIFICATIONS OFFERED
(Offered FULL-TIME only)

Diploma in Geomatics (Revised Programme)	06DGEO
Bachelor of Geomatics (Revised Programme)	07BGEO
Bachelor of Geoinformation Technology (Revised Programme)	07BGEI

GEOMATICS PROGRAMMES

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 period of three years.

The progression rules 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 a half years.

DIPLOMA IN GEOMATICS **06DGEO**
(Revised Programme)

NQF Credits: 286

Description

The Diploma in Geomatics programme was purposefully designed to prepare students for a career as survey technician, 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. The programme 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 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.

Admission Requirements

Candidates may be admitted to the Diploma of 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, Physical Science, 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, Physical Science, 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, Physical Science and English;
- Minimum C-symbol on NSSCO for Mathematics (or e-symbol on NSSCAS);
- Minimum D-symbol on NSSCO for Physics;

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 Language in Practice.

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 are 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 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 credit for a qualification.

Diploma in Geomatics students may be admitted to the Bachelor of Geomatics programme, if they pass the Introduction to Science, Technology, Engineering and Mathematics courses Introduction to Mathematics B and Introduction to Physics B.

Students who fail either of the courses 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 "B" 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 the University's rules and regulations.

CURRICULUM

Year 1:
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
PLU411S	Principles of English Language Use	None	4	NCB
BSV521S	Basic Surveying	None	5	12
SUP520S	Survey Project 1	Basic Surveying (co-requisite)	5	8
ILP510S	Introduction to Land Use Planning and Management	None	5	12
ITM401S	Introduction to Mathematics A	None	4	14
CUS411S	Computer User Skills	None	4	10
Semester 2				
BSC410S	Basic Science	None	4	8
SDR420S	Survey Drafting	Basic Surveying	4	6
SUR610S	Surveying 2	Basic Surveying, Survey Project 1	6	12
LTS520S	Land Tenure Systems	None	5	12
GES512S	Geographic Information Systems 1	Basic Surveying, Computer User Skills	5	12
Year 2:				
Semester 3				
CAD510S	Computer Aided Drafting	Basic Surveying, Computer User Skills	5	12
RES511S	Remote Sensing 1	GIS1, Introduction to Mathematics A	5	12
CAS520S	Cadastral Surveying 1	Basic Surveying	5	12
MSV610S	Mine Surveying	Basic Surveying, Survey Project 1	6	12
ENS610S	Engineering Surveying	Basic Surveying, Survey Project 1	6	12
EPR511S	English in Practice	Principles of English Language Use	5	NCB

Semester 4				
DTM620S	Digital Terrain Modelling	Engineering Surveying, Surveying 2	6	12
STS621S	Sectional Title Surveying	Survey Drafting, Computer Aided Drafting, Surveying 2	6	12
SUR620S	Surveying 3	Engineering Surveying, Surveying 2	6	12
GAT621S	Geomatics Adjustment Theory	Surveying 2	6	12
EAP511S	English for Academic Purposes	English in Practice	5	14
Year 3:				
Semester 5				
ICT512S	Information Competence	None	5	10
CAS610S	Cadastral Surveying 2	Cadastral Surveying 1	6	12
PGY611S	Photogrammetry	GIS1, Remote Sensing 1	6	12
CMV611S	Cartography and Map Visualisation	GIS1	6	12
SUP611S	Survey Project 2	Surveying 3, Digital Terrain Modelling	6	12

Transition Arrangements

The revised Diploma in Geomatics programme was implemented as from January 2020. The last intake of 1st year students on the old curriculum was therefore January 2019.

Students on the old Diploma in Geomatics programme will be allowed to transfer to the new programme, or to complete the old programme, subject to the transition arrangements below.

- The new 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 Credit 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.
- 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.

Table 38: 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 & Map Visualisation
SUP520S	Survey Project	SUP522S	Survey Project 1

BACHELOR OF GEOMATICS **CODE: 07BGEO**

(Revised - Phased in 2020)

NQF Credits: 390

Description

The Bachelor of Geomatics programme was 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, but will also be eligible for registration with the Namibian Council for Professional Land Surveyors, Technical Surveyors and Survey Technicians (SURCON) as technical surveyors.

The programme provides a systematic and coherent introduction to the main theories, broad principles, concepts, data, and problem-solving techniques in the field of geomatics. The programme will enable students to acquire cognitive skills, practical problem-solving skills, and key transferable skills required 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 will be able to contribute to the attainment of national development objectives by taking up jobs as a technical surveyor in the public and private sectors of Namibia.

Admission Criteria

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 for NSSC Higher) for English Second Language;

OR, as of the beginning of 2021,

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

The Bachelor of Geomatics will provide access to further studies in Geomatics or a related cognate area, at NQF Level 8.

Mode of Delivery
The programme will be offered on full-time mode of study in accordance with the University's rules and regulations.

CURRICULUM

Year 1:
Semester 1
Course Code

	Course Title	Prerequisites	NQF Level	NQF Credits
BSV521S	Basic Surveying	None	5	12
SUP522S	Survey Project 1	Basic Surveying (co-requisite)	5	8
ILP510S	Introduction to Land Use Planning and Management	None	5	5
EAP511S	English for Academic Purposes	English in Practice	5	14
ENM510S	Engineering Mathematics 1	None	5	12
Semester 2				
SDR420S	Survey Drafting	Basic Surveying	4	6
SUR610S	Surveying 2	Basic Surveying, Survey Project 1	6	12
LTS520S	Land Tenure Systems	None	5	12
GES512S	Geographic Information Systems 1	Basic Surveying, Computer User Skills	5	12
ICT512S	Information Competence	None	5	10
ENM520S	Engineering Mathematics 2	Engineering Mathematics 1	6	12
Year 2:				
Semester 3				
CAD510S	Computer Aided Drafting	Basic Surveying, Computer User Skills	5	12
RES511S	Remote Sensing 1	GIS1, Introduction to Mathematics A	5	12
MSV610S	Mine Surveying	Basic Surveying, Survey Project 1	6	12
CAS520S	Cadastral Surveying 1	Basic Surveying	5	12
ENS610S	Engineering Surveying	Basic Surveying, Survey Project 1	6	12
Semester 4				
DTM620S	Digital Terrain Modelling	Engineering Surveying, Surveying 2	6	12
STS621S	Sectional Title Surveying	Survey Drafting, Computer Aided Drafting, Surveying 2	6	12
SUR620S	Surveying 3	Engineering Surveying, Surveying 2	6	12
GAT621S	Geomatics Adjustment Theory	Surveying 2	6	12
GES612S	Geographic Information Systems 2	GIS1	6	12
IPH402S	Introduction to Physics B	None	4	12
Year 3:				
Semester 5				
CAS610S	Cadastral Surveying 2	Cadastral Surveying 1	6	12
PGY611S	Photogrammetry	GIS1, Remote Sensing 1	6	12
CMV611S	Cartography and Map Visualisation	GIS1	6	12
SUR710S	Surveying 4	Surveying 3, Geomatics Adjustment Theory	7	12
GES711S	Geographic Information Systems 3	GIS2	7	12
MNL711S	Management and Leadership	None	7	12

Semester 6				
SYD611S	Sustainability and Development	None	6	12
PGI520S	Programming for Geoinformatics	None	5	12
ODC721S	Geodesy	Computer User Skills, Introduction to Mathematics A, Surveying 4	7	12
WIG721S	Work Integrated Learning (Geomatics)	Digital Terrain Modelling, Surveying 4, Cadastral Surveying 2	7	28

Transition Arrangements

The revised Bachelor of Geomatics programme will be implemented as from January 2020. The last intake of 1st year students on the old curriculum was therefore January 2019. Existing Bachelor of Geomatics students will be allowed to transfer to the newprogramme, or to complete the old 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 by2022. 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 Credit 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 theend 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.
- 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* (NQF Level 7 course) has been 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.
- The course *Digital Photogrammetry* (NQF Level 7) has been 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.

Table 39: Bachelor of Geomatics credit table reflecting which old courses grant credit for which new courses

Old 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	SUP520S	Sustainability and Development
SYD611S	Survey Project	SUP522S	Survey Project 1
DPG710S	Digital Photogrammetry	PGY611S	Photogrammetry
PPE621S	Professional Practice	MNL711S	Management and Leadership

BACHELOR OF GEOINFORMATION TECHNOLOGY **CODE: 07BGEI**

(Revised programme)

NQF Credits: 368

Programme Aims/Purpose

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 25 points on the NUST 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;

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);

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;
- Individual assignments;
- Use of e-learning platform (including emails and blog/forum);
- Discussion and student presentations (assignment results and other activities);
- Case studies;
- Guest lecturers with open discussion, when appropriate;
- Seminars.

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.

CURRICULUM

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
Year 1				
Semester 1				
IGD411S	Introduction to Geospatial Data	None	4	8
CUS411S	Computer User Skills	None	4	10
ILP511S	Introduction to Land Use Planning and Management	None	5	12
MSS511S	Mathematics and Statistics for Spatial Science	None	5	12
EAP511S	English for Academic Purposes	English in Practice, or English in Practice "B" or Module 3 or Principles of English Language Use	5	14
Semester 2				
GES512S	Geographic Information Systems 1	Introduction to Geospatial Data Computer User Skills	5	12
WDF521S	Web Development Fundamentals	None	5	10
OSN521S	Introduction to Operating Systems and Networks	Computer User Skills	5	10
ISM520S	Introduction to Survey and Mapping	Introduction to Geospatial Data	5	12
SYD611S	Sustainability and Development	None	6	12
Year 2				
Semester 3				
WBG511S	Web GIS	Computer User Skills	5	12
CTM611S	Cartography and Map Visualisation	Geographic Information Systems 1	6	12
RES511S	Remote Sensing 1	Mathematics and Statistics for	5	12
DBF510	Spatial Science		5	10
	Database Fundamentals	None		
ICT521S	Information Competence	None	5	10
GMN621S	Geoinformation Management	Geographic Information Systems 1	6	12
Semester 4				
SEH620S	Software Engineering 1 and HCI	Web Development Fundamentals	6	12
DPT621S	Database Programming and Techniques	Database Fundamentals	6	12
PGI520S	Programming for Geoinformatics	Mathematics and Statistics for Spatial Science	5	12
GES612S	Geographic Information Systems 2	Geographic Information Systems 1	6	12
RES612S	Remote Sensing 2	Remote Sensing 1	6	12
GCP511S	GIT Camp	Geographic Information Systems 1 Remote Sensing 1	5	8
Year 3				
Semester 5				
GDB611S	Geodatabases	Database Fundamentals Geographic Information Systems 2	6	12
GDG621S	Geodemographics	Geographic Information Systems 2	6	12
PGY611S	Photogrammetry	Remote Sensing 1	6	12
GES711S	Geographic Information Systems 3	Geographic Information Systems 2	7	12
GIP710S	GIS Programming	Programming for Geoinformatics Geographic Information Systems 2	7	12
Semester 6				
SPS721S	Spatial Statistics	Geographic Information Systems 3, Remote Sensing 2	7	12
AWG721S	Advanced Web GIS	Web GIS, Geodatabases	7	12
WOK721S	Work Integrated Learning	All courses up to and including Semester 5	7	36

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

ARCHITECTURE

QUALIFICATIONS OFFERED

Bachelor of Architecture. 07BARC

BACHELOR OF ARCHITECTURE **07BARC**

NQF Level: 7 **NQF Credits: 388** **NQF Qualification ID: Q0993**

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.

General Admission

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 and/or relevant INSTEM results obtained from NUST. Candidates are required to meet the following minimum academic criteria to be considered:

- A minimum of 12 points on the NUST Admission Point Score for English and Mathematics using a combination of NSSCAS/ 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 Admission Point Score for any three (3) other subjects, excluding second languages, 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 NSSCAS/NSSCH and/or NSSCO, provided that no symbol lower than a "C" on NSSCO will be accepted.
- INSTEM results will be evaluated on a course-by-course basis according to NUST regulations.

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. International applicants will be accommodated by distance.

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 entertained. 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. 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.

Mature Age Entry Scheme

Admission into the programme may be considered according to the NUST regulations on the Mature Age Entry Scheme as per Part 1 of the NUST Yearbook, General Information and Regulations. 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 in 10.1.2 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, General Information and Regulations. 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. 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.

CURRICULUM

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
Year 1				
Semester 1				
ARD511S	Architectural Design 1A	None	5	20
ABS511S	Applied Building Science	None	5	16
ACC511S	Architecture in Context	None	5	10
GPC511S	Graphics and Communication	None	5	10
CUS411S	Computer User Skills	None	4	10
Semester 2				
ARD521S	Architectural Design 1B	None	5	20
CST521S	Construction Technology 1	None	5	10
LSC521S	Landscape and Context	None	5	10
ATD521S	Architectural Drafting	None	5	16
ICT521S	Information Competence	None	5	10
VTS521S	Vertical Studio 1	None	5	4
Year 2				
Semester 3				
ARD611S	Architectural Design 2A	Architectural Design 1A Architectural Design 1B	6	20
CST611S	Construction Technology 2	Construction Technology 1	6	16
AAD611S	Architecture and Discourse	None	6	10
CAD611S	Computer Aided Drafting and Visualisation	None	6	10
EAP511S	English for Academic Purposes	English in Practice	5	14
Semester 4				
ARD621S	Architectural Design 2B	None	6	20
BDS621S	Building Structures	None	6	16
HEL621S	Housing and Everyday Life	None	6	10
ISM520S	Introduction to Survey and Mapping	* None	5	12
VSD521S	Vertical Studio 2	None	5	4

** In consultation with the Department of Geo-Spatial Science and Technology (DGST), Senate approved to exempt Architecture students from the prerequisite for ISM520S.*

Year 3				
Semester 5				
WIA711S	Work Integrated Learning: Architecture	Architectural Design 2A; Architectural Design 2B; Construction Technology 2	7	60

Semester 6

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

Criteria for Admission

The admission of students to the programme is via three routes: General Admission; admission via the Mature Age Entry Scheme; and admission with Advanced Standing or Recognition of Prior Learning, as set out below.

General 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 and/or relevant INSTEM results obtained from NUST. Candidates are required to meet the following minimum academic criteria to be considered:

- A minimum of 12 points on the NUST Admission Point Score for English and Mathematics using a combination of NSSCAS/ 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 Admission Point Score for any three (3) other subjects, excluding second languages, out of the following (or their equivalent): Technical Drawing, Physical Science, Physics, Chemistry, Biology, and Economics, using a combination of NSSCAS/NSSCH and NSSCO, provided that no symbol lower than a "C" on NSSCO will be accepted.
- 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 Part 1 of the NUST Yearbook, General Information and Regulations. 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 per Part 1 of the 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, candidate 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.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
ABS511S	Applied Building Science	None	5	16
MSS511S	Mathematics and Statistics for Spatial Sciences	None	5	12
PAD511S	Principles of Architectural Design	None	5	10
PMI511S	Principles of Microeconomics	None	5	12
TQS511S	Theory of Quantity Surveying	None	5	16
Semester 2				
BAC1100	Business Accounting 1A	None	5	10
CST521S	Construction Technology 1	None	5	10
CLR521S	Construction Legislation and Regulations	None	5	10
POM521S	Principles of Management	None	5	10
EAP511S	English for Academic Purposes	English in Practice	5	14
CUS411S	Computer User Skills	None	4	10
Year 2				
Semester 3				
BEL611S	Building and Engineering Law	Construction Legislation and Regulations	6	10
CSE611S	Construction Economics	None	6	10
CST611S	Construction Technology 2	Construction Technology 1	6	16
MSM511S	Measurement 1	None	5	20
ICT521S	Information Competence	None	5	10
Semester 4				
BDS621S	Building Structures	None	6	16
CAQ621S	Computer Applications for Quantity Surveying	None	6	10
ISM520S	Introduction to Survey and Mapping	None	5	12
EAS621S	Environment and Services	None	6	16
MSM621S	Measurement 2	Measurement 1	6	20
Year 3				
Semester 5				
WQS711S	Work Integrated Learning Quantity Surveying	Measurement 2	7	60
Semester 6				
CPM721S	Construction Project Management	None	7	10
MSM721S	Measurement 3	Measurement 2	7	10
QSP721S	Quantity Surveying Project	Work Integrated Learning: QS	7	20
CSA621S	Construction Accounting	* None	6	10
SYD611S	Sustainability and Development	None	6	12

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

SPATIAL PLANNING

QUALIFICATIONS OFFERED

Bachelor of Town and Regional Planning 07BTAR
Bachelor of Regional and Rural Development 07BRAR

BACHELOR OF TOWN AND REGIONAL PLANNING 07BTAR

NQF level: 7 **NQF Credits: 396** **Qualifications ID: Q0228**

Admission Requirements

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 12 points on the NUST Admission Point Score for English and Mathematics, using a combination of NSSCAS/ 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 Admission Point Score for three (3) other subjects, excluding second languages, using a combination of NSSCAS/NSSCH and/or NSSCO, provided that no symbol lower than a "D" on NSSCO will be accepted.

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 University may be considered for admission, but will be required to have a minimum of 3 years work experience in the field of town and regional planning completed under appropriate supervision.

Candidates who hold the 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%. Credit Recognition will be granted for courses completed under the National Diploma in Land Use Planning.

CURRICULUM

Year 1

Semester 1

Course Code	Course Title	Prerequisite(s)	NQF Level	NQF Credits
CUS411S	Computer User Skills	None	4	10
ISO511S	Introduction to Sociology	None	5	12
IGD411S	Introduction to Geo Spatial data	None	4	8
ERP511S	English in Practice	None	5	NCB
PMI511S	Principles of Micro Economics	None	5	12
ILP511S	Introduction to Land Use Planning and Management	None	5	12
BSC410S	Basic Science	None	4	8

Semester 2

ISM520S	Introduction to Survey and Mapping	Introduction to Geo Spatial Data	5	12
LTS520S	Land Tenure Systems	None	5	12
GES512S	Geographical Information Systems 1	Introduction to Geo Spatial Data Computer User Skills	5	12
LED520S	Local Economic Development	None	5	12
EAP511s	English for Academic Purposes	Language in Practice	5	14
ICT521S	Information Competence	None	5	10

Year 2

Semester 3

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

Semester 4

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

Year 3

Semester 5

PNH610S	Planning for Housing	None	6	10
CAC610S	Comparative African Cities	None	6	10
EVP510S	Environmental Planning	None	5	12
WLD711S	WIL – Layout Drafting Studio	All courses for the first 4 semesters, inclusive of a maximum of 2 courses which have been failed for which the student has obtained examination admission	7	15
DPS610S	Demography and Population Studies	Introduction to Applied Statistics	6	10
WCB701S	WIL – Community Based Project	All courses for the first 4 semesters, inclusive of a maximum of 2 courses which have been failed for which the student has obtained examination admission	7	16

Semester 6

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

BACHELOR OF REGIONAL AND RURAL DEVELOPMENT **07BRAR**

NQF level: 7 **NQF Credits: 388** **NQF Qualifications ID: Q0231**

Admission Requirements
Candidates may be admitted to this programme, 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 on the NUST Admission Point Score, using a combination of NSSCA/NSSCH and/or NSSCO, 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 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.

CURRICULUM

Year 1

Semester 1 Course Code	Course Title	Prerequisite(s)	NQF Level	NQF Credits
IGD411S	Introduction to Geo Spatial data	None	4	8
ITM111S	Introduction to Mathematics	None	5	10
LIP411S	Language in Practice	None	4	NCB
CUS411S	Computer User Skills	None	4	10
ILP510S	Introduction to Land Use Planning and Management	None	5	12
ITP511S	Introduction to Public Management	None	5	12
BSC410S	Basic Science	None	4	8
Semester 2				
GES512S	Geographical Information Systems 1	Introduction to Geo Spatial Data Computer User Skills	5	12
EPR511S	English in Practice	Language in Practice	5	NCB
IGE420S	Introduction to Geography	None	5	10
AEM520S	Agricultural Economics	Introduction to Mathematics	5	10
PMN521S	Public Management in Namibia	Introduction to Public Management	5	12
SRP520S	Statistics for Regional Planners	Introduction to Mathematics	5	12
ICT521S	Information Competence	Introduction to Geo Spatial data None	5	10
Year 2				
Semester 3				
PTY510S	Planning Theory 1	None	5	10
CEP610S	Civil Engineering for Planning	None	6	6
LUP610S	Land Use Planning 2	Introduction to Land Use Planning and Management	6	12
NRM511S	Natural Resource Management	None	5	12
RLG611S	Regional and Local Government Management	Public Management in Namibia	6	13
RLC620S	Rural Livelihoods and Community Development	None	6	12
Semester 4				
GES612S	Geographical Information Systems 2	Geographical Information Systems 1	6	12
IRF620S	Institutional and Regulatory Framework	None	6	10
IEM621S	Integrated Environmental Management	None	6	12
EAP511S	English for Academic Purposes	English in Practice	5	14
RDT620S	Rural Development Tools and Techniques	None	6	12

Year 3				
Semester 5				
ASP720S	Applied Spatial Planning	Planning Theory 1, Institutional and	7	15
ARR720S	Applied Regional and Rural Economic Development	Regulatory Framework Agricultural Economics, Rural Livelihoods and Community Development	7	15
ICE712S	Innovation, Creativity and Entrepreneurship	None	7	15
NRS711S	Natural Resource Management & Sustainable Development	None	7	12
Plus ONE of the following Electives				
DMA711S	Development management	Introduction to Public Management	7	14
UDM711S	Urban development and Management	Regional and Local Government Management	7	15
Semester 6				
SYD611S	Sustainability and Development	None	6	12
WIR710S	Work Integrated Learning for Regional	All courses for semesters 1 to 4	7	45
Plus ONE of the following Electives				
DRM721S	Disaster Risk Management	None	7	14
OOM420S	Organisation and Operational Management	None	7	15

POSTGRADUATE PROGRAMMES

SCHOOL OF ENGINEERING

DEPARTMENT OF CIVIL, MINING AND PROCESS ENGINEERING

CIVIL ENGINEERING

QUALIFICATIONS OFFERED

Master of Integrated Water Resources Management	09MIWR
Master of Science Integrated Water Resources Management	35MWRM
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 a 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 the 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 projects 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

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
Year 1				
Semester 1				
IWR910S	Integrated Water Resource Management	None	9	20
QEM910S	Water Quality & Environmental Management	None	9	20
HDG910S	Hydrogeology	None	9	20
Semester 2				
RAP920S	Water Resources Analysis & Planning	None	9	20
EQP920S	Environmental Water Quality Processes	None	9	15
REM920S	Research Methodology	None	9	15
Year 2				
Semester 3				
WWM910S	Wastewater Management	None	9	15
WSM910S	Water Supply Management	None	9	15
Semester 4				
TWM911S	Thesis Integrated Water Resources Management	Research Methodology	9	100
TWM912X	Thesis Integrated Water Resources Management	Research Methodology Extension		

NOTE: Student should only register for TWM912X, if s/he fails to complete the Integrated Water Resources Management Thesis (TWM911S) within the minimum prescribed period.

MASTER OF SCIENCE IN INTEGRATED WATER RESOURCES MANAGEMENT **35MWRM**

(IWRM - MMP) Module: Water for People (SADC- cooperation)

The Department of Civil, Mining and Process Engineering is a permanent member of the (SADC) Waternet. Since 2001, the department engaged itself in supporting (SADC) Waternet with curriculum development and therefore is offering the specialisation module “Water for People”.

The Integrated Water Resources Management Modular Master Programme (IWRM - MMP) is accredited SADC wide and through UNESCO-IHE and meets international standards.

The complete curriculum over two semesters was implemented at the Universities Dar es Salaam, Harare, and Western Cape, with the University of Malawi and the Polytechnic of Namibia/Namibia University of Science and Technology supporting SADC stakeholders with one specialisation module each. (Water for People- Polytechnic of Namibia/Namibia University of Science and Technology).

This module lends itself for best capacity building options at the Namibia University of Science and Technology for upgrading current curricula to international standards with the support of SADC higher education institutions and the UNESCO-IHE in Delft/NL.

The University therefore only offers the module “Water for People” which consists of the last semester for the Integrated Masters programme.

Students should have already completed two or more semesters at participating Universities and will only be registered for the above module which consists of four courses:

CURRICULUM

WSS520S	Water Supply and Sanitation
WUM520S	Water Utility Management 2
WWM520S	Wastewater Management
WQP920S	Environmental Water Quality Processes

MASTER OF ENGINEERING IN CIVIL ENGINEERING **09MECE**

NQF Credits: 240

Description
The Master of 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), and aims at providing practice-orientated education for high-level engineers and specialist 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.

This 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. Structures, 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; and
- Present research outcomes in a professional and effective way, catering for a wide range of specialist and non-specialist 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 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 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
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 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 hours 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 Code**	**Course Title**	**Prerequisites**	**NQF Level**	**NQF Credits**
CMM911S	Construction Management and Methods	None	9	15
SDF911S	Sustainable Development and Institutional Framework	None	9	15
Structures:				
AAD911S	Advanced Structural Analysis and Structural Dynamics	None	9	20
Transportation:				
QTM911S	Quantitative Methods	None	9	20
Water:				
GDM911S	GIS and Data Management	None	9	20
Semester 2				
Structures:				
FEA921S	Finite Element Analysis	None	9	20
ADS921S	Advanced Design of Steel Structure	None	9	20
ADC921S	Advanced Design of Concrete Structures	None	9	20
Transportation:				
ATM921S	Advanced Transport Modelling	None	9	20
RET921S	Railway Engineering and Transport	None	9	20
APT921S	Advanced Pavement Technology and Design	None	9	20
Water:				
FCU921S	Flood Control and Water Resources Utilisation	None	9	20
AWS921S	Advanced Water and Wastewater Systems	None	9	15
HDG921S	Hydrogeology	None	9	20
Year 2 **Semester3** **Course Code**				
RTM920S	Research Methodology and Techniques	None	9	20
Plus ONE of the following Strands depending on specialisation i.e. Structures, Transportation or Water				
Structures:				
TAS911S	Topics in Advanced Structural Engineering	None	9	15
Transportation:				
TAT911S	Topics in Advanced Transportation Engineering	None	9	15
Water:				
TAW911S	Topics in Advanced Water Engineering	None	9	15

Note: TMC912X – Student should only register for TMC912X, if s/he fails to complete the Civil Engineering Thesis (TMC911S) within the minimum prescribed period.

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 at 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 theareas of Energy Systems and Water Engineering.

This programme will, furthermore, enable students to evaluate and design complex and innovative systems in the above-mentioned 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, synthesize 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.

Programme Rationale
Namibia University of Science and Technology is driven by a vision to be a premier University in Science and Technology, preparing leaders for the new economy. This programme supports the NUST's vision and mission as outlined in the PSP4 by linking science and technology in engineering. Furthermore, the programme seeks to improve competitiveness locally, regionally and internationally by providing advanced academic and research competencies that will enable graduates to contribute to the national development goals as also outlined in the NDP4.

The design of the curriculum, enabling specialisation in Energy Systems and Water Engineering is a direct response to needs expressed during extensive consultations with industry (both private and public sector). Several relevant stakeholders within and outside Namibia have been consulted. It is anticipated that this approach would help to ensure the future sustainability of this programme.

The Ministry of Agriculture Water and Forestry under the UNESCO-Namibia Water sector Support programme, has requested NUST to develop a Master of Environmental Engineering in order to build capacity in the country's water sector. The programme is fully aligned with requirements of the NUST Curriculum Framework and the National Qualifications Framework (NQF).

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 have met the detailed requirements as set out below. In addition, students must meet the administrative and financial requirements of the NUST as set out in the Yearbook (Part 1).

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

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
Year 1				
Semester 1				
ESA911S	Environmental Systems and Analysis Tools	None	9	20
SWE911S	Solid Waste Engineering and Cleaner Production	None	9	20
EFM911S	Environmental Fluid Mechanics	None	9	20
Semester 2				
RTM920S	Research Techniques and Methodology	None	9	20
Plus TWO of the following strand compulsory depending on specialisation, i.e. Energy Systems and Water Engineering:				
Energy Systems:				
REE921S	Renewable Energies & Energy System Engineering	None	9	20
EET921S	Energy Efficiency Technology	None	9	20
Water Engineering:				
HDS921S	Hydraulic Structures	None	9	20
HDG921S	Hydrogeology	None	9	20
Year 2				
Semester 3				
ONE of the following Strand compulsory depending on specialisation, i.e. Energy Systems and Water Engineering:				
Energy Systems:				
BEG911S	Bio-Energy	None	9	20
Water Engineering:				
AWW911S	Advanced Water and Wastewater Engineering	None	9	20
Semester 4				
TEE911S	Thesis Environmental Engineering	Research Techniques and Methodology	9	100
TEE912X	Thesis Environmental Engineering Extension	Research Techniques and Methodology		

Note: TEE912X – Student should only register for TEE912S, if s/he fails to complete the Environmental Engineering Thesis (TEE911S) within the minimum prescribed period.

MINING AND PROCESS ENGINEERING
QUALIFICATIONS OFFERED

Master of Engineering in Metallurgy 09MMET

MASTER OF ENGINEERING IN METALLURGY 09MMET

NQF Credits: 240

Description

The Master of Engineering in Metallurgy is a postgraduate degree designed for registration at NQF level 9. The programme aims 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.

Programme Rationale

Namibia University of Science and Technology is driven by a vision to be a premier University in Science and Technology, preparing leaders for the new economy. Mineral beneficiations and value addition are at the forefront of Namibia's industrialisation and economic development aspirations, the Southern African Development Community (SADC) Industrialisation roadmap and the Africa Mining Vision. Realization of this goal depends on advanced skills in metallurgy.

The Mineral Beneficiation Strategy of Namibia which was developed by the Ministry of Mines and Energy in 2019 highlights the gap in research and development skills in mineral beneficiation. This would be helpful in ensuring that minerals are value added before they are exported, thus contributing to employment creation and economic development.

This Programme is fully aligned with requirements of the NUST Curriculum Framework and the National Qualifications Framework (NQF).

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

The Masters of Engineering in Metallurgy will be awarded to candidates credited with a minimum of 240 NQF credits (all at NQF 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 NUST as set out in the Yearbook (Part 1).

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
Students are required to choose ONE of the following Strands depending on Specialisation				
Mineral Processing Strand				
AMP910S	Advanced Mineral Processing	None	9	20
CCL910S	Comminution and Classification	None	9	20
MSP910S	Mineral Separation Process	None	9	20
Pyrometallurgy Strand				
TKN910S	Thermodynamics and Kinetics	None	9	20
RPS910S	Refractory Principles and Selection	None	9	20
FEN910S	Fuels and Energy	None	9	20
Physical Metallurgy and Advanced Materials Strand				
PHM910S	Physical Metallurgy	None	9	20
CEN910S	Corrosion Engineering	None	9	20
MSE910S	Materials Selection	None	9	20
Hydrometallurgy Strand				
LOC910S	Leaching of Ores and Concentrates	None	9	20
AEL910S	Advanced Electrometallurgy	None	9	20
HST910S	Hydrometallurgical Separation Techniques & Processes	None		
Semester 2				
RTM920S	Research Techniques and Methodology	None	9	20
Plus any TWO Elective Courses (based on demand)				
MSP920S	Modelling and Simulation of Processes	None	9	20
CPS920S	Cleaner Production and Sustainability	None	9	20
PCO920S	Process Control and Optimisation	None	9	20
MVC920S	Mineral Value Chain Management	None	9	20
BMH920S	Bulk Materials Handling	None	9	20
RPM920	Risk and Project Management	None	9	20
MCH920S	Materials Characterisation	None	9	20

Year 2
Semester 3 and 4

MTE940S	Thesis	Research Techniques and Methodology	9	120

DEPARTMENT OF MECHANICAL, INDUSTRIAL AND ELECTRICAL ENGINEERING

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 08PGDS
(Phased in 2016)

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 spelt out in Part 1 of the NUST Yearbook.

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 system; emails and blog/ forum);
- Discussion and student presentations (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 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, 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 exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, tutorials, practical projects and questioning (tests and/or examinations) 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

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
Year 1				
Semester 1				
SEV811S	Space Environment	None	8	15
MAT811S	Mission Architecture	None	8	15
SAP811S	Space Applications	None	8	15
SMA811S	Satellite Mission Analysis and Design	None	8	20
Semester 2				
SPM821S	Space Policy and Management	None	8	10
SAT821S	Satellite Architecture	Mission Architecture	8	15
ADP821S	Advanced Design Project	Satellite Mission Analysis and Design; Space Applications	8	30

POSTGRADUATE DIPLOMA IN SPACE AND ATMOSPHERIC SCIENCE **08PGDA**

NQF Level: 8 **NQF Credits: 120** **NQF Qualification ID: Q0986**

Description
The Post Graduate 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 employment 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 projects in the field 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 s will develop competence in the application of qualitative and quantitative experimental methods through participation in projects 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 Part 1 of the NUST Yearbook.

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

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
Year 1				
Semester 1				
SEV811S	Space Environment	None	8	15
MAT811S	Mission Architecture	None	8	15
SAP811S	Space applications	None	8	15
IMD811S	Instrumentation Measurement and Data Analysis Techniques	None	8	20
Semester 2				
SPM821S	Space Policy and Management	None	8	10
AMS821S	Atmospheric Science	Space Environment	8	15
ADP821S	Advanced Design Project	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.

Admission Criteria

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.

CURRICULUM

Year 1 **Semester 1** **Course Code**	**Course Title**	**Prerequisites**	**NQF Levels**	**NQF Credits**
EST911S	Energy Systems	None	9	20
SEI911S	Socio-Ecological Impact Assessment	None	9	20
SDE911S	Sustainable Development	None	9	20
Semester 2				
RTM920S	Research Techniques and Methodology	None	9	20
PMG921S	Participatory Mapping and Geographic Information System (GIS)	None	9	20
Plus ONE of the following strands compulsory depending on pecialisation				
Energy Technologies Strand:				
SER921S	Solar Energy Resources and Technologies	Energy Systems	9	20
Energy Management Strand:				
ECO921S	Energy Economics	None	9	20
Year 2 **Semester 3**				
ENS911S	Energy Storage Technologies	None	9	20
WOE911S	Wind and Ocean Energy Technologies	None	9	20
BEG911S	Bio-Energy	None	9	20
Plus ONE of the following Strand Elective Courses for Specialisation in Energy Management				
EPO911S	Energy Policy	None	9	20
EMM911S	Energy Management	None	9	20
PJM911S	Project Management	None	9	20
Semester 3 and 4 (Year course)				
TSE911S	Thesis Sustainable Energy Systems	Research Techniques and Methodology	9	100
TSE912S	Thesis Sustainable Energy Systems	Research Techniques and Methodology		
TSE913X	Thesis Sustainable Energy Systems Extension	Research Techniques and Methodology		

Note: TSE913X – Student should only register for TSE913X, if s/he fails to complete the Sustainable Energy Systems Thesis (TSE912S) within the minimum prescribed period.

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**

Programme Aims/Purpose

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 method, 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, Productivity Analysts, etc. and be in a position to start or expand their own businesses.

Exit Programme Outcomes (Qualification Outcomes)

Upon completing the Master of Industrial Engineering, students will be able to:

- Evaluate processes in complex systems (comprising labour, material and capital) by competitive variables (including productivity, quality, reliability, speed, flexibility, cost and profit) using the tools and techniques of Industrial Engineering;
- Design new or improved processes for complex systems by one or more of the competitive variables; i.e. they will creatively solve complex problems in the field of Industrial Engineering to improve organisational performance;
- Evaluate information (literature) critically in new and emerging fields impacting the development, improvement and/or operation of processes in complex systems;
- Design models to fit particular industries by evaluating information and appraising the degree to which the models fit the industry;
- Work in goal-oriented self-directed ways;
- Plan and carry out a substantial piece of original research.

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- 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 releases" 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) and a Thesis (worth 120 credits). In addition, students must meet the administrative and financial requirements of the University as set out in Part 1 of the NUST Yearbook.

CURRICULUM

Year 1 **Semester 1** **Course Code**	**Course Title**	**Prerequisites**	**NQF Level**	**NQF Credits**
IEM910S	Industrial Engineering Methods	None	9	20
WSC910S	Work Science	None	9	20
AEE910S	Applied Economics for Engineers	None	9	20
Semester 2 QRE920S	Quality and Reliability	None	9	20
BAN920S	Business Analysis	None	9	20
RTM920S	Research Techniques & Methodology	Pass at least 2 courses	9	20
Year 2 **Sem. 3 and 4**				
IET911S	Industrial Engineering Thesis	Research Techniques and Methodology	9	120
IET912S	Industrial Engineering Thesis	Research Techniques and Methodology		
IET913X	Industrial Engineering Thesis Extension	Research Techniques and Methodology		

Note: Student should only register for IET913X, if s/he fails to complete the Industrial Engineering Thesis (IET912S) within the minimum prescribed period.

ALL ENGINEERING PROGRAMMES

QUALIFICATIONS OFFERED

Doctor of Philosophy in Engineering 10DRPE

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.

Exit Programme Outcomes

Upon completing the PhD in Engineering, students will be able to:

- Produce and present a comprehensive research proposal and concomitant research plan;
- Plan and conduct independent research to internationally recognised standards by implementing a chosen research method, collecting, analysing, interpreting and evaluating quantitative and/or qualitative data demonstrating a high level of research competence;
- Demonstrate highly specialised, authoritative knowledge in the sub-field of learning/area of specialisation, and the ability to apply that knowledge in solving real-world engineering problems;
- Produce a thesis that represents an original contribution to the body of knowledge in the sub-field of learning/area of specialisation;
- Present research work in a professional and effective way, catering for a wide range of specialist and non-specialist audiences;
- Provide leadership in the area of research and scientific writing.

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 latter 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 Part 1 of the NUST Yearbook.

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 plans. Students will be supervised, guided and supported through regular contact sessions using all available means during which study planning, progress, and other relevant topics are discussed. Academic support will be provided in accordance with the University's rules and procedures for postgraduate studies leading to the award of research degrees.

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 theses 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

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
PHD101S	PhD Thesis Semester 1	None	10	360
PHD102S	PhD Thesis Semester 2	None		
PHD103S	PhD Thesis Semester 3	None		
PHD104S	PhD Thesis Semester 4	None		
PHD105S	PhD Thesis Semester 5	None		
PHD106S	PhD Thesis Semester 6	None		
PHD107X	PhD Thesis Semester 7 Extension	None		

Note: PHD107X – Student 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 LAND AND SPATIAL SCIENCES
LAND AND PROPERTY SCIENCES
QUALIFICATIONS OFFERED

Bachelor of Land Administration Honours 08BHLA

BACHELOR OF LAND ADMINISTRATION HONOURS 08BHLA

NQF Level: 8 **NQF Credit: 20** **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 organisations, including within 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.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
LAU811S	Land Administration and Urban Development	None	8	15
RMD811S	Research Methodology	None	8	15
LPD811S	Land Policy and Development	None	8	15
Plus ONE of the following Elective courses				
APM811S	Advanced Project Management	None	8	15
CRM820S	Community Resource Management	None	8	15
EIR820S	Environmental Issues in Regional and Rural Development	None	8	15

Semester 2

EOI821S	Emerging and Open Issues in Land Administration	None	8	15
MTH821S	Mini-thesis	Research Methodology	8	45

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 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 presentations, 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 and 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 qualification 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 per Table 40. For outstanding courses students have to do equivalent courses as per Table 41 next page.

Table 40: Bachelor of Land Administration Honours courses to be credited

Bachelor of Land Administration Honours (Old Courses)		**Bachelor of Land Administration Honours (Equivalent New/ revised Courses)**	
Course Code	**Course Title**	**Course code**	**Course Title**
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

Table 41: Bachelor of Land Administration Honours corresponding courses (if failed)

Bachelor of Land Administration Honours(Old Courses)		**Bachelor of Land Administration Honours (New/ revised Corresponding Courses)**	
Course Code	**Course Title**	**Course code**	**Course Title**
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:

Table 15.2 above 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.

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
(Revised Programme)

NQF Credit: 120

Description

The main aim of the Bachelor of Geomatics Honours programme is to equip graduates 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).

Upon completion of the Bachelor of Geomatics Honours programme, graduates should be able to:

- Perform advanced surveying and mapping operations, using a wide variety of equipment, software and techniques, under a wide variety of conditions;
- Apply analytical, critical and problem solving skills to acquire, process, analyse and present survey data;
- Resolve complex boundary issues and disputes using advanced cadastral surveying principles and methods;
- Produce professional survey diagrams, plans and maps (cadastral and topographic);
- Use and develop software applications for the processing and analysis of survey observations and coordinates;
- Plan and execute research of an applied nature requiring a wide range of advanced surveying and analysis techniques;
- Manage the effective and efficient acquisition, processing, presentation and maintenance of spatial data;
- Perform and manage advanced Global Navigation Satellite System (GNSS) and Geodetic Control surveys;
- Present and communicate academic or professional work effectively, catering for a wide range of audiences and/or in diverse genres.

Admission Requirements

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.

Mode of Delivery

The programme will be delivered in full-time mode, with diverse teaching modes over a period of one or two years, depending on the number of students registered for the respective courses, in accordance with the University's 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 spelled out in Part 1 of the Namibia University of Science and Technology Yearbook.

CURRICULUM

Semester 1 Course Code	Course Title	Pre-requisite	NQF Level	NQF Credits
ACS811S	Advanced Cadastral Surveying	None	8	15
AGT811S	Advanced Geodesy and Adjustment Theory	None	8	15
ERS810S	Environmental Remote Sensing	None	8	15
RMG810S	Research Methodology (Geoinformatics)	None	8	15
Semester 2				
GSV820S	Geodata Science and Visualisation	None	8	15
MTG821S	Mini-thesis	Research Methodology, Advanced Geology, Advanced Cadastral Surveying	8	45

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 credit table below.
- Students who transfer to the new programme will be granted credits for the equivalent courses passed on the old programme.
- 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.

Table 42: Bachelor of Geomatics Honours credit table reflecting which old courses grant credit for which new/revised courses

Old Bachelor of Geomatics Honours		**Revised Bachelor of Geomatics Honours**	
Course Code	**Course Name**	**Course Code**	**Course Name**
AVG820S	Advance Geovisualisation	GSV820S	Geodata Science and Visualisation
GMP811S	Geomatics Programming	AGT811S	Advanced Geodesy and Adjustment Theory

BACHELOR OF GEOINFORMATION TECHNOLOGY HONOURS **08HBGI**

NQF Level: 8 **NQF Credit: 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 critically pertaining to Geoinformation Technology (GIT), and to become expert practitioners in the theory, methods and applications of GIT to natural, socio-economic and rural/urban development. Overall, the programme places specific emphasis on the competencies and attributes that will enable students to assume supervisory/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 mini- thesis.

Admission for Requirements

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 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 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 case 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.

Assessment Strategies

Students will be assessed through continuous and summative assessments. The assessments will focus on the achievement of qualification outcomes and take the form of problem solving exercises, individual/group assignments and presentations, case studies, report writing, practical application of skills and competencies, practical projects and questioning (tests and/or examinations). 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 assessed in this way will have a minimum of four assessment events. The mini-thesis will be assessed in accordance with NUST rules for studies at postgraduate level.

A make-up assessment is arranged for those who don't reach 50% of the total mark during the continuous and summative assessment.

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 1 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 44, below, for detailed information on the new/revised corresponding courses to be done if courses on the old curriculum are failed.

Table 43: Bachelor of Geoinformation Technology Honours courses to be credited

Bachelor of Geoinformation Technology Honours (Old Courses)		**Bachelor of Geoinformation Technology Honours (Equivalent New/Revised)**	
Course Code	**Course Name**	**Course Code**	**Course Name**
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

Table 44: Bachelor of Geoinformation Technology Honours corresponding courses (if failed) cognate area table

Bachelor of Geoinformation Technology Honours (Old Courses)		**Bachelor of Geoinformation Technology Honours (Corresponding New/Revised Courses)**	
Course Code	**Course Name**	**Course Code**	**Course Name**
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 (GeoinformationTechnology)	RMG810S	Research Methodology (Geoinformatics)
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		None
CRM820S	Community Resources		None

Please Note:

The above-mentioned old course 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

Semester 1 **Course Code**	**Course Title**	**Pre-requisite**	**NQF Level**	**NQF Credits**
SDI810S	Spatial Data Infrastructures	None	8	15
ASA810S	Advanced Spatial Analysis	None	8	15
ERS810S	Environmental Remote Sensing	None	8	15
RMG810S	Research Methodology (Geoinformatics)	None	8	15
Semester 2				
MNS820S	Mini-Thesis	Research Methodology (Geoinformatics)	8	30
GSV820S	Geodata Science and Visualisation	None	8	15
GAD820S	GIS Application Development	Note	8	15

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

ARCHITECTURE

QUALIFICATIONS OFFERED

Bachelor of Architecture Honours	08BARH
Master of Architecture	09MARC
Master of Landscape Architecture (Not offered in 2023)	09MOLA
Master of Urban Design (Not offered in 2023)	09MOUD

BACHELOR OF ARCHITECTURE HONOURS **08BARH**

NQF Level: 8 **NQF Credits: 120** **NQF Qualification ID: Q0994**

Criteria for Admission

Applicants holding a Bachelor of Architecture degree, obtained from the Namibia University of Science and Technology, will be evaluated by the Departmental Postgraduate Selection Committee on academic merit, based on the minimum average mark of 60% for their third year courses, and with regards to the maximum intake per academic year. Candidates who do not meet the above requirements are advised to gain a minimum of one year work experience in an architectural office, to develop a portfolio of work experience, with which they are encouraged to re-apply in the next available academic year. Such candidates will be invited for an interview with the Departmental Postgraduate Selection Committee, including a portfolio review, as per requirements set out by 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 do not meet the above requirements are advised to gain a minimum of one year work experience in an architectural office, to develop a portfolio of work experience, with which they are encouraged to re-apply in the next available academic year. Eligible candidates will be invited for an interview with the Departmental Postgraduate Selection Committee, including a portfolio review of relevant study experience, as per requirements set out by the Department. 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 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. In addition, students should meet the administrative and financial requirements in accordance with 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 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 for 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 Code	Course Title	Prerequisite	NQF Level	NQF Credits
HDP811S	Honours Design Project 1	None	8	20
GSU821S	Global South Urbanism	None	8	15
CEW811S	Construction Economics and Works Estimation	None	8	10
RMR 810S	Research Methodology	None	8	15
Semester 2				
HDP821S	Honours Design Project 2	Research Methodology Honours Design Project 1	8	30
ICT821S	Integrated Construction Technology	None	8	10
EDT811S	Environmental Design and Technology	None	8	10
BLC821S	Building Law and Contract Management	None	8	10

MASTER OF ARCHITECTURE **09MARC**

NQF Level: 9 **NQF Credits: 240** **NQF Qualification ID: Q1103**

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 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 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 by 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 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 integrated 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 of the lack of academic progress and to advice on the re-admission of the student.

CURRICULUM

Year 1
Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
IDS911S	Integrated Design Studio I	None	9	30
ABC911S	Advanced Building Construction	None	9	20
Choose ONE of the following Elective Courses:				
SML911S	Sustainable Materials Lab	None	9	10
HSD911S	Housing Design	None	9	10
BHC911S	Building Heritage and Conservation	None	9	10
Semester 2				
ISD921S	Integrated Design Studio II	Integrated Design Studio I	9	30
ARM921S	Applied Research Methodology	None	9	10
PPM921S	Professional Practice Management	None	9	10
Choose ONE of the following Elective Courses:				
AUB921S	African Urbanism	None	9	10
AUE911S	Applied Urban Ecology	None	9	10
Year 2				
Semester 3				
CUT911S	Critical Urban Theory	None	9	10
Semester 3 and 4				
MDT911S	Master Design Thesis	Integrated Design Studio II Applied Research Methodology	9	100
MDT921S	Master Design Thesis			

MASTER OF LANDSCAPE ARCHITECTURE **09MOLA**
(Not offered in 2023)

NQF Level: 9 **NQF Credits: 240** **NQF Qualification ID: Q0992**

Criteria for Admission
Applicants holding a B. Arch. Honours degree, obtained from the University or any other recognised institutions, or holders of an equivalent 4-year qualification in Architecture, Urban Design, Landscape Technology/Studies, at NQF level 8 worth 480 credits of a recognised Tertiary Education Institution are eligible for admission for the MLA 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 industry work.

Candidates without formal design training will be expected to demonstrate acceptable level of interest and aptitude for design and creativity.

In addition, criterion for selection includes evidence of research experience as part of the candidates' CV, described in reasonable detail, while candidates should indicate in as complete a manner as possible their proposals for the development of their own independent research.

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. No articulation is provided for the research component of this degree.

Graduates of this programme will ordinarily be able to pursue further studies at Doctoral level in Landscape Architecture or a related cognate area of learning at NQF Level 10.

Mode of Delivery
The programme is offered on the full-time mode in accordance with NUST rules and regulations.

Requirements for Qualification Award
The Master of Landscape Architecture (MLA) degree will be awarded to candidates credited with a minimum of 240 NQF credits, (all at NQF Level 9). Additionally, students must meet the administrative and financial requirements as spelt out in the NUST Yearbook.

CURRICULUM

Course Code	Course Title	Prerequisite
ILD911S	Integrated Landscape Design Studio I	None
LAT911S	and Landscape Architecture Theory	None
RPF911S	Regulatory and Professional Practice Framework	None
AUE911S	Applied Urban Ecology	None
Semester 2		
ILD921S	Integrated Landscape Design Studio II	None
SVT921S	Soil and Vegetation Technology	None
ARM921S	Applied Research Methodology	None
Year 2		
Semester 3		
CUT911S	Critical Urban Theory	None
Semester 3 and 4		
DST911S	Design Thesis	Integrated Landscape Design Studio I and II Applied Research Methodology
DST921S	Design Thesis	

MASTER OF URBAN DESIGN **09MOUD**
(Not offered in 2023)

NQF Level: 9 **NQF Credits: 240** **NQF Qualification ID: Q1131**

Programme Description
The Master of Urban Design (MUD) aims at providing practice-oriented education to enable students to pursue careers as an urban designer in Namibia and beyond. The programme covers major cognate areas of learning including urban design and practice, critical theory of urban design and urban systems. Furthermore, the programme is designed to increase capacity for applied research in urban design and the built environment. The programme will be facilitated through coursework and mini-thesis and is structured to be largely studio-based with prospects for skills in design, theory and practice.

Admission Criteria
The Master of Urban Design Programme seeks suitably qualified candidates who can benefit from, contributing to, and successfully completing the programme. To be considered for admission to this programme, applicants must:

- Hold either a minimum of the Bachelor of Architecture Honours degree, a Bachelor of Town and Regional Planning Honours degree, or a Bachelor of Regional and Rural Development Honours degree obtained from an educational institution that is of a recognised standard, or an equivalent 4-year qualification with a studio-based and supervised research component at NQF level 8 (worth 480 NQF credits) from a recognised institution. Qualifications obtained from other institutions will be evaluated by the Departmental Postgraduate Selection Committee to determine equivalence in terms of core competencies, acceptable to the Department.
- In addition to the minimum qualification stated above, applicants must provide evidence of a minimum of two years practical experience as a candidate professional after completing post graduate studies.

The selection of students will be by means of an 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 practical work carried out in previous place of work. The result of the selection process is final, and no discussion or correspondence will be entered into.

Articulation Arrangements
Transfer of credits will be dealt with according to NUST regulations on Recognition of Prior Learning. These provide for course-by- course credits, as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification. Graduates of this programme will ordinarily be able to pursue further studies at Doctoral level in Urban Design, or a related cognate area of learning, at NQF Level 10.

Mode of Delivery
The programme is primarily offered on block release, although some courses are shared with the Master of Architecture programme as full-time mode.

Requirements for Qualification Award
The Master of Urban Design will be awarded to candidates credited with a minimum of 240 NQF credits (all at NQF Level 9), and who have met the detailed requirements set out below. Students are required to complete ten (10) compulsory NQF Level 9 courses (worth 170 credits) and a design mini-thesis (worth 70 credits; NQF level 9). In addition, students should meet the administrative and financial requirements as stipulated in Part 1 of the NUST Yearbook.

CURRICULUM

Year 1		
Semester 1		
Course Code	**Course Title**	**Pre-requisites**
IUD911S	Integrated Urban Design Studio 1	None
HTU911S	History and Theory of Urban Design	None
AUE911S	Applied Urban Ecology	None
Semester 2		
IUD921S	Integrated Urban Design Studio II	None
UST921S	Urban Systems	None
ARM921S	Applied Research Methodology	None
AUB921S	African Urbanism	None
Year 2		
Semester 3		
USD911S	Integrated Urban Design Studio II	None
CUT922S	Critical Urban Theory	None
UPP911S	Urban Design Professional Practice	None
Semester 4		
UMT921S	Urban Design Mini-Thesis	Integrated Design Studio II Applied Research Methodology

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**

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's 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. In addition, students should meet the administrative and financial requirements in accordance with Yearbook Part 1 of the NUST Yearbook, General Information and Regulations.

CURRICULUM

Year 1

Semester 1

Course Code	Course Title	Prerequisite	NQF Level	NQF Credits
RMR810S	Research Methodology	None	8	15
MSM811S	Measurement	None	8	15
CSF811S	Construction Finance	None	8	15
PPP811S	Professional Practice and Procedures	None	8	15

Semester 2

CLS821S	Construction Costing and Feasibility Study	None	8	15
CCM821S	Contract Management	None	8	15
MIT821S	Mini-Thesis	None	8	30

SPATIAL PLANNING

QUALIFICATIONS OFFERED

Bachelor of Urban and Regional Planning Honours	08BURH
Bachelor of Regional and Rural Development Honours	08BRDH

BACHELOR OF URBAN AND REGIONAL PLANNING HONOURS **08BURH**

NQF Level: 8 **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.

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.

CURRICULUM

Year 1

Semester 1				
Course Code	**Course Title**	**Prerequisites**	**NQF Level**	**NQF Credits**
ATU811S	Advanced Theory of Urban and Regional Planning	None	8	15
PPG811S	Project Planning and Management	None	8	15
UDN811S	Urban Design Studio	None	8	20
RMY811S	Research Methodology	None	8	15
Semester 2				
ITP821S	Integrated Transportation Planning	None	8	15
SPP821S	Spatial Planning Practice	None	8	15
Plus ONE of the following Elective courses				
MTS822S	Mini-Thesis	Research Methodology	8	30
ARP822S	Applied Research Project	Research Methodology	8	30

BACHELOR OF REGIONAL AND RURAL DEVELOPMENT HONOURS **08BRDH**

NQF Level: 8 **NQF Credits: 120** **NQF Qualification ID:**

Programme Aims/Purpose

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.

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 rural development, to conduct research, retrieve information, think critically, solve problems, engage actively in the steps of a 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 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.

CURRICULUM

Year 1

Semester 1 **Course Code**	**Course Title**	**Prerequisites**	**NQF Level**	**NQF Credits**
RDP811S	Rural Development Planning	None	8	15
SLE811S	Sustainable Local Economic Development	None	8	15
PPG811S	Project Planning and Management	None	8	15
RMY811S	Research Methodology	None	8	15
Semester 2				
RDM821S	Rural Development Methods and Practice	None	8	15
END821S	Environment and Development	None	8	15
Plus ONE of the following Elective courses:				
MNR821S	Mini-Thesis	Research Methodology	8	30
ARP821S	Applied Research Project	Research Methodology	8	30

ALL BUILT ENVIRONMENT DEPARTMENTS

QUALIFICATIONS OFFERED

Master of Spatial Sciences	09MOSS
Doctor of Philosophy in Spatial Sciences	10DPSS

MASTER OF SPATIAL SCIENCE **09MOSS**

NQF Level: 9 **NQF Credits: 260** **NQF Qualification ID:**

Programme Description

The Master of Spatial Science programme is interdisciplinary and aims at students 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 alight with Namibia's development agendas and will produce graduates who are skilled in spatial science investigations, evaluation and synthesis.

Admission Criteria

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.

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.

Transition Arrangements

This is a revised programme, and it is aligned with the old curricula. The Master of Spatial Sciences (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 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 Code	Course Title	Prerequisites	NQF Level	NQF Credits
RMS911S	Research Methodology	None	9	20
MSP911S	Thesis	None	9	240

Semester 2
MSP912S

Year 2
Semester 3
MSP913S

Semester 4
MSP914S

Year 3
Semester 5
MSP915X

DOCTOR OF PHILOSOPHY IN SPATIAL SCIENCES **10DPSS**

NQF Level: 10 **NQF Credits: 360** **NQF Qualification ID: Q0974**

Programme Description
The Doctor of Philosophy (PhD) in Spatial Sciences is aimed at equipping students with deepened knowledge and research skills in their specialisation area by creating new knowledge that will bring solutions and implement new ideas to the spatial sciences.

The programme will enable students to develop a thorough understanding of relevant methodological approaches and develop general competence in and knowledge of one or more of the subfields in 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 subjects and/or related cognitive areas can be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at degree level. In addition, applicants will be requested to attend a pre-selection interview at the discretion of the Programme Coordinator. The applicants may be requested to make up specific deficiencies at the discretion of the supervisor and, 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). Applicants are welcome to approach the relevant department directly, to discuss possibilities before drafting a Concept Note, which is expected to be submitted in draft form prior to the formal application for admission to the programme.

The Higher Degrees Committee (HDC) will approve the final selection and admission of the selected candidates in accordance with the regulations as specified by Rules for Postgraduate Studies of the NUST Yearbook (Part 1). First-time registration may only occur upon the submission and approval of a Concept Note by the HDC. The Concept Note is prepared under the guidance of the student's designated supervisor. Continuation of admission to the programme is conditional on the production and approval of a comprehensive research proposal, which needs to be submitted within the first two semesters for full-time students and within the first three semesters for part-time students. These procedures will be fully explained to each prospective student during his or her personal interview. Additional information is given in the Guidelines for the Supervision and Examination of Masters and Doctoral Programmes.

It is recommended that candidates submit their applications within the window of opportunity provided by NUST for applications, normally between June and August, with intent to register at the beginning of the following semester, usually in late January or early February. Application or registration outside of the normal periods will be subject to payment of late application fee or late registration fee, and processing may be delayed.

Mode of Delivery
The qualification will be delivered on a full-time or part-time basis in accordance with the Rules for Postgraduate Studies. Students may interchange between full and part-time according to the speed of their progress. The whole programme is comprised of semester courses (six for the full-time mode and 12 for the part-time mode), each of which needs to be registered for in succession. Students may also opt to suspend for one or (a maximum of) two semesters, provided that the Higher Degrees Committee (HDC) is formally informed and that the supervisor provides no service to the student for those semesters. If the student suspends his or her study for more than two semesters, then a form for resumption of studies will need to be submitted upon re-registration within three years of first registration. If this period is exceeded without registration and the former student wishes to continue with the PhD programme, then a new application would need to be submitted.

Students who exceed the minimum registration period for the relevant mode of study will be registered for the Thesis Extension course in the subsequent semesters, until they complete or reach the maximum study period. Additional information is given in the Guidelines for the Supervision and Examination of Masters and Doctoral Programmes.

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

Students who register for the full-time option every semester would be expected to complete the programme within six semesters but may be permitted to extend to a maximum of 10 semesters while registering and paying for additional semester courses. Students who register for the part-time option every semester would be expected to complete the programme within 12 semesters but may be permitted to extend to a maximum of 16 semesters while registering and paying for additional semester courses. Students who opt for a combination of full and part-time registrations, will be permitted extra semesters in proportion to the number of semesters they registered under each option.

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

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

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

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

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

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

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

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

CURRICULUM

Course Code	Course Title	Prerequisites	NQF Level	NQF Credits
PSS101S	Thesis- Semester 1	None	10	360
PSS102S	Thesis- Semester 2	None		
PSS103S	Thesis- Semester 3	None		
PSS104S	Thesis- Semester 4	None		
PSS105S	Thesis- Semester 5	None		
PSS106S	Thesis- Semester 6	None		
PSS107X	Thesis- Extension			

CURRICULUM for Part Time Mode

PSS101P	Thesis- Part Semester 1	None		
PSS102P	Thesis- Part Semester 2	None		
PSS103P	Thesis- Part Semester 3	None		
PSS104P	Thesis- Part Semester 4	None		
PSS105P	Thesis- Part Semester 5	None		
PSS106P	Thesis- Part Semester 6	None		
PSS107P	Thesis- Part Semester 7	None		
PSS108P	Thesis- Part Semester 8	None		
PSS109P	Thesis- Part Semester 9	None		
PSS110P	Thesis- Part Semester 10	None		
PSS111P	Thesis- Part Semester 11	None		
PSS112P	Thesis- Part Semester 12	None		
PSS113X	Thesis- Part Extension			

NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Office of the Registrar
Namibia University of Science and Technology
Private Bag 13388
Windhoek
NAMIBIA

T: +264 61 207 2118
F: +264 61 207 9118
E: registrar@nust.na

www.nust.na