PHYSICS

2022
HANDBOOK

DUT
DURBAN UNIVERSITY OF TECHNOLOGY
INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

FACULTY OF
APPLIED
SCIENCES

2022 HANDBOOK

FACULTY of
APPLIED
SCIENCES

DEPARTMENT of
PHYSICS

IMPORTANT NOTICES

- Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the institution and, if permitted, will be in accordance with the rules applicable at that time.
- The rules in this departmental handbook must be read in conjunction with the General Rules (G Rules) contained in the DUT General Handbook for Students as well as the relevant Study Guides.
- With respect to an appeal, your attention is specifically drawn to Rules G1(8) and (9), and to the process of dealing with students' issues.

STRATEGIC DIRECTION

FACULTY OF APPLIED SCIENCES

[Educate. Innovate. Engage]

VISION

Leading innovation through science and technology

MISSION STATEMENT

Educate students
Generate new scientific knowledge
Engage communities

VALUES

1. **Accountability:** We take ownership of all activities, resources and tasks required of us. We deliver on our promises and responsibilities.
2. **Integrity:** We adhere to moral standards and principles. We are transparent and consistent in all our actions, and lead by example.
3. **Dedication:** We are committed to achieving our goals and expectations.
4. **Professionalism:** We operate within clear boundaries with respect to our code of conduct.
5. **People Oriented:** We are committed to sustaining the morale and holistic development of staff and student. We value diversity in all forms.

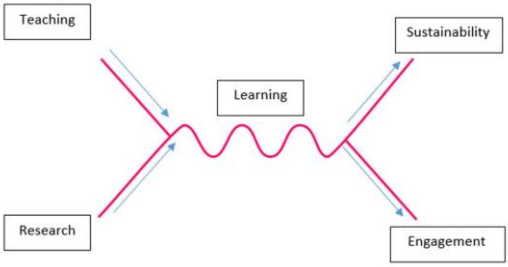
DEPARTMENT OF PHYSICS

VISION

Promoting the advancement of physics

MISSION STATEMENT

Unlocking the relevance of physics in a technologically developing society through -



CONTENTS

1. DEPARTMENTAL & FACULTY CONTACT DETAILS

All Departmental queries to:

Secretary:	Ms S Chetty
Tel No:	(031) 373 5361
Tel No:	(031) 373 5264
Location of Department:	ML Sultan Campus, A-Block, 2nd Floor, Room AA0206

All Faculty queries to:

Faculty Officer:	Ms G Shackleford
General Enquiries No:	031 373 2506
Facsimile No:	031 373 2175
Email:	fas@dut.ac.za
Location:	Block S4 Level 3, Steve Biko Campus

Faculty Assistant:	Mr S Masuku
General Enquiries No:	031 373 3036
Facsimile No:	031 373 2175
Email:	spha@dut.ac.za
Location:	Block S4 Level 3, Steve Biko Campus

Executive Dean:	Prof S Singh
Executive Dean's Secretary:	Mrs NK Naidoo
Telephone No:	031 373 2720
Facsimile No:	031 373 2724
Email:	fas@dut.ac.za
Location:	Between Block S6 and S7, Level 4 Steve Biko Campus

2. DEPARTMENTAL STAFF

Head of Department	Dr. S Moolla, BSc (UDW), BSc (Hons) (UDW), MSc (UDW), PhD (UKZN)
Associate Professors	Prof. I J Lazarus, BSc (UDW), BSc (Hons) (UCT), MSc (UDW), PhD (UKZN)
Associate Director	Mr. D Gxawu, BSc (Hons), MSc (UDW)
Senior Lecturers	Mr. D Singh, BSc (Hons) (UDW), MSc (NIU, USA)
	Dr. K Reddy, BSc (UDW), BSc (Hons) (UDW), MSc (UND), PhD (UKZN)
Lecturers	Dr. R Haripersad, BSc (Unisa), MTech (DUT) PhD (DUT)
	Mr. NA Kgasi, BSc, BSc (Hons) (UKZN), MSc (Dunelm)
	Mr. V Masondo, BSc (Wits); BSc (Hons) (UWC), MSc (UWC)
	Ms. M Gumede, BSc (UKZN), BSc (Hons) (UKZN), MSc (UKZN)
Laboratory Technicians	Dr. S. Dlamini, BSc (UKZN), BSc (Hons) (UKZN), MSc (UKZN), PhD (UKZN)
	Mr. J. Sehume, BSc (UFS), Post Graduate Diploma in Higher Education (VUT)
Secretary	Ms. S Chetty, BTech (DUT)

3. QUALIFICATIONS OFFERED BY THE DEPARTMENT

Programmes are offered in this Department, which will, upon successful completion, lead to the award of the following qualifications:

- Doctor of Applied Sciences (DAppSc)

Qualification	Qualification Code	Important Dates		SAQA NLRD ID
		Ist Offered	Phased Out *	
Doctor of Applied Sciences	DRASC1	Jan 2018		101 690

4. DOCTOR OF APPLIED SCIENCES

Purpose of Qualification

The Doctor of Philosophy in Applied Sciences Degree aims to promote the career advancement of students in the field of applied sciences by enabling students to conduct independent, novel research within a specific discipline or in an interdisciplinary manner in applied sciences programmes offered within the Faculty of Applied Sciences and Faculty of Engineering. The Doctor of Philosophy in Applied Sciences degree prepares graduates for advanced level positions in the field, as well as the opportunity to grow in expert and advisory positions in future. Interdisciplinary research provides the means to solve problems and answer questions that may not be satisfied using a single method or approach within a single discipline. Interdisciplinary research is transformative as it synthesizes disciplinary knowledge in order to produce original and creative ideas. It builds meta-knowledge, which is original in nature and emanates from bodies of knowledge underpinning different disciplines.

This qualification is offered by means of a full research project.

4.1 PROGRAMME STRUCTURE (2 YEAR)

Code	Subject Offering	Year of Study	Compulsory /Elective	Assessment Method	SAQA Credits	NQF Level
RTHS 611	Research Thesis (1st Registration)	1	C	Full Research Thesis	360	10
RTHS 621	Research Thesis (2nd Registration)	2	C	Full Research Thesis		
RTHS 631	Research Thesis (3nd Registration)	3	C	Full Research Thesis		
RTHS 641	Research Thesis (4th Registration)	4	C	Full Research Thesis		
RTHS 651	Research Thesis (5th Registration)	5	C	Full Research Thesis		

4.2 PROGRAMME INFORMATION

4.2.1 Academic Integrity

Refer to the DUT General Rules pertaining to academic integrity G13(1)(o) – covering falsification of academic records, plagiarism and cheating. These will

be enforced wherever necessary to safeguard the worthiness of our qualifications, and the integrity of the Faculty of Applied Sciences at DUT.

4.2.2 Code of Conduct for Students

A professional code of conduct shall apply to all students registered with the Faculty of Applied Sciences. Refer to Programme Rule 4.3.8 below.

4.2.3 Attendance

Students are expected to attend all planned research activities as these are designed to provide optimal support for the required competency

4.2.4 Assessment and Moderation

Students are expected to work steadily through the period of registration in order to achieve the highest results possible. All modules in this programme are assessed using 100% full research. The final examination of the thesis constitutes the full examination.

4.2.5 Employment Opportunities

There are job opportunities in the scientific and other related industries.

4.2.6 Registration Periods

In accordance with the DUT Rules G25(2)(c) and G26, students are required to register each year in January.

4.3 PROGRAMME RULES

4.3.1 Minimum Admission Requirements

In addition to DUT Rule G7 and G25(1), the following minimum entrance requirements will apply for applicants with reference to:-

4.3.1.1 Academic Achievement

An applicant must be in possession of a relevant master's degree (from a broad spectrum of science and engineering) with a minimum of 180 credits at level 9 or equivalent. Applicants with a Master of Technology will be required to make application for entry into the programme via Conferment of Status.

4.3.1.2 Admission of International Applicants

The DUT's Admissions Policy for International Students and DUT Rules G4 and G7(5) will apply. International applicants must meet the equivalent of programme minimum entrance requirements as stated above.

4.3.1.3 Admission of Applicants from other Institutions

In addition to the relevant DUT Rules, a transferring applicant will only be accepted if there are places available and the student has met the applicable entrance requirements of the university.

4.3.2 Selection Criteria

In addition to the Minimum Admission Requirements (Rule 4.3.1), the following selection process will determine acceptance into the programme:

- All applicants must apply through the Department of Physics.
- Selection will be based on the applicants who meet the minimum admission requirements as well as available places (refer to DUT Rule G5).

4.3.3 Duration of Programme

In accordance with DUT Rule G25(2), the minimum duration for this programme will be 2 consecutive years of registered study and the maximum duration will be 4 years of registered study.

4.3.4 Interruption of Studies

In addition to DUT Rule G25(2), should a student interrupt their studies by more than three (3) years, the student will need to apply to the department for permission to reregister and will need to prove currency of appropriate knowledge prior to being given permission to continue with registration.

4.3.5 Secret Projects

The DUT Rule G27 applies.

4.3.6 Code of Conduct

In addition to the Student Code of Conduct in the DUT General Handbook for Students, and the relevant requirements as stated in the appropriate Study Guides, the following rules apply:

4.3.6.1 Laboratory Code of Conduct

Strict adherence to related instructions issued by staff, whether academic or technical is required. Misconduct or disregard for instructions will result in disciplinary measures.

4.3.7 Health and Safety

Students must adhere to all Health and Safety regulations both while at DUT and in WIL placements. Failure to do so will be treated as a breach of discipline. Refer to the appropriate Health and Safety policies.

5. SERVICED SUBJECTS

The servicing departments rules apply to all serviced subjects. The following subjects are serviced from this department.

FIRST SEMESTER

Serviced Programme	Serviced Programme Code	Subject Name	Subject Code
BH: Emergency Medical Care	BHEMC3	Physics	PHIS101
BH: Homoeopathy	BHHOM1	Physics 1: Module 1	PHHC111
BH: Homeopathy (5 Years)	BHHMF1	Physics I: Module I	PHHC111
BH: Environmental Health	BHEVH1	Physics 1: Module 1	PYSI111
BH in Medical Laboratory Science	BHMLS1	Physics: Module 1	PHIS111
BHSC in Clinical Technology	BACHR1	Physics 101	PHYS111
BHSC in Clinical Technology	BHCLT1	Physics: Module 1	PHIS111
BH: Medical Orthotics and Prosthetics	BHMOP1	Physics	PSIC101
Diploma in Nautical Studies	DINAU1	Marine Science I	MRSN101
ND: Chiropractic	NDCHR1	Physics I	PHHC101
ND: Chiropractic (4 Years)	NDCHF1	Physics I	PHHC101
Diploma in Analytical Chemistry	DIACH1	Physics 1	PHIC101
ND: Food Technology	NDFDT2	Physics 1	PHYS103
ND: Food Technology (4 Years)	NDFTF1	Physics 1	PHYS103
BS: Food Science and Technology	BSFST1	Physics	PHYS104
BS: Biotechnology	BSBTC1	Physics	PHYS104
Diploma in Textile Technology (4 Years)	DITXF1	Physics 1A	PHCA101
Diploma in Textile Technology (4 Years)	DITXF1	Physics 1B	PHCA101
Diploma in Textile Technology	DITXT1	Physics 1	PYSC101
ND: Pulp and Paper Technology	NDPPT2	Physics I	PYSC105
ND: Pulp and Paper Technology	NDPPT2	Engineering Physics II	EPHY201
B Engineering Technology in Industrial Engineering	BNIND1	Engineering Physics 1A	EPHA101
B Engineering Technology in Electronic Engineering	BNELC1	Engineering Physics 1A	EPHA101
B Engineering Technology in Power Engineering	BNPWE1	Engineering Physics 1A	EPHA101
Civil Engineering and Geomatics	BBGMT1	Engineering Physics 1A	EPHA101
B Engineering Technology in Mechanical Engineering	BNMCH1	Engineering Physics 1A	EPHA101

Civil Engineering and Geomatics	BBGMT1	Engineering Physics 1A	EPHA101
B Engineering Technology in Chemical Engineering	BNCME1	Engineering Physics 1A	EPHA101
B Engineering Technology in Civil Engineering	BNCVL1	Engineering Physics 1A	EPHA101
Bachelor of BE in Construction Studies	BBCST1	Physics for the Built Environment IA	PHBA101
Bachelor of BE in Construction Studies	BBARCH1	Physics for the Built Environment IB	PHBA101

SECOND SEMESTER

Serviced Programme	Serviced Programme Code	Subject Name	Subject Code
Diploma in Nautical Studies	DINAU1	Marine Science II	MRSN201
ND: Dental Technology	NDDNT1	Physics and Chemistry I (Physics)	PHCD111
BH: Homoeopathy	BHHOM1	Physics 1: Module 2	PHHC121
BH: Homeopathy (5 years)	BHHMF2	Physics I: Module 2	PHHC121
BH: Environmental Health	BHEVH1	Physics 1: Module 2	PYSI121
BHSC in Chiroprac	BACHR1	Physics 201	PHYS121
BH in Medical Laboratory Science	BHMLS1	Physics: Module 2	PHIS121
BHSC in Clinical Technology	BHCLT1	Physics: Module 2	PHIS121
BHSC in Diagnostic Radiography	BHDRD1	Physics	PHIS101
BHSC in Diagnostic Sonography	BHDSN1	Physics	PHIS101
BHSC in Nuclear Medicine	BHNMD1	Physics	PHIS101
BHSC in Radiotherapy	BHRDT1	Physics	PHIS101
Diploma in Eng Tech in Civil Eng	DICVE1	Physics A	PSCA101
Diploma in Eng Tech in Civil Eng	DICVE1	Physics B	PSCB101
Diploma in Eng Tech in Civil Eng	DICVE1	Physics C	PSCC101
ND: Pulp and Paper Technology	NDPPT2	Engineering Physics II	EPHY201
B Engineering Technology in Chemical Engineering	BNCME1	Engineering Physics 1B	EPHB101
B Engineering Technology in Civil Engineering	BNCVL1	Engineering Physics 1B	EPHB101
B Engineering Technology in	BNPWE1	Engineering Physics 1B	EPHB101

Power Engineering			
B Engineering Technology in Electronic Engineering	BNELC1	Engineering Physics 1B	EPHB101
B Engineering Technology in Industrial Engineering	BNIND1	Engineering Physics 1B	EPHB101
B Engineering Technology in Mechanical Engineering	BNMCH1	Engineering Physics 1B	EPHB101
Civil Engineering and Geomatics	BBGMT1	Engineering Physics 1B	EPHB101
Bachelor of BE in Construction Studies	BBARCH1	Physics for the Built Environment 1B	PHBB101
Bachelor of BE in Construction Studies	BBCST1	Physics for the Built Environment 1B	PHBB101