

**CAREER INFORMATION 2023**


**BACHELOR OF ENGINEERING TECHNOLOGY  
IN ELECTRONIC ENGINEERING**

**DUT**  
DURBAN UNIVERSITY OF TECHNOLOGY  
INVULESI YASETHEKWINI YEZOBUCHIWEPESE

**FACULTY OF  
ENGINEERING  
& THE BUILT  
ENVIRONMENT**

**DEPARTMENT OF  
ELECTRONIC  
& COMPUTER  
ENGINEERING**

**01 JAN - 31 DEC 2023**



## Bachelor of Engineering Technology in Electronic Engineering

**NQF Level: 7**

**SAQA ID: 99514**

**Qualification Code: BNELCI**

**Location: Steve Biko Campus, S-Block, S8 Level 3**

### DESCRIPTION OF THE PROGRAMME

The undergraduate programme in electronic engineering, which leads to the internationally accredited BEng Tech degree, is designed to provide a broad foundation in electronic engineering through a combination of classroom and/or online lectures, online tools, and extensive hands-on technical training as well as laboratory work. The qualification prepares the student for a career in the variety of electronic and computer engineering fields as well as becoming a competent practicing engineering technologist or certificated engineer that will make a meaningful contribution to the economy and national development.

The programme will provide the student with a strong foundation in mathematics, physical sciences and the core fundamentals of engineering and blends theory, concept, and application. Electronic and computer engineering finds itself at the heart of the burgeoning Industry 4.0 and merges fields such as telecommunications, control systems, embedded and intelligent systems, data analytics and machine intelligence, automation and robotics, signal and image processing, smart factories and cities, green energy, AI and the industrial IoT.

Some of the key attributes of the programme include the fostering of lifelong learnership, the need for continuous improvement, teamwork and the attainment of solid critical thinking and problem-solving skills. The BEng Tech qualification will also allow for further study through articulation into the postgraduate NQF level 8 BEng Tech Honours programme, to be offered at DUT from 2022, and the subsequent opportunity for masters and doctoral research.

Qualified candidates may register with the internationally affiliated Engineering Council of South Africa (ECSA) as Professional Engineering Technologists and/or Professional Certified Engineers.

### CAREER OPPORTUNITIES

Qualified electronic engineering professionals are highly sought after by industry. An electronic engineer may find opportunities in a wide range of industries including microelectronics, fixed and wireless communications, networking, automation and robotics, intelligent systems, automotive, rail, renewable and green energy, paper, sugar, water, defence, aerospace, marine, banking, software and ICT, systems analysis and machine learning and AI.

### ENTRY REQUIREMENTS

The minimum entry requirement is the National Senior Certificate or the National Certificate (Vocational) with appropriate module combinations and levels of achievement as defined in the *Government Gazette*, Vol. 751, No. 32131 of 11 July 2008, and in the

*Government Gazette*, Vol. 533, No. 32743, November 2009. In addition, the minimum admission requirements, rule G7, is stipulated in the General Rules Handbook.

Further to the above, the following are required for admission into BEng Tech (Electronic Engineering) programme:

### Explanation of Points scale:

SENIOR CERTIFICATE(SC)		
SYMBOL	HIGHER GRADE	STANDARD GRADE
A	8	6
B	7	5
C	6	4
D	5	3
E	4	2
F	3	1

NATIONAL SENIOR CERTIFICATE(NSC)	NATIONAL SENIOR CERTIFICATE(NSC)	NATIONAL SENIOR CERTIFICATE(NSC)
%	%	%
90-100	90-100	90-100
80-89%	80-89%	80-89%
70-79%	70-79%	70-79%
60-69%	60-69%	60-69%
50-59%	50-59%	50-59%
40-49%	40-49%	40-49%
30-39%	30-39%	30-39%
20-29%	20-29%	20-29%

### Entry Requirements BET (Electrical Engineering)

NATIONAL SENIOR CERTIFICATE (NSC) (01 January 2009)		SENIOR CERTIFICATE (SC) (PRE 2009)			NATIONAL CERTIFICATE (VOCATIONAL) (NCV)	
NSC DEGREE ENTRY		SENIOR CERTIFICATE (SC)			(NCV) – LEVEL 4	
Compulsory Subjects	NSC Rating Code	Compulsory Subjects	HG	SG	Compulsory Subjects	Mark
English	4	English	E	C	English	60%
Mathematics	4	Mathematics	E	C	Mathematics	70%
Physical Science	4	Physical Science	E	C	Physical Science	70%
					Life Orientation	60%
					In addition, <b>TWO</b> other additional vocational subjects at a minimum of 70%.	

#### NB:

1. NSC Mathematical Literacy will not be accepted as a substitute for the subject NSC Mathematics
2. The exit certificate of the candidate must qualify the candidate for degree study at an institution of higher learning.
3. Applicants with a NSC will be ranked according to the sum of their scores for Mathematics and Physical Science, subject to a minimum combined score of 120.

#### Other:

Applicants, that qualify for degree study (Bachelor's Pass) at an institution of higher learning, but do not meet the departmental mathematics and/or physical science requirements, may present the following N4 subjects, for consideration for entry to the BET programme:

- Mathematics and Engineering Science, plus any two of the following:
- Industrial Electronics OR Electronics
- Digital Systems OR Logic Systems
- Electrotechnics

The above subjects must be passed with a minimum of 50% and all in the same sitting. Students will then be considered alongside the NSC students according to the sum of their marks for N4 Mathematics and Engineering Science, subject to a minimum combined score of 120.

**OR**

## **ADMISSION REQUIREMENTS BASED UPON WORK EXPERIENCE, AGE AND MATURITY**

### **For admission to entry level DEGREE studies:**

A person may, subject to such requirements as the Senate may determine, be admitted if such a person is in possession of a National Senior Certificate, Senior Certificate, or an equivalent certificate, but lacks the minimum requirements for admission to the degree provided that:

- (a) The person shall have reached the age of 23 in the first year of registration and shall have at least: three years' appropriate work experience; and/or capacity for the proposed instructional programme, which shall be assessed by a Senate-approved admission assessment comprising of a DUT Standardised Assessment Test for Access and Placement (SATAP), Academic Literacies (AL) & English for Academic Purposes (EAP) (2,5 hours) and/or an appropriate subject or programme specific written assessment designed and marked by the relevant Department; and the person has obtained
- (b) A conditional certificate of exemption from the Matriculation Board (when in possession of the Senior Certificate (SC)); OR has met
- (c) The requirements for Senate discretionary admission (when in possession of the NSC or equivalent), where Senate is satisfied the applicant has shown sufficient academic ability to ensure success, and that the person's standard of communication skills, and/or work experience are such that the person, in the opinion of the Senate, should be able to complete the proposed instructional programme successfully.
- (d) The person's application for admission in terms of with work experience, age and maturity is approved prior to registration.

**Applicants intending to gain admission through work experience, age and maturity must submit their applications at least four months before commencement of the academic year.**

## **CONTENT OVERVIEW AND ACCREDITATION LEVEL**

The programme is structured according to the modules as referred to in the table below. All modules listed are compulsory to qualify in this programme. The programme is offered on a full-time basis and require attendance to lectures.

### **Tuition Fees**

To assist you with your planning, the **2022** fees have been indicated. An increase for next year to accommodate the inflation rate can be expected.

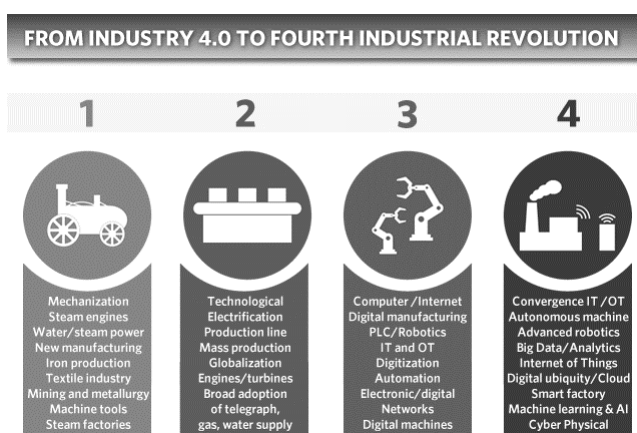
**Please Note:** DUT cannot be held liable for the fees in this brochure as the **2023** fees are not yet final

<b>First Year Curriculum</b>				
<b>Subject Code</b>	<b>Subject Code</b>	<b>Subject Code</b>	<b>Subject Code</b>	<b>Subject Code</b>
<b>Semester One</b>				
Engineering Mathematics IA	EMTA101	5	12	R4210.00
Engineering Physics IA	EPHA101	5	12	R4210.00
Electrical Principles I	ELEPI01	5	12	R4220.00
Analogue Electronics IA	ANLA101	5	12	R4220.00
Digital Electronics IA	DGEA101	5	12	R4220.00
Computer and IT	CPUT101	5	8	R2900.00
Cornerstone I01	CSTNI01	5	12	R3410.00
<b>TOTAL</b>				<b>R27390.00</b>

<b>Semester Two</b>				
Engineering Mathematics 1B	EMTB101	5	12	R4210.00
Engineering Physics 1B	EPHB101	5	12	R4210.00
Electrical Principles II	ELEP201	6	12	R4220.00
Analogue Electronics 1B	ANLB101	6	12	R4220.00
Digital Electronics 1B	DGEB101	6	12	R4220.00
Technical Literacy	TELC101	5	8	R2900.00
<b>TOTAL CREDITS SEMESTER 1&amp;2</b>			<b>148</b>	
<b>TOTAL</b>				<b>R23980.00</b>
<b>Second Year Curriculum</b>				
<b>Semester Three</b>				
Engineering Mathematics IIA	EMTA201	6	12	R4210.00
Fundamentals of Power Engineering IIA	FUPE201	6	8	R2900.00
Fundamentals of Instrumentation IIA	FIST201	6	12	R3330.00
Fundamentals of Signals and Systems IIA	FCMC201	6	12	R4220.00
Fundamentals of Microcontrollers IIA	MCRD201	6	12	R4270.00
Electronic Circuit Design IIA	ECDS201	6	12	R4220.00
Computer Programming IIA	CPTP201	6	12	R4220.00
<b>TOTAL</b>				<b>R27370.00</b>
<b>Semester Four</b>				
Engineering Mathematics IIB	EMTB201	6	12	R4210.00
Fundamentals of Control Systems IIB	FCNS201	6	12	R4220.00
Communication and Network Systems IIB	FNTW201	6	12	R4220.00
Electronic Circuit Design IIB	ECDS301	6	12	R5980.00
Embedded Systems IIB	MCRD301	6	12	R4270.00
Data Analytics and Computation IIB	CPTP301	6	8	R2900.00
<b>TOTAL CREDITS SEMESTER 3&amp;4</b>			<b>148</b>	
<b>TOTAL</b>				<b>R25800.00</b>
<b>Third Year Curriculum</b>				
<b>Semester Five</b>				
Process Instrumentation IIIA	PINA301	7	12	R3090.00
Control Systems IIIA	CSYA301	7	12	R4220.00

EM Theory and Wireless Communication IIIA	RFEA30I	7	12	R4220.00
Digital Signal Processing IIIA	DSPA30I	7	12	R2900.00
Electronic Design Project IIIA	EDPA30I	7	12	R5730.00
Innovation Management and Entrepreneurship IIIA	PJCT10I	7	8	R2900.00
<b>TOTAL</b>				<b>R23060.00</b>
<b>Semester 6</b>				
Process Control Systems IIIB	PCSB30I	7	12	R4220.00
RF Engineering IIIB	RFEB30I	7	12	R4220.00
Renewable Energy IIIB	RENE30I	7	12	R4220.00
Digital Image Processing IIIB	DSPB30I	7	8	R2900.00
Electronic Design Project IIIB	EDPB30I	7	12	R5730.00
Engineering Ethics and Professional Skills IIIB	PRIM10I	7	8	R2900.00
<b>TOTAL CREDITS SEMESTER 5&amp;6</b>			<b>132</b>	
<b>TOTAL</b>				<b>R24190.00</b>

**NB:** The course structure and requisite modules are subject to alteration.



### Application

Applicants who wish to enrol for the programme must apply through the CAO system by no later than 30 September of the previous year.

### Application Forms

Contact the **Central Applications Office (CAO)**

Address letters to:

Central Applications Office

Private Bag X06

Dalbridge,

4014

Tel: (031) 2684444

Fax: (031) 2684422

**OR**

Apply Online: <http://www.cao.za>

**CAO Code:** DU-D-BGL

**Closing date for applications:** 30 September 2022

### **For Further Information**

Contact the Department of Electronic Engineering

Steve Biko Campus (S8 Level 3)

Durban University of Technology

P O Box 1334

DURBAN,

4000

Tel: (031) 3732932

Fax: (031) 3732744

Email: premi@dut.ac.za

### **Financial Aid**

For Financial Aid application for a DUT programme please apply online at [www.nsfas.org.za](http://www.nsfas.org.za) or call the NSFAS call centre on 0860 067 327.

For an explanation on how to fill out the application form, please go to [www.nsfas.org.za](http://www.nsfas.org.za) or contact the call centre on the number above.

**Please note** that completing a form does not guarantee Financial Aid. For further assistance, please consult the Department of Financial Aid and Scholarships on (031)373 2931/2557/2054.

***This is for information purposes only and is not binding on the Durban University of Technology***