



## CAREER INFORMATION 2022

### BACHELOR OF ENGINEERING TECHNOLOGY IN POWER ENGINEERING



01 JAN - 31 DEC 2022



## Bachelor of Engineering Technology in Power Engineering

**NQF Level: 7**

**SAQA ID: 99611**

**Qualification Code: BNPWEI**

**Location: Steve Biko Campus (S7 Level 3)**

### Description of the Programme

This career is related to the generation and distribution of electricity for power, heat and light. The technologist in this field is concerned with designing, developing, installing, fault-finding and testing of electrical motors, generators, alternators, transformers, transmission lines, cables, and switchgear. He can also work as a consultant in his own right to design and manage electrical projects when he has registered as a Professional Technologist.

### Working Conditions

The technologist is not office bound but can be called upon to work on plant and installations at times, both indoor and outdoor. Hours are generally regular but, in emergencies, the technologist can be called up onto work after hours. He may be called onto travel locally and internationally to where the actual work is taking place.

### Personal Qualities Required

The prospective technologist must have an enquiring mind and enjoy problem-solving tasks. The technologist must be able to think in a logical, deductive manner, and must have good organisational abilities and be able to communicate effectively with colleagues at various levels.

A qualifying student will be competent to apply technical knowledge, engineering principles, and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team.

The qualified person will be able to apply to register with the Engineering Council of South Africa (ECSA) as a Technologist-in-Training in the field of Electrical Engineering.

### Career Opportunities

The Electrical Power Technologist is mainly employed by organisations such as ESKOM, EThekweni Municipality, ISCOR, SIEMENS, ALUSAF, manufacturers of electrical appliances and contractors. Many registered technologists also work as self-employed consultants or are employed at consulting firms. Prospects are good and the work increasingly challenging in a time when electrical technology is developing rapidly. The Bachelor of Engineering Technology is the first step in a process of advancement to Professional Technologist.

### 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
A	8	6

B	7	5
<b>NATIONAL SENIOR CERTIFICATE(NSC)</b>		
<b>%</b>	<b>LEVEL</b>	<b>POINTS</b>
90-100	7	8
80-89%	7	7
70-79%	6	6
60-69%	5	5
50-59%	4	4
40-49%	3	3
30-39%	2	2
20-29%	1	1

### Entry Requirements BET (Power 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%.
<b>NB:</b>						
<ol style="list-style-type: none"> <li>1. NSC Mathematical Literacy will not be accepted as a substitute for the subject NSC Mathematics</li> <li>2. The exit certificate of the candidate must qualify the candidate for degree study at an institution of higher learning.</li> <li>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%.</li> <li>4. Prospective applicants may also present an NQF level 6 Diploma in Engineering for entry into the degree programme. A possibility of transfer of credits for cognitive previous studies would be considered dependent on the discipline and nature of the Diploma being presented.</li> </ol>						
<b>Other:</b>						
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:						
<ul style="list-style-type: none"> <li>• Mathematics and Engineering Science, plus any two of the following:</li> <li>• Industrial Electronics</li> <li>• Logic Systems</li> <li>• Electrotechnics</li> </ul>						
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.						
<b>FOREIGN QUALIFICATIONS</b>						
•Foreign Qualifications must be evaluated in accordance with the G7 (9) or failing that, by the SAQA at full senior certificate level or higher.						
Please note: Selection of students is strictly on merit. Where there are more students than places available, selection will be based on academic performance in English, Mathematics, and Physical Science.						
Final selection is made at the full discretion of the Head of Department based on factors such as class size, equity etc.						

**OR**

### Admission Requirement 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.**

### Tuition Fees

To assist you with your planning, the **2021** 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 **2022** fees are not yet final

### First Year Curriculum

Name of Module	Subject Code	HEQSF Level	SAQA Credits	2021 Fees
<b>Semester One</b>				
Computing & Information Technology	CPIT101	6	12	R2770.00
Cornerstone	CSTN101	5	12	R3260.00
Engineering Mathematics IA	EMTA101	5	12	R4020.00
Engineering Physics IA	EPHA101	5	12	R4020.00
Projects I	PRJS101	5	12	R4030.00
Technical Literacy	TCLT101	5	8	R2770.00
<b>TOTAL</b>				<b>R20870.00</b>
<b>Semester Two</b>				
Mechanics of Machine I	MCHM101	5	12	R4030.00
Engineering Mathematics IB	EMTB102	6	12	R4020.00
Engineering Physics IB	EPHB101	6	12	R4020.00
Electrical Principles I	ELEPI01	5	12	R4030.00
Analogue Electronics I	ANLE101	5	12	R4030.00
Digital Electronic IA	DGTE101	6	12	R4030.00
<b>TOTAL CREDITS SEMESTER 1&amp;2</b>			<b>140</b>	
<b>TOTAL</b>				<b>R24160.00</b>
<b>Second Year Curriculum</b>				
<b>Semester Three</b>				
Mechanical Technology I	MTCH101	6	12	R4030.00
Engineering Mathematics IIA	EMTA202	7	12	R4030.00
Electrical Applications	EAPP101	6	8	R2770.00
Electrical Principles II	ELEP201	6	12	R4030.00
Instrumentation and Control I	INCT101	6	12	R4030.00
Project Management	PMAN101	6	8	R3180.00
Communication II	COMP201	6	12	R4030.00
<b>TOTAL</b>				<b>R26100.00</b>
<b>Semester Four</b>				
Mechanical Technology II	MTCH202	6	12	R4030.00
Engineering Mathematics IIB	EMTB202	7	12	R4030.00
Engineering Drawing Design	EDRD101	6	12	R4030.00
Electrical Machine I	EMCH101	6	12	R4030.00
Power System I	PWRS101	6	12	R4030.00
Illumination	ILLM101	7	8	R2770.00
<b>TOTAL CREDITS SEMESTER 3&amp;4</b>			<b>144</b>	
<b>TOTAL</b>				<b>R22920.00</b>
<b>Third Year Curriculum</b>				
<b>Semester Five</b>				
Mechanical Technology III	MTCH302	7	12	R4030.00
Strength of Material I	STMT101	7	12	R4030.00
Design Project I	DSPJ101	7	12	R4030.00
Electrical Machine II	EMCH201	7	12	R4030.00
Power System II	PWRS201	7	12	R4030.00
Power Electronics	PWEL101	7	12	R4030.00
<b>TOTAL</b>				<b>R24180.00</b>
<b>Semester Six</b>				
Environmental Engineering	EVEN101	7	8	R2770.00

Strength of Material II	STMT201	7	12	R3180.00
Design Project II	DSPJ201	7	12	R4030.00
Utilization of Electrical Plant'	UTEPI01	7	8	R2770.00
Electrical Protection	EPRT101	7	12	R4030.00
Renewable Energy System	RNESI01	7	8	R2770.00
Principles of Management	PMGM101	7	8	R2770.00
<b>TOTAL CREDITS SEMESTER 5&amp;6</b>			<b>140</b>	
<b>TOTAL</b>				<b>R22320.00</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) 2684421

### OR

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

**CAO Code:** DU-D-BGH

**Closing date for applications:** 30 September 2021

## For Further Information

Contact the Department of Electrical Power Engineering

Steve Biko Campus (S7 Level 3)

Durban University of Technology

P O Box 1334

DURBAN,

4000

Tel: (031) 3732062

Fax: (031) 3732063

Email: [reginan@dut.ac.za](mailto:reginan@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***