



## CAREER INFORMATION 2021

### BACHELOR OF ENGINEERING TECHNOLOGY IN ELECTRONIC ENGINEERING



01 JAN - 31 DEC 2021



NQF 7

SAQA ID: 99514

## Bachelor of Engineering Technology in Electronic Engineering

**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 BEngTech degree, is designed to provide a broad foundation in electronic engineering through a combination of classroom 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 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 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 BEngTech qualification will also allow for further study through articulation into the postgraduate NQF level 8 BEngTech Honours programme, to be offered at DUT, 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, 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 BEngTech (Electronic Engineering) programme:

### 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)			NATIONAL CERTIFICATE VOCATIONAL (NCV) – LEVEL 4	
Compulsory Subjects	NSC Rating Code	Compulsory Subjects	HG	SG	Compulsory Subjects	Mark
English	4	English	E	C	English	60%
					Life Orientation	60%
Mathematics	4	Mathematics	E	C	Mathematics	70%
Physical Science	4	Physical Science	E	C	Physical Science	70%
					In addition, two 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.

## 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:

- 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
- A conditional certificate of exemption from the Matriculation Board (when in possession of the Senior Certificate (SC)); OR has met
- 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.
- 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.

**NB:** For semester programmes there a single registration for semester 1 and semester 2 at the beginning of each academic year.

### First Year Curriculum

Name of Module	Subject Code	HEQSF Level	SAQA Credits
<b>Semester 1</b>			
Engineering Mathematics 1A	EMTA101	5	12
Engineering Physics 1A	EPHA101	5	12
Electrical Principles 1	ELEP101	5	12
Analogue Electronics 1A	ANLA101	5	12
Digital Electronics 1A	DGEA101	5	12
Computer and IT	CPUT101	5	8
Cornerstone 101	CSTN101	5	12
<b>Semester 2</b>			
Engineering Mathematics 1B	EMTB101	5	12
Engineering Physics 1B	EPHB101	5	12
Electrical Principles 2	ELEP201	6	12
Analogue Electronics 1B	ANLB101	6	12
Digital Electronics 1B	DGEB101	6	12
Technical Literacy	TCLT101	5	8
<b>TOTAL CREDITS SEMESTER 1&amp;2</b>			<b>148</b>

### Second Year Curriculum

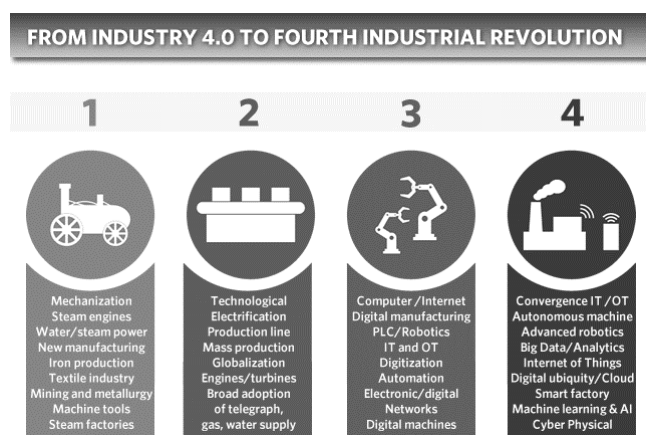
<b>Semester 3</b>			
Engineering Mathematics 2A	EMTA201	6	12
Fundamentals of Power Engineering 2A	FUPE201	6	8

Fundamentals of Instrumentation 2A	FIST201	6	12
Fundamentals of Signals and Systems 2A	FCMC201	6	12
Fundamentals of Microcontrollers 2A	MCRD201	6	12
Electronic Circuit Design 2A	ECDS201	6	12
Computer Programming 2A	CPTP201	6	12
<b>Semester 4</b>			
Engineering Mathematics 2B	EMTB201	6	12
Fundamentals of Control Systems 2B	FCNS201	6	12
Communication and Network Systems 2B	FNTW201	6	12
Electronic Circuit Design 2B	ECDS301	6	12
Embedded Systems 2B	MCRD301	6	12
Data Analytics and Computation 2B	CPTP301	6	8
<b>TOTAL CREDITS SEMESTER 3&amp;4</b>			<b>148</b>

### Third Year Curriculum

<b>Semester 5</b>			
Process Instrumentation 3A	PINA301	7	12
Control Systems 3A	CSYA301	7	12
EM Theory and Wireless Communication 3A	RFEA301	7	12
Digital Signal Processing 3A	DSPA301	7	12
Electronic Design Project 3A	EDPA301	7	12
Innovation Management and Entrepreneurship 3A	PJCT101	7	8
<b>Semester 6</b>			
Process Control Systems 3B	PCSB301	7	12
RF Engineering 3B	RFEB301	7	12
Renewable Energy 3B	RENE301	7	12
Digital Image Processing 3B	DSPB301	7	8
Electronic Design Project 3B	EDPB301	7	12
Engineering Ethics and Professional Skills 3B	PRIM101	7	8
<b>TOTAL CREDITS SEMESTER 5&amp;6</b>			<b>132</b>

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



**Closing date for applications:** 30 September 2020

### Application

Applicants who wish to enrol for the programme must apply through the CAO system by no later than 30 November 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 November 2020

### **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

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Email: [premi@dut.ac.za](mailto:premi@dut.ac.za)

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