

# Bachelor of Engineering Technology Honours (B.EngTech Hons) in Electrical Engineering

The B.EngTech Hons in Electrical Engineering (H6EL0Q) is a *one-year* honours programme at **NQF level 8** offering a unique avenue to candidates interested in: consolidating their acquired knowledge and technical skills; specializing in the field of Power or Telecommunication Engineering, or in pursuing a Master's degree in Electrical Engineering.

## Job Opportunities

The B.EngTech (Hons) provides advanced knowledge and the possibility to major either in Power Engineering or in Telecommunication Engineering. Upon completion of this programme, graduates will be well positioned for exciting opportunities as power systems engineers, telecommunication or data engineers, engineering managers as well as research and development (R and D) engineers.

## Are you interested in?

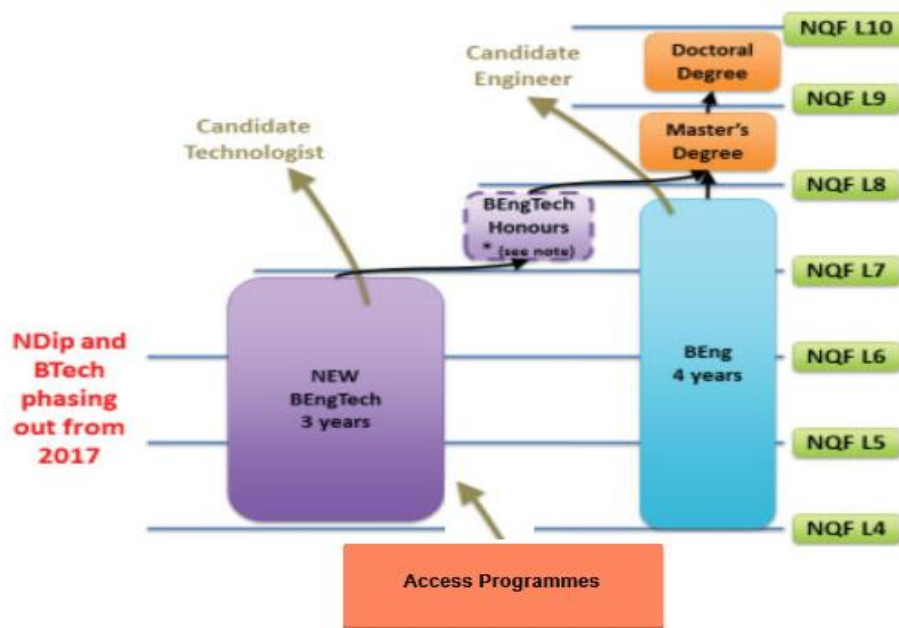
1. Advancing your foundation knowledge in electrical and electronic system design?
2. Growing your potentials in specific areas of Electrical and Electronic Engineering?
3. Positioning yourself for future competitive postgraduate positions?

Candidates with interests in this programme should pay attention to the entry requirements below:

## Minimum Entry Requirements

As per Faculty Regulations for B.EngTech (Hons) admissions:

- (a) B.EngTech in Electrical Engineering or an equivalent **NQF 7** degree.
- (b) B.Tech degree in Electrical Engineering or an equivalent degree.
- (c) Advanced Diploma in Electrical Engineering or its equivalent.



## Bachelor of Engineering Technology Honours Programme (H6EL0Q; NQF 8)

**Graduation Requirements:** Completion of a total of 154 credits, in addition to completing all ECSA GA requirements\* as stipulated. Unlike the B.EngTech programme, there are two sets of module offerings that count towards graduation: **Compulsory modules** and **Elective/Field-related** modules as thus described:

**Compulsory Modules** – These are compulsory modules, which by departmental standards, must be undertaken by all B.EngTech Hons students. These modules cover important areas of advanced engineering mathematics, computing, electronics, research methods and project design.

**Elective/Field-related Modules** – These are modules aligned to each of the fields of Electrical Engineering namely **Power** (power engineering) and **Light Current** (telecommunication). The student has to do Four (4) of the field-related modules (Two modules per Semester). These four selected modules constitute a total of 56 credits (28 credits per semester).

### SEMESTER ONE (S1): TOTAL OF 80 Credits (Compulsory + Elective/Field-related Modules)

#### Compulsory Modules – 52 Credits

CODE	MODULE NAME	NQF Credits	HEQSF Level
AEMC8X01	Mathematics and Computing	14	8
PHE8X80	Energy Physics	14	8
ERM8X01	Research Methodology	14	8
ERP8X01	Research and Design Projects	10	8
<b>TOTAL</b>		<b>52</b>	

\*<https://www.ecsa.co.za/education/EducationDocs/E-08-PN.pdf>

#### Field-related Modules – 28 Credits/Field

FIELDS		MODULE NAME	NQF Credits	HEQSF Level
POWER ENGINEERING	PHE8X01	Power Systems and High Voltage Engineering	14	8
	GTE8X01	Generalized Theory of Machines	14	8
LIGHT CURRENT	ADC8X01	Advanced Communication	14	8
	DSP8X01	Digital Signal Processing	14	8
<b>TOTAL (For TWO selected modules/Field)</b>			<b>28</b>	

## SEMESTER TWO (S2): TOTAL OF 74 Credits (Compulsory + Elective Modules)

### Compulsory Modules – 46 Credits

MODULE NAME		NQF Credits	HEQSF Level
ERP8X02	Research and Design Projects	32	8
EGS8X02	Engineering and Society	14	8
<b>TOTAL</b>		<b>46</b>	

### Elective/Field-related Modules – 28 Credits/Field

FIELD	CODE	MODULE NAME	NQF Credits	HEQSF Level
POWER ENGINEERING	EFW8X02	Electromagnetic Field Theory and Waves	14	8
	EPE8X02	Power Electronics	14	8
LIGHT CURRENT	EME8X02	Mechatronics	14	8
	NET8X02	Networks	14	8
<b>TOTAL (For TWO selected modules/Field)</b>			<b>28</b>	

### ECSA Graduate Attributes (GAs)\*

The following set of graduate attributes will be examined per the listed modules as criteria for completion of B.EngTech (Hons) degree programme.

MODULE NAME	NQF Credits	GA Assessed
Maths and Computing	14	x
Energy Physics	14	x
Research Methodology	14	x
Research and Design Projects	42	1,2,3,4, 5,6
<sup>e</sup> Power Systems and High Voltage Engineering (Power)	14	8
<sup>e</sup> Generalised Theory of Machines (Power)	14	x
<sup>e</sup> Advanced Communication (Light Current)	14	8
<sup>e</sup> Digital Signal Processing (Light Current)	14	x
Engineering And Society	14	7,10
<sup>e</sup> Networks (Light Current)	14	x

°Mechatronics (Light Current)	<b>14</b>	<b>9</b>
°Electromagnetic Field Theory and Waves (Power)	<b>14</b>	<b>x</b>
°Power Electronics (Power)	<b>14</b>	<b>x</b>
<b>TOTAL (Each Field)</b>	<b>154</b>	