

**Recommended full-time study path
(5½ years):**

Year 1 - Sem 1

C5 - MAT - 11, E5 - PH1 - 14, E5 - PL1 - 14, E5 - GCH - 14, E5 - GCL - 14

Sem 2

C5 - ICO - 14, E5 - PH2 - 14, E5 - PL2 - 14, E5 - EM1 - 14

Year 2 Sem 3

D5 - CSS - 14, E6 - IEN- 20,, E5 - END - 20
E5 - EM2 - 14

Sem 4

C6 - IPC - 11, E6 - EEE - 20, E5 - EWP - 20, E5 - EM3 - 14

Year 3 - Sem 5

C5 - CSA - 11, E5 - SAP - 14, C7 - JAV - 11

Sem 6

E7 - DIE - 14, E7 - DEL - 14, C5 - OSH - 11, E6 - DCN - 14

Year 4 - Sem 7

E7 - DID - 14, E7 - EMA - 20, C7 - DSA - 11, E7 CMS-20

Sem 8

E7 - COM - 14, E7 - MAM - 14

Elective – I

(Select one module from below)

C7 - SEN - 11, E7 - WIT - 14, E7-DCD-14

Year 5 Sem 9

E7 - PPR - 13

Sem 10

E8 - DSP - 14, E7 - LCS - 14 elective
(E8 - DDM - 14, E8 - BIO - 14, E8 - HCI - 14)

Year 6 - Sem 11

E8 - RES - 14, E8 - RPO - 20, elective (B8 - ENT - 13, E8 - ISD - 18)

Admissions Criteria

1) Applicants are expected to have successfully completed secondary schooling. The typical entry requirement is BGCSE or IGCSE (in Botswana), LGCSE (in Lesotho) or other equivalent secondary school qualification.

2) BGCSE/equivalent with minimum

Pass (D) in 5 subjects including English, Mathematics and Physics/Double Sciences/Physics+Chemistry.

3) Applicants in possession of a Diploma or Higher Diploma in related field will be given exemptions based on the credit point equivalency

4) For enquiries and more information please visit our General Admissions Information page.

Bachelor of Engineering (Hons) in Electrical Engineering

Programme details:

The programme consists of core (required) and elective modules as detailed below. Some modules may have pre-requisites (i.e. may require the student to pass another module or set of modules first). Some modules may be co-requisite (i.e. such modules are required to be taken together).

The number at the end of the module in parenthesis indicates the credit load of the module. 1 credit is equal to 10 hours of learning (guided, in-class and independent combined); therefore a 10-credit module requires on average 100 hours of learning from the student.

Core modules:

- C5 - MAT - 11: Mathematics 1 (20)
- E5 - PH1 - 14: Physics 1 (10)
- E5 - PL1 - 14: Physics 1 Laboratory (10)
- E5 - GCH - 14: General Chemistry (10)
- E5 - GCL - 14: General Chemistry Laboratory (10)
- C5 - ICO - 11: Introduction to Computers (20)
- E5 - PH2 - 14: Physics 2 (10)
- E5 - PL2 - 14: Physics 2 Laboratory (10)
- E5 - EM1 - 14: Engineering Mathematics 1 (20)
- D5 - CSS - 14: Communication & Study Skills (20)
- E5 - EM2 - 14: Engineering Mathematics 2 (20)

*The programmes offered in this document are accredited by BQA and offered at Botho University at the time of print. Please refer to your offer letter from the admissions department for any changes in programme name or duration that may occur due to regulatory requirements.

FACULTY OF ENGINEERING AND TECHNOLOGY

(CONTINUED)

- C6 - IPC - 11: Introduction to Programming using C++ (20)
- E5 - FES - 20: Fundamentals of Energy systems(10)
- E5 - EWP - 20: Engineering Workshop Practice (10)
- E5 - EM3 - 14: Engineering Mathematics 3 (20)
- E6 - EM4 - 14: Engineering Mathematics 4 (20 credits)
- E6 - ECA - 14: Electrical circuit Analysis (10)
- E6 - EAL - 14: Electrical circuit Analysis Laboratory (10)
- E6 - ECI - 14: Electronic Circuits (10)
- E6 - ECL - 14: Electronic Circuits Laboratory (10)
- E6 - SAS - 14: Signals and Systems (20)
- E6 - EMW - 14: Electromagnetism & Waves (20)
- E7 - ANE - 14: Analogue electronics (10)
- E7 - AEL - 14: Analogue electronics Laboratory (10)
- E7 - LCS - 14: Linear Control Systems (20)
- E7 - DIE - 14: Digital Electronics (10)
- E7 - DEL - 14: Digital Electronics Laboratory (10)
- E7 - ELM - 14: Electrical Machines (10)
- E7 - EL1 - 14: Electrical Machinery Laboratory 1 (10)
- E7 - EMA - 14: Engineering Management (10)
- E7 - PPR - 13: Professional Practice (60)
- E8 - POE - 14: Power Electronics (10)
- E8 - PEL - 14: Power Electronics Laboratory (10)
- E8 - EPS - 14: Electrical Power systems (10)
- E8 - EL2 - 14: Electrical Machinery Laboratory 2 (10)
- E8 - UEE - 14: Utilization of Electrical Energy (10)
- E8 - RPO - 20: Research Project (30)
- E6 - IEN - 20: Introduction to Engineering (10)
- E5 - END - 20: Engineering Drawing (10)

- E7 - MAM - 20: Microprocessor & Microcontroller (10)
- E7 - PTD - 20: Power Transmission & Distribution

Elective modules

- E7 - IIN - 14: Industrial Instrumentation (20)
- E7 - OCS - 14: Optical Communications Systems(20)
- E7 - PSG - 20: Protection & Switch Gear(20)
- E8 - ESY- 14: Embedded Systems (20)
- E8 - HVE - 19: High Voltage Engineering (20)
- E8-RTS-20:Real Time Systems (20)
- B8-ENT-13:Essentials of Entrepreneurship
- E8-ISD-18:Innovation for Sustainable Development (20)

Recommended full-time study path (5½ years):

Year 1 - Sem 1

C5 - MAT - 11: (20), E5 - PHY1 - 14:(10),E5 - PL1 - 14:(10), E5 - GCH - 14:(10), E5 - GCL - 14:(10)

Sem 2

C5 - ICO - 14, E5 - PHY2 - 14, E5 - PL2 - 14, E5 - EM1 - 14

Year 2 - Sem 3

E6 - IEN - 20, E5 - END - 20, D5 - CSS -14
E5 - EM2 - 14

SEM 4

C6 - IPC - 11, E5 - FES - 20
E5 - EM3 - 14, E5 - EWP- 20

Year 3 - Sem 5

E6 - EM4 - 14,E6 - EMW - 14
E6 - ECA - 14, E6 - EAL - 14

Sem 6

E6 - ECI - 14, E6 - ECL - 14
E6-SAS-14, E7- MAM -20

Sem 7

E7 - ANE - 14 (10), E7 - AEL - 14
E7 - LCS - 14 (20), E7 - DIE - 14 , E7 - DEL
- 14

Sem 8

E7 - ELM - 14, E7 - EL1 - 14 - I, E7 - EMA -
20, E7 - PTD - 20

**Elective – I (Select one module from
below)**

E7 - OCS - 14, E7 - PSG - 20, E7 - IIN - 14

Sem 9

E7 - PPR - 13

Sem 10

E8 - POE - 14, E8 - PEL - 14, E8 - EPS - 14,
E8 - EL2 - 14

**Elective – II (Select one module from
below)**

- E8 - RTS - 20, E8 - ESY - 14
, E8 - HVE - 19, E8 - DSP-14

Sem 11

- E8 - UEE - 14, E8 - RPO - 20

**Elective – III (Select one module from
below)**

- B8 - ENT - 13, E8 - ISD - 18

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Program Version Course List



14-07-2022

<u>Course Code</u>	<u>Course Description</u>	<u>Credits</u>	<u>Elective List</u>	<u>Pre-Requisite List</u>	<u>Co-Requisite List</u>	<u>PreElect</u>	<u>ResourceList</u>
EEN-8BH-20	Bachelor of Engineering (Honours) in Electrical Engineering			Weeks:286.00 Credits: 680.00			
Core							
C5-ICO-11	Introduction to Computers	20.00					MSOF10 - Microsoft Office 2010
C5-MAT-11	Mathematics -I	20.00					
D5-CSS-14	Communication and Study Skills	20.00					
E5-END-20	Engineering Drawing	10.00					
E5-EWP-20	Engineering Workshop Practice	10.00					
E5-FES-20	Fundamentals of Energy Systems	10.00					
E5-GCH-14	General Chemistry	10.00					
E5-GCL-14	General Chemistry Laboratory	10.00					
E5-PH1-14	Physics 1	10.00					
E5-PL1-14	Physics 1 Laboratory	10.00					
E6-IEN-20	Introduction to Engineering	10.00					
E6-SAS-14	Signal and Systems	20.00					
E7-EMA-20	Engineering Management	10.00					
E7-MAM-14	Microprocessors and Microcontroller	20.00					
E7-PPR-13	Professional Practice	60.00					
E8-RPO-20	Research Project	30.00					
E8-UEE-14	Utilization of Electrical Energy	10.00					
E6-ECA-14	Electrical Circuit Analysis	10.00					E6-EAL-14 - Electrical Circuits Analysis Laboratory
E6-EAL-14	Electrical Circuits Analysis Laboratory	10.00					E6-ECA-14 - Electrical Circuit Analysis
E6-ECL-14	Electronic Circuits Lab	10.00					E6-ECI-14 - Electronic Circuits

<u>Course Code</u>	<u>Course Description</u>	<u>Credits</u>	<u>Elective List</u>	<u>Pre-Requisite List</u>	<u>Co-Requisite List</u>	<u>PreElect</u>	<u>ResourceList</u>
E6-ECI-14	Electronic Circuits	10.00			E6-ECL-14 - Electronic Circuits Lab		
E7-AEL-14	Analogue Electronics Laboratory	10.00			E7-ANE-14 - Analogue Electronics		
E7-EL1-14	Electrical Machinery Laboratory1	10.00			E7-ELM-14 - Electrical Machines		
E8-PEL-14	Power Electronics Laboratory	10.00			E8-POE-14 - Power Electronics		
C6-IPC-11	Introduction to Programming Using C++	20.00		C5-MAT-11 - Mathematics -I			TURC++ - Turbo C++, MSOF10 - Microsoft Office 2010
E5-EM1-14	Engineering Mathematics 1	20.00		C5-MAT-11 - Mathematics -I			
E5-EM2-14	Engineering Mathematics 2	20.00		E5-EM1-14 - Engineering Mathematics 1			
E5-EM3-14	Engineering Mathematics 3	20.00		E5-EM2-14 - Engineering Mathematics 2			
E6-EM4-14	Engineering Mathematics 4	20.00		E5-EM3-14 - Engineering Mathematics 3			
E7-LCS-14	Linear Control Systems	20.00		E5-EM3-14 - Engineering Mathematics 3			
E5-PH2-14	Physics 2	10.00		E5-PH1-14 - Physics 1			
E5-PL2-14	Physics 2 Laboratory	10.00		E5-PL1-14 - Physics 1 Laboratory			
E6-EMW-14	Electromagnetism and Waves	20.00		E5-PL2-14 - Physics 2 LaboratoryE5-PH2-14 - Physics 2			
E7-PTD-20	Power Transmission and Distribution	10.00		E6-ECA-14 - Electrical Circuit Analysis			
E7-ELM-14	Electrical Machines	10.00		E6-ECA-14 - Electrical Circuit Analysis	E7-EL1-14 - Electrical Machinery Laboratory1		
E7-ANE-14	Analogue Electronics	10.00		E6-ECI-14 - Electronic Circuits			

<u>Course Code</u>	<u>Course Description</u>	<u>Credits</u>	<u>Elective List</u>	<u>Pre-Requisite List</u>	<u>Co-Requisite List</u>	<u>PreElect</u>	<u>ResourceList</u>
E7-DIE-14	Digital Electronics	10.00		E6-ECI-14 - Electronic Circuits E6-EEE-14 - Basics of Electrical and Electronic Engineering E6-EEE-20 - Basics of Electrical and Electronic Engineering	E7-DEL-14 - Digital Electronics Laboratory		
E7-DEL-14	Digital Electronics Laboratory	10.00		E6-ECL-14 - Electronic Circuits Lab E6-EEE-14 - Basics of Electrical and Electronic Engineering E7-EL1-14 - Electrical Machinery Laboratory1	E7-DIE-14 - Digital Electronics		
E8-EL2-14	Electrical Machinery Laboratory 2	10.00		E7-ELM-14 - Electrical Machines			
E8-ELM-14	Electrical Machinery Laboratory 2	10.00			E8-EL2-14 - Electrical Machinery Laboratory 2		
E8-EPG-14	Electrical Power Systems	10.00			E8-PEL-14 - Power Electronics Laboratory		
E8-PEL-14	Power Electronics	10.00					
41		600.00					
Elective							
ELEC	Semesr 11 Electives	20.00	B8-ENT-13 - Essentials of Entrepreneurship, E8-ISD-18 - Innovation for Sustainable Development				
ELEC	Semester 10 Electives	20.00	E8-DSP-14 - Digital Signal Processing, E8-ESY-14 - Embedded Systems, E8-HVE-19 - High Voltage Engineering, E8-RTS-20 - Real Time Systems				
ELEC	Semester 8 Electives	20.00	E7-OCS-14 - Optical Communication Systems, E7-IIN-14 - Industrial Instrumentation, E7-PSG-20 - Protection and Switch Gear				
3		60.00					
44		660.00					

<u>Course Code</u>	<u>Course Description</u>	<u>Credits</u>	<u>Elective List</u>	<u>Pre-Requisite List</u>	<u>Co-Requisite List</u>	<u>PreElect</u>	<u>ResourceList</u>
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