MODULES
2020/21

25 years
1997 - 2022
BOTHO UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY
BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING

https://botswana.bothouniversity.com/

BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING

Programme details

The Computer Engineering programme at Botho University runs for five years plus a sixmonth sandwiched internship programme. There are eleven semesters, out of which the students will be expected to do an internship (Professional Practice) in one of the semesters.

A Computer Engineering graduate studies the design of systems such as hardware and software, digital systems and computers. They focus on the digital device programming and interfacing between devices and users. Their work, for example, will involve areas such as the development of mobile phones, alarm systems and x-ray equipment, which use a combination of embedded software and hardware. They can also work in areas such as Computer system design, Scientific Research and Development, Computer and Electronic Manufacturing, Telecommunications, Wholesale and trade and Public administration.

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-MA1-11 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)
- E6-IEN-20 Introduction to Engineering (10)
- E5-END-20 Engineering Drawing (10)

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Core Modules (Continued)

- C6-IPC-11 Introduction to Programming using C++ (20)
- E5-EM2-14 Engineering Mathematics-2 (20)
- E6-SAP-14 Statistics and Probability (20)
- E5-EM3-14 Engineering Mathematics-3 (20)
- E6-EEE-20 Basic of Electrical and Electronic Engineering (10)
- E6-IEN-14 Introduction to Engineering (20)
- C5-CSA-11 Computer System Architecture (20)
- E6-EEE-14 Basics of Electrical and Electronic Engineering (20)
- E7-DIE-14 Digital Electronics (10)
- C5-OSH-11 Operating Systems and Hardware (20)
- E6-DCN-14 Data Communication Networks (20)
- E7-DID-14 Design and Implementation of Digital Systems (20)
- E7-EMA-14 Engineering Management (20)
- E5-EWP-20 Engineering Workshop Practice
- C7-DSA-11 Data Structures and Algorithms (20)
- E7-COM-14 Compilers (20)

- E7-MAM-14 Microprocessors and Microcontrollers (20)
- E7-DEL-14 Digital Electronics Lab (10)
- E7-PPR-13 Professional Practice (60)
- E8-CSE-14 Computer Security (10)
- E7-MAM-14 Microprocessors and Microcontrollers (20)
- E7-DEL-14 Digital Electronics Lab (10)
- E7-PPR-13 Professional Practice (60)
- E8-DSP-14 Digital Signal Processing (20)
- E7-LCS-14 Linear Control Systems (20)
- E8-RES-14 Real-Time Embedded Systems (20)
- E8-PRO-20 Project (20

Elective modules

Select one from the following
- C7-SEN-11 Software Engineering (20)
- E7-WIT-14 Wireless Technologies (20)
- E7-DCD-14 Developing Concurrent and Distributed Systems (20)

Elective modules (Continued)

Select one from the following
- E8-HCI-14 Human Computer Interaction (20)
- E8-BIO-14 Bio-Informatics (20)
- E8-CSE-14 Computer Security (20)
- E8-DDM-14 Databases & Data Modeling (20)

Select one from the following
- B8-ENT-13 Essentials of Entrepreneurship (20)
- E8-ISD-17 Innovation for Sustainable development

Recommended full-time study path (5½ years)

Semester 1
- C5-MAT-11 Mathematics-1 (20)
- E5-PHY1-14 Physics-1 (10)
- E5-PL1-14 Physics-1 Laboratory (10)
- E5-GCH-14 General Chemistry (10)
- E5-GCL-14 General Chemistry Laboratory (10)

Semester 2
- C5-ICO-11 Introduction to Computers (20)
- E5-PHY2-14 Physics-2 (10)
- E5-PL2-14 Physics-2 Laboratory (10)
- E5-EM1-14 Engineering Mathematics-1 (20)

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Recommended full-time study path (Continued)

Semester 3
- D5-CSS-14 Communication & Study Skills (20)
- E6-IEN-20 Introduction to Engineering (10)
- E5-END-20 Engineering Drawing (10)
- E5-EM2-14 Engineering Mathematics-2 (20)

Semester 4
- C6-IPC-11 Introduction to Programming using C++ (20)
- E6-EEE-20 Basic of Electrical and Electronic Engineering (10)
- E5-EWP-20 Engineering Workshop Practice (10)
- E5-EM3-14 Engineering Mathematics-3 (20)

Semester 5
- C5-CSA-11Computer System Architecture (20)
- E6-IEN-14 Introduction to Engineering (20)
- E6-EEE-14 Basics of Electrical and Electronic Engineering (20)

Semester 6
- E7-DIE-14 Digital Electronics (10)
- E7-DEL-14 Digital Electronics Laboratory (10)
- C5-OSH-11 Operating Systems and Hardware (20)
- E6-DCN-14 Data Communication Networks (20)

Semester 7
- E7-DID-14 Design and Implementation of Digital Systems (20)
- E7-EMA-14 Engineering Management (20)
- C7-DSA-11 Data Structures and Algorithms (20)

Semester 8
- E7-COM-14 Compilers (20)
- E7-MAM-14 Microprocessors and Microcontrollers (20)
- Elective –I (Select one module form below)
- C7-SEN-11 Software Engineering (20)
- E7-WIT-14 Wireless Technologies (20)
- E7-DCD-14 Developing Concurrent and Distributed Systems (20)

Semester 9
- E7-PPR-13 Professional Practice (60)

Semester 10
- E8-DSP-14 Digital Signal Processing (20)
- E7-LCS-14 Linear Control Systems (20)
- Elective –II (Select one module form below)
- E8-DDM-14 Databases & Data Modeling (20)
- E8-BIO-14 Bio-Informatics (20)
- E8-HCI-14 Human Computer Interaction (20)
- E8-CSE-14 Computer Security (20)

Semester 11
- E8-RES-14 Real-Time Embedded Systems (20)
- E8-PRO-20 Project (20)
- Elective –I (Select one module form below)
- B8- ENT-13 Essential of Entrepreneurship (20)
- E8-ISD-17 Innovation for Sustainable development (20)

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. BGCSE or IGCSE (in Botswana), LGCSE (in Lesotho) candidates are required to achieve a minimum grade of 'D' in five subjects.

2) The applicant should have passed in a minimum of five BGCSE or equivalent subjects including English, Mathematics and either one of Physics, Double Sciences, or PC (Physics and 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