The Admissions and Enrollment office, Faculty representatives and BIUST students.

Designer: Oabona Mpudi

Directorate of Registry Services
Admissions and Enrollment
Private Bag 16
Palapye, Botswana
Plot 10071, Boseja Ward
Palapye, Botswana
T (+267) 4900117, 4931480, 4931481
F (+267) 4900102
admissions@biust.ac.bw
www.biust.ac.bw

Disclaimer
Whilst every attempt is made to ensure that information in this prospectus is accurate and up-to-date, some information is subject to change without prior notice. The University will not be held liable for information that is subject to change and reserves the right to alter the content of the prospectus at any time.
VISION
To be a premier research based University of Science, Engineering and Technology, internationally recognised for the quality and excellence of its teaching and learning, research and innovation, and engagement.

MISSION
- To produce world class research and innovation in Science, Engineering and Technology, contributing to industry growth, and the development and advancement of a diversified knowledge based economy.

- To produce tomorrow’s leaders in industry and society through the provision of relevant, innovative, and quality research-intensive education of international standard.

- To promote community, national, regional and international development through the transfer of the University’s knowledge and the provision of its skills and expertise.

CORE VALUES
Equality and Diversity; Sincerity & Trust; Innovation; High Performance and Quality; and Quest for knowledge and Understanding

STRATEGIC THEMES
Academic Quality and Student Reputation; Research and Innovation Excellence; Engagement for Development; and High performance driven by cutting-edge institutional capabilities
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vice Chancellor’s Message</td>
<td>1</td>
</tr>
<tr>
<td>Why BIUST?</td>
<td>2</td>
</tr>
<tr>
<td>How to apply</td>
<td>3</td>
</tr>
<tr>
<td>Fee Structure</td>
<td>5</td>
</tr>
<tr>
<td>International Students</td>
<td>6</td>
</tr>
<tr>
<td>Campus Life</td>
<td>8</td>
</tr>
<tr>
<td>Sports and Recreation</td>
<td>9</td>
</tr>
<tr>
<td>Clubs and Societies</td>
<td>10</td>
</tr>
<tr>
<td>Counselling Services</td>
<td>11</td>
</tr>
<tr>
<td>University Library</td>
<td>12</td>
</tr>
</tbody>
</table>

## FACULTY OF ENGINEERING AND TECHNOLOGY 13

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>14</td>
</tr>
<tr>
<td>Meet the Dean</td>
<td>15</td>
</tr>
<tr>
<td>Chemical ,Materials and Metallurgical Engineering</td>
<td>16</td>
</tr>
<tr>
<td>Civil and Environmental Engineering</td>
<td>17</td>
</tr>
<tr>
<td>Computer and Telecommunications Engineering</td>
<td>18</td>
</tr>
<tr>
<td>Electrical and Electronics Engineering</td>
<td>19</td>
</tr>
<tr>
<td>Geological Engineering</td>
<td>20</td>
</tr>
<tr>
<td>Industrial and Manufacturing Engineering</td>
<td>21</td>
</tr>
<tr>
<td>Mechanical and Energy Engineering</td>
<td>22</td>
</tr>
<tr>
<td>Mechatronics and Industrial Instrumentation</td>
<td>23</td>
</tr>
<tr>
<td>Mining Engineering</td>
<td>24</td>
</tr>
</tbody>
</table>

## FACULTY OF SCIENCES 25

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>26</td>
</tr>
<tr>
<td>Meet the Dean</td>
<td>27</td>
</tr>
<tr>
<td>Biology and Biotechnology</td>
<td>28</td>
</tr>
<tr>
<td>Computer Science and Software Engineering</td>
<td>29</td>
</tr>
<tr>
<td>Earth and Environmental Sciences</td>
<td>30</td>
</tr>
<tr>
<td>Environmental Sciences</td>
<td>31</td>
</tr>
<tr>
<td>Forensic Sciences</td>
<td>32</td>
</tr>
<tr>
<td>Geology</td>
<td>33</td>
</tr>
<tr>
<td>Information Systems and Data Management</td>
<td>34</td>
</tr>
<tr>
<td>Physics and Astronomy</td>
<td>35</td>
</tr>
<tr>
<td>Pure and Applied Chemistry</td>
<td>36</td>
</tr>
<tr>
<td>Pure and Applied Mathematics</td>
<td>37</td>
</tr>
<tr>
<td>Statistics</td>
<td>38</td>
</tr>
</tbody>
</table>
My dear prospective students,

It is with great pleasure and excitement that I welcome you as a student to the Botswana International University of Science and Technology (BIUST). At BIUST we understand and acknowledge that as our student, you are the essence and reason of our existence. We can never be BIUST without you being our student.

BIUST is a unique dream and aspiration of our nation. We are the only University in Botswana with a specific mandate to be a specialized University to offer only Science, Engineering and Technology academic programmes, to offer teaching and learning that emphasizes problem-solving, industry linkages, community engagement, collaborative partnerships and employment-ready graduates who also have entrepreneurship training. It is clear therefore that our vision at BIUST is forward looking and distinctively ambitions, while our mission is expansive. I welcome you with open arms to this aspiring great University of high performance, relevance and excellence.

Our teaching and learning at BIUST is not just confined to the single-minded pursuit of academic excellence. It is far more than that-for we offer an inspiring, culturally diverse environment of sports, entertainment, social activities and fun-filled experience. As our student, you have a right to fully participate in extra-curricular activities of your choice, confident that BIUST will provide both an enabling environment and a safe and secure platform to realize that right.

I would like to conclude this welcome message by pledging to you my full support and commitment to making your studies and stay with the entire BIUST community a fulfilling, wondrous and accomplished one.

Yours Sincerely,

Prof. Otlogetswe Totolo, PhD, FBAS
Vice Chancellor
WHY BIUST?

BIUST prides itself as the first specialized tertiary institution in the country. It is the first research intensive University in Botswana with a focus on Engineering, Science and Technology. Furthermore the University also focuses on industry linkages as a critical factor in achieving its mandate. BIUST is therefore working with industries to establish Industry Advisory Boards which will assist in aligning, among other things, the curriculum to the skills needs of the economy.

In this way BIUST will be able to meet its objective of producing employment ready graduates not only for the local market, but for the global market as well. The University’s approach to teaching and learning is problem-based which is intended to enhance the learner’s understanding as well as provide practical experience.

VISITING BIUST

BIUST has opened its doors to all those who wants to learn more about the University. Prior booking with the Enrolment and Admissions office is essential. Prospective students are welcome to come and appreciate the state of the art facilities and get a taste of student life at the University. The University offers themed open days which are held throughout the year to allow groups of school going learners to come explore and appreciate the University’s academy programmes, learning and research facilities. Open days are tailored for students eager to get information about BIUST and what different Faculties at the University have to offer. The events further gives secondary school learners the chance to pose questions to the academic staff, student ambassadors as well as a chance to explore many career opportunities BIUST academic programmes have to offer.

Open days also features a wide range of activities which include, interactions with the University’s recruitment and admissions team, interactive displays and experiments by academic departments’, workshops and laboratories, guided tour of student facilities by fellow students of the University which includes campus facilities such as the gym, sports fields, student village and the cafeteria. Guided tours usually last for 30 to 60 minutes.

Prospective students are advised not to miss this because it helps them make informed decisions about their study choices. Visitors may access the campus by means of public transport from the main Palapye bus rank or private transport. Active secondary school learners can contact their Guidance and Counseling teachers to facilitate their school participation in the Open Day.
Explore the BIUST website (www.biust.ac.bw) to learn more about BIUST programmes and how to apply. If you are eligible to apply, please visit the university in Palapye to collect the application form. You can also send a request for application form and the prospectus through email at admissions@biust.ac.bw, download the application form from the website or you can contact Admissions staff at (+267) 4900117 for any assistance with the admission process.

ENTRY REQUIREMENTS

The University considers and assesses every application on its own merits, taking into account the relevance of qualifications and experience each student has. For students with a Botswana General Certificate of Secondary Education (BGCSE) or equivalent, the following minimum requirements will apply for undergraduate degree programmes:

- A credit in at least six subjects in BGCSE or equivalent. These subjects must include a minimum of Pass (D) in English and at least a Credit (C) in Mathematics plus two science subjects.

- BGCSE holders or equivalent should possess a minimum of 20 points from any of Mathematics, and Physics and/or Chemistry and/or Biology or Science double award.

- A minimum combined points score for admission from the six subjects (including Mathematics, English, two science subjects or Science Double Award, must be above 38 points based on the points scores in the following table:

<table>
<thead>
<tr>
<th>Grade Points</th>
<th>A*,A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Points for Science Double Award are doubled E.g. Grade BB= 14 Points
- Students with other qualifications (i.e. non-BGCSE and its equivalents) including international students, will be considered on their own merits and equivalency to BGCSE.
Direct Entry into Second Year

- The University will consider A-level holders and those who have already completed year one (1) BSc General at any recognised University for direct entry into second year.

- Furthermore, applicants in possession of year one (1) BSc General or equivalent, are required to have attained at least 40 BGCSE points or equivalent and must have obtained an average of at least 65% without resits or retakes in their BSc transcript.

- A-level holders are required to possess, in addition to the general minimum entry requirements, 2 A-level grades with a C or better in Maths, and in one of Physics or Chemistry or Biology.

- Diploma holders will also be considered on the relevance of their prior programmes of study to their programmes of interest.

The University reserves the right to ask prospective students to sit a pre-admission exam if required. Please note that these are the only minimum entry requirements, and certain programmes may have additional entry requirements. Information on additional requirements is available from the Admissions Office.

Undergraduate Programme-Specific Entry Requirements

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Entry Requirements</th>
<th>Additional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering &amp; Technology</td>
<td>Minimum Entry Requirements</td>
<td>Physics or Science Double Award</td>
</tr>
<tr>
<td>Sciences</td>
<td>Minimum Entry Requirements</td>
<td>Chemistry/ Biology/ Physics or Science Double Award</td>
</tr>
</tbody>
</table>
## Fee Structure

### Application fees

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application fee for UG - citizens/SADC</td>
<td>P200</td>
</tr>
<tr>
<td>Application fee for UG - non-residents</td>
<td>P400</td>
</tr>
<tr>
<td>Late application fee for UG - citizens/SADC</td>
<td>P350</td>
</tr>
<tr>
<td>Late application fee for UG - non-residents</td>
<td>P900</td>
</tr>
</tbody>
</table>

### Tuition fees

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate citizens/SADC per Academic Year</td>
<td>P1250 x 40 credits = P50 000</td>
</tr>
<tr>
<td>Undergraduate non-SADC residents</td>
<td>P60 000</td>
</tr>
<tr>
<td>Masters Sciences &amp; Engineering - citizens/SADC</td>
<td>P25 000</td>
</tr>
<tr>
<td>Masters Sciences &amp; Engineering - non-residents</td>
<td>P40 000</td>
</tr>
<tr>
<td>PhD Sciences &amp; Engineering - citizens/SADC</td>
<td>P18 000</td>
</tr>
<tr>
<td>PhD Sciences &amp; Engineering - non-residents</td>
<td>P20 000</td>
</tr>
<tr>
<td>Field work fees/day/student</td>
<td>P1 000</td>
</tr>
<tr>
<td>Project fees (incl. typing of dissertation)</td>
<td>P9 000 (final year of the programmes)</td>
</tr>
<tr>
<td>One Credit Fees (Max of 15 per semester (UG))</td>
<td>P3 000 (non degree)</td>
</tr>
<tr>
<td>Industrial attachment fees</td>
<td>P2 500 (for equipment boots, helmets, etc)</td>
</tr>
<tr>
<td>Supplementary exam fees</td>
<td>P250</td>
</tr>
<tr>
<td>Life and disability insurance fees</td>
<td>P200</td>
</tr>
<tr>
<td>Remarking Fees (Per course)</td>
<td>P300</td>
</tr>
<tr>
<td>Protective clothing fees</td>
<td></td>
</tr>
<tr>
<td>i. College of Engineering &amp; Technology</td>
<td>P5 500</td>
</tr>
<tr>
<td>ii. College of Sciences</td>
<td>P2 500</td>
</tr>
<tr>
<td>Transcripts sent to 3rd parties</td>
<td></td>
</tr>
<tr>
<td>i. Within Botswana</td>
<td>P100</td>
</tr>
<tr>
<td>ii. Elsewhere</td>
<td>P200</td>
</tr>
</tbody>
</table>

### Housing

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postgraduate - two semesters</td>
<td>P10 500</td>
</tr>
<tr>
<td>Postgraduate - Calendar year</td>
<td>P20 500</td>
</tr>
<tr>
<td>Undergraduate - two semesters</td>
<td>P5 500</td>
</tr>
<tr>
<td>Undergraduate - during holidays per night</td>
<td>P150</td>
</tr>
<tr>
<td>Non student during holidays per night</td>
<td>P250</td>
</tr>
</tbody>
</table>

### Other Fees

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student life fee</td>
<td>P150</td>
</tr>
<tr>
<td>Late registration fee - per day (up to 14 days)</td>
<td>P150/day</td>
</tr>
<tr>
<td>Transcript fee</td>
<td>P60</td>
</tr>
<tr>
<td>ID Card replacement fee</td>
<td></td>
</tr>
<tr>
<td>i. first time</td>
<td>P70</td>
</tr>
<tr>
<td>ii. Second time</td>
<td>P140</td>
</tr>
<tr>
<td>For Books and equipment send an enquiry to</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:admissions@biust.ac.bw">admissions@biust.ac.bw</a></td>
<td></td>
</tr>
<tr>
<td>Laundry</td>
<td>P600</td>
</tr>
<tr>
<td>Meals</td>
<td>P3 900</td>
</tr>
</tbody>
</table>
INTERNATIONAL STUDENTS

Applying to BIUST

BIUST is an exciting place to study at and live in. As a home to international students from more than fifteen countries, you will find it hospitable and friendly. Applying to study at BIUST has been simplified for international students. Prospective International students may download application forms from the website, request for them through admissions@biust.ac.bw or through mail at Enrolment and Admissions, Botswana International University of Science and Technology, Private Bag 16, Palapye, Botswana.

Applicants must submit the following:
1. Completed application form
2. Application fee receipt
3. A certified copy of your senior secondary school certificate or equivalent, accompanied (if not in English) by a certified official English
4. Certified copy of a valid Passport and Birth Certificate
5. Certified copies of additional official documents (e.g. post-secondary school certificate, transcript, professional registration certificates, certifying letters from examining bodies, proof of change of name, etc) where appropriate.

Complete application forms and supporting documents can either be scanned and emailed to admissions@biust.ac.bw or submitted through the mail below:

Enrolment and Admissions Office
Botswana International University of Science and Technology
Private Bag 16
Palapye, Botswana

BIUST, as an International University is committed to ensuring that international students feel welcome and home away from home. The office of Student Affairs dedicates its time in making sure that upon arrival of international students that they are assisted in all aspects of their study including accommodation, immigration matters and banking necessities. There is a separate orientation for international students where they are acclimatized to the new environment.
VISA AND STUDY PERMITS REQUIREMENTS

Once you have been accepted to study at the Botswana International University of Science and Technology, you need to have the following to apply for a study permit with the Botswana immigration office:

1. Certified copy of valid passport (valid for at least the period of the programme offered)
2. Certified copy of Birth certificate or Identity card
3. Complete Immigration application form
4. Proof of payment (deposit receipt for tuition fees)
5. Study permit fee of P1500.00 and P500.00 VISA fee for non SADC residents
6. Proof of sufficient financial means to cover tuition fees, subsistence and incidental costs
   (in the form of a bursary, or bank statement or and support letter)
7. Medical report (forms are available at Immigration offices).
8. Admission Letter, stating the duration of the programme offered
9. Four (4) passport size photos (background should be white)

ARRIVAL INFORMATION

Upon your arrival in Botswana, you must be in possession of your valid passport and admission letter and other relevant supporting documents which might be requested by the immigration officials at the border. Shuttle services and taxis are available at the Sir Seretse Khama International Airport to transport passengers to the Gaborone bus rank where they can board a bus to Palapye. From Palapye bus rank one can take a taxi to BIUST campus.
CAMPUS LIFE

Life at our University is not just about lectures and study. There is so much more to being a student at BIUST. Students will find the sports, societies and social life vital and exciting ingredients of their wider University experience.

The University offers student accommodation on campus. All students interested in staying on campus can make their applications via our online accommodation application services as soon as they accept offers at BIUST. Feel free to contact the Campus Housing for further assistance and information. There are other amenities for a vibrant life on campus such as catering services, indoor, outdoor sporting facilities and free access to WiFi.

NEW STUDENT ORIENTATION

Orientation takes place in the week before lectures commence and is a special week for new students to get acquainted with the University, the staff, facilities and life at BIUST in general.

Orientation activities include:

- Meeting classmates and getting settled into University life
- Collecting student identity cards, Academic registration, collecting welcome packs, study guides, text books, class lists etc.
- Introductions to the student services, meeting the support staff at BIUST and getting to know what they offer.
- Attending the Vice Chancellors’ welcome ceremony to officially mark the start of a BIUST student experience and the pathway to a great career.
BIUST SPORTS
BIUST has a vibrant sporting atmosphere and is looking forward to build this into a great culture of participation. BIUST Sport and Recreation provides students with an opportunity to take part in sport and recreational activities at national and international levels. BIUST Sport provides students with an opportunity to gain a practical experience whilst participating with their peers and also to make them have a meaningful life on campus. Students are able to develop and build lifelong friendships as a result of their participation as well as gaining invaluable health benefits of exercise in the process. Our students are at the peak of their performance levels hence the need to carefully assist them in achieving their sporting goals. The performances of our students in competitions promote the great name of BIUST and are consistent with our mission and vision.

BIUST Sport offers a wide range of sporting codes and activities that students can choose from. These guarantee that students will find activities of their choice while studying here. They include the following:

• Athletics, Badminton, Basketball, Bridge, Chess, Karate, Netball, Table Tennis, Lawn Tennis, Rugby, Soccer, Softball, Volleyball

Facilities
BIUST has a variety of sports and recreational facilities that can be used by both students and staff. All BIUST Sport Clubs can use the facilities free of charge.

BIUST Gym
The Sports and Recreation Unit also operates a gym to enhance the healthy living amongst the university community. The gym offers a variety of fitness programs to cater for different interest groups.

BIUST GYM Business Hours:
Monday - Thursday 06:30-20:30
Friday 06:30-18:30
Saturday 07:30-15:00
Sunday 07:30-12:30
Students clubs and societies are a great way to explore interests or develop new ones. New students will find that membership and involvement in student societies is an extremely enjoyable part of University life. Involvement in clubs and Societies enables students to explore their passions and realize their potentials in other spheres of life. Students will be able to take part in the following clubs and societies

- BIUST Christian Fellowship
- BIUST Botswana Student Network
- BIUST Choir Club
- BIUST Debate Society
- BIUST Engineering Students Association
- BIUST Invitation Club(Performing Arts, and many more)

HEALTH AND WELFARE SERVICES

Student health is of paramount importance in the University and the following services are available to ensure that students are provided with a conducive learning environment.

HEALTH SERVICES

BIUST clinic is available to offer services that are youth friendly, affordable and accessible to all students. The services are student oriented with a comprehensive continuous care for acute and chronic health problems, as well as a wide range of health promotion and disease prevention services that are appropriate to the gender, age, race, and ethnicity of the clients being served. Services include:

- Clinical Consultation and treatment
- Sexual Reproductive Health (Ante-Natal Care, Post Natal Care & Family Planning)
- Emergency Response Services
- Health Promotional Activities
- HIV Testing, Counselling and Support

Emergency Contacts: (+267) 73154388/9
All BIUST students are entitled to a counselling session whenever they are undergoing certain difficulties that requires intervention by an expert in the field. The following services are available within this unit:

- Personal /Individual Counselling
- Group Counselling
- Referrals when needed

Contact Information: Ms Nametsegang Ntibinyane  
Tel: (+267) 4931689  
Email: ntibinyanen@biust.ac.bw

HEALTH AND WELLNESS OFFICE

The office supports students with the development of life long health behaviours. It coordinates the provision of health education to students. The services within this unit include

- Sexual Health Education
- Alcohol, drugs and substance use
- Rape, sexual assault and violence prevention

STUDENTS WITH DISABILITIES AND LEARNING DIFFICULTIES

BIUST is fully committed to ensuring that learning opportunities are available to everyone. Students living with a disability wishing to apply to BIUST are advised to declare and contact the Admissions Office. This will allow the University to conduct a needs assessment program.
On behalf of the library staff, we welcome you to the BIUST Library. As a key academic partner and catalyst for learning, research and knowledge creation, the University Library has a collection of over 5,000 books consisting of carefully selected essential print and reference books required for each programme of study at BIUST.

Along with the print books is a growing list of online resources ensuring that our students’ have access to the most important resources in their chosen fields of study. The library subscribes to major online science, engineering and technology databases. These currently include Access Science, Access Engineering, Science Direct, Springer Journals, GeoRef, Applied Science & Technology Index, Academic Search Premier, IEEE Xplore, Scopus, Web of Science.

The Library also has access to open online resources namely; BioOne, JSTOR, SABINET Journals, Journal of Engineering, African Journal Online, Cambridge ebooks, Springer Open Books and Journals etc. The BIUST Library has an awesome group of experienced professional Librarians and support staff who are available to assist you with connecting with the learning resources you need.

We invite you to browse through our resources, chat with our librarians on line to get help for your assignments and research or give us ideas about what other resources or services we should add to what is currently available. Our staff will also help you with arranging loans of these materials. We also invite you to the Library for your group work in our discussion rooms, for the quiet study areas and for training in the use of discovery tools and our resources.

The BIUST Library can be contacted by telephone on number (+267) 4900117, by email at: library@biust.ac.bw or through Facebook at facebook.com/biustlibrary. You may also twit us on twitter.com/biustlibrary. We are open throughout the academic year. Come and take full advantage of the facilities, resources and services for your education and research.
Faculty of Engineering and Technology
Engineering deals with design, development, implementation, operation and maintenance of industrial/production systems. The Faculty of Engineering offers undergraduate and postgraduate teaching and research facilities to train aspiring students to become professionals in their respective fields.

The vision of the Faculty is to be a leading provider of Engineering and Technology education using innovative approaches to enhance lifelong career opportunities in the following fields:

- Chemical, Materials and Metallurgical Engineering
- Civil and Environmental Engineering
- Computer and Telecommunications Engineering
- Electrical and Electronics Engineering
- Geological Engineering
- Industrial and Manufacturing Engineering
- Mechanical and Energy Engineering
- Mechatronics and Industrial Instrumentation
- Mining Engineering

This is emphasised by our mission to provide globally competitive and high quality education based on a theoretical, experiential, student centered teaching and learning. There are also opportunities for participation in research, industrial internships, and interdisciplinary studies so as to produce employment-ready graduates.

All our programmes are designed to fulfill ECSA (Engineering Council of South Africa) accreditation requirements.
Professor Raymond S. Suglo is a holder of PhD and MSc degrees in Mining Engineering (University of Alberta, Edmonton, Canada), a Postgraduate Diploma and Bachelor of Science (Honours) degrees in Mining Engineering (Kwame Nkrumah University of Science and Technology, Kumasi, Ghana).

He has over 33 years of professional experience in teaching, research and underground mining operations. He is currently a Professor and Acting Dean of the Faculty of Engineering and Technology (CET) at the Botswana International University of Science and Technology (BIUST), Palapye, Botswana. He was the Head of Mining and Geological Engineering Department from April 2014 to September 2016.

Before joining BIUST, he worked for 24 years at the University of Mines and Technology, (UMaT), Tarkwa, Ghana. He rose through the ranks from an Assistant Lecturer (May 1989 - April 1995) to a Lecturer (May 1995 - September 1999), Senior Lecturer (October 1999 - September 2006) and then to Associate Professor from October 1, 2006 to September 30, 2013.

He also worked as a Production Engineer at Tarkwa Goldfields Limited, Tarkwa, Ghana, from March 1983 to April 1989. His research areas are Mine Ventilation and Safety Engineering, Simulation of Mining Systems, Surface and Underground Mine Planning and Design, Mining Laws and Environmental Management issues. From August 2006 to July 2008, he was the Head of the Mining Engineering Department, UMaT, Tarkwa.

He became the Dean of Postgraduate Studies from August 2008 to July 2012 and from August 2012 to July 2013, he was again the Head of the Mining Engineering Department, UMaT, Tarkwa. He has to his credit 61 publications (29 refereed journal publications & 32 conference publications). He is a Member of the American Institute of Mining, Metallurgical and Petroleum Engineers, Inc. (SME), the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) and Ghana Institution of Engineers (GhIE).
Chemical, Materials and Metallurgical Engineering

Award: BEng
Duration: 5 years

Introduction
Chemical engineers are principally involved in the production of a wide range of chemicals such as soaps, dyes, polyethylene, detergents, fertilizers, cement, bricks etc., foodstuffs such as cooking oil, margarine, beverages and pharmaceuticals as well as petroleum products, but they are also involved in production of potable water, pulp and paper, cars, steel, mineral resources processing, production of energy, textiles, beverages, waste processing and minimization, river, water, soil and air pollution and treatment. Chemical engineers design processes, build and manage chemical operations and ensure efficiency of production by intelligent control and optimization of physical, thermal and chemical parameters. Materials engineers are essentially involved in the design and selection of materials based on the physical and mechanical properties desired for engineering application. Appropriate materials are required for specific conditions. Engineering materials broadly include, metals, polymers, ceramics, including mixtures such as metallic alloys and composites. Metallurgical engineers specialise primarily in metals and their alloys. The spectrum of metallurgical engineering stretches from minerals processing, metal extraction and refining through to alloying and forming into shapes for use.

Why is this Course for me?
Humankind has revolved around the discovery, development and application of materials. Advances in telecommunication, aerospace, space exploration, bio-medical and other hi-tech disciplines have been possible because of engineers have availed suitable materials with specific properties for use.

What Will I Study?
Students will study varying courses that develop skills and competencies in extraction and processing of chemical, minerals and metals to produce materials that shape the technology-driven world. In the course of study students will take modules such as Chemical and Metallurgical Engineering Thermodynamics, Chemical Reaction Engineering, Green Energy Engineering, Process Control and Instrumentation, Chemical and Metallurgical Engineering Design, Extractive Metallurgy, Heat and mass transfer, Mechanical Metallurgy, Polymer and composite technologies

Career and postgraduate opportunities
Career opportunities for chemical, materials and metallurgical engineers are found in chemical and materials processing plants, minerals, metal production and metal forming industries. Further career opportunities are found in food and beverage industries, biotechnology, production of bio-medical materials, manufacture of polymeric materials, ceramics and composites. Careers can be diversified to other associated functions such as energy utilisation, environmental protection, health and safety, disposal of hazardous waste, process control and quality management.
Introduction
The Department of Civil and Environmental Engineering offers Bachelor of Engineering Degree in Civil and Environmental Engineering. This is a five year degree programme providing students with detailed courses in structures, construction materials, geotechnics, water, environmental engineering and transportation. The structure of the programme is such that the first two years is common to all engineering students. In year five, students pursue more specific courses on this field. The department is committed to produce high quality engineers for the civil and environmental engineering industry through excellent education, research and partnership with the industry. It is still a new department and has therefore not yet been accredited. However, the curriculum was developed with the view to seeking accreditation with the Engineering Council of South Africa.

Why is this Course for Me?
Civil engineering is arguably the oldest engineering discipline and continues to provide the largest employment world-wide due to the high demand of the much-needed construction industry. Civil engineers literally build nations through construction and maintenance of large and most essential infrastructures such as roads, bridges, railway lines, buildings, dams, water and waste water treatment and supply systems.

What Will I Study?
Primary disciplines in civil engineering are structures, construction materials, geotechnics, transport, water and environmental engineering. This programme will give you the theory and practical part of these disciplines that are well backed by the basic fundamentals of science and engineering such mathematics, chemistry, physics and mechanics of materials. You will also be provided with soft skills that allow you to perform in the industry such as professional ethics, construction management and entrepreneurship skills.

Career and Graduate Study Opportunities
There is no fixed or standard career path for a Civil Engineer. In Botswana you can join the vast construction industry, consulting industry, Government Departments, parastatals and the mining industry. You can also opt to further pursue your learning by joining the postgraduate programme at BIUST which will give you the opportunity to enter the academic world and open your career path even wider. The Department of Civil and Environmental Engineering offers MSc and PhD degrees in all fields within the department such as water, environmental engineering, structures, materials, transportation and geotechnics. The post graduate programme seeks to conduct intense research that is based on the fundamentals of civil and environmental engineering to address national problems and to provide high level human resource for the industry.
Computer and Telecommunications Engineering

Award: BEng
Duration: 5 years

Introduction

The driving force in our contemporary society is the engineer’s ingenuity. There are only a few aspects of modern society that are not affected by computers and telecommunications. Computer Engineering has ushered in a lot of modern conveniences from microwave ovens, mobile phones, high and ultra-definition televisions, entertainment and automated systems, wireless high speed internet technologies that are controlled by computer systems. Communicating information over short and long distances over wired and wireless networks, and the security of such data, networks, power lines and electrical distribution is central to engineers who specialise in Computer and Telecommunications Engineering.

Why is this Course for Me?

As the world moves further into knowledge economy, the demand for high level qualifications has increased exponentially. The computer and telecommunications revolution has particularly impacted economic growth in Africa and the world over. In order for Botswana, and the other developing countries to compete with developed countries, computer and telecommunications engineering offer catalytic properties to speed up the process. The course will equip students with the concepts, theories and principles underlying the science and mathematics of electrical, computer and telecommunications engineering for a broad range of modern technologies.

What Will I Study?

Computer and Telecommunications Engineering have the first two years common with other Engineering disciplines. Students will learn the tools such as computer languages and software, computer systems and architectures, networking and security, wired and wireless and mobile communication systems and networks, convergence and broadband technologies.

The Modules You Will Study Include;

- Automation and Control systems
- Computer Networks and Security
- Digital Communications
- Digital Signal Processing
- Engineering Mathematics
- Fundamentals of Communication Theory
- Microprocessors and Microcontrollers
- Mobile and Satellite networks & Infrastructure
- Transmission and Switching Engineering

Career and Graduate Opportunities

Whether one aspires to be an entrepreneur, an engineer, a social scientist, an economist or a banker, then Computer and Telecommunications Engineering will equip you with the necessary and crucial skills. There has never been a greater need for Computer and Telecommunications Engineers in high demand and well-paying industries. Engineers can work in research and development (R&D) centres, creating the products of tomorrow to help make modern life convenient. Some of the potential careers include consumer and professional electronics, robotics, defence, broadcasting and telecommunications and the information technology sectors.
Introduction
This is a 5 year programme which is concerned with the study and application of electricity, electronics, and electromagnetism. During the first year, the students are introduced to mathematics, physics, writing skills, and computing. In the subsequent years, the students learn basic electrical and electronic concepts. Towards the end of the programme, fine points of various areas of Electrical and Electronics Engineering are investigated. This programme deals with power generation and distribution on a large-scale. It is a discipline that uses scientific knowledge of the behaviour and effects of electrons to create components, devices, systems or equipment that use electricity as part of their source of power.

Why is this Course for Me?
Electrical and Electronics Engineering offers solutions to some of the most critical problems facing the world today such as energy shortages and control, environmental impact, constant need for information security and informatics.

What Will I Study?

The Modules You Will Study Include:

Career and Graduate Study Opportunities
The Electrical and Electronics programme grooms students to have the flexibility to be whatever they choose to be in later life. Electrical and Electronics Engineers are involved in a wide variety of technology ranging from huge global positioning systems which can pinpoint the location of a moving vehicle to gigantic electrical power generators. These Engineers are responsible for designing, developing, testing as well supervising the production of electrical and electronic equipment and machinery. Broadcast and telecommunication systems, electric motors, controls of machinery, lights and wiring in building complexes, vehicles, aircrafts, radar and navigation systems, power generation, control and transmission devices which are used by electric utilities are all examples of equipment built by these engineers.
Introduction

Geological Engineering is the practical application of principles, concepts and techniques of the earth sciences to provide sustainable engineering solutions to human needs. Geological Engineers help find the best ways to use earth’s resources to solve technological problems in an environmentally sustainable manner. They deal with mineral resource exploitation and management, environmental and geotechnical design involving rock, soil and water interaction, and the non-destructive or geophysical investigation of the subsurface environment for engineering purposes.

Why is this Course for Me?

Geological Engineering is a field oriented practical discipline. It will expose students to methods and techniques to protect the earth while still exploiting it through careful industrial practices. This is of vital importance given the extensive mining activities and construction works in Botswana, the surrounding region and globally.

What Will I Study?

You will study fundamentals of Geological Sciences and Engineering. The programme emphasizes the integration of Geosciences and Engineering with applications in areas such as construction, foundation design, site selection, resource production, geo-hazard assessment and mitigation, waste disposal and restoration of pollution sites.

The modules you will study include:

- Applied Hydrogeology
- Foundation Engineering
- Engineering Geology
- Geotechnical Engineering
- Geographic Information Systems
- Exploration geology
- Mineralogy & Petrology

Career and Graduate Study Opportunities

You can look forward to a secure and well-paid career in a wide variety of organisations including mining, exploration and construction companies, consulting firms, government agencies, research laboratories and environmental resources agencies. The programme also prepares you for eligibility to study for postgraduate degrees in Geological Engineering or related fields.
Award: BEng  
Duration: 5 years

Introduction
It is concerned with the development, improvement, implementation and evaluation of integrated systems of people, money, knowledge, information, equipment, energy and materials. It uses mathematical, physical and social sciences together with the principles and methods of engineering design to specify, predict, and evaluate the results to be obtained from such systems or processes. Its underlying concepts overlap considerably with certain business oriented disciplines such as operations management, but the engineering side tends to emphasize extensive mathematical proficiency and usage of quantitative methods.

Why is this Course for Me?
Industrial and Manufacturing Engineering combines fields of Mathematics, Computing, Engineering and Social Sciences. The programme seeks to provide a broad skills and knowledge set necessary to provide practical solutions to industrial and technological problems across manufacturing, defence, logistics and services industries.

What will I study?
You will study courses in statistics, operations research, human factors and ergonomics, production planning, manufacturing, engineering economics, quality control and simulation. The skills set you will acquire will enhance the use of mathematical models and methods to identify and come up with solutions for a range of technical and scientific problems across a range of industries including manufacturing.

The Modules You Will Study Include:

Career and Graduate Study Opportunities
An Industrial Manufacturing Engineer can expect to get a job in all types of industries. They can join private companies, private consultancy firms, manufacturing industries, automobile, aeronautics, fabrication, designing, government organisations and research institutions etc. They can also work as Production and Operations Engineers, Quality Assurance and Control Engineers, Supply Chain Engineers, Purchase Engineers, Technical Sales Managers, Production and Industrial Engineers. They can also pursue higher Degrees in the discipline.
Introduction

This programme is designed to prepare mechanical and energy graduates for needs of modern society in the disciplines. Engineers are central to providing sustainable, smart solutions to complex national and industrial challenges. They are involved in the delivery of new forms of power generation and production of machines and systems for automotive, energy, heating and cooling systems. Students will be equipped with fundamental theoretical principles and skills to design, maintain and deliver complex engineering solutions including power plants, heating, ventilation and air conditioning (HVAC), heat exchangers, fluid machineries, conventional energy plants using coal, oil and gas and renewable energy plants such as biomass, biodiesel, solar and wind energy systems.

Why is this Course for Me?

It is an opportunity to study a multidisciplinary programme that addresses today’s rapidly growing needs for sustainable energy generation, production of innovative devices and new forms of materials for manufacturing, automobiles and building services. It also prepares graduates for a stimulating career in reliability and maintenance engineering.

What will I Study?

You will study implementation of creative solutions to problems in energy provision, new materials like composites, manufacturing, maintenance, energy management, power distribution and conservation.

The Modules you Will Study Include;

- Applied Thermodynamics
- Electrical Energy Systems
- Heat Transfer
- Building Services
- Control Engineering
- Materials Engineering
- Maintenance Engineering
- Design and Manufacturing systems
- Fluid Mechanics
- Dynamics of Machines and Mechanisms
- Mechanics
- Strength of Materials
- Renewable Energy
- Energy Management and Conservation

Career and Graduate Study Opportunities

The Programme prepares students to specialise and find careers in areas such as in power plants, maintenance of heavy duty equipment (e.g. in the mines, chemical, cement, pharmaceutical, food & allied industries), automotive industries, energy management and conservation, transportation, advanced materials design, alternative energy, oil and gas manufacturing, project management, consultancy, academia, public service, and logistics and operations.
Introduction
The increasing demand of current and future technologies requires that modern engineers possess multidisciplinary skills in order to meet the evolving needs of industry. With this requirement, engineers are expected to design and develop machinery with computer and electrical controls from automobiles, aircraft, power generation systems, mining and manufacturing to health and safety systems. The programme is designed to produce engineers knowledgeable about and competent to employ new and emerging technologies that are crucial to maintaining modern society’s competitive industries.

Why is this Course for Me?
Many industries rely heavily on the use of systems and equipment that are powered by mechanical principles, electronics, computers and control systems. Increasingly engineers are required to design and develop machinery with computer, mechanical and electronic controls. These technical skills are fundamental in industries and production systems.

What will I Study?
Mechatronics and Industrial Instrumentation is a multidisciplinary field combining mechanical, electronics, instrumentation, software and control engineering. It will equip the student with a range of skills required to design and maintain innovative solutions to automated modern industrial systems.

The Modules You Will Study Include;
Control Engineering, Dynamics of Machines and Mechanisms, Data Acquisitions and Networks Sensors and Actuators, Electronics, Machine Learning, Industrial Automation and Control Modelling and Simulation, Measurement and Instrumentation, Robotics and Intelligent Systems, Materials and Manufacturing Engineering, Software Engineering

Career and Graduate Study Opportunities
The graduate of this programme can follow a wide range of career pathways in industries such as oil and gas, manufacturing, heavy plant, mining, chemical and allied industries. They can function as Automation Engineers, Data Logging Engineers, Maintenance Engineers, Control Systems Engineers, Instrumentation Engineers, Manufacturing Engineers, Process Plant Engineers and Maintenance Engineers.
Adequate supply of mineral products at acceptable prices is indispensable to modern industrialization. Mining Engineering involves the practice, theory, science, technology and application of extracting and processing of mineral resources economically and in a sustainable manner. It also includes processing of minerals for value addition purposes.

Why is this Course for Me?

The course is designed to produce high quality mining engineers who are capable of applying engineering and technology to plan, design, operate and manage mining and mineral projects anywhere in the world in an environmental friendly manner. Graduates are trained to carry out professional duties using their knowledge of sound engineering and environmental technology, innovative and entrepreneurial skills to maximise returns on investment.

What Will I Study?

Mining Engineering is an interdisciplinary field that includes elements of mining, geological, civil, mechanical, materials and mineral engineering. Students will learn how to carry out mining efficiently and safely while ensuring sustainability and minimal environmental impact.

The Modules you will study include:
- Surface and Underground Mining Methods
- Explosives & Rock Fragmentation
- Soil & Rock Mechanics
- Mine Health & Safety
- Materials Handling
- Mine Planning and Design (Surface & Underground Mines)
- Mine Ventilation

Career and Graduate Study Opportunities

You can look forward to a secure and well-paid career in a dynamic and challenging industry in mining and exploration regions around the world, academia and the investment banks. The programme also prepares you to be able to undertake postgraduate studies and research.
Faculty of Sciences
The Faculty of Sciences offer courses in Geological Sciences, Environmental Sciences, Mathematical and Statistical Sciences, Physics and Astronomy, Chemical and Forensic Sciences, Biological and Biotechnological Science, Computer and Information Technology programmes. All the Bachelors degree programmes in these important fields of study emphasise applications to the real world and links with industry, commerce. Research and Entrepreneurial skills training will form part of the curriculum of all the programmes and thus promote the employability of our graduates. Innovative curricula encourage students to deepen their knowledge and develop disciplinary and employability skills.

The Faculty also has courses for students which can be taken in addition to their main programme of study. These courses provide a very important opportunity to debate and discuss important issues which allow science to be put in the essential contexts of the economy and society in which it plays an important role in the future of sustainable development of our nation. Original research is the prime objective of the Faculty and a number of Research Centres are being developed. Our research will support cutting-edge teaching and provide all undergraduate students with the opportunity to participate in relevant and interesting applied research projects. The Faculty is housed in new purpose-designed buildings with well-equipped teaching and research laboratories and facilities.
Professor Edward Lungu graduated from the University of Zambia with a BSc (1975) degree and did his graduate studies leading to MSc (1978) and PhD (1981) from University of Bristol, United Kingdom. He worked for several years in the Department of Mathematics, University of Botswana, in various positions and also as Head of the Department. He served the Department of Mathematics, University of Botswana for 29 years in various positions and as a Full Professor for many years. He is currently a full Professor, Department of Mathematics and Statistics, Botswana International University of Science and Technology, Palapye, Botswana.

Professor Edward Lungu has supervised many MSc and PhD students and is currently very active in research supervision. His contributions are numerous and several International organisations have recognized his outstanding work: He is a recipient of several international/National awards listed below:

1. In 2007, he was honoured by the Southern Africa Mathematical Sciences Association for tremendous achievements in training most mathematical modellers in Southern Africa.

2. In 2011, Professor Lungu was awarded The ICIAM Su Buchin Prize. He was the second Applied Mathematician to receive this Prize in recognition of his outstanding applications of mathematics that have had an economic and cultural impact in developing countries, and also for his fundamental contribution to the development of teaching, research, and organisational structures for applied mathematics in southern Africa. Professor Lungu has focused his mathematical modelling efforts on three fields, each of central importance to problems of Africa: hydrology; ecology; and epidemiology.

3. In 2012, the University of Botswana awarded Professor Edward Lungu two prizes namely, the International Champion award for his research in HIV/AIDS modelling and the International Champion award for his teaching of HIV/AIDS.

4. In 2016, Professor Edward Lungu became the first African to be awarded the Philip Grffth Award for his work in Biomathematics. The Award was given by the Advanced Study Institute, Princeton University, USA. In 2013, Professor Edward Lungu secured funding amounting to US$400,000 for five years from the Simmons Foundation (USA) to run postgraduate studies in Sub-Sahara Africa for postgraduate teaching and research. This program is currently hosted by BIUST. The program initially enrolled 9 PhD students and 22 MSc students. The PhD students were based at the University of Botswana (3 students), University of Namibia (1 student), University of Kwazulu Natal (1 student), University of Addis Ababa (2 students), and BIUST (2 PhD students). This program has been renewed for five years from 2018 to 2023.
Introduction

The Biology and Biotechnology cover a wide array of specialist subjects all related to the study of life and technological applications that uses biological systems. The core strands of Biology include the fundamental understanding of organism’s (e.g. animals, plants and microbes) cellular structure and function, physiology, ecology and evolution. Biotechnology aims to exploit the biological processes in organisms with main emphasis on modern genetic manipulations for applications in medicine, agriculture and the environment.

Why is this Course for Me?

Advances in technology means new opportunities in the field of Biology and Biotechnology. Graduates will be equipped with knowledge and strong set of practical skills required for tackling many of the challenges the world is facing today in health, agriculture and food industry. Specific examples include; developing new medicines; ensuring the safety of our food; environment and wildlife conservation, improving agricultural production, parasites, pests and disease control.

What Will I Study?

The degree programme is designed around Biotechnology building on fundamental courses in Biology such Botany, Zoology, Cell and developmental Biology; Molecular Biology; Biochemistry, Genetics and Microbiology etc. The degree will allow some specialization and introduce modern applications of biological systems such as: genomics and bioinformatics, tissue engineering, stem cell biology, recombinant DNA technology and insect biotechnology;

The Modules You Will Study Include:

Biochemistry, Biotechnology, Cell & Development Biology, Entomology, Genetics Genomics & Bioinformatics, Microbiology, Molecular Biology, Recombinant DNA technology, Tissue Engineering

Career and Graduate Study Opportunities

Biology and Biotechnology offers a wide range of career opportunities in government, private and parastatals. Careers options may be in the food, medical, pharmaceutical, biotechnological, health, nature conservation, environmental, agricultural, forensics, regulatory units, education or manufacturing spheres and research. For those interested in a research can enrol and obtain a Masters or Doctoral Degree in Biology and Biotechnology and expand their employment opportunities.
Introduction
Computer Science and Software Engineering is the study of computational systems involving designing, building, evaluating performance of computer hardware and software. It also involves thinking both in abstract and concrete terms. The necessities of the programme include designing and analysing relevant algorithms and/or application software. The programme also has strong connections to other science and engineering disciplines.

Why Is This Programme for Me?
Choose a computer science degree, and you will be at the forefront of the next greatest technological innovations. Its manifestations indirectly affect areas such as medicine, business, law, physical and life sciences. The computation power of computers has been increasing exponentially over the years thereby allowing us to address problems that seemed intractable only a few years ago. Therefore, the relevance of computer science is ever increasing in our lives. Computer Science equips the graduate with knowledge of the following areas where they can specialize: Applied Mathematics, Digital Image/ Sound, Artificial Intelligence, Microprogramming, Bioinformatics, Networks and Administration, Cryptography, Ontology, Robotics and Drones Protocol Development, Simulation and Modelling, Parallel Programming and High Performance Computing, and Mobile Development.

The Modules You Will Study Include

Career and Graduates Studies Opportunities
Our graduates’ knowledge and skills represent principles which will outlast today’s technology. Career opportunities exist in a range of technology industries and visually every industry that relies on technology to develop products or provide technological services. Popular computer science careers include: Software Engineers, Programmers, System Administrators, Network Engineers and many more. The CS graduates can also continue at the PG level, as the department has MSc and PhD programmes in Computer Science.
Introduction
The earth is a dynamic and active planet, as revealed by recent dramatic and sometimes catastrophic volcanic eruptions, earthquakes, tsunamis, fires and floods. To understand how our planet works, how it has evolved and what we know about its future, the ideas and principles of Physics, Chemistry, Geology and Biology are integrated in Earth and Environmental Sciences. This understanding of the Earth is at the heart of many economic, social, and environmental issues; oil and mineral exploration; safe disposal of industrial and municipal wastes; preservation of ground water supplies; the choice of sites for development; the impact of climate change on our social and economic support systems and many others, all these issues that will become more complex as demands on the earth and its resources increase.

Why is this Course for Me?
There has never been a better or more important time to study Earth and Environmental Sciences. Increasingly, environmental legislation is forcing businesses to account for their contribution on environmental impact, and with many countries putting sustainability at the heart of their policies, there is a growing shortage of skilled personnel to manage resources sustainably for future generations. This programme will cover the importance of understanding earth systems (past, present and future); the integration of theoretical and practical investigation; a holistic and multidisciplinary scientific approach; the importance of spatial and temporal scale; the importance of the concepts of sustainability and sustainable development; the examination of resource use and environmental management.

What will I Study?
You start this programme by studying the basic sciences (Physics, Chemistry, Biology and Mathematical Sciences) and later a combination of relevant core and optional Earth Sciences and Environmental Sciences modules.

The Modules You Will Study Include:
- Atmospheric Physics and Chemistry
- Climate Change
- Environmental Geology
- Environmental Pollution and Remediation
- Mineral Exploration and Economic Geology
- Remote Sensing & Geographic Information Systems
- Soils and Environmental Science
- Structural Geology and Tectonics

Career and Graduate Study Opportunities
This programme will equip you with the skills and knowledge necessary for careers in environmental, engineering and ecological consultancies; regulatory authorities and government agencies; industry and private companies; conservation and natural resource management and research. The communication, numeric and IT skills gained will also equip you for business or education oriented
Introduction
Environmental Sciences is a multidisciplinary field of science that integrates the study of the environment, and its functions and its problems and solutions resulting from environmental development. Environmental Science provides a quantitative and interdisciplinary approach to the study of human environment interactions and their impacts as well as the concept of sustainability.

Why is this Course for Me?
Environmental scientists work on subjects like the understanding of Earth processes, evaluating alternative energy systems, pollution control and mitigation, natural resource management, and the effects of global climate change. Environmental issues almost always include an interaction of physical and biological processes with human impacts and development. Environmental Scientists bring a systems approach to the analysis of environmental problems. Key elements of an effective environmental scientist include the ability to relate space and time relationships as well as quantitative analysis.

What Will I Study?
The programme will offer you analytical and practical skills in a range of areas including pollution and control, ecosystems, urbanization, population dynamics, environmental management and the management of biodiversity.

The Modules You Will Study Include:
- Atmospheric Physics and Chemistry
- Earth & Environmental Systems
- Environmental Management
- Global Climate & Environmental Change
- Natural Resource Management
- Remote Sensing & Geographic Information Systems
- Soil and Environmental Science
- Sustainable Development and Conservation of Biodiversity
- Water Resource and Hydrology

Career and Graduate Study Opportunities
Environmental Science has many careers that are very rewarding. These include jobs in Ecology Sustainability, Green Living, Atmospheric Science, Environmental Chemistry, Nature Conservation, Tourism and similar work. As many countries move toward cleaner energy choices, and sustainable development, Environmental Science is a career field that is poised to grow larger and stronger with each passing year.
Introduction

As the first specialised programme of its nature in the country, the programme is designed to give students competences in Forensic Science and its practice in the contemporary society. This exiting science is concerned with forensic practices such as crime scene investigation, law, biometric analysis, ballistics, firearms, blood pattern analysis, forensic chemistry, forensic intelligence, arson, explosives, wildlife forensics, agricultural forensics, environmental forensics, biology and biochemistry.

Why is this programme for me?

This programme will appeal to the curious students who are interested in collecting, analysing and interpreting scientific results in order to solve crime. Scientific data must be of high quality and treated according to practices and procedures of the Botswana legislation.

Career and Graduate Opportunities

Forensic scientists may be employed in public and private forensic laboratories, wildlife monitoring as well as the food processing industry.
Geology

Award: BSc
Duration: 4 years

Introduction
The BSc in Geology includes the study of the continents, the oceans, the atmosphere, and the earth’s magnetic and gravitational fields. It encompasses the physical, chemical, and biological sciences, and weathering with the earth’s history, including the formation and evolution of landmasses through erosion and deformation. The more that is known about the earth’s materials, formation, and structure the better we can appreciate their use and abuse and preserve the planet. This understanding applies to economic, social, and environmental issues related to water, soil, oil and mineral exploration; rehabilitation of mined areas, safe disposal of industrial and municipal wastes; preservation of groundwater supplies; the choice of sites for dams, nuclear power plants and high-rise buildings.

Why is this Course for Me?
Mineral resources dominate the national Botswana economy (diamonds, copper/nickel and coal), and this will continue to be increased by diversification in terms of the types of minerals explored (e.g. gold, silver, uranium), gas production and geothermal capacity. It is very important that this ‘bedrock’ of the economy is maintained and enhanced through innovative and substantial downstream processing. This programme will produce graduates who have the expertise to join the resources sector in Botswana and elsewhere in the region, through the exploration and resource development of minerals, energy and groundwater and surface water systems.

What will I study?
You start this programme by studying the basic sciences. In subsequent years of the Geology Degree you will study a combination or core and optional geoscience modules.

Career and Graduate Study Opportunities
The programme allows graduates to become professional Geoscientists in a range of careers in Mineral and Petroleum Exploration, Mining and Quarrying, Geosciences Information Analysis, and Engineering Consultancy. Students may go on to postgraduate study, either at Master’s level, usually with a particular specialised career path in mind, or at Doctorate level for those wishing to pursue an academic career. The communication, numeric and IT skills you will gain also make you a good candidate for business education oriented careers.
Information Systems and Data Management

Award: BSc
Duration: 4 Years

Introduction

Information Systems encompasses a multi-scientific discipline which addresses a broad range of strategic, managerial, and operational activities utilised in the gathering, processing, storing, and distributing of information and ICT in society and organisations. The utilisation of information systems attest to be very evident nowadays because no organisation can work without having access to these systems be it a governmental agency, a hospital or an enterprise. There are various types of information systems: transaction processing systems, decision support systems, expert systems, knowledge management systems, learning management systems, geographic information systems, etc.

Why Is This Programme for Me?

The programme will gear you not only to acquire industry standard programming skills, but will also be a savvy in improving organisational processes and to exploit opportunities created by new technological innovations. It will enable you to understand and address information requirements, to designing and managing enterprise architecture, to identify and evaluate solution and sourcing alternatives, to secure data and infrastructure, and to manage IS projects.

What Will I Study?

You will comprehend the essential principles which support knowledge management systems, networks and the software development process. Our modules are distributed between two main areas: (1) IS-specific knowledge and skills and (2) organisational/managerial knowledge and skills. You will also be given an opportunity to explore different application domains of IS by taking elective modules from different departments within BIUST. The modules you will study include: Foundations of Computation, Programming, Databases, Information Management, Operating Systems, Web Design and Development, Business Process Modeling, Software Engineering IT Infrastructure, Data Communications and Networks, ICT and Society Human Computer Interaction, Professional Issues and Ethics Major Project (to be done in the fourth year in two semesters)

Career and Graduate Study Opportunities

Information Systems is playing an ever growing role in all aspects of today’s life, you’re highly likely to find your IS skills in high demand in many different industries although, obviously, most graduates go into roles within the industry. As Information Systems professional you can work in a broad range of domains which include; business, health care, government, and non-profit organizations. Graduates from our programme can choose any of the following specialised professional paths: Business Analyst, Database Administrator, IS Manager, Network Engineer, Systems Analyst, Systems Developer, ERP Specialist, Project Manager, IS/IT Auditor, SEO Specialist or Information Architect. We also offer Master’s and PhD programmes to those who would like to pursue an academic career.
Physics and Astronomy

Award: BSc
Duration: 4 years

Introduction
Physics and Astronomy combine the study of the imperceptibly small scales of the quantum world with the large and often difficult to comprehend distances to stars and remote galaxies. Our goal as physicists is to understand the physical world by confronting theory with experiment with the aim of unravelling the fundamental laws that govern the Universe. This process often leads to useful technological applications in sectors related to energy, health, nutrition security, telecommunications and transport. Physics forms the basis of many other disciplines including astrophysics, biophysics, econophysics, geophysics, nanotechnology and physical chemistry. Moreover, physicists have been instrumental in developing the World Wide Web, investment models on the stock exchange, as well as medical techniques for diagnosing and eliminating certain diseases. They have also developed a theoretical framework to describe the evolution of the Universe from the big bang to the present day.

Why is this Course for Me?
An undergraduate course in Physics develops advanced analytical, communication, quantitative and technical skills which are applicable to virtually any field. Furthermore, the Physics programme will develop your IT and personal skills with a number of scenarios requiring teamwork. Using your unique skill set will allow you to make a highly valued contribution to solving the many open theoretical questions in modern physics or real-life challenges for promoting socio-economic and technological development in Botswana.

What Will I Study?
The programme is designed to give students a rigorous applied, experimental and theoretical foundation in classical and modern physics, as well as grounding in astronomy relevant to Botswana’s involvement in the Square Kilometre Array Project.

The modules you will study include:
Astronomy & Astrophysics, Classical Mechanics, Computational Physics, Electromagnetism and Waves Electronics, Laboratory Physics, Nuclear and Particle Physics, Quantum Physics, Solid State Physics, Statistical and Thermal Physics. You will also carry out a physics research project under the supervision of a researcher.

Career and Graduate Study Opportunities
A Physics degree provides a pathway into a wide variety of exciting and rewarding careers across the Science, Technology, Engineering and Mathematics spectrum. These include: education (both basic and tertiary); energy companies; diagnostic and research laboratories; the banking industry; government agencies; mining, engineering and manufacturing companies. Self employment is also a potentially lucrative avenue in an emerging economy such as Botswana.
Pure and Applied Chemistry

Award: BSc
Duration: 4 years

Introduction

What is Chemistry? Chemistry is an important science in its own right and is also crucial for a thorough understanding of many science, engineering and environmental studies. Modern Chemistry plays a pivotal role in our understanding of structure and interactions of matter as well as achieving deeper insight into the formulation of new compounds, their identification, quantification and characterisation. Chemistry retains the magic and mystery that fuelled the Alchemists in the seventeenth century.

Why is this programme for me?

Everything around us (including us) is composed of basic building blocks that constitute matter. Chemists refer to these building blocks as atoms. There are only about 100 atoms known to exist. However, these building blocks can arrange themselves into an amazing number of different combinations that we call molecules. There are thousands of known molecules and new ones are discovered or made on a regular basis. Everything that you see (and can’t see) is composed of atoms and molecules. So the question “What is Chemistry?” would be better posed as “What isn’t Chemistry?”

Career and Graduate Opportunities

The study of Chemistry at University gives one broad education and prepares one for entry into many careers, from the invention of new products and materials, to the control of the processes that lead to their production, to work that assures their quality. The following is a sample of areas that would employ a graduate of Pure and Applied Chemistry; University Teaching and Research, Agricultural Research, Medical Research, Forestry Research, Science Publishing, Biotechnology, Material and Chemical Manufacturing, Environmental Science Research and Health and Safety.
Introduction
Mathematics may appear to be an abstract subject but it has its roots many millennia ago in the systematic development of methods to solve practical problems. In the modern age the breadth of the applicability of Mathematics is immense not just in the areas of Science, Technology and Engineering but in Medicine, Business, Commerce and Finance. The principles and methods of mathematics are used in these fields to model real world processes and activities.

Why is this Course for Me?
The applicability of Mathematics is expanding as more areas of human work and endeavour require the analytical model building approach of modern mathematics. This programme will produce graduates who have the expertise to work as applied mathematicians in engineering, science based industry, commerce and in the public and private sectors in both research and education.

What Will I Study?
Mathematics is at the heart of problem solving and decision making in modern society and plays a crucial role in virtually all industries. A combination of pure and applied mathematics will provide the broad knowledge base and skills necessary for problem solving and the modelling of natural phenomena.

The Modules You Will Study Include:
Algebra Analysis, Calculus, Computational Mathematics, Financial Mathematics Information & Coding Theory Linear Algebra, Linear Algebra, Mathematics Modelling Mechanics, Number Theory, Optimisation

Employers greatly value the intellectual skills and rigour in reasoning, the familiarity with numerical and symbolic thinking and the analytic approach to problem solving that well trained graduates in pure and applied mathematics have. Employment can be obtained in areas such as engineering, science based industry, commerce and in the public and private sectors in both research and education. Students may go on to postgraduate study, either at Master’s level, usually with a career path in mind, or at Doctorate level for those wishing to pursue an academic career.
Statistics

Award: BSc
Duration: 4 years

Introduction
Statistics is the Science of learning from data. As a discipline, it is concerned with the collection, management, analysis, and interpretation of data, as well as the effective communication and presentation of results of the analysis. Statistics is the basis for the quantitative reasoning necessary for making advances in the Sciences, Agriculture, Medicine industry and for making business and public policy decisions.

Why is this Course for Me?
The programme in Statistics will provide you with the necessary concepts and tools in quantitative reasoning to extract information intelligently from the vast quantities of data generated in almost all spheres of human activity in the modern world. If you have an inclination towards mathematical reasoning, then Statistics is an option for you.

What Will I Study?
The programme in Statistics will provide you with a sound and broad knowledge, offering skills in rational decision making, data analysis and modelling of random phenomena.

The Modules You Will Study Include:

Career and Graduate Study Opportunities
One advantage of working in Statistics is that you can combine your interest with almost any other field in science, technology, education or business. As a Biostatistician, you can work in the field of Health, Medicine and the Biological Sciences, using your statistical skills in the following areas: Animal Health, Clinical Trials, Epidemiology, Genetics, Pharmacology, Public Health, Ecology, and Forestry. Statisticians also work in Business and Industry - Agriculture, Information Technologies, Engineering, Finance, Risk Assessment, Insurance, Manufacturing, Marketing, Quality Improvement and Reliability. Your statistical skills can also find you work in various Government Departments, Research Institutions and NGOs that are involved in sample surveys and in monitoring and evaluation. Students may go on to postgraduate study at the Masters, usually with a career path in mind or at the Doctoral level for those wishing to pursue an academic or research career.