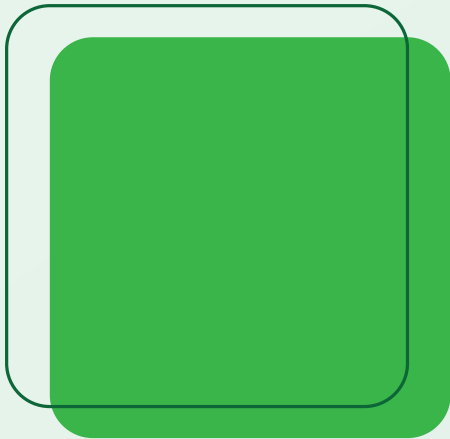




BOTSWANA UNIVERSITY OF
AGRICULTURE AND NATURAL RESOURCES

Inspiring Sustainable Growth



*Building the
future together.*



UNDERGRADUATE PROSPECTUS
(2020-2021)

VISION

- To be a vibrant world-class university of agriculture and natural resources.

MISSION

- To Produce Market Ready Graduates For The Agriculture And Natural Resources Sectors.

VALUES

Accountability

Promote individuals to own up and accept responsibility.

Customer Centric

Provide an exceptional customer experience at the point of service.

Excellence

Provide exceptional performance through productivity, discipline and quality of service.

Innovation

Embrace creativity for progress.

Integrity

Maintain high moral standing.

TeamWork

Promote cooperation and collaboration.

■ Location:

The Botswana University of Agriculture and Natural Resources Content Farm, Sebele, Gaborone (12 km north of Gaborone City Centre)

■ Postal Address:

Botswana University of Agriculture and Natural Resources
Private Bag 0027
Gaborone, Botswana

■ Website Address:

www.buan.ac.bw

■ Email: info@buan.ac.bw

info@buan.ac.bw

■ Telecommunications:

Telephone: (267) 365 0100

Fax: (267) 392 8753

■ Facebook: [BuanBw](#)

■ Twitter: [@BuanOfficial](#)

■ Instagram: [buanworld](#)

■ YouTube: [Buanlive](#)

Bankers:

Standard Chartered Bank Botswana
Absa Bank Botswana

Auditors:

Deloitte

Lawyers:

Moeletsi and Motumise Attorneys

BUAN

BOTSWANA UNIVERSITY OF
AGRICULTURE AND NATURAL RESOURCES

Inspiring Sustainable Growth

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PRINCIPAL OFFICERS OF THE BOTSWANA UNIVERSITY OF AGRICULTURE AND NATURAL RESOURCES

Chancellor:	His Honour Mr. Slumber Tsogwane, BA
Chairperson of Council:	Mr. D N Moroka, BSc, MSc, CAIB
Vice Chairperson of Council:	Mr. M Mphathi, Dip, BSc, MSc
Vice Chancellor:	Dr. J Rees, BA (Hons), MA, DPhil
Deputy Vice Chancellor (Academic Affairs and Research):	Prof. S J Nsoso, BSc, (Hons), PhD
Deputy Vice Chancellor (Finance and Administration):	Mrs. R Mgadla, BCom, FCCA, FCPA

MEMBERS OF THE GOVERNING COUNCIL OF THE BOTSWANA UNIVERSITY OF AGRICULTURE AND NATURAL RESOURCES

Mr. D N Moroka (Chairperson)	Mr. J Mafoko
Mr. M Mphathi (Vice Chairperson)	Prof. S Masupe
Dr. J Rees (Vice Chancellor)	Prof. V Mlambo
Prof. S J Nsoso (Deputy Vice Chancellor, Academic Affairs and Research)	Mr. A T Makepe
Mrs. R Mgadla (Deputy Vice Chancellor Finance and Administration)	Mr. M Mokakapadi
Mr. E W Arabang	Dr. B Sebolai
Ms. N Chengeta	Dr F T Thema
Prof. E Chimbombi	Prof. E E Waugh
Prof. O Dikinya	Mrs M Gabegwe (Secretary to Council)

UNIVERSITY MANAGEMENT



Dr. Jasper Rees, Vice Chancellor



Prof. S J Nsoso, Deputy Vice Chancellor
(Academic Affairs and Research)



Mrs. R Mgadla, Deputy Vice Chancellor
(Finance and Administration)

Vice Chancellors Welcome

Dumelang! Lumelang! Hello! Bonjour! Jambo! Salam!

I am delighted to welcome the class of 2020/21 to Botswana University of Agriculture and Natural Resources, and to congratulate you on your offer to study here. Thank you for choosing us.

You have made a smart decision to pursue a career in Agriculture and Natural Resources, a career which most young people do not consider as exciting and cool.

As you are aware, there is a pressing need to feed the world and protect the planet. With the field you have chosen, you are going to help your family, community, country and region in food production as well as contributing to the entire food value chain.

There are more exciting activities that as your Vice Chancellor I promise you to experience as a student and as our alumni. Apart from the experienced teaching staff that will take you through your studies, you will also have hands on experience at the University farm, labs and other practical areas availed by our stakeholders in the industry. An opportunity I urge you to embrace and utilize to the best of your ability.

Being away from home can be an exciting period for some whilst scary for some. The University has put in place all the resources and services to help you adjust and succeed in your studies. I encourage you to maintain a healthy balance between your academic activities and recreation activities. It is our goal to ensure that you have a good University experience and become successful in your studies.

Our trust is that for having been accepted at the University, you are a capable student. I urge all of you to continue maintaining an excellent academic record as it will earn you an opportunity to continue with your studies, either to become a research scholar so as to resolve and answer the problems and needs of the farmers, or to develop as an entrepreneur and so contribute to the food value chain of your communities and maintaining the natural resources. Let us always remember, our involvement in agriculture and food is for business!

On behalf of the University Council, Management and Staff, I wish you best of luck in your studies. And we trust you will find your stay at BUAN enjoyable.

UNIVERSITY CALENDAR 2020/21

SEMESTER 1

AUGUST 2020

4	Final Examination Period Ends (Semester 2, 2019/2020)
7	Departmental Boards meetings (for examinations)
7	Release of Supplementary Examinations
8	Registration for Supplementary Examinations
9	APPOINTMENTS, PROMOTIONS AND NOMINATIONS COMMITTEE
11-13	Special and Supplementary Examinations
17	Departmental Boards meetings
17-19	Arrival and Registration of All New Students
18	FACULTY BOARDS MEETINGS (for examinations)
19-21	Supplementary Examinations (for Special Examinations)
20	SENATE (for examinations)
20	Results Released
20-21	Orientation of new students
20-23	Registration of Continuing Students (All Programmes)
24	Classes begin for all programmes
24-28	Late registration period (all students registering during this period will incur a late Registration fee of P120.00 for new students and P210.00 for returning students per Day.
25	Departmental Boards (Supplementary examinations for special Examinations)
26	FACULTY BOARDS EXECUTIVE (Supplementary exam for Special Examinations)
27	SENATE EXECUTIVE (Supplementary examinations for Special Examinations)
27	Results Published (Supplementary examinations for Special Examinations)

SEPTEMBER 2020

1-4	Students can drop a course but will not be allowed to register for any new Course
3	Deadline for Submission of Project (APB420 for Semester 2, 2019/2020)
3	APPOINTMENTS, PROMOTIONS AND NOMINATIONS COMMITTEE
6	RESEARCH, TECHNOLOGY DEVELOPMENT AND TRANSFER COMMITTEE
10	FINANCE AND DEVELOPMENT COMMITTEE
11	AUDIT COMMITTEE
11	Deadline for submission of teaching Allocation for semester 2
14	ACADEMIC ADVISORY COMMITTEE
18	Last day to withdraw and receive a refund
24	UNIVERSITY COUNCIL
28	SENATE
28	Mid-Semester Break Begins
30	Botswana Day

UNIVERSITY CALENDAR 2020/2021 (Continued)

OCTOBER 2020

1	Public Holiday
2	Mid-Semester Break Ends
5	Classes begin after mid semester break
23	ACADEMIC ADVISORY COMMITTEE
30	RESEARCH, TECHNOLOGY, DEVELOPMENT AND TRANSFER COMMITTEE

NOVEMBER 2020

6	FACULTY BOARDS MEETINGS
12	HUMAN RESOURCES COMMITTEE
13	SENATE
19	APPOINTMENTS, PROMOTIONS AND NOMINATIONS COMMITTEE
25	FINANCE AND DEVELOPMENT COMMITTEE
27	Graduation Ceremony
29	AUDIT COMMITTEE

DECEMBER 2020

1-4	Last week of Semester (No assessments OR examination held)
2	Last day to enter CA components marks
3	Continuous Assessment marks RELEASED
7	Final Examination Period Begins
10	UNIVERSITY COUNCIL
18	Final Examinations Period Ends
18	END OF SEMESTER 1
22	Departmental Boards meetings (for examinations)
22	Release of supplementary lists
22	University Closes for Christmas

SEMESTER 2

JANUARY 2021

1	New Year's Day
4	Public Holiday
1-4	Registration for Supplementary Examinations (online) continues
5	University Re-opens
5	Registration for Supplementary Examinations (manual)
6-8	Special and Supplementary examinations (Semester 1)
11	FPT/TP and SUMMER TAUGHT COURSES Begins
13	Departmental Boards meetings (supplementary and special examinations)
18	FACULTY BOARDS MEETINGS (for examinations)
20	SENATE (for examinations)
20	Result Released
21-27	Registration of all students (All programmes)
25-27	Supplementary Examinations (Semester 1, special examinations)

JANUARY 2021 (Continued)

28	FACULTY BOARDS EXECUTIVE (Supplementary examinations)
28	RESEARCH, TECHNOLOGY DEVELOPMENT AND TRANSFER COMMITTEE
29	SENATE EXECUTIVE COMMITTEE (special and supplementary examinations)
29	Results Released

FEBRUARY 2021

9	APPOINTMENTS, PROMOTIONS AND NOMINATIONS COMMITTEE
18	FACULTY BOARDS MEETINGS
19	End of FPT/TP and Summer Taught Courses
20-21	Arrival and continuation of registration of all students (All programmes)
22	Classes begin for all students
22-26	Late registration period (all students registering during this period will incur a late Registration fee of P120.00 for new students and P210.00 for returning students Per day)
26	ACADEMIC ADVISORY COMMITTEE

MARCH 2021

8-12	Registration of Winter Semester
11	SENATE
19	Last day to withdraw and receive a refund
23	Deadline for submission of teaching allocations for semester 1

APRIL 2021

2	Good Friday
5	Easter Monday
5	Mid- Semester Break Begins
12	Classes Resume after Mid-Semester Break
16	RESEARCH, TECHNOLOGY DEVELOPMENT AND TRANSFER COMMITTEE

MAY 2021

1	Labour Day
3	Public Holiday
6	FACULTY BOARDS MEETINGS
11	APPOINTMENTS, PROMOTIONS AND NOMINATIONS COMMITTEE
13	Ascension Day
19	ACADEMIC ADVISORY COMMITTEE

JUNE 2021

1	SENATE
1-4	Last Week of Classes (No assessments OR examination held)
2	Last day to enter CA component marks
3	Continuous Assessment marks RELEASED
7	Final Examination Period Begins
18	Final Examination Period Ends
18	End of Semester 2
21	Winter Session start

JUNE 2021 (Continued)

21	FPT/TP starts
25	FACULTY BOARDS MEETINGS (for examinations)
29	SENATE (for examinations)
30	Results Released

JULY 2021

1	Sir Seretse Khama Day
14-16	Special Examinations
19	President's Day
20	Public Holiday
30	End of TP and FPT

AUGUST 2021

2-3	Registration for Supplementary Examinations
6	End of Winter Session (taught courses)
6-8	Supplementary Examinations
9	Classes begin (Semester 1, 2021/2022)
13	Departmental Boards meetings (special, winter and supplementary examinations)
18	FACULTY BOARDS EXECUTIVE (supplementary examinations)
21	SENATE EXECUTIVE (supplementary examinations)
21	Results Released

END OF ACADEMIC YEAR 2020/2021



BUAN PROFILE

The Botswana University of Agriculture and Natural Resources was established through an Act of Parliament No.12 of 2015 following the repeal of the Botswana College of Agriculture Act No.9 of 1991. The history of the institution dates as far back as 1967 at Content Farm in Sebele Gaborone, when the Ministry of Agriculture decided to transfer the Certificate in Agriculture course, which had been offered since 1959 at Mahalapye. Assistance from the British charity organizations, Freedom from Hunger and Oxfarm as well as funds obtained from the Botswana Government were used to construct the first buildings of the Botswana Agricultural College (BAC).

The total enrolment at Sebele was 67 students all registered for the three-year sandwich certificate course in agriculture. In 1970, the Certificate in Animal Health course which had been offered for some time at the Ramatlabama Veterinary Training Centre was also transferred to the College.

In 1972 a certificate course in Community Development was introduced at the College and by 1973 the total enrolment for all certificate programmes was 170 students. During this period technical assistance was provided by, among other organizations, the British ODA; FAO/UNDP and the United States Agency for International Development (USAID). During this period, students from Botswana who wished to undertake higher level education (diploma and degree) in agricultural sciences and allied fields had to go to Luyengo, Swaziland, where the Swaziland Agricultural College and University Centre (SACUC) operating under the University of Botswana, Lesotho and Swaziland (UBLS), offered diploma and degree level education for all the three BLS countries.

Following the break-up of the University of Botswana, Lesotho, and Swaziland (UBLS) in 1975, planning for higher level education in agricultural sciences was accelerated and by 1978, an agreement had been reached between the Government of Botswana (GoB) and the United States Agency for International Development (USAID) for an expansion project of the College.

A total amount of US\$12 million was spent in expanding the college facilities to enable it to double the enrolment at certificate level and introduce diploma programmes in General Agriculture and in Animal Health and Production. The first students were enrolled for the diploma programmes in 1981, and these diplomas were to be awarded by the University of Botswana (UB) unlike the certificate programmes which were Ministry of Agriculture awards. Interim arrangements were established for the University Senate to validate the diploma programmes

through the Faculty of Science at UB, pending the formal establishment of a Faculty of Agriculture at Sebele.

Discussions on starting a Bachelor of Science degree in Agriculture and establishment of a Faculty of Agriculture started from 1979 and involved among others, the Ministry of Agriculture (MoA); the Ministry of Education (MoE) and the University of Botswana.

The discussions and consultations revolved around whether UB should establish a Faculty of Agriculture (at Sebele or elsewhere) to offer degree and diploma education and BAC should concentrate on the certificate and vocational training or BAC should be upgraded into a college under UB/or MoA to offer all the training at the three levels (certificate, diploma and degree).

In view of the anticipated small number of students who were expected to enroll in the agriculture degree programme, the expensive nature of facilities required for such training and the need to maintain economical student: staff ratios, it became quite apparent right from the outset that it would not be cost effective to have two training institutions for the agricultural sciences (one for degree and diploma under UB/MoE and one for certificate under MoA).

In addition, with UB being under MoE, and BAC; Agricultural Research Station (ARS) and Extension Services being under MoA, it was therefore decided to adopt a model which will ensure that linkages between BAC/Faculty of Agriculture, and ARS and the Extension services are maintained, as well as availing to UB effective mechanism through which it can ensure high and relevant academic standards for the programmes accredited to it. A Working Group Committee (WGC) was formed in 1984 by UB Council to superintend the merger process between UB and BAC. This WGC was chaired by Vice Chancellor UB, and included as its members, among others, the Permanent Secretaries of MoA, MoE, Finance and Development Planning and Local Government and Lands.

In 1985 it was decided, following studies by a number of consultants and study visits to a number of faculties of agriculture in the region that BAC should become a Constituent/Associate College of UB and a parastatal under the MoA. The BAC as a College of UB was to offer both UB accredited programmes, as well as its own programmes such as the certificate courses and short in-service and continuing education courses for staff of the MoA.

BUAN PROFILE *(Continued)*

The administration of the College was to be superintended by a Governing Council where UB, MoA and MoE would be represented as well as other members who were active in the agricultural sector of the nation. In October 1985, the WGC recommended that a Dean of Agriculture should be recruited to work out, in consultation with all concerned, detailed implementation programme embracing the teaching and administrative arrangements as well as the budgetary requirements.

The Dean was appointed and started working at BAC in November 1987. Detailed curriculum and regulations for the BSc. (Agriculture) degree were prepared and approved by UB Senate in April 1988 and UB Council in June 1988. As a consequence of UB Council's approval of the curriculum and regulations for the BSc. degree programme the first cohort of students to register for this programme commenced their second year of study at Sebele with effect from August 1988 (the first year of study was done under Faculty of Science UB).

Regulations for the diploma programmes as well as their curricula were reviewed and a new diploma programme in agricultural education was established with effect from February 1989. Proposals on the administrative set up of Botswana College of Agriculture (BCA) were also finalized and approved and this culminated in the enactment of Act No.9 by the Legislature in May 1991 and hence the establishment of BCA. The BCA was officially inaugurated as an Associate Institution of the University of Botswana at the latter's 11th Congregation held at Sebele on the 2nd of November 1991.

The Chancellor of the University and President of the Republic of Botswana, His Excellency Sir Ketumile Masire officially inaugurated BCA at this ceremony, and awarded certificates, diplomas and as well as conferred for the first time in Botswana, the BSc. (Agriculture) degree, to the first group of graduands who had completed the programme in June 1991.

A certificate programme in Forestry and Range Ecology admitted its first cohort of students in August 1992 while the diploma programme in Agricultural Engineering enrolled the first group in February 1993. The Centre for In-service and Continuing Education (CICE) started offering short courses in August 1992. Construction work for additional facilities commenced in 1991 and was completed in 1995. Altogether, 9 000m² of new laboratories, lecture rooms, library and seminar rooms were added to the BCA facilities. A BSc degree programme in Agricultural Education admitted its first cohort of students in August 1996. The Diploma in Forestry and Range Ecology Programme (DFRE) commenced in August 1999, while the Diploma in Horticulture programme admitted its first

students in August 2000.

The College undertook a curriculum review exercise of its diploma and bachelors degree programmes in 1998. This exercise was combined with the semesterization of academic programmes, which was implemented in August 2002, in line with the vision and mission of the BCA and the National Vision 2016. Still in 2002, the BSc Animal Science programme was introduced and admitted its first cohort of students in the same academic year.

The BSc Crop Science programme admitted its first group of students in August 2005. During the same year, the College abolished admission and training at certificate level, in view of focusing in training at higher levels. The BSc in Agricultural Mechanization and BSc in Soil and Water Conservation Engineering were introduced in August 2007. The College also, during the same academic year introduced Graduate Programmes and admitted the first group of students into the MSc in Agricultural Education, MSc in Animal Science and MSc in Crop Science.

The College gradually phased out the higher diploma in Agricultural Education, Agricultural Engineering and Horticulture with the last groups being admitted in August 2006. In August 2008, the College enrolled the first cohort of students for MSc in Agricultural Engineering. The College kept growing; in August 2009 it enrolled the first cohort of students into the BSc in Food Science and Technology and BSc in Agricultural Economics. In 2011 the first intake of BSc in Agricultural Extension was admitted. A PhD in Animal Science was approved in December 2010 to start in January 2011, followed by the introduction of a PhD in Crop Science and the BSc in Range Science in August 2015.

On the 1st of April 2012, the Ministry of Agriculture handed over the Meat Inspection Training Centre (MITC) in Lobatse to BCA. The center was renamed Meat Industry Training Institute (MITI) with a view to enhance its academic profile. The MITI focuses training in veterinary public health (meat inspection).

The University continues to grow at its two campuses in Sebele and Lobatse by developing new programmes that are relevant to the needs of industry in the areas of agriculture, natural resources and allied fields.

STUDENT FACILITIES AND SERVICES

The University has a wide range of facilities for students.

a. Hostels

The University has five hundred and eighty-four (584) beds at its two campuses, 544 in Sebele, of which 20 are for graduate student accommodation and 40 in Lobatse. Most of the accommodation is on sharing basis, but both male and female students have different blocks. There are a few hostel blocks which collectively can accommodate one hundred and eighty-two (182) students on a non-sharing basis. Each of the blocks has a common room where the students can relax and watch TV or play one of the several in-door sporting activities.

b. Health Care Clinic

The University has a Health Care Clinic with two consultation rooms and a dispensary. Two nursing staff who run the clinic and refer cases that require further medical attention to Government/Private Clinics or Hospitals. There is always a nurse on call over night as well as on weekends and holidays.

c. Counselling Services

The University provides counselling and support on careers, psycho-social, HIV/AIDS and other health matters.

d. Recreation

The University has indoor facilities for badminton, table tennis, basketball, volleyball, darts, boxing, karate, aerobics and football. In addition, there are outdoor facilities for tennis, volleyball, basketball, football, softball, rugby and athletics. All sporting activities provided by the university are open to all registered students. There are student-led clubs to enhance student academic and social life.

e. The Student Representative Council

There is a Student Representative Council (SRC) recognized by the University as an organization representing the student body of the University. The SRC is elected by the student body every academic year.

APPLICATION PROCEDURES

Applications are made available between March and May each year for candidates wishing to enroll in August of the same year. Prospective students for any of the programmes offered at the University may apply online or

obtain application forms from the University and Senior Secondary Schools across the country. Enquiries should be made from the following office:

Director, Academic and Student Services
Botswana University of Agriculture and Natural Resources
Private Bag 0027 Gaborone, Botswana.
Telephone: (267) 3650100
Fax: (267) 392 8753
Email: admissions@buan.ac.bw
Website: www.buan.ac.bw
Facebook: BuanBw
Twitter: @BuanOfficial
Instagram: buanworld
Youtube: Buanlive

SCHEDULE OF FEES

**Subject to change at any given academic year.*

Fees 2020/2021	Annual Fee Estimate (Bwp)	Fee For One Credit (Bwp)
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Certificates

Resident Students	37 200	1 240
Non-Resident Students	74 700	2 490

Diplomas

Resident Students	37 200	1 240
Non-Resident Students	74 700	2 490

Bachelors

Resident Students	37 200	1 240
Non-Resident Students	74 700	2 490

FEES (BWP)

PROGRAMMES 2020/2021

Other Fees

Supplementary Fee per Subject	240
Graduation fee	220

Application Fee

Resident Students	350
Non-Resident Students	690

Late Application Fee

Resident Students	520
Non-Resident Students	1 030
Student Life Fee	

Late Registration Fee/Day

PROGRAMMES 2020/2021

FEES (BWP)

(Returning Students) (maximum 14 days)	210
Late Registration Fee/Day (New Students) (maximum 14 days)	120
Transcript Fee	50
Identity Card Fee	70
Accommodation Fee	
Under Graduate Full Time Student/Annum	7 740
Under Graduate Hostel Fee during Holidays/Day	40
Under Graduate Hostels For Non-Students During Holidays/Day	260
Graduate Hostels/Annum	13 080
Graduate Hostels/Annum (Including Holidays)	18 720
Graduate Hostels Fee during Holidays/Day	120
Graduate Hostels For Non-Students During Holidays/Day	580
Laundry Fee/Annum	830
Excursion Fee Course 1000	
PhD Science and Engineering	130
Resident Students	550
Non-Resident Students	820
PhD (Other Faculties)	
Resident Students	430
Non-Resident Students	640

SCHOLARSHIPS

The University (BUAN) does not offer scholarships or bursaries. Botswana citizens are advised to apply to the Department of Tertiary Education and Financing, in the Ministry of Education and Skills Development for sponsorship.

STUDENT FINANCIAL PROCEDURES

Reporting to the Finance Office is an integral part of registration; until financial clearance has been obtained from the Finance Office, registration will be deemed to be incomplete. Self-sponsored students must make arrangements with the Finance department for the payment of fees. Sponsored students must produce satisfactory evidence of the award of sponsorship. If a cheque is not honoured, a student will be de-registered immediately.

Students who damage University property or equipment will be charged the cost of repair or replacement of the item(s). Should a student leave the University without having paid the prescribed fees, including fines due, or without returning any library books, their academic results and academic certificate for which a student is otherwise qualified, shall be withheld until such fees, library books or University property have been recovered.

Any registered student who decides to withdraw from the University must give notice of his/her intention to do so in writing to the Director, Academic and Student Services Office. If the withdrawal takes place before the fourth week of the semester, 50 percent of the semester tuition fees will be refundable. If withdrawal takes place after the fourth week of the semester, no tuition fees will be refundable. In the event of withdrawal, residence and refectory fees will be payable pro-rata.

THE UNIVERSITY LIBRARY

Botswana University of Agriculture and Natural Resources Library is an academic agricultural library which maintains a wide range of information materials on agriculture, natural resources and related fields. The Library is also a depository for publications of the Food and Agricultural Organization (FAO). In addition, the library keeps special collections materials on and about Botswana, as well as SADC publications. The Library has a study area with a sitting capacity of up to 300 patrons at any time and a late-night study area for student users. The BUAN library has a fully computerized library management system.

Membership

Staff and Students of the University should produce a University identity card to register with the library. Membership to the library for students ceases on completion of their studies. Membership for BUAN staff ceases on termination of employment or end of their contract.

BUAN Students

Upon registration, a student automatically registered as a member of the Library within 24 hours.

BUAN Staff

Upon finalisation of appointment, the library

membership will be activated within 24 hours.

Visiting Scholars

Upon finalisation of appointment, the library membership will be activated within 24 hours.

Affiliated Institutions Members

Affiliated institutions should complete the membership application form and submit a written official support from the Head of the Institution. Membership is valid for two years subject to subsequent renewals following relevant membership audit.

External members

Individuals should complete the membership application form and submit it with two passport-size photographs, certified copy of national identity card/ passport and written support from the Head of Department. Membership of the library is valid for two years subject to subsequent renewals following relevant membership audit.

Borrowing

Registered library clients can borrow circulating information materials. The service is governed by the Library Use Policy and the Library procedure manual.

Borrowing Entitlements for Members			
Membership group	Books	Loan period	e-Resources access
Undergraduates	6	30 days	Yes
Graduates	8	60 days	Yes
Academic staff	10	150 days	Yes
Support staff	4	30 days	Yes
Temporary staff (support)	4	30 days	Yes
Visiting scholars	10	60 days	Yes
Institutional members	4	30 days	No
External members	2	30 days	No

Renewing loans

After the initial borrowing period, a book loan may be renewed twice unless it has been requested by another user or it has reached the maximum overdue limit.

Returning Items

Borrowed items can be returned to any of the University libraries (Main campus or MITI) during operating hours. Members should take full responsibility for returning borrowed material on or before due date.

Lost Material

A member who has lost or damaged library books/ material will be required to pay the current replacement value of the book/material plus 25% handling charges. The library will not accept recovered items that have already been paid for by the member. However, if it is in the interest of the library to keep such materials, the member may be refunded for the material excluding

handling charges.

Reserving materials

The reserved materials collection comprises of books reserved by lecturers and may be loaned for only two hours.

Information for academic staff

1. Course Reserve Forms should be used to place materials on reserve.
2. A maximum of two (2) copies per title is permissible to be put on reserve.
3. The materials on reserve will be taken back to active circulation at the end of the semester.

Information for students

1. The loan period for books on reserve is two hours renewable once for one hour.
2. Overnight use of course reserves is permissible

- when picked 15 minutes before closure.
3. Users are required to return materials 30 minutes after the library circulation desk opens on the following day.
 4. Renewal of materials on hold is not allowed.
 5. Late fines for reserve materials is P1.00 per hour.

Recall of borrowed materials

The borrower may be requested to return the book sooner than the original due date, however a seven-day notice will be given.

Fines and Penalties

Overdue materials will attract fines as follows:

Ordinary loan	P0.50/book/day
Reserve materials	P1.00 per hour

All library fines are paid at the University Cash Office and proof of payment should be presented to the library circulation desk. Appropriate action shall be taken against defaulters.

Inter Library Loan (ILL)

The service enables the library to borrow materials from other libraries within the SABINET network. The service is available only to University students and staff.

Reference Services

Assistance on the use of the library and the different library products is offered through this service. Virtual reference assistance is offered through social media platforms, but users may consult their faculty or departmental librarians.

Current Awareness Service

Through this service, librarians assist users to find the latest information on their areas of expertise or interest. The library databases allow users to configure search or journal alerts. These alerts save valuable research time and can be set up to provide automatic e-mail notification whenever new search results become available. Librarians can be consulted for further assistance.

Reprographics

The library has a card-operated machine for copying and scanning. Photocopying cards are paid for at the University Cash Office and obtained at the library circulation desk, proof of payment is a requisite. The cost of a card is P10.00 and the minimum recharge amount is P5.00. Intellectual Property and Copyright legislation must be observed when photocopying.

Information Literacy and Instruction

The library aims to integrate information literacy instruction into the course plans through collaboration with Faculties. This is achieved through orientation for new library users.

Research Support

The library provides support to researchers by sourcing and availing research information.

Research Seminar Series

The library in collaboration with Faculties organizes seminars for researchers to share their findings.

Library Spaces

1. **Study areas**
Currently, the library provides silent study spaces for individuals within the main library. There are also designated spaces for computer use.
2. **Late night study area**
The library provides a 24/7 study area available to staff and students.

Internet and Wi-Fi Services

The library has unlimited Wireless hotspots and networked workstations which are reserved for students.

Library Collections

The library collection includes books, bound journals and special collections material in both print and electronic formats. Print collections stand at 34 172 volumes and these include reference materials, special collections, journals magazines and newspapers. In addition, the library has an Audio-Visual collection available on short loan.

Online/ Electronic Databases

The library subscribes to several agricultural related online resources that complements the library's print collection. Online resources can be accessed from the library portal at <http://library.buan.ac.bw>

Institutional Repository

The University digital repository holds intellectual content in the form of journal articles, theses and dissertations. The service is intended to facilitate anywhere anytime access to the University research output.

Library Rules and Regulations

- a. Clients must always observe silence while in the library
- b. Cellphones and other distracting devices should be muted/switched off in the library
- c. Stealing and mutilation of library materials is a serious offence
- d. Eating, drinking and smoking is not allowed in the library
- e. Study carrels should not be reserved.
- f. Bags are not allowed in the library
- g. Clients leave their personal property in the library at their own risk
- h. All items going in and outside the library will go through security checks

Operating Hours

Semester Opening Time

Monday – Thursday	0845hrs – 2300hrs
Friday	0845hrs – 1630hrs
Saturday	1000hrs – 1745hrs
Sunday	1515hrs – 2300hrs

Winter Session

Monday- Thursday	0845hrs – 2100hrs
Friday	0845hrs – 1630hrs
Saturday	1000hrs – 1745hrs
Sunday	1515hrs – 2300hrs

Vacation

Monday – Friday	0845hrs – 1630hrs
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Holidays

The library is closed on public holidays. Any changes in the opening and closing times of the library will be communicated to clients.

For more information contact:

Librarian, Client Services

Botswana University of Agriculture and Natural Resources
Private Bag 0027

Main Library

Physical Address: Content Farm Sebele, Gaborone
Telephone: +267-365 0360/ 58
FAX: +267-392 8753
Others: +267-365 0698
E-mail: client.service@buan.ac.bw

Meat Industry Training Institute Library

Physical Address: Boswelatlou, Lobatse, Opp. BMC
Telephone: +267-533 0671
FAX: +267-392 8753
E-mail: client.service@buan.ac.bw
Webpage: <https://library.buan.ac.bw>

Current Awareness Service

Staff (support)	4 "	30 days
External	2 "	30 days
Affiliated	2 "	30 days

Returning Materials

Members should take full responsibility for returning borrowed materials on or before the due date. Returned materials may be renewed if not reserved for another user. A member is not allowed to renew a book more than two times in succession, whether the book has been reserved or not.

THE UNIVERSITY FARM



Objectives of the farm

1. The first objective of the Farm is to provide facilities and services for teaching:
 - i. Provide student-managed plots for carrying out practical activities.
 - ii. Provide demonstration plots for practical classes.
 - iii. Provide structures for demonstration related to agriculture and natural resources
 - iv. Be an industrial attachment facility for learners.
2. The second objective of the Farm is to provide facilities for research by:
 - i. Provide space and resources for students

and staff to conduct research in agriculture and natural resources

- ii. Providing experimental materials for staff and student research projects.

3. The third objective of the Farm is in commercial production in areas where, there is comparative advantage to produce. This objective will be realized by:

- i. Engaging in profitable agricultural enterprises under local conditions as well as altered environments.
- ii. Serving as a model to stakeholders by demonstrating that farming and natural resources in Botswana can be developed to become a viable economic option

Areas of operation of the farm

The farm has diversified its activities to meet the objectives of Teaching, Research and Commercial production. The areas of operation and facilities for crop production include:

- i. Horticulture – various vegetable production
- ii. Plant nursery
- iii. Field crops – cereal and fodder
- iv. Fodder crops on irrigated lands using treated sewage water
- v. Orchards with various fruit trees
- vi. Gardens for student practicals
- vii. Water pipeline which transfers irrigation water from sewage ponds to the gardens.
- viii. Centre pivot irrigation system.

The areas of operation and facilities for livestock production include:

- i. Poultry (layers, broilers and guinea fowls, slaughterhouse)
- ii. Pigs
- iii. Rabbits
- iv. Beef cattle in ranches and feedlot
- v. Dairy (cattle and goats)
- vi. Tswana goats and Tswana sheep
- vii. Ostriches
- viii. Fodder mixing plant



- ix. Livestock handling facilities
- x. Aquaculture and Apiculture

The Meat Industry Training Institute (MITI)

The Meat Industry Training Institute (MITI) was established in 1984 through an agreement between Food and Agriculture Organisation (FAO), (working in conjunction with the government of Denmark) and the government of Botswana. At that point it was called the Regional Training Centre for Meat Inspectors and Meat Technologists in Africa.

In 1991, the FAO handed over the running of the training center to the government of Botswana managed by the Department of Veterinary Services of the Ministry of Agriculture. The center was re-named Meat Inspection Training Centre (MITC). In order to enhance the academic profile of the institute, MITC was taken over by the Botswana College of Agriculture now Botswana University of Agriculture and Natural Resources on the 1st of April 2012. Since its establishment in 1984, over 1,900 participants from 45 African countries have undergone training at the Institute. The MITI has in the past received students from the European Union on internship in the area of Veterinary Public Health.

Mandate

The MITI is a specialized institute mandated to provide both long-term programmes (undergraduate, and graduate) as well as short courses.

The institution is also mandated to conduct applied research in the areas of livestock products and by-products.

Thematic areas of research include food safety and quality, veterinary public health, animal health, animal welfare, hides and skins as well as environmental protection.

Academic Programmes

CERTIFICATE IN MEAT INSPECTION

Programme type: Certificate

Entry requirements: Minimum Certificate in Animal Health or equivalent.

Description:

This is an intensive six-months hands-on Certificate in Meat Inspection programme running from January to June and from July to December. This is a value addition programme for all those interested in meat inspection, food safety management systems (HACCP and its pre-requisite programmes), animal welfare as well as meat safety

requirements and legislation. The programme is offered to certificate holders in animal health or equivalent, Diploma holders in animal health or equivalent, undergraduate degree holders in animal health or related programmes, veterinary degree holders.

Employment opportunities

On completion of this programme graduates will be registered as veterinary para-professionals as such will be able to work as meat inspectors, quality assurance personnel in meat processing facilities, meat processing entrepreneurs, animal welfare officers and as instructors.

Consultancies

The institute provides consultancies in the following:

- Food safety management system development,
- Food premises designs.
- Inspection and Audits of food premises.
- Training on food safety management systems and animal welfare.

Contact details

Postal Address
The Director
Meat industry Training Institute
Private Bag 45
Lobatse

Physical Address:

Boswelatlou Plot 13725
Telephone number: +267 533 0671
FAX: +267 533 2259
Email: miti@buan.ac.bw

GENERAL ACADEMIC REGULATIONS

00.0 GENERAL PROVISIONS

00.1 Preamble

00.11 Senate reserves the right to alter, amend, replace or cancel any of the Academic Regulations and shall be the final authority for the interpretation of these regulations.

00.12 Senate has the power to exempt any student from any of the Academic Regulations.

00.13 In addition to these general academic regulations, special faculty and departmental regulations, which must be approved by Senate, shall also apply.

00.14 General regulations shall take precedence over special faculty and departmental regulations unless Senate has otherwise provided.

00.15 Faculty regulations shall take precedence over departmental special regulations, unless Senate has otherwise provided.

00.16 Should a regulation, according to which a programme has been compiled, be amended, a student who has started a programme under the old regulation and who has not interrupted studies, may complete such a programme in accordance with the old regulation on condition that a faculty board may formulate special transitional requirements in order to enable that student to complete studies in accordance with the new regulation.

00.17 A student who has been admitted to a programme and fails to register for such a programme in the ensuing two semesters; or is re-admitted to such a programme, is deemed to have interrupted studies and forfeits the right to continue studies under the old regulation.

00.18 Senate shall establish procedures for the approval of all academic programmes of the University.

00.2 Definitions of Key Terms: In these regulations, the following terms shall be used as indicated.

00.211 Academic Year and Semester: The academic year shall comprise of two semesters, each consisting of 14 teaching weeks, a one-week mid-semester break, and two weeks for examinations.

00.212 Programme: A plan of study made up of core, optional, electives, and general education courses, lasting over a specified period, which leads to a Degree, or a Higher Diploma qualification.

00.213 Subject: A collection of core and optional courses in a given discipline of study that will constitute a major or minor component of the programme.

00.214 Course: For the purpose of teaching, each subject shall be divided into one or more components called courses. A course is a basic building block of teaching and learning activities with content designed to meet particular aims and objectives. Each course will normally be assessed within the semester in which it is offered, except for a year-long course, teaching practice, internship, industrial training or any other attachments.

00.215 Course Code: A course code is an identification of a course with a prefix of three capital letters followed by three digits. The first of the three letters shall normally be the same as the first letter of the subject, and the digits shall

indicate the level, with 100 to 599 for Bachelor's Degrees, and Diploma programmes.

two equally weighted major subjects which are independently studied, as well as electives and general education courses.

00.216 Lecture Hour: A lecture hour is a period of instruction of a duration of 50 minutes.

00.217 Lecture Hour Equivalent: One lecture hour equivalent shall be equivalent to any of the following modes of teach learning: One lecture hour; two to three hours of practical/laboratory work/activity defined by the department; or any number between one to four weeks of teaching practice, field work, industrial training or any other attachments or other academic work outside the classroom.

00.218 Credit or Credit Value: The number of credits (or credit value) is assigned to a course in relation to the work done. In any course, work entailing one lecture hour or one lecture hour equivalent per week throughout a semester shall have a credit value of 1.

00.219 Major Subject: A major subject shall comprise courses where the subject is treated in depth during the entire programme of study; and the workload shall depend on the type of programme as defined in regulation 00.230. A student shall normally register for a major subject either in the third or fifth semester.

00.220 Minor Subject: A minor subject shall comprise courses where the workload shall have fewer credits than those of the major subject as stated in regulation 00.232.

00.230 Types of Programmes: Possible programme format shall include single major, combined degree major/minor, major/major, multidisciplinary).

00.231 Single Major: A single major is a programme of study composed of core and optional courses from one subject (normally chosen either in the third or fifth semester), as well as electives and general education courses.

00.232 Combined Degree (major/minor): A combined degree (major/minor) is a programme of study composed of core and optional courses from two subjects normally in the ratio of major to minor of approximately 70:30, as well as electives and general education courses. A student's major and minor cannot be from the same subject.

00.233 Combined Degree (major/major): A combined degree (major/major) is a programme of study composed of core and optional courses from

00.234 Combined Degree (multidisciplinary): A combined degree (multidisciplinary) is a programme of study composed of core and optional courses from more than two subjects (for example a combination of three equally weighted subjects, or a series of individualized courses resulting in a programme constructed by negotiation between a student and a personal tutor, and approved by Heads of relevant Departments and Deans), as well as electives and general education courses.

00.240 Types of Courses: Types of courses shall include core, optional, elective, general education, pre-requisite, co-requisite, winter, project, service and audit.

00.241 Core Courses: Core courses are those courses which must be taken in order to meet the requirements of an award, that is, they are compulsory or mandatory.

00.242 Optional Courses: Optional courses are those courses which may be selected from an approved list of courses within a subject of study and which count towards the requirements of an award.

00.243 Elective Courses: Elective courses are those courses which may be selected from a list of courses outside a subject of study and which count towards the requirements of an award.

00.244 General Education Courses: General education courses are those courses taken for the purpose of broadening the knowledge of a student and count towards the overall credit requirement for the award but are not part of the core courses of the programme.

00.245 Pre-requisite: A pre-requisite is a course that must be taken and passed in preparation for another course.

00.246 Co-requisite: A co-requisite is a course that must be taken concurrently with other courses to enhance learning in the programme.

00.247 Winter Course: A winter course is that which is taken during the long vacation, such as, teaching practice, industrial training, field work, internships, and attachments. The curriculum and methods of assessment for these courses will be specified in special faculty and departmental regulations.

00.248 Project Course: A project course may be taken in a major subject and the requirements of such a course and its method of assessment will be specified in special departmental and faculty regulations. A project course may be taken as a semester course or as a year-long project course.

00.249 Service Course: A service course is a course taken in a major or minor subject of one department but is taught by another department.

00.250 Audit Course: An audit course is a course taken by a student, but no credit is earned in such a course.

00.251 Attempted Credits: Attempted credits are the total number of credits a student is officially registered for in a given semester or in all years/levels of study. They exclude audit courses, noncredit courses a student may take, and courses which a student has officially dropped. Attempted credits are used in the calculation of the grade point average (GPA).

00.252 Earned Credits: Earned credits are the total number of credit values of the courses a student has passed in a given semester or in all years/levels of study. Earned credits are used in the determination of a student's year/level of study and minimum number of credits required for graduation. Audit and non-credit courses do not count in credits earned within a particular programme.

00.253 Academic Good Standing: Students are in academic good standing at the university when their cumulative grade point average is 2.00 or above. Such students are considered to be making satisfactory progress toward a qualification.

00.254 Academic Warning: Students may be placed on academic warning for failure to make satisfactory progress toward a qualification. Students whose cumulative grade point average is between 1.99 and 1.51 (the actual lower limit is dependent on the number of attempted credits a student has as indicated in regulation 00.9) may be placed on academic warning for their subsequent semester of enrolment. Students on academic warning may not enroll for more than 16 semester credits. They are encouraged to seek appropriate advice and services from relevant offices.

00.255 Academic Probation: Students may be placed on academic probation for failure to make satisfactory progress toward a qualification. Students whose cumulative grade point average

is between 1.90 and 1.21 (the actual upper limit is dependent on the number of attempted credits a student has as indicated in regulation 00.9) may be placed on academic probation for their subsequent semester of enrolment. Students on academic probation may not enroll for more than 14 semester credits. They should seek appropriate advice and services from relevant offices.

00.3 STUDENTS

00.31 Registered Students

00.311 Full-time Student: A full-time undergraduate student is one who is registered with the university and carries a minimum workload of 15 credits per semester, unless officially exempted.

00.312 Part-time Student: A part-time undergraduate student is one who is registered with the University and normally carries a workload of less than 15 credits per semester.

00.313 Transfer Student: A transfer student is one who is registered with BUAN after transferring academic credits deemed to be equivalent to BUAN credits. Such credits may come from another recognized university or equivalent or be the result of various articulation agreements between BUAN and other institutions. Such a student can only transfer up to a maximum of one-half of the total credits required for the programme, and must complete the remaining one-half in the university. The total credits transferred are subject to acceptance by the relevant Department(s). Grade points are not transferable, and the cumulative GPA of transfer students will be computed on the basis of the work done at BUAN only.

00.314 Visiting/Exchange/Audit Student: A visiting exchange/audit student is one who satisfies the university entrance requirements and is registered for a selected number of courses for credit or audit. Such students may be from within the country, from abroad or under exchange programmes.

00.315 Special Student: A special student is one who satisfies the university entrance requirements but does not have immediate plans to enter a programme and wants to take courses with approval from the department. Such a student shall be limited to register for a maximum of fifteen credits overall.

00.32 Responsibilities of Students

00.321 While the university strives to give students

proper academic advice, it is the responsibility of the individual student to know and follow all the regulations of the university.

00.322 A student registered for a course is expected to fulfil all requirements prescribed for that course.

00.323 A student who is unable to attend classes due to illness should notify the Director of Student Welfare of this fact within twenty-one consecutive days from the day the student misses classes. Certification from a recognized health officer will be required in support. Prior permission or supporting evidence will be necessary for circumstances other than ill health.

00.324 A student who enters or returns to the university late shall not be entitled to extra tuition.

00.325 A student may have access to their academic transcript and has the right of appeal on any matters concerning it, to Senate through their Faculty Board.

00.4 EXEMPTIONS, CREDIT BANKING, CREDIT TRANSFER, AND RECOGNITION OF PRIOR LEARNING.

0.41 Permission for exemptions shall be sought in all cases from the Director, Academic Services, and exemption shall be subject to the approval of the relevant Head(s) of Department. Exemption from taking certain courses may be granted under the following conditions:

a) A student who has been registered at BUAN can bank credits up to a maximum of ten consecutive semesters. Exemption may be given to a former UB student who subsequently rejoins BUAN if such a student has banked credits. Once such exemption has been granted, the programme for which the student is currently registered will be credited with the original marks obtained for the credit course(s) and the corresponding grade points.

b) Exemption(s) may be given to a student if such a student took a course or courses at another recognized university or institution with which BUAN has a formal articulation agreement, within ten semesters prior to registration. Once such exemptions have been granted, the student may transfer up to a maximum of one-half of the total credits required for the programme. However, grade points for such students are not transferable, and the cumulative GPA shall be computed on the basis of the work done at BUAN only.

c) Exemption may be granted to a student if such a student took a course or courses at another recognized University or institution with which BUAN has no formal articulation agreement within ten semesters prior to registration. Such exemptions shall be based on course to course articulation and once they have been granted a student may transfer up to a maximum of one third of the total credits required for the programme. However, grade points for such students are not transferable, and the cumulative GPA shall be computed on the basis of work done at BUAN only.

d) Exemption(s) may be given to a student for relevant work experience and recognized prior learning upon satisfactory performance in assessments of their knowledge, skills and experience in the area as outlined in Section 6.0 of the policy organized by the Department. A student who has performed such tests shall be awarded an appropriate grade and may be exempted in the relevant courses up to a maximum of one-sixth of the total credits required for the programme.

00.42 Articulation agreements between BUAN and other institutions resulting in de facto exemptions shall be applied to general admissions to certificate, diploma, higher diploma and degree programmes as well as to satisfy programme specific internal requirements.

00.5 ENTRANCE QUALIFICATIONS

00.51 Normal Entry Scheme

00.511 The normal requirement for entrance to Diploma Programmes are specified in General Regulation 10.2.

00.512 The normal requirements for entrance to Bachelor's Degree Programmes are specified in General Regulation 20.2.

00.52 Mature Age Entry Scheme for Undergraduate Programmes

00.521 Applicants of at least 25 years of age on the first day of the semester of entry who have BGCSE with grade C or better in at least three subjects and grade D or better in English Language or equivalent but lack the qualifications for entry into the undergraduate programmes may apply as a mature age applicant.

00.522 Subject to regulation 00.521, any additional entry requirements shall be specified in the appropriate special faculty and departmental regulations.

00.523 Subject to regulations 00.521 and 00.522, a mature age applicant may use the direct entry route if such an applicant possesses BGCSE or equivalent with grade B or better in two subjects and grade C or better in four subjects.

00.53 Transfer Students

00.531 Transfer students from other recognized universities or institutions may be accepted for undergraduate studies if they have at least a cumulative GPA of 2.00 (on a five-point scale) or equivalent and are eligible to return to the university or institution last attended.

00.532 Transfer students with a cumulative GPA of less than 2.00 (on a five-point scale) or equivalent shall be subjected to the provisions of general academic regulation 00.9 to determine their admissibility for undergraduate studies. Students admitted under such provisions will have an academic probation status.

00.6 REGISTRATION

00.611 The normal workload for a full-time undergraduate student shall be 15 to 18 credits per semester.

00.612 A full-time undergraduate student may carry 12 to 14 credits per semester if such a student has approved course exemptions or is on academic probation.

00.613 Subject to the provisions of regulation 00.912, a full-time undergraduate student may carry up to a maximum of 21 credits if such a student has a cumulative GPA of at least 3.50.

00.614 No student shall be registered for any programme one week after the commencement of classes. Any exception to this regulation must have the written permission of the Dean of the Faculty who may consult with the Head of Department and shall not extend beyond the end of the second week after the commencement of classes.

00.615 A student may register for a course only if the official class timetable allows the student to attend all the classes.

00.616 No student shall be allowed to add a course or courses after the first week of the commencement of classes.

00.617 A student may drop a course or courses up to the end of the second week of the commencement of classes.

00.618 A student who has been admitted to the university can register for a core, optional, elective or general education course offered in any of the university programmes, subject to pre-requisites or any other approved programme restrictions.

00.619 An undergraduate student must, during the first two semesters at the Botswana University of Agriculture and Natural Resources, register for at least ten credits in level 100 general education courses in areas 1 and 2, except where exemptions have been provided.

00.620 In addition to the requirements of general academic regulation 00.619, an undergraduate student must register for a minimum of an additional nine credits of elective and/or general education courses.

00.621 The total number of credits earned by a student from elective and general education courses shall not exceed one third of the total credits gained in the entire programme.

00.622 A Dean, on the recommendation of a relevant department may cancel the registration of a student or the registration for a course during a semester, if the student does not meet the programme requirements or prerequisite requirements for the course.

00.623 A registered student shall have access to an official registration record printout detailing the course(s) registered for. It is the student's responsibility to ensure that the registration record is correct. Any registration record amendments should be made by the end of the add/drop/late registration period.

00.624 A student should not attend a course unless such a course is officially registered for as indicated on the official registration printout.

00.625 A student cannot earn credit for a course unless such a course is officially registered for as indicated on the official registration printout.

00.626 Any student registered for a course which is abandoned or not attended will be recorded with a zero mark for any graded component not taken. Such a course will be included in the calculation of the student's cumulative GPA.

00.627 The minimum number of students required in order for an optional course to run is 15 students for levels 100 to 200 classes, and 8 students for classes above level 200 except as permitted by Senate.

00.628 The maximum number of students permitted to be enrolled in each course shall be determined by the Head of Department in consultation with the Dean.

00.629 Cancellation of Classes: If no class cancellation notice is posted on the classroom door, classes are officially considered cancelled if an instructor is 15 minutes late. All cases of cancelled classes must be reported to the relevant Head of department.

00.630 A visiting/exchange/special/audit student may register to take courses for credit or audit. An application to take courses for credit or audit should be made to the Director of Academic Services. The application will be subject to approval by the relevant Head(s) of Department(s).

00.631 A student may, in addition to their normal academic programme, register to audit courses up to a maximum of three credits.

00.632 A student on audit courses shall not be subject to assessment, but such audited course(s) shall be recorded on the student's academic transcript.

00.633 A visiting/exchange/special student who register for credit course(s) and subsequently enrolls in an academic programme of UB shall have their courses treated in accordance with general academic regulation 00.41 (b) on credit banking.

00.7 WITHDRAWAL

00.711 Withdrawing refers to withdrawing from all courses for which a student is enrolled for a given semester, and therefore the student is no longer enrolled. The withdrawal application should be lodged through the relevant Head of Department and Dean's office.

00.712 A student may officially withdraw from the university by voluntarily terminating enrolment during a semester which is in progress. Such a student shall not receive any credit for courses taken during the semester. If such a student subsequently enrolls in the university the courses previously taken shall be treated in accordance with regulation 00.41 (b) on credit banking.

00.713 A student who withdraws prior to the end of the eighth week of a semester or who withdraws after the eighth week of a semester where there are documented acceptable extenuating circumstances, will receive a grade of "W" (withdrawn) otherwise a zero mark will be recorded for any graded component not taken.

00.714 If a student is obliged through illness or any other cause to be absent from classes for a continuous period exceeding three weeks, the Dean, in consultation with relevant Departments and in light of an appropriate medical report, shall decide whether such a student shall be withdrawn from the university for the duration of that semester.

00.715 A student who has withdrawn from the university may re-enter the programme subject to quota restrictions and compliance with existing programme requirements. The university does not guarantee to offer the same courses as at the time the student withdrew from the university.

00.8 ASSESSMENT

00.81 Continuous Assessment

00.811 The continuous assessment component of each course may include one or more of the following: written assignments, written tests, practical's, projects, research exercises, essays, open book tests, independent study, dissertations/theses, oral tests, plus other forms of continuous assessment as shall be determined by the instructor and approved by the Head of Department.

00.812 A student is required to fulfil all requirements prescribed for continuous assessment. Failure to do so without valid reasons will normally incur penalties as prescribed in special faculty and departmental regulations.

00.813 Progress Reports: Each faculty shall report continuous assessment marks for all undergraduate students by the end of the eighth week of classes. Progress reports are made available to students and to the students' advisors through the computer system at BUAN.

00.82 Final Examinations

Where the assessment of a course includes final examinations, the following regulations shall apply:

00.821 All final examinations shall be held during the scheduled examination period at the end of the semester in which the course is taught.

00.822 A paper in a final written examination of a course shall be of one to three hours duration.

0.823 Other forms of examination of a course shall be as prescribed in special faculty and departmental regulations.

00.824 A student must take final examinations at the scheduled times. Failure to do so without valid reasons will amount to a candidate being awarded a zero mark in that particular examination.

00.825 Special final examinations will be considered on an individual basis for students who miss scheduled final examinations due to exceptional and extenuating circumstances.

00.826 Once a student has sat for an examination, the student may not afterwards apply for a special examination on the basis of unforeseen circumstances or illness.

00.827 In the week preceding the final examinations, all lectures and tutorials will continue, however, no assignment, test, examination, field trip, or any assessment work may be scheduled.

00.83 Quality Assurance

00.831 Senate shall determine the system of quality assurance of programmes of the university.

00.84 Overall Course Grade

00.841 In any course, the weighting between different components of assessment shall be specified in the special faculty and departmental regulations.

00.842 Overall performance in a course shall be assessed on a percentage scale, a letter grade, and a grade point as follows:

Marks (%)	Letter Grade	Grade Point
80-100	A	5.0
75 – 79.9	B+	4.5
70 – 74.9	B	4.0
65 – 69.9	B-	3.5
60 – 64.9	C+	3.0
55 – 59.9	C	2.5
50 – 54.9	C-	2.0
45 – 49.9	D+	1.5
40 – 44.9	D	1.0
35 – 39.9	D-	0.5
0 – 34.9	E	0.0

00.843 When letter grades are used, they shall represent the following:

A	Outstanding
B+	Excellent
B	Very Good
B-	Good
C+	Good
C	Satisfactory
C-	Satisfactory
D+	Poor - Fail
D	Poor - Fail
D-	Poor - Fail
E	Very Poor - Fail
I	Incomplete
W	Withdrawn
AUD	Audit Course. No credit granted

00.844 An Incomplete grade (I) may be awarded when some assigned work comprising continuous assessment, for example a project, has not been completed with valid reasons. The I letter grade has no grade point. The I grade must be converted to an appropriate mark within the following twelve months; otherwise the incomplete work will be awarded a zero mark.

00.845 Passing a course means obtaining a mark of at least 50 percent.

00.85 Completion of Credits in a Programme

00.851 A student shall only be awarded a qualification after completing a minimum number of credits in a given programme as follows:

- A minimum of 60 credits in a Diploma programme with a duration of 4 semesters; or
- A minimum of 90 credits in a Higher Diploma programme with a duration of 6 semesters; or
- A minimum of 120 credits in Bachelors' Degree programmes with a duration of 8 semesters; or
- A minimum of 150 credits in Bachelors' Degree programmes with a duration of 10 semesters.

00.852 To be awarded a qualification, at least two thirds of the total credits must come from core and optional courses prescribed in the programme, and the total number of credits from elective courses shall not exceed one third of the total credits. Where there have been exemptions, general academic regulation 00.862 shall apply.

00.86 Calculating Cumulative GPA

00.861 Cumulative GPA associated with courses at BUAN at any time during the student's programme is obtained as follows:

- a) Identify the credits for the course;
- b) Identify the marks (%), corresponding letter grade and the grade point using the table in regulation 0.842;
- c) Obtain the weighted score by multiplying the credits and the grade point for each course;
- d) Obtain the total weighted score by adding the weighted scores for all the courses;
- e) The cumulative GPA is given by the total weighted score divided by the total number of credits. The cumulative GPA shall be computed to one decimal place.

00.862 Where there have been exemptions for credits as per regulation 00.4, grade points from other institutions are not transferable to BUAN, and the cumulative GPA shall be computed on the basis of the work done at BUAN only.

00.87 Supplementary Examination

00.871 Supplementary examinations may be permitted to enable a student to obtain the minimum mark required in a course to satisfy any additional requirements as specified in the Faculty and Departmental special regulations in order to proceed to the following semester or pass the final semester of study.

00.872 Except as stated in Faculty Special and Departmental regulations a full-time student may be allowed to write supplementary examinations in a maximum of three failed courses in any one Semester, or the equivalent number for part-time study.

00.873 In determining whether a student shall be permitted to supplement, Senate shall first of all satisfy itself that supplementation will enable the students to obtain the minimum mark required to pass a course, before satisfying any other requirement as specified in Faculty Special and departmental regulations.

00.874 In order to be permitted to supplement a failed course a student must have obtained the following final mark in the course:

Undergraduate:	40-49%
Graduate:	50-54%

00.875 If student is permitted to supplement in order to pass a course, the maximum course mark awarded shall not exceed the minimum requirement to pass that course as specified in Faculty Special and Departmental regulations.

00.876 In recalculating the final course mark, the original continuous assessment mark shall be used.

00.877 If in a given course, a student obtains a supplementary mark that is lower than the original mark, then the original mark shall be retained.

00.878 The original mark and the supplementary mark obtained in a course shall be recorded on the student Academic Transcript.

00.879 A fee to be determined by the University from time to time shall be charged for each course to be supplemented.

00.880 To sit for supplementary examinations, a student shall be required to register for all courses they intend to supplement.

00.881 Any student who fails to write supplementary examinations after registering for them shall be awarded a 0 (zero) mark for supplementary examinations.

00.9 PROGRESSION FROM SEMESTER TO SEMESTER

00.91 Proceed

00.911 To remain in academic good standing, a student must pass at least half the attempted semester credits and attain a cumulative GPA of at least 2.00.

00.912 A student proceeding on academic good standing who fails a core, prerequisite or co-requisite course must retake the course. Such a student shall carry a semester credit load not exceeding eighteen (18) credits.

00.913 To proceed on academic warning (AW) or academic probation (AP) a student must pass at least half the attempted semester credits and attain a cumulative GPA of at least 1.21. Such a student shall be subject to regulation 00.92 below.

00.92 Academic Warning and Academic Probation

00.921 A student must pass at least half the attempted semester credits and attain a cumulative GPA of at least 1.21 for the status of academic warning or academic probation to apply.

00.922 The status of academic warning shall apply to a student whose cumulative GPA is less than 2.00 but higher than the academic probation level as indicated in regulation 00.923 below.

00.933 The status of academic probation shall apply to a student in accordance with cumulative GPA performance levels as indicated below:

00.924 A student on academic warning status must any failed core, prerequisite and co-requisite course(s) when next offered. Such a student shall carry a semester credit load not exceeding sixteen (16) credits.

00.925 A student on academic probation status must retake any failed core, prerequisite and co-requisite course(s) when next offered. Such a student shall carry a semester credit load not exceeding fourteen (14) credits.

00.93 Fail and Discontinue

00.931 A student who fails more than half the attempted semester credits or attains a cumulative GPA of 1.20 or less shall be put on fail and discontinue (FD) status.

00.932 A student with two (2) consecutive academic probations shall be put on a fail and discontinue status.

00.933 A student with any combination of three (3) consecutive academic warnings and/or academic probations shall be put on a fail and discontinue status.

00.934 A student who fails a course thrice shall be put on a fail and discontinue status, even if the cumulative GPA is above 2.00.

00.935 A student on fail and discontinue status may apply for readmission to the programme after a lapse of at least one (1) semester. To return to the programme the student must apply and be accepted for re-entry/readmission.

00.936 A student on a fail and discontinue status may apply to change to another programme for which the student qualifies and can enter in the subsequent semester(s).

00.94 Fail and Exclude

00.941 A student who is placed on fail and discontinue status twice in one programme shall be placed on a fail and exclude (FE) status.

00.942 A student who has been unsuccessful in two programmes shall be placed on fail and exclude status.

00.943 A student placed on fail and exclude status may apply for readmission to the university after a lapse of at least two (2) academic years.

00.95 Retaking Courses

00.951 A student shall not retake a course already passed with a minimum grade of fifty (50 C-).

00.952 Subject to regulations on academic warning/probation, fail and discontinue, and fail and exclude, a student may retake a failed course up to two (2) times.

00.953 A student who has failed a core, prerequisite, co-requisite course or a core general education course must retake the course.

00.954 A student who has failed an optional, elective, a non-core general education course may retake the course or take a substitute course.

00.955 When a student retakes a course, the series of retakes with their grades shall appear on the student's official academic record and count in the cumulative GPA. However, in satisfying the minimum number of credits required for graduation the credits shall count only once where a passing grade is recorded.

00.96 Pre-requisite Courses

00.961 A student must achieve at least fifty (50 C-) in a prerequisite to enroll in the specific course(s) for which the course is a prerequisite.

Attempted Credits	Academic Warning	Academic Probation
Up to 30	1.99 to 1.51	1.50 to 1.21
31 to 60	1.99 to 1.61	1.60 to 1.21
61 to 90	1.99 to 1.81	1.80 to 1.21
More than 90	1.99 to 1.91	1.90 to 1.21

00.971 At end of each semester, a student's academic standing shall be reported using the following symbols:

- P Proceed (Academic Good Standing)
- AP Proceed (Academic Probation)
- AW Proceed (Academic Warning)
- FD Fail and Discontinue
- FE Fail and Exclude
- W Withdrawn with Permission

00.98 Minimum Cumulative GPA Required for Graduation

00.981 A student should attain a minimum cumulative GPA of 2.00 to be considered for graduation. If the cumulative GPA is below 2.00 after passing the course retakes, the student shall take additional courses to bring the cumulative GPA to at least 2.00.

01.0 Aegrotat Regulations

01.01 If a student in the final semester of a programme is prevented by illness, or other sufficient cause, from undertaking some of the requirements for assessment (continuous assessment or final examinations), Senate may, upon written report of the Department(s) concerned, and upon any other evidence as it shall deem fit, recommend to assign an aegrotat award. The student's illness or incapacity must be reported to the office of the Director of Academic Services within two weeks of the date on which the test(s) or examination(s) should have been written.

01.02 The aegrotat award shall be unclassified.

10. GENERAL REGULATION FOR UNDERGRADUATE DIPLOMA AND HIGHER DIPLOMA PROGRAMMES

10.1 Diploma Programmes

10.11 Diplomas

Programme titles appear in Faculty and Departmental sections below.

10.12 Higher Diplomas

Programme titles appear in Faculty and Departmental sections below.

10.2 Entrance Qualifications

10.21 The normal entry requirement for Diploma programmes is at least six subjects not below grade D in the BGCSE or equivalent. English language shall be one of the required subjects. Five subjects may be accepted. A grade of C shall be required in at least three of the five or six subjects.

The normal entry requirements are subject to review by SENATE from time to time.

10.22 Other entry qualifications for entry to Diploma programmes may be accepted on their own merit as alternatives. In particular, attention is drawn to the regulations governing mature age applicants in 00.52 and the regulation in respect

to recognition of prior learning general academic regulation 00.41.

10.23 Subject to regulation 10.21, any additional requirements shall be specified in appropriate special regulations.

10.24 The entry requirements specified in 10.21, 10.22 and 10.23 do not guarantee admission.

10.3 Programme Structure

10.31 Curriculum and Assessment: The curriculum and methods of assessment for the undergraduate Diploma programmes shall be specified in special faculty and departmental regulations.

10.32 Duration of the Programme

10.321 Diploma and Higher Diploma Programmes: The normal duration for Diploma or Higher Diploma programmes shall be as follows: 4 to 6 semesters on a full-time basis; 8 to 12 Semesters on a part-time basis.

10.4 Classification of Results

10.41 Subject to regulations 00.85 and 00.98, the overall result of the Diploma or Higher Diploma shall be classified based on the cumulative GPA (computed to one decimal place) that includes all attempted credits as follows:

Classification	Cumulative GPA
Distinction:	4.4 – 5.0
Merit:	3.6 – 4.3
Credit:	2.8 – 3.5
Pass:	2.0 – 2.7

20. GENERAL REGULATIONS FOR BACHELORS DEGREE PROGRAMMES

20.1 Degree Programmes

Programme titles appear in Faculty and Departmental sections below.

20.2 Entrance Qualifications

20.21 The normal entry requirement for Bachelors degree programmes shall be as follows:

- a. Botswana General Certificate of Secondary Education (BGCSE)
- i. To have taken at least five subjects including English Language and Mathematics at the

- ii. Botswana General Certificate of Secondary Education (BGCSE) examination or its equivalent and obtained a minimum grade of E (Pass) in English Language and a minimum grade of C (Credit) in Mathematics.
- iii. Have a minimum grade of C (Credit) in at least two of the following subjects: Physics, Chemistry and Biology.
OR
A minimum of grade BB, in Science Double Award.
- iii. Have a minimum grade of D (Pass) in any other subject.

b. ADVANCED LEVELS (A-LEVELS) HOLDERS
An applicant who has taken A-Level or equivalent examinations and attained minimum grades of one E with two Ds in the relevant subjects may be admitted to a Bachelor of Science Degree or Higher Diploma programme and be awarded credits for equivalent course(s) prescribed for a Bachelor of Science Degree or Higher Diploma programme.

c. UNDERGRADUATE CERTIFICATE/DIPLOMA/HIGHER DIPLOMA HOLDERS
Applicants who have a relevant undergraduate certificate/Diploma/Higher Diploma in Agriculture or related fields from a recognized institution may be admitted to a higher Diploma or Bachelor of Science Degree programme and be awarded credits for equivalent course(s) prescribed for a Bachelors Degree or Higher Diploma programme. The normal entry requirements are subject to review by SENATE from time to time.

20.22 Other entry qualifications may be accepted on their own merit as alternatives. In particular, attention is drawn to the regulations governing mature age applicants in 00.52 and the regulation in respect to recognition of prior learning general academic regulation 00.41.

20.23 Applicants possessing an acceptable Certificate qualification with grade C or better in at least four subjects and grade E in English language in the BGCSE or equivalent may be considered for entry to Level 100 of a related bachelors programme.

20.24 Where entry is on the basis of a Diploma qualification, the Diploma shall normally be two years or more and one acceptable to UB. Entry on the basis of a Diploma of less than two years in duration may be considered if the applicant has a previous related Certificate qualification.

20.25 Subject to regulation 20.21, any additional requirements shall be specified in appropriate special regulations.

20.26 The entry requirements specified in 20.21, 20.22, 20.23, 20.24 and 20.25 do not guarantee admission.

20.3 Programme Structure

20.31 Curriculum and Assessment: The curriculum and methods of assessment for Bachelor's degree programmes shall be specified in special faculty and departmental regulations.

20.32 Duration of the Programme

20.321 The normal duration for Bachelor's programmes shall be as follows: 8 to 10 semesters full-time or up to 16 to 20 semesters part-time respectively.

20.322 A student may register for a combined degree programme (major/major, major/minor or multidisciplinary) or single major programme as shall be specified in special departmental and faculty regulations.

20.4 Degree Classification

20.41 Subject to regulations 00.85 and 00.98, the overall result of the Degree shall be classified based on the cumulative GPA (computed to one decimal place) that includes all attempted credits as follows:

Classification	Cumulative GPA
First Class:	4.4 – 5.0
Second Class, Upper Division:	3.6 – 4.3
Second Class, Lower Division:	2.8 – 3.5
Pass:	2.0 – 2.7

4.4 EXAMINATION REGULATIONS

4.41 Information and Guidance for Candidates: All candidates will be assumed to have read the following rules and regulations.

4.42 Examination Rooms: The rooms in which examinations are to be held appear in the examination timetable. Candidates are responsible for knowing in advance the rooms in which they write examinations.

4.43 Examination Numbers: In line with University policy on anonymous marking, Student Identity Numbers will be used for examination purposes. Candidates must produce a valid Student ID card at each of their examinations and display it on the examination desk/table for checking by the invigilator.

4.44 Time of Arrival: Examinations commence at times stated in the examination timetable. Candidates

must confirm the times of each of their examinations.

Candidates will be admitted into the examination room approximately 20 minutes before the start of each examination session.

Candidates will be given 10 minutes reading time prior to the advertised time of exam commencement.

Candidates must not make notes or commence writing during this period.

4.45 Absence from an Examination

- i) If a candidate fails to take an examination for no good reason, special papers will not be set and the candidate will be deemed to have failed the particular examination. Losing, misreading or failure to consult the examination timetable are not acceptable reasons for absence or late arrival at an examination.
- ii) In the case of absence from an examination through ill health, the candidate (or someone acting on his/her behalf) must submit a relevant medical certificate, which must relate to the day or period of the examination. Evidence of illness will not normally be taken into account unless substantiated by a medical certificate. Such evidence must be received within 14 days after the day of examination in order for it to receive full consideration.
- iii) It is the responsibility of the candidate to arrange with his/her doctor for any medical evidence to be sent to the examinations office.
- iv) In the case of absence from an examination due to serious causes (other than ill health of the candidate), the candidate (or someone acting on his/her behalf) must submit to the examinations office: (a) evidence of the cause, where possible and (b) a written explanation of the absence.

4.46 Entry into the Examination Room: Candidates will be told when they can enter the examination room and silence must be observed on entry and whilst in the examination room.

4.461 Seating Arrangements in the Examination Room: Invigilators and exam assistants will guide candidates to their seats.

4.462 Special Arrangements: Candidates who have a disability or suffer from any illness or condition that will require special examination arrangements should inform the examination office well in advance. Where feasible, special examination arrangements will be made.

4.463 Procedures during the Examination: Candidates must immediately on taking their examination seats fill in the attendance slip provided. Answer books and other requisite stationery will be provided. Candidates should carefully read the instructions on the front cover of the answer books and then enter their candidate's ID number and other details required. No part of the book may be torn off and all books used must be left on the desks. Rough work must be done in the answer book and should be crossed out to show that it is not part of the answer.

4.464 Starting the Examination: You will be told by the supervisor when you can start the examination and you should not look at the examination question paper before you are told to do so.

4.465 Late Arrival: Candidates who are more than one hour late will not be admitted into the examination room. Candidates who arrive late will not be allowed extra time to complete the examination.

4.466 Examination Reading Time: On being told to start reading, candidates will check that the question paper is the correct one, all questions are legible and all pages are attached. Discrepancies must be reported to the invigilator for attention.

4.467 Temporary Withdrawal: A candidate leaving the examination room temporarily for personal reasons will be accompanied by an invigilator or other authorized person. (NB: Smoking is not considered a suitable reason for leaving the examination room). The candidate will not take the question paper, answer book(s) and other materials and must not consult or attempt to consult any materials or persons outside the room that may assist him/her in writing the examination.

4.468 Leaving the Examination Room: Candidates may not leave the examination room during the first hour of the examination session unless they feel unwell. Candidates must also not leave during the last ten minutes of the examination and must remain seated until all the examination scripts have been collected and checked by the invigilators.

If a candidate has completed his/her paper before the specified time and wishes to leave, he/she must do so as quietly as possible, so as not to disturb the other candidates. Such a candidate will not be allowed to re-enter the examination room. Permission to leave at any time must be requested from the supervisor.

4.469 Illness during Examination: Candidates who fall ill during the examination should inform the supervisor/invigilator who shall act or advice as appropriate.

4.470 Misconduct

The following will be construed as misconduct in an examination:

- a) Taking into the examination room, or possessing or using whilst in that room any unauthorized materials or items. Misconduct is presumed from the fact of possession unless an innocent explanation is obvious or is established by the candidate;
- b) Aiding or attempting to aid, obtaining or attempting to obtain aid from another candidate. Misconduct is presumed from the fact of communication unless an innocent explanation is obvious or is established by the candidate;
- c) Consulting or trying to consult during the examination any books, notes or other unauthorized materials or another candidate while temporarily outside the examination room;
- d) Impersonating another candidate or allowing oneself to be impersonated;
- e) Attempting to influence the examiners or other University officials;
- f) Failing to obey or comply with any of the examination regulations, or instructions of the supervisor/invigilator acting within the scope of his/her authority. Such repeated behaviour as may in the view of the supervisor prejudice the performance of other candidates. It should be noted that the supervisor is empowered to discontinue the examination of a candidate suspected of misconduct and to expel him/her from the examination room.

4.471 End of the Examination

Candidates will be told to stop writing at the end of the examination by the supervisor. Candidates in the room should then remain seated until they have filled all the details required on the answer book and the scripts have been collected.

It is the responsibility of the candidate to ensure that all the additional loose sheets, charts or papers and supplementary answer books are enclosed in the first answer book.

Candidates may not take any examination materials, used or unused, out of the examination room other than:

- i) The material they brought into the examination room;
- ii) The question paper (where permissible)

4.472 Penalties for Infringement of Examination Regulations

All candidates will be assumed to have read the above Regulations. The following steps will be taken to impose penalties on any candidate who infringes upon examination regulations.

- i) Any candidate who is considered by the invigilator to be committing an infringement of the rules will be reported and appropriate action taken. The supervisor has the power to dismiss a candidate from the room and compel him/her to surrender the script if deemed to be guilty of serious misconduct
- ii) In all cases of misconduct, the candidate will be warned that his/her conduct will be reported and that the decision as to whether the work will be accepted or disciplinary action taken rests with the authorities.
- iii) When it is determined that the student has committed misconduct calculated to affect improper examination performance:
 - a) He/she may be refused credit for any courses or examinations completed or attempted;
 - b) The results may be withheld;
 - c) He/she may be suspended from writing the examinations;
 - d) He/she may be dismissed from the University for Repeated Misconduct;
- iv) A candidate who wishes to appeal shall follow the procedure set out in the Disciplinary Regulations.

ACADEMIC APPEALS PROCEDURES

A. Continuous Assessment Appeals

A student may request a review of continuous assessment mark(s) and decisions during the course of the year.

Steps in the Process of an Assessment Appeal

Course Instructor

First discuss concern with the course instructor promptly upon receipt of the assessment mark or decision in an

attempt to resolve any differences. The student has the right to take the matter directly to the Head of Department if need be.

Department/Programme

If the complaint has not been satisfactorily resolved at Step 1, the student may approach the Head of Department (or Dean if the Head of Department is the instructor, or DVC/AA if the Faculty/School Dean is the instructor) for review, mediation or resolution.

The student should attach to the written complaint all relevant evidence as is available to substantiate the complaint.

The Head of Department shall investigate and may endeavour to resolve the matter or may seek further advice/recommendation from the Departmental Board or other persons as he/she thinks fit. The Head of Department may direct that corrective action be taken when justified.

Faculty/School/Institute

If the complaint is not resolved at Step 2, either the Head of Department or the student will refer the written complaint to the Dean of the Faculty/School for investigation, review and resolution. The Dean will review the appeal, discuss with the student, the Head of Department, and any other persons concerned, and may refer it to the Faculty/School Executive for further advice/recommendation. The Dean may direct that corrective action be taken when justified. He/she will report his/her decision to the student and the instructor.

Academic Appeals Committee

Should the complaint not be satisfactorily resolved at Step 3, either the student or Dean may refer the written appeal to the Senate Academic Appeals Committee for review and resolution. The Committee will review the appeal and the appeal decisions made at earlier steps of the appeals process. The Committee shall determine its own procedure.

The student(s) and the instructor concerned may attend the hearings to head and answer allegations and to present their arguments. The Committee shall not itself re-mark/re-grade the continuous assessment script but shall direct that this be independently done where appropriate. The Committee's decision shall be binding on all parties, may not be appealed, and takes effect when issued.

The Committee may refuse to proceed with an appeal or complaint if it concludes that the appeal or complaint is vexatious or malicious.

Appeals which challenge the professional academic judgment of individual examiner or Boards of Examiners on the examination performance of students will not be permitted.

Victimization or harassment of students who lodge complaints is prohibited. No fee shall be paid.

B. Examination Appeals: Students may request a review of their examination marks, results and academic decisions. However, examination appeals against externally moderated examination marks will not be considered unless evidence exists that errors/omissions/irregularities had occurred or new evidence exists which necessitates a review of the mark, result or decision.

Appeals are heard on the following grounds:

1. New evidence: i.e. evidence of circumstances affecting the student's examination performance that, through no fault of the student, could not reasonably have been presented at an earlier date.
2. Procedural or other irregularities in the conduct of the examination.
3. Procedural irregularities in the marking of the examination, e.g. evidence that the scripts have been insufficiently or incorrectly marked.
4. Evidence of prejudice or bias on the part of one or more examiners.
5. Inappropriate advice from members of administrative or academic staff on matters affecting the student's examination candidature or performance.
6. Failure of the University (Botswana University of Agriculture and Natural Resources) to implement its agreed procedures and regulations

Grounds for appeal must be specific. Reasons such as 'I deserved a better grade', or 'I thought I did better' are unclear and unhelpful. Appeals which challenge the professional academic judgment of examiners on the student's examination performance will not be considered.

Appeals or representations are allowed as a way of ensuring that as far as possible all relevant circumstances surrounding examination performance are brought to light and taken into account in formulating results and decisions. Appeals should be lodged with the Head of Department. Examination appeals must state clearly the grounds for appeal and should include all relevant information.

The burden of proof is on the student, and the

written appeal should state and support with available evidence the grounds for appeal.

The Examinations Appeals Committee will consider the details of the appeal and decide whether the appeal is valid, and if so, what relief should be provided. The Committee does not usually hold hearings.

The examination script may be re-marked only if the Committee so directs; there is no automatic re-marking/re-grading of scripts. However, for all appeals and queries received from students, the marks and/or results will be checked for errors, omissions and conformity with regulations, and a correction made where necessary.

The Committee's decision is final and takes effect when issued.

Examination scripts and the marks awarded for individual examination questions/answers are not shown to students.

forward the student's appeal to the Secretary of the Senate Academic Appeals Committee. The Committee shall process the appeal within two weeks of receipt of the written appeal and its decision is final.

6. The HoD or Dean or Appeals Committee may refuse or accept the appeal. If the appeal is accepted, the appellant's examination script shall be re-marked. The original marker or a second marker shall be asked to review the examination script along with a representative sample of all the examination scripts in the course. The appellant's script shall be identifiable. If the review leads to a lower grade/mark the original grade/mark shall not be lowered.

C. Complaints Relating to Individual Course Instructors

A student who has a grievance relating to a course instructor (e.g. unsatisfactory teaching, unsatisfactory relationship with the course instructor) may follow these steps:

1. Raise concern with the course instructor as soon as the problem or difficulty arises. Most grievances can be resolved amicably and quickly in this manner. The student may take the matter directly to the Head of Department if need be.
2. Concerns related to an instructor that cannot be resolved at Step 1 should be discussed with the Head of Department or Faculty Dean, if the Department Head is the instructor, or DVC AA & R, if the Dean is instructor.
3. If the complaint is not resolved at Step 2 above, the student may follow the Steps as in 1.3 through 1.5 under Section 1 above.

The complaint review process is accomplished in a collegial non-judicial atmosphere rather than an adversarial one and allows the parties involved to participate as appropriate. Complaints must be raised and resolved promptly and as soon as they arise during the course of the year. The student and instructor may enlist the aid of a neutral third party (e.g. counsellor, academic advisor) to assist.

For further details of the appeals procedure please contact the Director, Department of Academic and Student Services, Office NO. 002, Block 302, Tel: (267)-365 0122 Fax: (267)-392 8753.

Procedure for Handling Queries and Appeals on Final Course Grades and Marks

1. Students shall submit queries and appeals within one month from official date of the publication of Cumulative GPAs and academic results. Queries and appeals received after the deadline date will not be processed except where the delay was caused by factors reasonably beyond the student's control.
2. If a student feels that a final course grade/mark is inaccurate, the student may lodge a query with the Head of the Academic Department/Unit concerned. The Examiner(s) will check the continuous assessment and examination marks for errors and omissions, and if an error is detected, submit to the Head of Department a change of course grade or mark in the approved Course Grade/Mark Change Form.
3. If the student feels that a final course grade/mark was unfairly assigned, the student may submit a written appeal of the grade/mark to the Head of the Department (HoD) concerned.

The HoD shall process the appeal within one week of receipt of the written appeal.

4. If the complaint is not resolved, the HoD shall forward the student's appeal to the Dean. The Dean shall process the appeal within one week of receipt of the written appeal.
5. If the complaint is not resolved, the Dean shall

FACULTIES SPECIAL REGULATIONS FOR BACHELORS DEGREE PROGRAMMES

Preamble:

Subject to the provisions of General Academic Regulations 00.0 and 20.00 the following special regulations shall apply: -

AG28.0 Faculties Special Regulations

AG28.01 Bachelors Degree Programmes

AG28.02 Programmes of study may be offered for the following Bachelor's degrees:
Bachelor of Science in Agriculture - BSc Agric
Bachelor of Science in Agricultural Education - BSc Agric. Educ
Bachelor of Science in Agricultural Extension- BSc Agric Ext.
Bachelor of Science in Animal Science) - BSc Anim. Sci
Bachelor of Science in Crop Science – BSc Crop Sci.
Bachelor of Science in Agricultural Mechanization - BSc Agric. Mech.
Bachelor of Science in Soil and Water Conservation Engineerin - BSc Soil and Water Con.
Bachelor of Science in Agricultural Economics- BSc Agric Econ.
Bachelor of Science in Food Science and Technology- BSc Food Sci andTech
Bachelor of Science in Range Science- BSc Range Sci

AG28.10 Entry Requirements

AG28.11 Admission to Level 100 of the BSc degree programme shall be on the basis of performance in the Botswana General Certificate of Secondary Education (BGCSE) examination, or its equivalent, in Science subjects as per General Academic Regulation 00.5.

AG28.12 There shall be cut-off points, which shall be determined by the Admissions Committee of the University.

AG28.13 Applicants with Higher Diploma in Agriculture and Agricultural Education from the Botswana University of Agriculture and Natural Resources may enter Level 300 of the Bachelor of Science in Agriculture and Agricultural Education, respectively.

AG28.14 Applicants who have a relevant diploma in Agriculture or allied fields from an approved institution or equivalent qualifications may be awarded credits from their diploma course

AG28.20 Types of Programmes

The Faculty of Agriculture offers the following programmes leading to the award of the mentioned degrees:

Single major programme leading to the award of BSc in Animal Science with two streams;
Single major programme leading to the award of BSc in Crop Science with two streams;

Single major programmes leading to the award of BSc in Agriculture and BSc in Agricultural Education which are articulated with the Higher Diploma in Agriculture and Agricultural Education, respectively.

Single major programmes leading to the award of BSc in Agricultural Mechanization

Single major programmes leading to the award of BSc in Soil and Water Conservation Engineering

Single major programmes leading to the award of BSc in Food Science and Technology

Single major programmes leading to the award of BSc in Agricultural Economics
Single major programmes leading to the award of BSc in Agricultural Extension

AG28.30 Assessment

AG28.31 Assessment shall be as prescribed in General Academic Regulation 00.8.

AG28.32 Where a course is assessed by both Continuous Assessment (CA) and a Final Examination, the weighting shall be in the ratio 1:1. The CA component shall comprise at least one assessment for every credit hour.

AG28.33 It shall be the duty of the department offering the course to specify to students at the beginning of the course the number of practical and theory tests required for Continuous Assessment

AG28.40 Progression from One Semester to the next

AG28.41 At the end of each semester during a programme of study, a student's progress will depend on his/her Cumulative GPA, in accordance with Academic General Regulation 00.9.

AG28.42 Students are to submit work for continuous assessment by the due date. Failure, without good cause to submit an assignment for continuous assessment within one week after the due date shall carry a penalty of five percentage marks for each day.

After one week of the due date it shall incur a zero mark. This regulation will also apply to

students who fail to submit their Field Practical Training reports by the due date.

Field Practical Training Guidelines and Manual.

AG28.50 Industrial Attachment (Field Practical Training) FPB 300 and FPB 400 in an Agricultural Industry/Organization

AG28.51 Students registered in the Bachelors degree programmes shall be required to undertake a total of 12 Weeks of supervised field practical training in an agricultural industry/ organization between Levels 200 and 300 and between levels 300 and 400.

Each field practical training session shall last for 6 weeks. FPB 300 shall be undertaken in agricultural production areas such as farms and estates, while FPB 400 shall be under taken in extension field offices or similar set-ups.

AG28.52 Students registered in the BSc. (Agricultural Education.) degree programme shall be required to undertake 6 weeks of supervised field practical training in an agricultural industry/organization between Levels 300 and 400 (FPB 300).

AG28.53 The University shall, in consultation industries/ organizations receiving the students, arrange for suitably qualified staff within these institutions to be Training Officers for the students during the training period. The University in collaboration with Training Officers in Industries/Organizations will prepare a training programme for the students for the period they are attached to these institutions.

AG28.54 Each student shall be required to undertake the industrial attachment at a place approved by the University and shall be required to follow instructions of their Training Officers in Industry/ Organization. Students shall be required to submit their field practical training reports not later than the second Friday of the subsequent semester. In case a student submits his/her industrial attachment Report late, Faculty of Special Regulation AG28.42 shall apply.

AG28.55 The assessment of Industrial Attachment will be based on practical training reports (40%), log books (20%) and an assessment by the Training Officer in Industry/Organization (40%) for FPB 300 and FPB 400 using standardized faculty FPB assessment form.

AG28.56 Other details concerning the conduct of Field Practical Training shall be as outlined in the

AG28.60 Teaching Practice

AG28.61 Students registered in the BSc. (Agricultural Education) programme shall be required to undertake a winter course of not less than 6 weeks of teaching practice (AEB 300) in a Secondary School between levels 200 and 300.

AG 28.70 Project

AG28.71 The assessment of the Project (APB 410) shall comprise the supervisor's mark (50%) and marks for a seminar presentation assessed by two internal examiners (50%).

AG28.72 The assessment of the Project (APB 420) shall comprise the supervisor's mark (50%) and marks for final report marked by two internal examiners 50%).

AG28.73 Each student shall be required to submit six copies of the final project report at the end of semester 8 by the last day of lectures.

AG 28.74 Any student who for good reasons fails to complete and hand in his/her final Project Report may be awarded an Incomplete (I) grade and with the consent of the department concerned and the faculty be allowed further time up to the end of the following two semesters to complete the final project report.

AG28.75 A student who fails, without good cause to hand in his/her final Project report by the last day of lectures shall be subject to the provisions of the Faculty Special Regulation AG28.42.

AG28.80 Award

AG28.81 To be awarded a degree, a student must satisfy the appropriate provisions of General Academic Regulation 00.851 and 00.852.

AG28.82 The degrees shall be classified in accordance with the provisions of General Academic Regulation 20.4 with the cumulative GPA computed in accordance with General

AG11.00 FACULTIES SPECIAL REGULATIONS FOR HIGHER DIPLOMA PROGRAMMES

PREAMBLE:

Subject to the provisions of General Academic Regulations 00.0 and 10.01 the following Faculty of Agriculture Special Regulations shall apply:

AG11.10 Higher Diploma Programmes:

AG11.11 Programmes of study may be offered in the following higher diplomas:

- i. Agriculture
- ii. Animal Health and Production
- iii. Forestry and Range Ecology

AG 11.20 Entry Requirements

AG11.21 Entry requirements for the higher diploma programmes are as specified for the BSc programmes in Faculties Special Regulation AG28.1 and General Academic Regulation 00.5.

AG11.22 Applicants who have a relevant Certificate in Agriculture or allied fields from an approved institution or equivalent qualifications may be awarded credits from the Certificate courses.

AG11.30 Types of Programmes

AG11.31 The Faculty of Agriculture offers a single major higher diploma programme in Agriculture. The Faculty of Animal and Veterinary Sciences offers a single major higher diploma programme in Animal Health and Production. The Faculty of Natural Resources offers a single major higher diploma programme in Forestry and Range Ecology.

AG11.40 Assessment

AG11.41 Subject to provisions of General Academic Regulation 00.81 the following Special Regulation shall apply:

AG11.42 Where a course is assessed by both Continuous Assessment (CA) and a Final Examination, the weighting shall be in the ratio 1:1. The CA component shall comprise of at least one assessment for every credit hour.

AG11.43 It shall be the duty of the department offering the course to specify to students at the beginning of the course the number and type of assessments required for Continuous Assessment as described In AG11.42.

AG 11.50 Progression from One Semester to the Next

AG 11.51 At the end of each semester during a programme of study, a student's progress will depend on his/her Cumulative GPA, in accordance with Academic General Regulation 00.9.

AG 11.52 Students are to submit work for continuous assessment by the due date. Failure, without good cause to submit an assignment for continuous assessment within one week after the due date shall carry a penalty of five percentage mark for each day. After one week of the due date it shall incur a zero mark. This regulation will also apply to students who fail to submit their Field Practical Training reports by the due date.

AG11.60 Industrial Attachment (Field Practical Training) FPB 300

AG 11.61 Students registered in the Higher Diploma in Agriculture, Animal Health and Production, Forestry and Range Ecology shall be required to undertake a winter course of not less than 6 weeks of supervised industrial attachment in an agricultural industry/organization between Levels 200 and 300.

AG11.62 The University shall, in consultation with industries/organizations receiving the students, arrange for suitably qualified staff within these institutions to be Training Officers for the students during the training period. The Faculties in collaboration with Training Officers in industries/organizations will prepare a training programme for the students for the period they are attached to these institutions.

AG11.63 Each student shall be required to undertake the industrial Attachment at a place approved by the Faculties and shall be required to follow instructions of their Training Industry/Organization.

Students shall be required to submit their industrial Attachment reports not later than the second Friday of the subsequent semester. In case a student submits his/her Field Practical Training Report late, Faculty Special Regulation AG 11.52 above shall apply.

AG11.64 The assessment of industrial Attachment will be based on practical training reports (40%), logbooks (20%) and an assessment by the Training Officer in industry/Organization (40%)

for FPB 300 using standardized University FPB assessment form.

AG11.65 Other details concerning the conduct of industrial Attachment shall be as outlined in the Field Practical Training Guidelines and Manual.

GENERAL EDUCATION COURSES

The aim of General Education is to provide the Botswana University of Agriculture and Natural Resources graduates with broad-based knowledge and skills that prepare them for life, the world of work and citizenship in the context of the University's Vision, Mission and Values.

The graduates are expected to have certain general attributes, alongside the knowledge and skills of their specialist discipline. In accordance with the Learning and Teaching Policy, these graduate attributes are as follows:

- i. Information and communication technology knowledge and skills
- ii. Self-directed, life-long learning skills o Critical and creative thinking skills o Problem-solving skills
- iii. Communication skills
- iv. Entrepreneurship and employability skills
- v. Organization and teamwork skills
- vi. Research skills and information literacy or Social responsibility and leadership skills o Interpersonal skills
- vii. Cross-cultural fluency
- viii. Accountability and ethical standards

Graduate attributes are infused in core, optional, elective and General Education courses; and through pedagogy, engagement and policy implementation. Communication skills are offered in Area 1; and Information and Communication Technology knowledge and skills are offered in Area 2.

Area 1 Communication and Academic Literacy Skills

Courses in Communication and Academic Literacy are open to Diploma and Degree students: The level 100 courses with the prefix COM are compulsory.

Com 141 Communication and Academic Literacy Skills (Science); 3 Credits

Com 142 Academic and Professional Communication (Science) 3 Credits

Area 2 Information and Communication Technology Knowledge and Skills

Courses in the Information and Communication Technology Knowledge and Skills are open to Diploma

and Degree students. The level 100 courses with the prefix ICT are compulsory.

ICT121 Computer Skills Fundamentals II, 2 CREDITS

ICT122 Computer Skills Fundamentals II, 2 Credits

General Education courses available to all students (Students should consult relevant departments on availability of the GECs). The following are General Education Courses available to all students:

- GEC 222 Problem-Solving with Spread sheet (2 credits)
- GEC 330 Introduction to Research and Methods (3 credits)
- BSB354 Bioethics (3 credits)
- BSB 353 History of Biology (3 credits)
- GEC247 HIV/AIDS Education, Prevention and Control (2 Credits)
- GEC 248 Human Nutrition (3 credits)
- ASP 231 Food Hygiene and safety (2 credits)
- ASB 210 Introduction to Animal Science (3 credits) ASB 213 Introduction to Range Management (2 credits)
- BSB 255 Economic Botany (2 credits)
- CSB 341 Crops and Humankind (2 credits)
- ASP 332 Animal Welfare and You (2 credits)
- ASB 413 Game Farming and Ranching (2 credits)
- ASB 431 Pet Management (2 credits)
- GEC 371 Small Business Entrepreneurship (2 credits)
- GEC 275 Basic Concepts in Marketing (2 credits)

PRIZES

The procedures for award of prizes are as follows:

- A. Prizes in this category are sponsored by the Botswana University of Agriculture and Natural Resources
 1. The Deans prizes: This prize may be awarded annually to the outstanding graduating BSc student in each Faculty with a Cumulative Grade Point Average of at least 4.0.
 2. Best student in each Bachelors Degree programme: This prize may be awarded annually to the outstanding graduating student in each Bachelors Degree programme.
 3. Best student in each Higher Diploma programme: This prize may be awarded annually to the outstanding graduating student in each Higher Diploma programme.
- B. Sponsored Prizes

Prof Daniel Motlhanka Prize

This prize was established in the 2009/2010 academic year through as a donation from Prof D Motlhanka with the view to encourage high performance and competition among citizen students. The prize may be

awarded to a graduating Bachelor of Science citizen student who has the following qualities: good conduct, no exempted courses, no retakes in any of the courses and with at least a Final Cumulative Grade Point Average of 4.7. The prize shall be in form of money amounting to P 1 000.00.





FACULTY OF AGRIBUSINESS, EDUCATION AND EXTENSION

Acting Dean:

**Associate Professor K Hulela,
(Dip Agric Educ, BSc Agric Educ, MSc Agric Educ, PhD Agric Educ)**

**Department Agricultural Education and Development and
Department Agricultural Extension and Rural Development**

Head of Department

**Dr Kgomotso Mabusa,
(Dip Agric Educ, BSc Agric Educ, MSc Agric Educ, PhD Educ)**

Department of Agricultural and Applied Economics

Acting Head of Department

**Dr D. S. Marumo,
(BSc Agric, PGDE, MSc Econ, PhD Agric Econ)**

Faculty Administrator

Mrs K Lobeko – Moesi, (BA Public Admin & Soc, MSc HR)

BACHELOR OF SCIENCE DEGREE IN AGRICULTURAL ECONOMICS

Preamble

General Provisions

Subject to the Provisions of General Academic Regulations and Faculty Special Regulations, the following Departmental Regulations shall apply:

Programme and Title of Degree

The Department of Agricultural Economics, Education and Extension shall offer a single major programme leading to the award of a BSc in Agricultural Agriculture and Applied Economics.

Objectives of the Programme

The aim of this programme is to train students who will be able to assist farmers attain better financial returns in their enterprises and establish their own agribusinesses. At the end of this programme the graduates should be able to:

- 1) Analyze agricultural policy problems in relation to production and marketing.
- 2) Advise farmers on farm business management.
- 3) Conduct market research in the agricultural industry.
- 4) Manage agribusinesses and retail outlets.
- 5) Assist farmers in the preparation of sound business plans.
- 6) Identify potential value addition to farm products through processing.
- 7) Advise farmers and farmers' groups on how to market their products efficiently.
- 8) Apply both quantitative and qualitative economic methods and concepts, in applied analysis as professionals in government, business and non-profit making agencies.
- 9) Advise government on appropriate policies to implement in order to develop the rural sector in general and the agricultural sector in particular

Entry Requirements

Admission into the Degree programme in Agricultural Economics shall be as specified in the Faculties Special

Regulation AG 28.10.

Career Opportunities for Agricultural Economics Graduates

The introduction of the BSc Agricultural Economics programme was based on the findings of the needs assessment survey which revealed that employment opportunities exist for BSc Agricultural Economics graduates in the following positions and areas:

- 1) Farm managers for commercial farms
- 2) Managers in supermarkets/chain stores
- 3) Policy analysts in the agricultural sector
- 4) Non-governmental organizations concerned with rural development
- 5) Non-profit organizations concerned with the reduction of poverty
- 6) Agribusinesses involved in processing and marketing
- 7) Agricultural input industries
- 8) Self-employment in various agricultural enterprises, starting from the primary, secondary to the tertiary sectors
- 9) Government establishments
- 10) Development banks (National Development Bank (NDB) and Citizen Entrepreneurial Agency (CEDA).
- 11) Parastatals involved in marketing of agricultural products are Botswana Meat Commission (BMC) and Botswana Agricultural Marketing Board (BAMB).
- 12) Agricultural cooperatives and farmers' associations
- 13) Consultancy firms

Programme Structure

- i) Courses for the Degree in Agriculture and Applied Economics programme shall be offered at levels 100 to 400, as outlined below:
- ii) In addition to the economics courses, all Agriculture and Applied Economics degree students shall take the General Education Courses (GEC) and Electives in accordance with General Academic Regulation 00.2124.
- iii) Students enrolled in the BSc in Agriculture and Applied Economics programme shall be required

to complete two 6-week Industrial Attachment (FPB 300 and FPB 400) courses as winter courses between the levels 200 and 300 and between the levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG28.50.

Students enrolled in the BSc in Agriculture and Applied Economics Programme shall be required to complete a research project (APB 410 and APB 420) in accordance with Faculties Special Regulation AG 28.70.

- iv) The Department of Agricultural Economics, Education and Extension also offers courses in Agricultural Economics and Agricultural Extension to non-Agricultural Education programmes as outlined below.

Level 100

Semester 1

In semester 1, the Degree in Agriculture and Applied Economics programme shall consist of the following courses:

Core Courses

BSB110: Mathematics I (3 credits)
BSB111: General and Inorganic Chemistry (3 credits)
BSB112: Physics I (3 credits)
BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)
ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree in Agriculture and Applied Economics programme shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)
BSB121: Physical and Organic Chemistry (3 credits)
BSB122: Physics II (3 credits)
BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)
ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree in Agriculture and Applied Economics

programme shall consist of the following courses:

Core courses

AEB212: Introduction to Agricultural Economics (2 credits)
AEB214: Introduction to Mathematics for Economists (3 credits)
ASB215: Livestock Production (3 credits)
AEB216: Introduction to Statistics for Economists (3 credits)

Electives/GECs (4 credits)

Total credits 15 credits

Level 200

Semester 4

In semester 4, the Degree in Agriculture and Applied Economics programme shall consist of the following courses:

Core courses

AEB226: Intermediate Microeconomics (3 credits)
AEB227: Intermediate Macroeconomics (3 credits)
AEB228: Agricultural and Food Marketing (3 credits)

Optional Courses (take at least one course)

AEB229: Financial Management in Agriculture (3 credits)
OR
AEB230: Development of Entrepreneurial Skills in Agribusiness (3 credits)

Electives/GECs (3 credits)

Total credits 15 credits

Winter Session

FPB 300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Degree in Agricultural Agriculture and Applied programme shall consist of the following courses:

Core courses

AEB313: Economics of Agricultural Development (3 credits)

AEB317: Rural Sociology (2 credits)

CSB211: Principles of Crop Production (3 credits)

Optional Courses (take at least one course)

AEB310: Environmental Economics OR **AEB311:** Resource Economics (3 credits)

Electives/GECs (6 credits)

Total credits 17

Level 300

Semester 6

In semester 6, the Degree in Agricultural Agriculture and Applied programme shall consist of the following courses:

Core Courses

AEB322: Farm Business Management (2 credits)

AEB325: Research Methods in Agricultural Economics (3 credits)

ELB411: Agricultural Processing (3 credits)

Optional Courses (take at least one course)

AEB321: Human Resource Management OR

AEB324: Labour Economics (3 credits)

Electives/GECs (5 credits)

Total credits 16

Winter Session

FPB 400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree in Agriculture and Applied Economics programme shall consist of the following courses:

Core courses

AEB414: Agricultural and Food Policy (3 credits)

AEB415: Agricultural Finance (3 credits)

AEB416: International Trade in Agricultural Products (3 credits)

AEB418: Introduction to Econometrics (3 credits)

APB410: Project (2 credits)

Electives/GECs (2 credits)

Total credits 16

Level 400

Semester 8

In semester 8, the Degree in Agriculture and Applied Economics programme shall consist of the following courses:

Core courses

AEB422: Project Appraisal and Evaluation (2 credits)

AEB424: Production Economics (2 credits)

AEB426: Intermediate Econometrics (3 credits)

APB420: Project (2 credits)

Electives/GECs (6 credits)

Total credits 15 credits

Assessment

The overall performance in each course shall be assessed in accordance with the Academic General Regulation 00.842.

Assessment of courses in Agriculture and Applied Economics programme shall be in accordance with the Faculties Special Regulation AG 28.30.

Assessment of the Project courses (APB410, APB420) for the Degree in Agriculture and Applied Economics programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Assessment of the Industrial Attachment courses (FPB300) and FPB400 for the Degree in Agriculture and Applied Economics programme shall be in accordance with the Faculties Special Regulation AG28.55.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (Cumulative GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree in Agriculture and Applied Economics, a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852.

The degree in Agriculture and Applied Economics shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (Cumulative GPA) computed in accordance with the Academic General Regulation 00.86

BACHELOR OF SCIENCE DEGREE IN AGRICULTURAL EDUCATION

Preamble

General Provisions

Subject to the Provisions of General Academic Regulations and Faculty Special Regulations, the following Departmental Regulations shall apply:

Programme and Title of Degree

The Department of Agricultural Education shall offer a single major programme leading to the award of a BSc in Agricultural Education.

Objectives of the Programme

To produce competent agricultural education teachers for senior secondary schools.

To co-operate with other Departments in the University and outside the faculty in training and producing high quality Agriculture teachers.

To combine theory and practice in all agricultural and education courses.

Entry Requirements

Admission into the Degree programme in Agricultural Education shall be as specified in the Faculty Special Regulation AG 28.10.

Career Opportunities for Agricultural Education Graduates

The introduction of the BSc in Agricultural Education programme was based on the need for trained teachers in Agricultural Science in Secondary Schools. Agricultural Education graduates may also serve as Education Officers and subject matter specialists in the Ministry of Education.

They may also be employed in colleges of education, private and parastatal sectors, and non-governmental organizations (NGO's)

Programme Structure

- i. The Degree courses in Agricultural Education shall be offered at levels 100 to 400 as outlined below.
- ii. In addition to agricultural courses, students enrolled in the Agricultural Education programme shall take General Education Courses (GEC's) and Electives as provided for in the programme structure.
- iii. Students enrolled in the Degree in Agricultural Education programme shall be required to complete a 6-week supervised Teaching Practice course as a winter course, between levels 200 and 300 in accordance with Faculty of Agriculture Special Regulation AG 28.6. To qualify for Teaching Practice the student must have taken and passed all core and optional courses in levels 100 and 200.
- iv. Students enrolled in the degree in Agricultural Education programme shall be required to complete a 6-week Industrial Attachment as a winter course, between levels 300 and 400 in accordance with Faculties Special Regulation AG 28.50

To qualify for Industrial Attachment the student must have taken and passed all core and optional courses in levels 100 to 300.
- v. Students enrolled in the degree in Agricultural Education programme shall be required to complete a project (APB 410 and APB 420) in accordance with the Faculties Special Regulation AG 28.70.
- vi. The Department of Agricultural Economics, Education and Extension also offers courses in Agricultural Economics and Agricultural Extension to Non-Agricultural Education programmes as outlined below.

Level 100

Semester 1

In semester 1, the Degree in Agricultural Education programme shall consist of the following courses:

Core Courses

- BSB110:** Mathematics I (3 credits)
- BSB111:** General and Inorganic Chemistry (3 credits)
- BSB112:** Physics I (3 credits)
- BSB113:** Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)

ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree programme in Agricultural Education shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)

BSB121: Physical and Organic Chemistry (3 credits)

BSB122: Physics II (3 credits) BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)

ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree programme in Agricultural Education shall consist of the following courses:

Core courses

AEB211: Educational Psychology (2 credits)

AEB212: Introduction to Agricultural Economics (2 credits)

ASB211: Animal Anatomy and Physiology of Farm Animals (3 credits)

ASB215: Livestock Production (3 credits)

ASB216: Animal Nutrition and Range Management (3 credits)

Optional Courses (take at least one course)

CSB211: Principles of Crop Production (3 credits) OR

CSB322: Field Crop Production (2 credits)

Total credits 15/16 credits

Level 200

Semester 4

In semester 4, the Degree programme in Agricultural Education shall consist of the following courses:

Core Courses

AEB 221: Teaching Methods in Agric. (3 credits)

AEB223: Educational Measurement and Evaluation (2 credits)

ASB226: Animal Health (3 credits)

CSB221: Soil Science (3 credits)

CSB324: Principles of Crop Protection (3 credits)

Optional Courses (take at least one)

ELB210: Land Surveying and Evaluation (3 credits) OR

ELB211: Soil and Water Conservation (3 credits)

Total credits 17 credits

Winter Session

AEB300: Teaching Practice (3 credits)

Level 300

Semester 5

In semester 5, the Degree programme in Agricultural Education shall consist of the following courses:

Core Courses

AEB312: Price Analysis (2 credits)

AEB315: Curriculum Design and Development (2 credits)

BSB212: Introduction to Genetics (2 credits)

BSB221: Biometry I (2 credits)

CSB311: Crop Physiology (3 credits)

Optional Courses (take at least one course)

ASB 429: Aquaculture (2 credits) OR

CSB413: Beekeeping (2 credits)

Electives/GECs (2 credits)

Total credits 15 credits

Level 300

Semester 6

In semester 6, the Degree programme in Agricultural Education shall consist of the following courses:

Core Courses

AEB322: Farm Business Management (2 credits)

ELB321: Tractor and Farm Implement Technology (3credits)
ELB322: Design of Irrigation Systems (3 credits)
CSB321: Fruit and Vegetable Production (2 credits)

Electives/GECs (5 credits)

Total credits 15 credits

Winter Session

FPB 300: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree programme in Agricultural Education shall consist of the following courses:

Core Courses

AEB 421: Research Methods in Education (3 credits)
BSB321: Biometry II (2 credits)
APB410: Project (2 credits)

Optional Courses (take at least one course)

AEB411: Sociology of Education (2 credits) OR
AEB419: Philosophy of Education (2 credits)

Electives/GECs (6 credits)

Total credits 15 credits

LEVEL 400

Semester 8

In semester 8, the Degree programme in Agricultural Education shall consist of the following courses:

Core Courses

AEB425: Management of Agricultural Enterprises in Schools (2 credits)
CSB421: Ornamental Horticulture (2 credits)
APB420: Project (2 credits)

Optional Courses (take at least one course)

AEB422: Project Appraisal and Evaluation (2 credits)
AEB424: Production Economics (2 credits)
GECs/

Electives (7 credits)

Total credits 15 credits

Courses for Non-Agricultural Education Programmes

The following Agricultural Economics and Agricultural Extension courses may be offered to Non-Agricultural Education degree Programmes:

AEB212: Introduction to Agricultural Economics (2 credits),
AEB 312: Price Analysis (2 credits)
AEB322: Farm Business Management (2 credits)
AEB 412: Agricultural Policy (2 credits)
AEB422: Project Appraisal and Evaluation

Assessment

Assessment of the Project courses (APB410, APB420) for the Degree in Agricultural Education programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Assessment of the Industrial Attachment (FPB300) for the Degree in Agricultural Education programme shall be in accordance with the Faculties Special Regulation AG 28.55.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (Cumulative GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree in Agricultural Education, a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852. The degree in Agricultural Education shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (Cumulative GPA) computed in accordance with the Academic General Regulation 00.86.

DIPLOMA IN AGRICULTURAL EXTENSION

Level 100

Semester 1

In semester 1, the Diploma in Agricultural Extension programme shall consist of the following courses:

Core Courses

DEE 111: Principles of Extension and Comparative Extension Education (3 credits)

DEE 112: Introduction to Rural Sociology (3 credits)
GEC 121: Computing and Information Skills Fundamentals 1 (2 credits)

Optional Courses

Group 1 (take at least one course)

DEE 113 Management of Small-Scale Farm Enterprises (3 credits)

OR

AED 312: Agricultural Marketing (3 credits)

Group 2 (take at least one course)

ASB 422: Dairy Production (3 credits)

OR

ASB 424: Livestock Production Processing (3 credits)

Total credits 14 credits

Level 100

Semester 2

In semester 2, the Diploma in Agricultural Extension programme shall consist of the following courses:

Core Courses

DEE 114: Development Communication in Agricultural Extension (3 credits)

DEE 115: Introduction to Adult Education (3 credits)

DEE 116: Agricultural Extension Administration (3 credits)

DEE 117: Project Management (3 credits)

Optional Courses (take at least one course)

CSD 111: Wild Land Fire Management (3 Credits)

OR

CSD 112: Crop Production (3 Credits)

Total credits 15 credits

LEVEL 200

Semester 3

In semester 3, the Diploma in Agricultural Extension programme shall consist of the following courses:

Core Courses

DEE 200: Techniques of Data Collection and Analysis (3 credits)

DEE 201: Rural Youth Extension Programme in Agriculture (3 credits)

DEE 202: Extension Programme Planning and Evaluation

3 credits)

Optional Courses

Group 1 (take at least one course)

ALD 211: Farm Structures (3 credits)

OR

ALD 212: Tractor and Machinery maintenance (3 credits)

Group 2 (Take at least one course)

ASB 417: Pig and Rabbit Production (3 credits)

OR

ASB 428: Poultry Production (3 credits)

Total credits 15 credits

LEVEL 200

Semester 4

In semester 4, the Diploma in Agricultural Extension programme shall consist of the following courses:

Core Courses

DEE 203: Community Organization and Local Leadership (3 credits)

DEE 204: Audio Visual Aids in Extension (3 credits)

DEE 305: Agricultural Extension Practical Project (6 credits)

Optional Courses (take at least one course)

ALD 213: Soil and Water Conservation (3 Credits)

OR

CSD 213: Forest and Range Ecology (3 Credits)

Total credits 15 credits

TOTAL CREDITS FOR THE DIPLOMA IN AGRICULTURAL EXTENSION (59 CREDITS)

BACHELOR OF SCIENCE DEGREE IN AGRICULTURAL EXTENSION

Preamble

General Provisions

Subject to the Provisions of General Academic Regulations and Faculty Special Regulations, the following Departmental Regulations shall apply:

Programme and Title of Degree

The Department of Agricultural Extension and Development shall offer a single major programme leading to the award of a BSc in Agricultural Extension.

Objectives of the Programme

The aim of this programme is to prepare graduates who are able to supply continuously updated science-based information that farmers and people in agriculture-related industries require to increase food production, and to increase quality of life in our rural set-up. At the end of this programme the graduates should be able to:

- 1) Serve as a link between farmers and government.
- 2) Serve as trainers in various rural training and agricultural vocational centers in the country.
- 3) Plan, implement, evaluate and monitor various agricultural development projects in the country.
- 4) Provide leadership in the process of participatory technology development and dissemination.
- 5) Mobilize people for implementing agricultural development policies.
- 6) Participate in formation of relevant farmers' groups.
- 7) Develop positive change in knowledge level, skills, attitudes and aspirations of people towards improving their quality of life.
- 8) Promote awareness of farmers on issues relating to agricultural production and development.
- 9) Organize and conduct extension meetings.
- 10) Take up farming as a business

Entry Requirements

Admission into the Degree programme in Agricultural Extension shall be as specified in the Faculties special Regulation AG 28.10 and General Academic Regulations 00.5.

Career Opportunities for Agricultural Extension Graduates

Graduates in Agricultural Extension could be employed to: Administer and supervise extension programmes in the Ministry of Agricultural Development and Food Security, Co-operatives in other relevant government departments, private sector and NGOs that are involved in extension activities.

Programme structure

- i) Courses for the Degree in Agricultural Extension programme shall be offered at levels 100 to 400, as outlined below

- ii) In addition to the extension courses, all Agricultural Extension degree students shall take the General Education Courses (GEC) and Electives in accordance with General Academic Regulation 00.2124.

- iii) Students enrolled in the BSc Agricultural Extension programme shall be required to complete two 6-week Industrial Attachment (FPB 300 and FPB 400) courses as winter courses between the levels 200 and 300 and between the levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG 28.50.

Students enrolled in the BSc in Agricultural Extension Programme shall be required to complete a research project (APB 410 and APB420) in accordance with Faculties Special Regulation AG 28.70.

Level 100

Semester 1

In semester 1, the Degree in Agricultural Extension programme shall consist of the following courses:

Core Courses

- BSB110:** Mathematics I (3 credits)
- BSB111:** General and Inorganic Chemistry (3 credits)
- BSB112:** Physics I (3 credits)
- BSB113:** Biology of Cells (3 credits)

General Education Courses

- COM 141:** Communication and Academic Literacy Skills I (3 credits)
- ICT121:** Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree in Agricultural Extension programme shall consist of the following courses:

Core Courses

- BSB120:** Mathematics II (3 credits)
- BSB121:** Physical and Organic Chemistry (3 credits)
- BSB122:** Physics II (3 credits)
- BSB123:** Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)
ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree in Agricultural Extension programme shall consist of the following courses:

Core courses

AEB212: Introduction to Agricultural Economics (2 credits)
AEB217: Agricultural Cooperative Development (3 credits)
ASB215: Livestock Production (3 credits)
CSB211: Principles of Crop Production (3 credits)
Optional Courses (take at least one course)
AEB211: Educational Psychology (2 credits) OR
AEB317: Rural Sociology (2 credits)

Electives/GECs (2 credits)

Total credits 15 credits

Level 200

Semester 4

In semester 4, the Degree in Agricultural Extension programme shall consist of the following courses:

Core courses

AEB231: Extension Communication and Teaching Methods (3 credits)
AEB232: Extension Administration and Supervision (3 credits)
AEB233: Adult Education and Rural Community Development (3 credits)
AEB234: Educational Technology (3 credits)

Electives/GECs (3 credits)

Total Credits 15 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Degree in Agricultural Extension programme shall consist of the following courses:

Core courses

AEB327: Extension Programme Planning and Evaluation (3 credits)
AEB329: Leadership and Group Dynamics in Extension (3 credits)
AEB331: Youth and Gender Issues in Agricultural Development (3 credits)

Electives/GECs (6 credits)

Total credits 15 credits

Level 300

Semester 6

In semester 6, the Degree in Agricultural Extension programme shall consist of the following courses:

Core Courses

AEB322: Farm Business Management (2 credits)
CSB321: Fruit and Vegetable Production (2 credits)
CSB324: Principles of Crop Protection (3 credits)

Optional Courses (take at least one course from each set)

ASB221: Livestock Feeds and Feeding (3 credits) OR
ASB422: Dairy Production (3 credits) AND
ELB310: Farm Structures (3 credits) OR
ELB410: Agricultural Mechanization (3 credits)

Electives/GECs (3 credits)

Total credits 16 credits

Winter Session

FPB 400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree in Agricultural Extension programme shall consist of the following courses:

Core courses

AEB414: Agricultural and Food Policy (3 credits)
AEB421: Research Methods in Education (3 credits)
AEB427: Analysis of Rural Dev. Projects in Botswana (3 credits)
APB410: Project (2 credits)

Electives/GECs (4 credits)

Total credits 15 credits

Level 400

Semester 8

In semester 8, the Degree in Agricultural Extension programme shall consist of the following courses:

Core courses

ASB417: Poultry Production (3 credits)

APB420: Project (2 credits)

Optional Courses (take at least one course from each set)

ELB245: Irrigation technology (3 credits) OR

ELB221: Soil Plant Water Relations (3 credits) AND

ASB212: Livestock Production Systems (2 credits) OR

ASB412: Beef Production (2 credits) AND

CSB322: Field Crop Production (2 credits) OR

CSB421: Ornamental Horticulture (2 credits)

Elective/GEC (3 credits)

Total credits 15 credits

Assessment

The overall performance in each course shall be assessed in accordance with the Academic General Regulation 00.842.

Assessment of courses in Agricultural Extension programme shall be in accordance with the Faculties Special Regulation AG 28.30.

Assessment of the Project courses (APB410, APB420) for the Degree in Agricultural Extension programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Assessment of the Industrial Attachment (FPB300) and FPB400 for the Degree in Agricultural Extension programme shall be in accordance with the Faculties Special Regulation AG 28.55.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (Cumulative GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree in Agricultural Extension, a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852.

The degree in Agricultural Extension shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (Cumulative GPA) computed in accordance with the Academic General Regulation 00.86.

COURSE SYNOPSES

Agricultural Economics Courses

AEB312: Agricultural Marketing (2 credits)

The course exposes students to the productive role marketing process plays in the agribusiness. Topics covered include; definition of agricultural marketing, price determination and discovery, marketing margins, market concentration/integration, market structures, market risks, futures market, hedging, risk management, cooperatives and marketing boards.

This is a two-credit core course offered in semester 5 level 300 and has a pre-requisite – AEB 212: Introduction to Agricultural Economics (2L)

AEB212: Introduction to Agricultural Economics (2 credits)

This is an introductory course to Agricultural Economics. Topics include scarcity, choice, opportunity costs, value judgement in economics, economic systems, consumer behaviour, input demand, production theory, costs of production, the circular flow of income and national income determination, money and its role in agriculture and international trade. This is a two-credit pre-requisite course offered in semester 3 level 200 (2L)

AEB214: Introduction to Mathematics for Economists (3 credits)

The course covers basic mathematical concepts and techniques applied to economics. It covers both differential and integral calculus and their use in economics optimization, simple economic modelling through the use of linear models, matrix algebra, linear programming and introduction of dynamics. Its pre-requisites are BSB110 and BSB120.

AEB216: Introduction to Statistics for Economists (3 credits)

This course covers statistical concepts and tools and their application to economic data. It covers descriptive statistics, probability theory, and analysis of variance, sampling theory, hypothesis testing, simple correlation, regression analysis and non-parametric inferences.

AEB226: Intermediate Microeconomics (3 credits)

This course is designed to cover intermediate of microeconomics. It covers intermediate theories of demand and supply and their applications.

The course also covers the intermediate theory of consumer behaviour, production theory, costs of production, product and factor market, government and microeconomic policy and welfare economics. Its pre-requisite is AEB212.

AEB227: Intermediate Macroeconomics (3 credits)

This course covers concepts of macroeconomics. It covers national income accounting and the theory of income determination. Keynesian macro-economics, open economy macroeconomics, the relationship between employment and inflation and the role of agriculture in economic growth. Its pre-requisite is AEB212.

AEB228: Agricultural and Food Marketing (3 credits)

This course exposes students to the productive role of the marketing process plays in agribusiness. The course covers the role of marketing and pricing, commodity marketing and marketing of food products. Its pre-requisite is AEB212.

AEB229: Financial Management in Agriculture (3 credits)

This course is designed to cover financial accounting techniques and their use in agricultural business. The course covers financial reporting, the accounting cycle, financial statements, valuation and analysis of financial statements. Its pre-requisite is AEB212.

AEB230: Development of Entrepreneurial Skills in Agribusiness (3 credits)

This course covers steps in setting up an agribusiness. It also covers alternative forms of business organization, business and marketing plan development, employment of staff and retention, production planning to meet market requirements and contemporary issues in small agribusiness management.

AEB310: Environmental Economics (3credits)

Environmental economics is designed to cover the application of economic theory and tools in the use of natural resources. It emphasizes the use of natural resources overtime, natural resources scarcity, environmental quality and mechanisms for pollution control and their implication for public policy. Its pre-requisite is AEB212.

AEB311: Resource Economics (3 credits)

Resource economics is designed to cover the application of economic theory and tools to the use of natural resources. It emphasizes the use of natural resources overtime, natural resources efficiency and different property regimes and natural resource use sustainability.

AEB312: Prices Analysis (2 credits)

The course exposes students to the role marketing processes play in agribusiness. Topics include the role of prices, consumer and producer theory, empirical price analysis, perfect and imperfect competition, spatial and temporal price analysis and price discovery. This is a two-credit core course offered in level 300 and AEB 212: Introduction to Agricultural Economics is its prerequisite (2L).

AEB313: Economics of Agricultural Development (3 credits)

This course covers economic development with particular focus on the role of agriculture. The course covers topics such as theories of development and agricultural growth, the role of agriculture in economic development, economic characteristics of traditional agriculture and

efforts undertaken to modernize traditional agriculture, emerging issues in agricultural development and agricultural development in Botswana.

AEB321: Human Resource Management (3 credits)

This course is designed to cover principles and concepts used in managing the labour force. It covers topics such as recruitment and retention of labour, human resource development, managing diversity, employee relationship and current issues in human resource management.

AEB322: Farm Business Management (2 credits)

The course orientates students to the business of farming. Topics covered include approaches to farm management, entrepreneurship, ownership costs in business management, farm records and accounting, measuring financial performance, credit sources and repayment terms and budgeting in farm business management. This is a two-credit course offered in semester 6 level 300 with AEB 212: Introduction to Agricultural Economics as its prerequisite. (2L).

AEB324: Labour Economics (3 credits)

This course covers issues related to agricultural supply and use. The course covers the demand and supply of agricultural labour, the characteristics of agricultural labour, determination of wages, labour market discrimination, trade unions, unemployment problems migration and factor mobility. Its pre-requisites are

AEB212 and AEB226.

AEB325: Research Methods in Agricultural Economics (3 credits)

This course covers the principles of agricultural economics research. The course covers the process of agricultural economics research, data collection and survey techniques, statistical and economic analysis of both qualitative and quantitative data and data analysis through operations research. Its pre-requisites are AEB214 and AEB216.

AEB412: Agricultural Policy (2 credits)

The course presents theoretical reviews of key domestic and cross-border policies and policy instruments that have been utilized throughout the world. Botswana's policy making processes, and domestic and trade policies (current and past) are also reviewed.

The course also reviews the GATT and WTO regulations on trade. This is a two-credit core course offered in semester 7, level 400 and AEB212: Introduction to Agricultural Economics is its pre-requisite (2L).

AEB414: Agricultural and Food Policy (3 credits)

This course covers agricultural and food policy issues in Botswana and other developing countries. It covers food security and self-sufficiency, dynamics of rural poverty, nutrition policy, agricultural policy making process in Botswana, domestic and boarder policies, policy instruments and their welfare, arguments for and against protection. Its pre-requisite is.

AEB415: Agricultural Finance (3 credits)

This course covers financing of agricultural enterprises and risks associated with it. The covers the theory of financial Management, capital budgeting, sources of agricultural finance, liquidity, credit and risk management techniques.

AEB416: International Trade in Agricultural Products (3 credits)

This course covers the theory of international trade and its applications to trade in agricultural products. The course covers neoclassical, new and monetary theories of trade. It also covers international trade policy, instruments of trade policy and their effects, arguments for and against free trade, regional and international trade organizations and technical and non-technical barriers to trade in agricultural products. Its pre- requisite is AEB212.

AEB418: Introduction to Econometrics (3 credits)

This is an introductory course in economics. It covers statistical inferences, the classical general linear model, violations of the assumptions of the classical linear regression model, functional forms and regression with dummy variables. Its pre-requisites are AEB214 and AEB216.

AEB422: Project Appraisal and Evaluation (2 credits)

This course includes all aspects of the project cycle; identification, formulation, appraisal, implementation and monitoring and evaluation.

The course emphasizes on the analytical tools that can be applied to identify costs and benefits of a given agricultural project for purposes of estimating the income generating potential of such projects. This is a two-credit core course offered in semester 8 level 400 and AEB 212: Introduction to Agricultural Economics is a pre-requisite (2L)

AEB424: Production Economics (2 credits)

The course exposes students to the production process and the role of economic theory in production economics. Topics include the production function model, economic allocation of one variable inputs, cost functions, production with two or more variables inputs, derivation of input demand and output supply function, production of two or more products and the production process through time.

This is a two-credit core course offered in semester 8 level 400, AEB 212: Introduction to Agricultural Economics is a pre-requisite to it (2L).

AEB426: Intermediate Econometrics (3 credits)

This is an intermediate course in econometrics. The course covers simultaneous equation and time series models and their application to economic data. Its pre-requisite is AEB418.

Agricultural Education Courses

AEB211: Educational Psychology (2 credits)

The course is an introductory and topics covered include psychology and its application to education, methods of psychological inquiry, basic theories about human development based on the schools of thoughts in psychology (Behavioural, Gestalt, Cognitive, Humanistic views of learning). Concepts of learning, motivation, intelligence, school discipline and instructional objectives. This is a two-credit core course offered in semester 1 level 200 (2L).

AEB221: Teaching Methods in Agriculture (3 credits)

The course covers assumptions and beliefs of teaching; principles of teaching and learning; elements of effective teaching; teaching methods and strategies/techniques; lesson planning, lesson plan preparation; instructional objectives; teaching aids; teaching/learning styles; evaluation of teaching and learning; classroom management; micro-teaching to apply and demonstrate the knowledge and skills learnt in the course. This is a three-credit core course offered in semester 4 level 200 (3L).

AEB223: Educational Measurement and Evaluation (2 credits)

The course teaches the principles and techniques of evaluating teaching and learning. Classification of educational objectives. Scales of measurement. Characteristics of a good measuring instrument. Classification and construction of tests. Assessment of practical work; administering tests; interpretation of tests results and methods of assigning marks. This is a two-credit core course offered in semester 3 level 200 (2L).

AEB300: Teaching Practice (3 credits)

The student teaching phase in teacher education programs is the most important part of the professional preparation of teachers. It is a time students can observe, try out and make more meaningful the principles, concepts, and practices presented in the agricultural education courses under the supervision of the co-operating teacher.

This carries 3 credits and is done in the winter session. The following are pre-requisites to AEB 300: AEB 211 Educational Psychology, AEB 221 Teaching Methods in Agriculture and AEB 223 Educational Measurement and Evaluation.

AEB315: Curriculum Design and Development (2 credits)

The course emphasizes the principles and practices in curriculum development in secondary school agricultural education programmes. More specifically the course will examine the meaning, foundations, principles, and issues and problems in the development of secondary school Agriculture curriculum. This is a two-credit core course offered in semester 5 level 300 (2L).

AEB411: Sociology of Education (2 credits)

The course introduces the school as a social institution. Topics offered include: Linkages between the society and education, education and cultural change, education and the politics of development, dynamics and cultural forces affecting Botswana education system, the role of education in the transmission of culture, social structure

and social stratification. This is a two-credit core course offered in semester 7 level 400 (2L).

AEB419: Philosophy of Education (2 credits)

The course is an introduction to philosophy of vocational agricultural education. It offers personal and intellectual education for teachers, prepares them to examine educational problems and issues more critically, it also increases the teachers' ability to influence secondary vocational agricultural education policies and practices at national and local levels. This is a two-credit core course offered in semester 7 level 400 (2L).

AEB421: Research Methods in Education (3 credits)

The course is designed to expose students to the research process; characteristics and types of research; relationship between problem solving and research; methods and sources of knowledge; the research proposal; selecting and defining the problem; objectives and hypothesis; survey research; relational research; experimental and quasi- experimental research; data analysis and interpretation. This is a three-credit core course offered in semester 7 level 400 (3L).

AEB234: Educational Technology (3 credits)

The course covers the selection, design, production, use and storage of projected and non-projected audio-visual aids; and the use of media to enhance agricultural technology transfer to farmers and other clientele systems.

AEB317: Rural Sociology (2 credits)

Topics covered in this course include traditional social organization, peasant farming systems, smallholder farmers; the individual, group and social system. Innovations and social change. Village leadership and change agents. The emerging rural community; rural institutions, social action programmes and participation. Concepts of rural development. Rural development and rural urban migration. Rural surveys. Rural societies in Botswana. This is a 2 CRedit core course offered in semester 5 level 300 (2L).

AEB331: Youth and Gender Issues in Agric. Development (3 credits)

The course covers all the socio-economic aspects of youths and gender in agricultural development, including the roles of youths and gender in agricultural development, problems of youth and gender, and poverty. Education and training of youth and women; youth, women and health; violence against youth and women and decision making.

AEB327: Extension Programme Planning and Evaluation (3 credits)

The course will entail some discussions as well as practical on programme planning implementation and evaluation including monitoring of extension programmes in rural communities.

AEB329: Leadership and Group Dynamics in Extension (3 credits)

The course will cover the advantages and disadvantages of groups; group goals, aims, objectives; team building; group evaluation; group techniques; leadership; leadership development.

AEB417: Agricultural Extension (3 credits)

The need for extension. Extension as an educational process. Diffusion and adoption of technologies. Extension surveys. Extension campaigns and execution. The change agents. Individual, group and mass media approaches. Extension organization and administration in Botswana. Planning, execution and evaluation of extension programmes. Audio visual methods. Factors affecting choice of media. This is a three- credit core course offered in semester 8 level 400 (3L) style.

AEB425: Management of Agricultural Enterprises in Schools (2 credits)

The course teaches importance of enterprises and description of school enterprises. Functions of agricultural teachers. Scheduling of students' participation during school and vacations, funding and generating resources. Record keeping in school farms. Challenges in planning and management of enterprises. This is a two-credit core course offered in semester 8 level 400 (1L,1P).

Agricultural Extension Courses

AEB217: Agricultural Cooperative Development (3 credits)

The course covers the concept of cooperative, historical background and objectives of Agricultural cooperatives; cooperative principles; types of cooperatives; secondary cooperative services; formation, organizational structure and functions of cooperatives.

AEB231: Extension Communication and Teaching Methods (3 credits)

The course covers the meaning of Extension, the roles, principles and philosophies of extension; the concept of communication, the nature and processes of communication, elements of communication, effective communication, the concept of teaching and learning processes, motivation, the extension teaching methods,

their meaning and classifications, preparation, selection and use of teaching materials and aids. Adoption and diffusion processes.

AEB232: Extension Administration and Supervision (3 credits)

The course covers the concept of Administration and Management, the functions of Management as they relate to Agricultural Extension. The concept of supervision and its importance in agricultural extension including: the extension management pyramid; pattern of motivation of the extension staff and the clientele system; the concept of power, authority, delegation and discipline; time management; decision making process and the available institutional support for the extension system.

AEB233: Adult Education and Rural Community Development (3 credits)

The course will cover the elements and processes of change in Botswana, resistant and conducive forces that affect change in rural communities; organization of major ethnic groups in Botswana. The nature and dimension of adult and non-formal education adult learning principles and processes.

AEB427: Analysis of Rural Dev. Project in Botswana (3 credits)

The course will focus on the review and analysis of the various rural agricultural development projects embarked upon by the various institutions and groups in Botswana, such as the Ministries, NGOs, Colleges and Universities. General Education Courses

COM141: Communication and Academic Literacy (3 credits)

The course introduces students to the concept of communication, academic literacy and information skills. It cursorily covers different modes of communication, processes and barriers to communication.

The literacy and information skills covered in the course are intended to develop self-directed and autonomous learners in areas such as aural and oral skills (e.g. listening, note-taking/making, oral presentations), reading skills (e.g. reading techniques, analytical reading, paraphrasing, summarizing), scientific writing (e.g. technical texts and reports,

COM142: Communication and Academic Literacy Skills II (3 credits)

The course provides an opportunity for students to develop their Communication and Academic Literacy Skills II proficiencies.

The course briefly covers different forms of scientific communication, such as lab reports, regular, occasional and commissioned reports and scientific research projects.

The research projects are primarily intended to introduce the students to scientific research methods, e.g. the identification of a research problem, literature review, data collection methods, findings, discussion, conclusions and references.

The aspect of professional communication deals with business letter writing, memorandums, documents of meetings, notices, posters, computer-mediated communication (internet, sms, email, netiquette) CV and interview skills. (2L).

GEC 275 Basic Concepts in Marketing (2 credits)

This course provides students with general knowledge

in marketing to appreciate the role of marketing in day to- day life and its contribution to economic development and society's well-being.

The following topics are covered: the role of human needs and wants in Marketing, understanding the marketing environment, the marketing mix, development of a marketing strategy, consumer and organizational buying and influences and assessment of marketing information needs as well as development and use of marketing information. This is a two-credit course offered in level 200 (1L-2P).

GEC330: Introduction to Research Methods (3credits)

The course is an introductory course mean to expose students to the various research designs, problem identification, research.





FACULTY OF AGRICULTURE

Dean: Associate Professor K B Mmolawa,
(BSc, MSc, PhD)

Department of Agricultural and Biosystems Engineering
Head of Department

Associate Professor H J Chepete,
(BSc Agric, MSc Agric Eng, PhD Agric Eng)

Department of Crop and Soil Sciences
Head of Department

Associate Professor U Batlang, (BSc, MSc Crop & Soil Env Sci, PhD Plant Physiol)

Department of Food Science and Technology
Head of Department

Dr R Kobue-Lekalake,
(BSc Dietetics, MSc Food Sci & Tech, PhD Food Sci)

Faculty Administrator
Ms K Dubane,
(BA Public Admin, MPA HR)

HIGHER DIPLOMA IN AGRICULTURE

Preamble

General Provisions

Subject to the provisions of General Academic Regulations, and the Faculty Special Regulations, the following Departmental Regulations shall apply:

Programme and Title of Diploma

The Department of Crop Science and Production shall offer a single major programme leading to the award of Higher Diploma in Agriculture

Objectives of the Programme

- i. To develop well trained human resources to meet the growing needs of the various sectors of agriculture and allied industries in Botswana.
- ii. To co-operate with other Departments in the Faculty and outside the Faculty in training and producing high quality human resources in agriculture and related fields.
- iii. To combine theory and practices in order to inculcate critical thinking in all agricultural courses.

Entry Requirements

Admission into the Higher Diploma in Agriculture Programme shall be as stipulated in the Faculty Special Regulation AG 11.20

Career Opportunities for holders of Higher Diploma in Agriculture

There are career opportunities for graduates of the Higher Diploma in Agriculture in Government, Parastatal organizations, the Private sector, and NGOs. Higher Diploma in Agriculture graduates can also opt for self-employment.

Programme Structure

- i. Courses for the Higher Diploma in Agriculture programme shall be offered at levels 100 to 300, as outlined below.
- ii. In addition to the agricultural courses, all Higher Diploma in Agriculture students shall take the General Education Courses (GEC) and Electives in accordance with Academic General Regulation 00.2124.
- iii. Students enrolled in the Higher Diploma in

Agriculture programme shall be required to complete a 6-week Industrial Attachment (FPB 300) as a winter course between Levels 200 and 300 in accordance with Faculties Special Regulation AG 11.60.

Level 100

Semester 1

In semester 1, the Higher Diploma in Agriculture programme shall consist of the following courses:

Core Courses

- BSB110:** Mathematics I (3 credits)
- BSB111:** General and Inorganic Chemistry (3credits)
- BSB112:** Physics I (3 credits)
- BSB113:** Biology of Cells (3 credits)

General Education Courses

- COM 141:** Communication and Academic Literacy Skills I (3 credits)
- ICT121:** Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Higher Diploma programme in Agriculture shall consist of the following courses:

Core Courses

- BSB120:** Mathematics II (3 credits)
- BSB121:** Physical and Organic Chemistry (3 credits)
- BSB122:** Physics II (3 credits)
- BSB123:** Biodiversity (3 credits)

General Education Courses

- COM142:** Communication and Academic Literacy Skills II (3 credits)
- ICT122:** Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Higher Diploma programme in Agriculture shall consist of the following courses:

Core courses

AEB212: Introduction to Agricultural Economics (2 credits)

ASB211: Animal Anatomy and Physiology (3 credits)

ASB215: Livestock Production (3 credits)

ASB216: Animal Nutrition and Range Management (3 credits)

BSB 212: Introduction to Genetics (3 Credits)

CSB211: Principles of Crop Production (3 credits)

Total Credits 16 credits

Level 200

Semester 4

In semester 4, the Higher Diploma programme in Agriculture shall consist of the following courses:

Core courses

AEB417: Agricultural Extension (3 credits)

ASB226: Animal Health (3 credits)

CSB221: Soil Science (3 credits)

Optional Courses (take at least one course from each set)

ELB210: Land Surveying and Evaluation (3 credits) OR

ELB211: Soil and Water Conservation (3 credits) OR

ELB221: Soil-Plant-Water Relations (3 credits) and

ELB245: Irrigation Technology (3 credits) OR

ELB310: Farm Structures (3 credits)

Total Credits 15 credits

Winter Session

FPB 300 Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Higher Diploma programme in Agriculture shall consist of the following courses:

Core courses

AED312: Agricultural Marketing (2 credits)

AEB317: Rural Sociology (3 Credits)

BSB221: Biometry I (3 Credits)

CSB311: Crop Physiology (3 credits)

ELB220: Farm Workshop Practice (2 credits)

Electives/GECs (4 credits)

Total Credits 15 credits

Level 300

Semester 6

In semester 6, the Higher Diploma programme in Agriculture shall consist of the following courses:

Core Courses

AEB322: Farm Business Management (3 Credits)

CSB323: Plant Breeding (2 Credits)

CSD326: Fruit and Vegetable Production Practices (2 credits)

CSD327: Field Crop Production Practices (3 Credits)

CSD328: Crop Protection Techniques (3 credits)

ELB321: Tractor and Farm Implement Technology (3 credits)

Electives/GECs (2 credits)

Total Credits 16 credits

5.1.3 Assessment

5.1.3.1 The overall performance of a student in each course shall be assessed in accordance with the General Academic Regulation 00.842.

5.1.3.2 Assessment of courses in the Higher Diploma in Agriculture programme shall be in accordance with the Faculties of Agriculture Special Regulation AG 11.40.

Assessment of the Field Practical Training courses (FPB300) for the Higher Diploma in Agriculture Programme shall be in accordance with the Faculties Special Regulation AG 11.60.

Progression from one semester to the next

In order to progress from one semester to the next, a student must obtain a Cumulative Grade Point Average (GPA) in accordance with the General Academic Regulation 00.9.

Award

To be awarded the Higher Diploma in Agriculture, a student must satisfy the appropriate provisions of Academic General Regulations 00.851 and 00.852

The Higher Diploma in Agriculture shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the General Academic Regulation 00.86.

BACHELOR OF SCIENCE DEGREE IN AGRICULTURAL MECHANIZATION

Preamble

General Provisions

Subject to the provision of Academic General Regulations, and the Faculty of Agriculture Special Regulations, the following Departmental Regulations shall apply.

Programme and Title of Degree

The Department of Agricultural Engineering and Land Planning shall offer a single major programme leading to the award of Bachelor of Science in Agricultural Mechanization (BSc Agric. Mech.).

Objectives of the programme

At the end of the programme, the graduates should be able to:-

- (i) Apply scientific knowledge to advance agricultural production, and post-production activities through appropriate mechanization management strategies;
- (ii) Implement government policies related to agricultural mechanization and environment protection;
- (iii) Initiate and manage agribusiness profitably;
- (iv) Provide technical expertise and support in matters relating to machinery acquisition, operation and maintenance.

Entry Requirements

Admission into the Degree in Agricultural Mechanization Programme shall be as stipulated in the Faculty Special Regulation AG 28.10.

Employment Opportunities

Employment Opportunities for the graduates exist in the public service, Non-Governmental Organizations, private sector and international organizations.

Programme structure

- i) Courses for the Degree in Agricultural Mechanization programme shall be offered at levels 100 to 400, as outlined below
- ii) In addition to the engineering courses, all Agricultural Mechanization degree students shall

take the General Education Courses (GEC) and Electives in accordance with General Academic Regulation 00.2124.

- iii) Students enrolled in the BSc Agriculture Mech. programme shall be required to complete two 6-week Industrial Attachment (FPB 300 and FPB 400) courses as winter courses between the levels 200 and 300 and between the levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG28.50.
- iv) Students enrolled in the BSc in Agriculture Mech. Programme shall be required to complete a research project (APB 410 and APB 420) in accordance with Faculties Special Regulation AG 28.70.

Level 100

Semester 1

In semester 1, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

BSB110: Mathematics I (3 credits)
BSB111: General and Inorganic Chemistry (3credits)
BSB112: Physics I (3 credits)
BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)
ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree in Agricultural Mechanization programme shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)
BSB121: Physical and Organic Chemistry (3 credits)
BSB122: Physics II (3 credits)
BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)
ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

AEB212: Introduction to Agricultural Economics (2 credits)

BSB221: Biometry I (2 credits)

ELB120: Soil Mechanics and Foundation (3 credits)

ELB220: Farm Workshop Practice (2 credits)

Optional Courses (take at least one course)

CSB21: Principles of Crop Production (3 credits) OR

ASB210: Introduction to Animal Science (3 credits)

Electives/GECs (4 credits)

Total credits 16 credits

Level 200

Semester 4

In semester 4, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

ELB213: Computer Applications in Engineering (3 credits)

ELB310: Farm Structures (3 credits)

ELB340: Farm Implement Technology (3 credits)

ELB341: Measurement Techniques in Agro-Biological Science (3 credits)

Optional Courses (take at least one course)

ELB214: Statics (3 credits) OR

ELB215: Engineering Design (3 credits)

General Education Course

GEC222: Problem-Solving with Spreadsheet (2 credits)

Total credits 16 credits

Winter Session

FPB 300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

ELB331: Renewable Energy (3 credits) **ELB332:** Tractor Power (3 credits)

ELB333: Electrical Power (3 credits)

ELB325: Environmental Impact Assessment (3 credits)

Optional Courses (take at least one course)

ELB210: Land Surveying and Evaluation (3 credits) OR

ELB420: Land Drainage (3 credits)

Total credits 15 credits

Level 300

Semester 6

In semester 6, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

ELB230: Fluid Mechanics (3 credits)

ELB311: Heating, Ventilating, and Air conditioning (3 credits)

ELB441: Soil Tillage and Traction (3 credits)

AEB322: Farm Business Management (2 CREDITS)

Optional Courses (take at least one course)

ELB342: Crop Harvesting Technology (3 credits) OR

ELB450: Food Preservation and Storage (3 credits)

Electives/GECs (2 credits)

Total credits 16 credits

Winter Semester

FPB 400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

ELB423: Current Issues in Agricultural Engineering (1 credit)

ELB443: Agricultural Machinery Testing and Evaluation (3 credits)

APB410: Project (2 credits)

BSB321: Biometry II (2 credits)

Electives/GECs (8 credits)

Total credits 16 credits

Level 400

Semester 8

In semester 8, the Degree in Agricultural Mechanization Programme shall consist of the following courses:

Core Courses

AEB422: Project appraisal and Evaluation (2 credits)

ELB410: Agricultural Mechanization Management (3 credits)

APB 420: Project (2 credits)

Optional Courses (take at least one course from each set)

ELB216: Fluid Power (3 credits) OR

ELB411: Agricultural Processing (3 credits) AND

ELB330: Introduction to Remote Sensing (3credits) OR

ELB440: Geographical Information Systems (3 credits)

Electives/GECs (2 credits)

Total credits 15 credits

Assessment

The overall performance of a student in each course shall be assessed in accordance with the Academic General Regulation 00.84.

Assessment of courses in the BSc Agricultural Mechanization programme shall be in accordance with the Faculty Special Regulation AG 28.30.

Assessment of the Field Practical training courses (FPB 300 and FPB 400) for the BSc in Agricultural Mechanization programme shall be in accordance with the Faculty Special Regulation AG 28.55. Assessment of the Project courses (APB 410 and APB 420) for the BSc Agricultural Mechanization programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Progression from one semester to the next in order to progress from one semester to the next, a student must obtain a Cumulative Grade Point Average (GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree of BSc Agricultural Mechanization, a student must satisfy the appropriate provisions of Academic General Regulations 00.851 and 00.852.

The BSc Agricultural Mechanization Degree shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the Academic General Regulation 00.86.

BACHELOR OF SCIENCE DEGREE IN SOIL AND WATER CONSERVATION ENGINEERING

Preamble

General provisions

Subject to the provision of Academic General Regulations, and the Faculty Special Regulations, the following Departmental Regulations shall apply.

Programme and Title of Degree

The Department of Agricultural Engineering and Land Planning shall offer a single major programme leading to the award of Bachelor of Science in Soil and Water Conservation Engineering.

Objectives of the programme

At the end of the programme, the graduates should be able to:-

- 1) Apply scientific knowledge to advance agricultural production through appropriate land and water management strategies;
- 2) Integrate issues of environmental concern with soil and water conservation engineering applications and;
- 3) Initiate and manage agribusiness profitably.

Entry Requirements

Admission into the Degree in Soil and Water Conservation Engineering programme shall be as stipulated in the Faculty Special Regulation AG 28.10.

Employment Opportunities

Employment Opportunities for the graduates exist in the public service, Non-Governmental Organizations, private sector and international organizations.

Programme structure for the BSc Soil and Water Conservation Engineering

- i Courses for the Degree in Soil and Water Conservation Engineering programme shall be offered at levels 100 to 400, as outlined below:
- ii In addition to the engineering courses, all Soil and Water Conservation Engineering degree students shall take the General Education Courses (GECs) and Electives in accordance with General Academic Regulation 00.2124.
- iii Students enrolled in the BSc Soil and Water Conservation Engineering programme shall be required to complete two 6- week Industrial Attachment (FPB 300 and FPB 400) courses as winter courses between the levels 200 and 300 and between the levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG 28.50.
- iv Students enrolled in the BSc in Soil and Water Conservation Engineering programme shall be required to complete a research project (APB 410 and APB 420) in accordance with Faculties Special Regulation AG 28.70.

Level 100

Semester 1

In semester 1, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

BSB110: Mathematics I (3 credits)
BSB111: General and Inorganic Chemistry (3credits)
BSB112: Physics I (3 credits)
BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)
ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)
BSB121: Physical and Organic Chemistry (3credits)
BSB122: Physics II (3 credits)
BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)
ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

AEB212: Introduction to Agricultural Economics (2 credits)
ELB120: Soil Mechanics and Foundation (3 credits)
ELB210: Land Surveying and Evaluation (3 credits)
BSB221: Biometry I (2 credits)

Optional Courses (take at least one course)

CSB211: Principles of Crop Production (3 credits) OR
CSP310: Vegetable Production (3 credits) OR
CSB311: Crop Physiology (3credits)

Electives/GECs (2 credits)

Total credits 15 credits ‘

Level 200

Semester 4

In semester 4, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

ELB221: Soil/ Plant/ Water Relations (3 credits)
ELB230: Fluid Mechanics (3 credits)
ELB245: Irrigation Technology (3 credits)

Optional Courses (take at least one course each set)

ELB213: Computer Application in Engineering (3 credits)

OR
GEC222: Problem-Solving with Spreadsheet (2 credits)
AND
ELB214: Statics (3 credits) OR
ELB215: Engineering Design (3 credits)

Electives/GECs (2 credits)

Total credits 16/17 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

ELB211: Soil and Water Conservation (3 credits)
ELB322: Design of Irrigation Systems (3 credits)
BSB321: Biometry II (2 credits)

Optional Courses (take at least one course)

ELB310: Farm Structures (3 credits) OR
ELB333: Electrical Power (3 credits)

Electives/GECs (4 credits)

Total credits 15 credits

Level 300

Semester 6

In semester 6, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

ELB360: Irrigation Water Supply and Conveyance (3 credits)
ELB365: Irrigation and Water Quality (3 credits)
Optional Courses (take at least one course)
ELB325: Environmental Impact Assessment (3 credits)
OR
ELB330: Introduction to Remote Sensing (3credits) OR
ELB440: Geographical Information System (3credits)

Electives/GECs (6 credits)

Total credits 15 credits

Winter Session

FPB400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

ELB320: Hydrology and Climatology (3 credits)
ELB420: Land Drainage (3 credits)
ELB423: Current Issues in Agricultural Engineering (1 credit)
APB410: Project (2 credits)

Electives/GECs (6 credits)

Total credits 15 credits

Level 400

Semester 8

In semester 8, the Degree in Soil and Water Conservation Engineering Programme shall consist of the following courses:

Core Courses

ELB421: Watershed Management (3 credits)
ELB424: Ground Water Hydrology (3 credits)
AEB322: Farm Business Management (2 credits)
AEB422: Project Appraisal and Evaluation (2 credits)
APB420: Project (2 credits)

Optional Courses (take at least one course)

ELB411: Agricultural Processing (3 credits) OR
ELB426: Wind Erosion (3 credits)

Total credits 15 credits

Assessment

The overall performance of a student in each course shall be assessed in accordance with the Academic General Regulation 00.84.

Assessment of courses in the BSc Soil and Water Conservation Engineering programme shall be in accordance with the Faculties Special Regulation AG 28.30.

Assessment of the Industrial Attachment (FPB 300 and FPB 400) for the BSc in Soil and Water Conservation Engineering programme shall be in accordance with the Faculties Special Regulation AG 28.55 Assessment of the Project courses (APB 410 and APB 420) for the BSc Soil and Water Conservation Engineering programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Progression from one semester to the next in order to progress from one semester to the next, a student must obtain a Cumulative Grade Point Average (GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree of BSc (Soil and Water Conservation Engineering), a student must satisfy the appropriate provisions of Academic General Regulations 00.851 and 00.852.

The BSc Soil and Water Conservation Engineering shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the Academic General Regulation 00.86.

COURSE SYNOPSES

ELB120: Soil Mechanics and Foundations (3 credits)

The course covers physical characteristics of soils, soil classifications, hydraulic properties, soil compaction, consolidation and settlement, stress distribution, retaining walls, bearing capacity of soils, types of foundations and basic soil engineering tests.

ELB210: Land Surveying and Evaluation (3 Credits)

Horizontal distance measurement, angle measurement, levelling, contouring, area determination, volume calculation, reading aerial photos and maps. Evaluation of suitability of land for arable, livestock and forestry use, land suitability orders and classes; soil productivity rating; index of potentiality; land classification maps; checklist of basic data for land evaluation. (2L-2P).

ELB211: Soil and Water Conservation (3 Credits)

Soil erosion, mechanics of soil erosion; USLE, SLEMSA, influence of rainfall and soil characteristics. Erosion control measures - control structures, tillage methods that reduce erosion; minimum tillage, terracing, etc. The effect of land management on soil loss. Preparation of physical plans. Water harvesting techniques and structures. (2L-2P).

ELB213: Computer Applications in Engineering (2 credits)

This course covers, binary information presentation, bits, bytes, basic computer, CPU, hardware, computer programming, engineering software packages.

ELB214: Statics (3 credits)

This course covers the study of statics of particles; rigid bodies; equilibrium of rigid bodies; distributed forces; analysis of structures; forces in beams and cables; friction; moment of inertia.

ELB215: Engineering Design (3 credits)

The course covers drafting instruments, lettering, drafting techniques; orthographic drawing, auxiliary views, sections, machine elements; Design Process: need identification, functional analysis, performance requirements and evaluation, conceptual design, detailed design, Design evaluation, computer aided design.

ELB216: Fluid Power (3 credits)

This course covers a broad range of topics in the field, including: physical properties of hydraulic fluids; energy and power in hydraulic systems; frictional losses in hydraulic pipelines; hydraulic pumps, cylinders, cushioning devices, motors, valves, circuit design, conductors and fittings; hydraulic system maintenance; pneumatic air preparation and its components; and electrical controls for fluid power systems

ELB220: Farm Workshop Practice (2 Credits)

Workshop safety. Metal and Woodwork: selection, treatment and storage of materials. Shaping and joining of materials. Main forms of metal shaping by rolling, casting, forging, cutting by hand tools and basic machines. Joining of materials. Sheet and pipe work. Pipe work: water pipe fittings: cutting, threading and sealing of pipes and fittings. Workshop layout and workshop records. (1L-2P)
ELB321: Tractor Farm Implement Technology (3 Credits)
Definition and characteristics of agricultural mechanization. Hand tools, animal and mechanically powered technologies, limitations, power sources for field and process operations.

The Farm Tractor: safety and maintenance of tractors. Implements use for tillage, planting, fertilizer applications, crop protection, harvesting and farm processing; milling equipment, care, operation and maintenance (2L-2P).

ELB221: Soil-Plant-Water Relations (3 Credits)

Physical properties of soil e.g., texture, structure and porosity. Measurement of soil moisture content.

Movement of soil water. Infiltration and hydraulic conductivity. Methods of determining evapotranspiration. Water deficit, plant growth and water use efficiency. Causes of salinity and alkalinity in soils. (2L-2P).

ELB230: Fluid Mechanics (3 credits)

This course covers properties of fluid, pressure, laminar and turbulent flow through pipes, friction, energy, channel flow, flow measurement, pumps.

ELB245: Irrigation Technology (3 credits)

Scope of irrigation in Botswana, irrigation systems planning, crop water requirements, irrigation scheduling, review of basic hydraulics. Types of irrigation systems: Surface, sprinkler and drip irrigation systems; pumps and pumping, examples of irrigation problems (for example, salinity) 2L-2P).

ELB310: Farm Structures (3 Credits)

Functional requirements for farm buildings, Machinery and equipment sheds. Building methods and techniques. Requirements and designs for poultry, dairy and piggery buildings, storage silos, etc. Interpretation and preparation of drawings and design calculations. Site surveying, tenders and site supervision. Services for farm buildings: light, water, and waste disposal. (2L-2P).

ELB311: Heating, Ventilating and Air Conditioning (HVAC) (3 credits)

The course covers psychometrics, space conditioning, analysis of HVAC systems and their specifications, pumps and piping design.

ELB320: Hydrology and Climatology (3 Credits)

Evaluation of elements of the weather. Measurement of meteorological data. The hydrological cycle; analysis and measurement of its components. Hydrograph analysis and flood routing. (2L- 2P).

ELB322: Design of Irrigation Systems (3 Credits)

Soil plant relationships. Irrigation scheduling. Source, storage and conveyance of irrigation water. Irrigation methods. Design of surface and pressurized irrigation systems. Pump selection. (2L-2P).

ELB325: Environmental Impact Assessment (3 Credits)

This course will cover environmental impact assessment process, reviewing environmental impact assessment and evaluating environmental impact assessment documents.

ELB330: Introduction to Remote Sensing (3 Credits)

The course introduces the student to the technical and historical perspectives of remote sensing, electromagnetic spectrum and how it can be used to gather information about materials, objects and features on land. Simple image processing and interpretation techniques are introduced, with agricultural and environmental applications.

ELB331: Renewable Energy (3 Credits)

The course covers world energy resources. Power for biomass energy, bio fuels, wind energy and wind machine, solar energy conversion, heating value of fuels, combustion process. Sustainable utilization of renewable energy resources.

ELB332: Tractor Power (3 credits)

This course will cover tractor system principles, tractor maintenance and safety, and tractor-implement matching.

ELB333: Electrical Power (3 Credits)

The course will cover the following topics, DC and AC resistive circuits, reactive circuits, single phase and three phase circuits, power generation, distribution, supply, and electric machines.

ELB340: Farm Implement Technology (3 Credits)

The course covers design principles, operation and adjustment of implements and tools for tillage, sowing, fertilizer application, and plant protection, harvesting and threshing.

ELB341: Measurement Techniques in Agro-Biological Sciences (3 Credits)

The course covers stress-strain relationships, modulus of elasticity, strain gauges; displacement, velocity and acceleration measurements; pressure and vacuum measurements; flow measurement; temperature measurement; moisture and humidity measurements; light measurement; possible errors in measurements; introduction to data acquisition and processing.

ELB342: Crop Harvesting Technology (3 Credits)

The course will cover physical principles of harvesting major types of crops: grains, fruits, vegetables and forage. Course content will also include technological principles, performance, analysis and selection of systems for harvesting crops, with principal emphasis on grain, forage and vegetable crops.

Crop and other environmental factors that affect crop quality and influence machine operation and design will also be discussed.

ELB360: Irrigation Water Supply and Conveyance (3 Credits)

This course covers the development of surface and groundwater supplies, design of canals, culverts, flumes, and pipeline systems.

ELB365: Irrigation and Water Quality (3 Credits)

This course covers aspects of water quality, strategies for water quality assessment, selection of water quality variables, water quality guidelines for agricultural use, irrigation with wastewater, wastewater quality guidelines for agricultural use, agricultural use of sewage sludge, waste water use case metering technique.

ELB410: Agricultural Mechanization Management (3 Credits)

Mechanization systems for large, medium and small farms. Economics of mechanized agriculture. Machinery selection and levels of capital investment and management. Equipment and machinery for dry-land and irrigated farming. Policies for mechanization: manpower requirements and infrastructure requirements, machinery replacement policies. (2L-2P).
manpower requirements and infrastructure requirements, machinery replacement policies. (2L-2P).

ELB411: Agricultural Processing (3 Credits)

This course will cover general post-harvest processes that are normally performed on food products after their detachment from the plant. The course content will include post-harvest losses and their assessment, engineering properties of biological materials, material handling, material separation, cleaning and grading and size reduction (2L-2P).

ELB412: Food Engineering (3 Credits)

This course will cover the basic principles of food engineering including heat and mass transfer and mass and energy balances. It also covers the procedure of identifying appropriate unit operations required to produce different types of food products under different situations. Its pre-requisites are BSB110, BSB120, BSB121, BSB122 and BSB213

ELB413: Cereal Science and Technology (3 Credits)

The quality of cereal grains used for processing operations, wet and dry milling operations, bread, cake and biscuit manufacturing, the production and properties of flour dough, the manufacture of breakfast cereals including pasta and noodles. Alternative processing of cereals such as malting and brewing, the extraction of starches and oil and animal feed processing will be covered.

ELB414: Food Packaging (3 Credits)

This course covers the history of food packaging, physical and chemical properties of food packaging materials. The principles of food packaging, design with respect to functionality and economics, as well as legislative regulations governing packages and packaging of different food products. Safety and developments in food packaging.

ELB415: Fruit and Vegetable Processing (3 Credits)

This course covers the handling and processing of both fruits and vegetables. The topics covered include methods for improving post-harvest quality of fresh produce. The traditional thermal methods of processing will be discussed and demonstrated and quality aspect of resulting products and by products will also be covered. New trends in processing techniques especially non-thermal methods will be covered.

ELB420: Land Drainage (3 Credits)

Importance of Drainage, Drainage Systems, Planning and Design of Drainage Systems, Drainage and Salinity control in crop rooting zones. (2L-2P).

ELB421: Watershed Management 3 Credits

This course covers principles of watershed management, watershed ecology, watershed change, analysis and planning, watershed monitoring, and management practices.

ELB423: Current Issues in Agricultural Engineering (1 Credit)

Orientation towards research program and policies, research methods study and discussion of research progress and new developments in agricultural engineering. Experts in the various study areas of agricultural engineering will be invited. Preparation, presentation and discussion of papers on a spectrum of topics common to the practice of agricultural engineering. Discussion of engineering ethics and professionalism. Report writing. Career development

ELB424: Ground Water Hydrology (3 Credits)

This course covers types of aquifers and their characteristics, ground water flow, groundwater investigations, well hydraulics, drilling methods, pumping tests, water quality, ground water chemistry, groundwater recharge, impact of droughts on groundwater supply, monitoring groundwater resources, inventory of groundwater resources in Botswana.

ELB426: Wind Erosion (3 Credits)

This course covers wind erosion principles and processes, wind erosion factors, estimation of wind erosion, and practices to reduce wind erosion.

The course will cover fundamentals of GIS, data sources and data input techniques data organization and storage, data manipulation and analysis Examples of GIS applications for agricultural, land and natural resource management will also be given.

ELB441: Soil Tillage and Traction (3 Credits)

The course covers types of soil engaging tools, soil cutting forces (2 dimensional cases), soil loosening and manipulation, soil properties and plant growth, traction machines.

ELB443: Agricultural Machinery Testing and Evaluation (3 Credits)

The course will cover introduction to testing and evaluation of tillage machinery; testing and evaluation of walking type tractors; testing and evaluation of reapers and threshers; ergonomic appraisal and safety testing; testing and evaluation of four wheel tractor; PTO; draw bar; testing and evaluation of water pumps and sprayers; instrumentation for power measurements.

ELB450: Food Preservation and Storage (3 Credits)

This course will cover preservation techniques for food products including biological, chemical and physical methods.

A detailed study of specific methods of preservation such as drying, sterilizing pasteurizing, freezing and refrigeration will be done. Students will also cover storage and aeration practices for both non-perishable and perishable products including design of storage systems.

GEC222: Problem Solving with Spreadsheet (2 Credits)

To introduce students to problem solving concepts using spreadsheet application packages and to provide students with further information skills. (1L-2P).

GEC350: Environmental Change in Southern Africa (2 Credits)

The course is designed to introduce environmental concepts, the geography and key resources of Southern Africa. Processes leading to environmental change are examined, as well as the impacts of these changes. (2L-0P).



BACHELOR OF SCIENCE DEGREE IN AGRICULTURE

Preamble

General Provisions

Subject to the provisions of General Academic Regulations, and the Faculties Special Regulations, the following Departmental Regulations shall apply:

Programme and Title of Degree

The Department of Crop Science and Production shall offer a single major programme leading to the award of Bachelor of Science in Agriculture

Objective of the BSc (Agriculture) Programme

- i. To develop well trained human resources to meet the growing needs of the various sectors of agriculture and allied industries in Botswana.
- ii. To co-operate with other Departments in the Faculty and outside the Faculty in training and producing high quality human resources in agriculture and related fields.
- iii. To combine theory and practices in order to inculcate critical thinking in all agricultural courses.

Entry Requirements

Admission into the Degree in Agriculture Programme shall be as stipulated in the Faculties Special Regulation AG28.10.

Career Opportunities for holders of a Degree in Agriculture

There are career opportunities for holders of a degree in Agriculture in Government, Parastatal organizations, the Private sector and NGOs. Agricultural graduates can also opt for self-employment.

Programme Structure

- i. Courses for the Degree programme shall be offered at levels 100 to 400, as outlined below
- ii. In addition to the agricultural courses, all agricultural degree students shall take the General Education Courses (GEC) and Electives in accordance with General Academic Regulation 00.2124.
- iii. Students enrolled in the BSc Agriculture programme shall be required to complete two 6 week Industrial Attachment (FPB 300 and FPB

400) courses as winter courses between the levels 200 and 300 and between the levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG 28.50.

- iv. Students enrolled in the BSc in Agriculture Programme shall be required to complete a research project (APB 410 and APB 420) in accordance with Faculties Special Regulation AG 28.70.

Level 100

Semester 1

In semester 1, the Degree in Agriculture programme shall consist of the following courses:

Cores Courses

BSB110: Mathematics I (3 credits)
BSB111: General and Inorganic Chemistry (3credits)
BSB112: Physics I (3 credits)
BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)
ICT121: Computer Skills Fundamentals I (2 Credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree programme in Agriculture shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)
BSB121: Physical and Organic Chemistry (3 credits)
BSB122: Physics II (3 credits)
BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)
ICT122: Computer Skills Fundamentals II (2 Credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree programme in Agriculture shall consist of the following courses:

Core courses

AEB212: Introduction to Agricultural Economics (2 credits)
ASB211: Animal Anatomy and Physiology (3 credits)
ASB215: Livestock Production (3 credits)
ASB216: Animal Nutrition and Range Management (3 credits)
BSB212: Introduction to Genetics (2 credits)
CSB211: Principles of Crop Production (3 credits)

Total Credits 16 Credits

Level 200

Semester 4

In semester 4, the Degree programme in Agriculture shall consist of the following courses:

Core courses

AEB417: Agricultural Extension (3 credits)
CSB221: Soil Science (3 credits)
ASB226: Animal Health (3 credits)

Optional Courses (take at least one course from each set)

ELB210: Land Surveying and Evaluation (3 credits) OR
ELB211: Soil and Water Conservation (3 credits) OR
ELB221: Soil-Plant-Water Relations (3 credits) and
ELB310: Farm Structures (3 credits) OR
ELB322: Design of Irrigation Systems (3 credits)

Total Credits 15 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the degree programme in Agriculture shall consist of the following courses:

Core courses

AEB312: Price Analysis (2 credits)
AEB317: Rural Sociology (2 credits)
BSB221: Biometry I (2 credits)
CSB311: Crop Physiology (3 credits)

ELB220: Farm Workshop Practice (2 credits)

Electives/GECs (4 credits) Total Credits 15 credits
Level 300

Semester 6

In semester 6, the degree programme in Agriculture shall consist of the following courses:

Core courses

AEB322: Farm Business Management (2 credits)
CSB321: Fruit and Vegetable Production (2 credits)
CSB322: Field Crop Production (2 credits)
CSB323: Plant Breeding (2 credits)
CSB324: Principles of Crop Protection (3 credits)
ELB321: Tractor and Farm Implement Technology (3 credits)

Electives/GEC (2 credits)

Total Credits 16 credits

Winter Session

FPB 400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the degree programme in Agriculture shall consist of the following courses:

Core courses

AEB412: Agricultural Policy (2 credits)
APB410: Project (2 credits)
BSB321: Biometry II (2 credits)

Optional Courses (take at least one course)

CSB411: Entomology (3 credits) OR
CSB412: Plant Pathology (3 credits) OR
CSB414: Weed Science (3 credits)

Electives/GECs (6 credits)

Total Credits 15 credits

Level 400

Semester 8

In semester 8, the degree programme in Agriculture shall consist of the following courses:

Core courses

AEB422: Project Appraisal and Evaluation (2 credits)

APB420: Project (2 credits)

CSB421: Ornamental Horticulture (2 credits)

Electives/GECs (9 credits)

Total Credits 15 credits

Assessment

The overall performance of a student in each course shall be assessed in accordance with the General Academic Regulation 00.842.

Assessment of courses in the BSc agriculture programme shall be in accordance with the Faculties of Agriculture Special Regulation AG 28.30.

Assessment of the Industrial Attachment (FPB300 and FPB400) for the BSc in Agriculture Programme shall be in accordance with the Faculties Special Regulation AG 28.55.

Assessment of the Project courses (APB410 and APB420) for the BSc in Agriculture Programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Progression from one semester to the next

In order to progress from one semester to the next, a student must obtain a Cumulative Grade Point Average (GPA) that is in accordance with the General Academic Regulation 00.9.

Award

To be awarded the degree of BSc (Agriculture), a student must satisfy the appropriate provisions of General Academic Regulations 00.851 and 00.852.

The BSc Degree in Agriculture shall be classified in accordance with the provisions of General Academic Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the General Academic Regulation 00.86.

BACHELOR OF SCIENCE DEGREE IN CROP SCIENCE (Agronomy and Horticulture Streams)

Preamble

General Provision

Subject to the provisions of Academic General Regulations, and the Faculties Special Regulations, the following Departmental Regulations shall apply:

The Department of Crop Science and Production shall offer a single major programme leading to the award of Bachelor of Science in Crop Science (Agronomy or Horticulture)

Objectives of the BSc Crop Science Programme (Agronomy Stream)

- i. To assess field crop resources and identify those suitable for growing in various environments.
- ii. To utilize scientific knowledge to advance all aspects of field, industrial and forage crop production through sustainable management practices.
- iii. To implement government policies related to field crop production.
- iv. To demonstrate field crop production systems at commercial and subsistence level.
- v. To establish and manage profitably field crop agribusiness.
- vi. To manage pests, diseases and weeds to enhance field crop yield and lengthen storage life.
- vii. To manage soil in a sustainable manner to enhance field crop growth.

Objectives of the BSc Crop Science Programme (Horticulture Stream)

- i. To assess horticultural crop resources and identify those suitable for growing in various environments.
- ii. To utilize scientific knowledge to advance all aspects of horticultural crop production through sustainable management practices.
- iii. To execute government policies related to horticultural crop production.
- iv. To demonstrate horticultural crop production systems at commercial, subsistence and recreational levels.
- v. To establish and manage profitably horticultural agribusiness.
- vi. To manage pests, diseases and weeds to enhance yield of horticultural crops and lengthen storage life.

- vii. To manage soil in a sustainable manner to enhance horticultural crop growth.

Entry Requirements

Admission into the Degree in Crop Science Programme shall be as stipulated in the Faculties of Agriculture Special Regulation AG 28.10.

Career Opportunities for holders of a Degree in Crop Science

There are career opportunities for holders of a degree in Crop Science in Government, Parastatal organizations, the Private sector and NGOs. Crop Science graduates can also opt for self-employment.

Programme Structure

- i. Courses for the BSc (Crop Science) Agronomy and BSc (Crop Science) Horticulture streams shall be offered at levels 100 to 400, as outlined below. The two streams shall have a common level 100 and level 200 and specialization shall be in levels 300 and 400.
- ii. In addition to the Crop Science courses, all Crop Science degree students shall take the General Education Courses (GEC) and Electives in accordance with Academic General Regulation 00.2124.
- iii. Students enrolled in the BSc (Crop Science) programme shall be required to complete a two 6-week Industrial Attachment (FPB 300 and FPB 400) courses as winter courses between the levels 200 and 300 and between the levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG 28.50.
- iv. Students enrolled in the BSc (Crop Science) Programme shall be required to complete a research project (APB 410 and APB 420) in accordance with Faculties Special Regulation AG 28.70.

Level 100

Semester 1

In semester 1, the Degree in BSc Crop Science shall consist of the following courses:

Core Courses

BSB110: Mathematics I (3 credits)
BSB111: General and Inorganic Chemistry (3 credits)
BSB112: Physics I (3 credits)
BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)

ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Degree in BSc (Crop Science) shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)

BSB121: Physical and Organic Chemistry (3 credits)

BSB122: Physics II (3 credits)

BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)

ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Degree in BSc (Crop Science) shall consist of the following courses:

Core Courses

AEB212: Introduction to Agricultural Economics (2 credits)

BSB212: Introduction to Genetics (2 credits)

BSB221: Biometry I (2 credits)

BSB323: Biochemistry (2 credits)

CSP201: Introduction to Soil Science (3 credits)

CSP203: Introduction to Crop Pests (3 credits)

Electives/GECS (2 credits)

Total Credits 16 credits

Level 200

Semester 4

In semester 4, the Degree in BSc (Crop Science) shall consist of the following courses:

Core Courses

AEB417: Agricultural Extension (3 credits)
CSB211: Principles of Crop Production (3 credits)
CSP202: Soil Fertility and Fertilizers (3 credits)

Electives/GECs (6 credits)

Total Credits 15 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

BSC IN (CROP SCIENCE) AGRONOMY STREAM

Level 300

Semester 5

In semester 5, the Degree in BSc (Crop Science) Agronomy stream shall consist of the following courses:

Core Courses

CSB414: Weed Science (3 credits)
CSP301: Agroforestry (3 credits)
CSB311: Crop Physiology (3 credits)

Electives/GECs (6 credits)

Total Credits 15 credits

Level 300

Semester 6

In semester 6, the Degree in BSc (Crop Science) Agronomy stream shall consist of the following courses:

Core courses

AEB322: Farm Business Management (2 credits)
CSB323: Plant Breeding (2 credits)
CSP302: Cereal Crop Production (3 credits)
CSP306: Pests of Field Crops (3 credits)

Optional courses (take at least one course from each set)

CSP308: Soil-Plant Relations (3 credits) OR
ELB411: Agricultural Processing (3 credits) and
ELB322: Design of Irrigation Systems (3 credits) OR
ELB410: Agricultural Mechanization (3 credits)

Total Credits 16 credits

Winter Session

FPB400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree in BSc (Crop Science) Agronomy stream shall consist of the following courses:

Core courses

APB410: Project (2 credits)
BSB321: Biometry II (2 credits)
CSP304: Legume, Oilseed and Fibre Crop Production (3 credits)
CSP401: Root, Tuber and miscellaneous Crops Production (3 credits)

Optional courses (take at least one course)

CSP310: Vegetable Production (3 credits) OR
CSP406: Fruit Production (3 credits)

Electives/GECs (2 credits)

Total Credits 15 credits

Level 400

Semester 8

In semester 8, the Degree in BSc (Crop Science) Agronomy stream shall consist of the following courses:
Core courses

APB420: Project (2 credits)
CSP402: Diseases of Field Crops (3 credits)

Optional courses (take at least one course)

ELB310: Farm Structures (3 credits) OR
ELB321: Tractor and Farm Implement Technology (3 credits)

Electives/GECs (8 credits)

Total Credits 16 credits

BSC IN CROP SCIENCE (HORTICULTURE STREAM)

Level 300

Semester 5

In semester 5, the BSc (Crop Science) Horticulture stream degree shall consist of the following courses:

Core courses

CSP303: Controlled Environment Horticulture (3credits)
CSP307: Plant propagation (3 credits)
CSP310: Vegetable Production (3 credits)
CSB311: Crop Physiology (3 credits)

Electives/GECs (4 credits)

Total Credits 16 credits

Level 300

Semester 6

In semester 6, the BSc (Crop Science) Horticulture stream degree shall consist of the following courses:

Core courses

AEB322: Farm Business Management (2 Credits)
CSB323: Plant Breeding (2 Credits)
CSP312: Pests of Horticultural Crops (3 credits)
ELB322: Design of Irrigation Systems (3 credits)

Optional courses (take at least one course)

CSP308: Soil-Plant Relations (3 credits) OR
ELB210: Land Surveying and Evaluation (3 credits) OR
ELB211: Soil and Water Conservation (3 credits)

Electives/GECs (2 Credits)

Total Credits 15 credits

Winter Session

APB400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the Degree in BSc (Crop Science) Horticulture stream shall consist of the following courses:

Core courses

APB410: Project (2 credits)
BSB321: Biometry II (2 credits)
CSB414: Weed Science (3 credits)
CSP406: Fruit Production (3 credits)
CSP408: Landscape Horticulture (3 credits)

Electives/GECs (4 credits)

Total Credits 17 credits

Level 400

Semester 8

In semester 8, the degree in BSc (Crop Science) Horticulture stream shall consist of the following courses:

Core courses

APB420: Project (2 credits)
CSP403: Floriculture (3 credits)
CSP403: Floriculture (2 Credits)
CSP404: Postharvest Physiology and Technology (3 credits)
CSP405: Diseases of Horticultural Crops (3 credits)

Electives/GECs (6 credits)

Total Credits 17 credits

Assessment

General Academic Regulation 00.84 and Faculties Special Regulation AG 28.30 shall apply. Assessment of industrial Attachment (FPB 300 and FPB 400) for the BSc in Crop Science shall be in accordance with the Faculties Special Regulation AG 28.55.

Assessment of Project courses (APB 410 and APB 420) for the BSc in Crop Science shall be in accordance with Faculties Special Regulation AG 28.70.

Progression from one semester to the next in order to progress from one semester to the next, a student must obtain a Cumulative Grade Point average (GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree of BSc (Crop Science) Agronomy stream or BSc (Crop Science) Horticulture stream, a student must satisfy the appropriate provisions of General Academic Regulations 00.851 and 00.852.

The BSc Degree in Crop Science shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the Academic General Regulation 00.86.

CSB 204: Forest and Range Entomology (3 Credits).

The course will cover diagnostic characteristics, diversity and ecology of major insects and other arthropods; their interactions with plant and vertebrate species in forest and rangeland ecosystems; their impact on the environment and on livestock and wildlife

Their services to the environment including land and water bodies; benefits to humans and role as vectors of livestock and game animal diseases. (2L, 2P).

CSB211: Principles of Crop Production (3 credits)

The course covers basics of crop production, description of different cropping systems in Botswana and the world, factors that influence crop production and distribution in Botswana. This is a three-credits core course offered in semester 3, Level 200 and has no pre-requisites. (2L, 2P).

CSB221: Soil Science (3 credits)

The course covers soil formation, soil physical properties, factors affecting plant growth, plant nutrition and nutrient uptake, soil reaction and liming, macro and micronutrients, and soil classification. This is a three-credit core course offered in semester 4, Level 200 and has no pre-requisites. (2L, 2P).

CSB311: Crop Physiology (3 credits)

The coverage of this course includes plant and cell structure and functions, factors of production, dormancy and germination, propagation, flowering and fruiting, water and nutrient uptake, plant growth regulators, crop competition, staging systems, plant growth analyses, crop adaptation to stresses. This is a two-credits core course offered in semester 5, Level 300 and has no pre-requisites. (2L, 2P).

CSB321: Fruit and Vegetable Production (2 credits)

The course covers principles of production, economic importance, botany, environmental requirements, cultural practices of tropical, subtropical and temperate fruits, and leafy, fruit, stem, root, tuber, flower and bulb vegetables. This is a two-credits core course offered in semester 6, Level 300 and has no pre-requisites. (1L, 2P).

CSB322: Field Crop Production (2 credits)

The course covers the roles played by agronomists in the sustainable production of field crops and selection of optimum packages for the production of such important field crops as cereals, legumes and oilseed crops, fibre crops and other potential miscellaneous field crops under dryland conditions in Botswana. This is a two-credits core course offered in semester 6, Level 300 and has no prerequisites. (1L, 2P).

CSB323: Plant Breeding(2credits)

The course covers principles and practices of plant breeding, including reproduction of crop plants, plant hybridization, sources of genetic variation, selection methods, breeding for disease and pest resistance,

applications of biotechnology in plant breeding and marker assisted selection, molecular breeding. This is a two-credits core course offered in semester 6, Level 300 and has no pre-requisites. (1L,2P).

CSB324: Principles of Crop Protection (3 credits)

The course covers diagnostic characteristics of major groups of pests, diseases and weeds, pest damage and associated crop yield losses, and pest management strategies. This is a three-credits core course offered in semester 3, Level 200 and has no pre-requisites. (2L, 2P).

CSB411: Entomology (3 credits)

The course covers principles of pest management, ecological aspects of pests and their natural enemies, methods of monitoring and assessing pests and their natural enemies, and pest management strategies. This is a three-credits optional course offered during semester 8 and its pre-requisite is CSB 211: Principles of Crop Production. (2L, 2P).

CSB412: Plant Pathology (3credits)

The course covers the mechanisms of disease and plant defense, disease diagnosis and etiology of major diseases in Botswana, epidemiology and control. This is a three-credits optional course offered during semester 8 and its pre-requisite is CSB 211: Principles of Crop Production. (2L, 2P).

CSB413: Beekeeping (2 credits)

The course covers importance of beekeeping, bee biology and behaviour, queen rearing, bee feeding, colony establishment and apiary management, processing of bee products, beekeeping equipment, and bee protection. This is a two-credit core course offered in semester 5 Level 300 and has no pre-requisites. (1L, 2P).

CSB414: Weed Science (3 credits)

The course covers general concepts of weed behaviour, classification, ecology and weed management systems and strategies for integrated weed management. This is a three-credits optional course offered during semester 8 and its pre-requisite is CSB 211: Principles of Crop Production. (2L, 2P).

CSB421: Ornamental Horticulture (2 credits)

The course is designed to give students knowledge of different types of materials and ornamental plants and shrubs used in landscaping and design and how they are used. Emphasis would be placed on materials available in Botswana and within the region. The course will also cover lawn establishment in homes, schools, recreational

facilities such as children play ground, football fields, golf courses and public parks. This is a two-credits course offered in semester 7 and has no pre- requisites. (1L, 2P).

CSP201: Introduction to Soil Science (3 credits)

Crops have different soil requirements. An understanding of soil science will enable graduates to offer better services to farmers in the selection of suitable soils for proper crop growth and high yields. The course will cover aspects of soil formation, basic soil physical, chemical and morphological properties and soil classification. This is a three-credits core course offered in semester 3 and has no pre-requisites. (2L, 2P).

CSP202: Soil Fertility and Fertilizers (3 credits)

The course will cover plant nutrition; soil fertility and fertilizer management of the essential plant macro and micro- nutrients. The influence of soil biological, physical and chemical properties on plant nutrient availability to crops will be emphasized. It is a three-credits core course offered in semester 4 and its pre-requisite are CSP201: Introduction to Soil Science and CSB 221: Soil Science. (2L, 2P).

CSP203: Introduction to Crop Pests (3 credits)

The course will cover diagnostic characteristics of arthropods, vertebrates, micro-organisms and weeds of agricultural importance and the biology and ecology of these pests. This is a three credits core course offered in semester 3 and has no pre-requisites. (2L, 2P).

CSP301: Agro-forestry (3 credits)

The course will cover principles of agro-forestry, agro-forestry systems and importance of agro-forestry tree species with emphasis on the role of agro-forestry in tropical and semiarid regions. This is a three-credits core course offered in semester 5 and has no pre-requisites. (2L, 2P).

CSP302: Cereal Crop Production (3 credits)

The course will cover sustainable production of cereal crops such as sorghum, millets, maize, wheat, rice, oats and barley and other minor cereal crops. Important production packages for these crops will also be covered. This is a three-credit core course offered in semester 6 and has no pre- requisites. (2L,2P).

CSP303: Controlled Environment Horticulture (3 credits)

The course will cover structures, designs, operations, production, irrigation systems, enriched environments and crop physiology under controlled environment. This

is a three-credit core course offered in semester 5 and has no pre- requisites. (2L, 2P).

CSP304: Legume, Oilseed and Fibre Crop Production (3 credits)

The course will focus on the production practices of leguminous, oilseed and vegetable fibre crops, factors affecting their performance, adaptation, yield quality and stability characteristics, processing and use as well as the current trends in grain legume, oilseed and fibre crops improvement. This is a three-credit core course offered in semester 6 and has no pre- requisites. (2L, 2P).

CSP306: Pests of Field Crops (3 credits)

The course covers diagnostic characteristics of pest species that attack field crops, outbreaks of exotic pests, crop damage and damage assessment and pest control. This is a three-credit core course offered in semester 6 and its pre- requisite is CSP 203: Introduction to Crop Pests. (2L, 2P).

CSP307: Plant Propagation (3 credits)

The course will cover importance of plant propagation, cellular basis of plant propagation,propagation environment, sexual and asexual propagation. This is a three-credit core course offered in semester 5 and has no pre- requisites (2L, 2P).

CSP308: Soil-Plant Relationships (3 credits)

The course will cover the soil medium for plant growth and the plant root, effects of soil biological, chemical and physical environment on plant growth as well as effects of soil water on plant growth. This is a three-credit optional course offered in semester 6 and its prerequisite is CSP 202: Soil Fertility and Fertilizers. (2L, 2P).

CSP310: Vegetable Production (3 credits)

The course will cover production of important vegetable crops; environmental requirements, cultural practices of leafy, fruit, stem, root, tuber, flower and bulb vegetables. This is a three-credit core course offered in semester 6 and has no prerequisites. (2L, 2P).

CSP312: Pests of Horticultural Crops (3 credits)

The course will cover diagnosis of pests of horticultural crops and identification of their indigenous natural enemies, pest monitoring and damage assessment. This is a 3 credits core course offered in semester 7 and its pre-requisite is CSP 203: Introduction to Crop Pests. (2L, 2P).

CSP401: Root, Tuber and Miscellaneous Crops Production (3 credits)

This course will cover root, tuber and miscellaneous crops of importance to Botswana and the southern African region, types and ecological adaptation to the farming systems, production and consumption patterns and the current uses and future potentials as food, feed, sugar, spice and beverages. This is a three-credit core course offered in semester 8 and has no pre-requisites. (2L, 2P).

CSP402: Diseases of Field Crops (3 credits)

The course covers the diseases of field crops caused by bacteria, fungi, viruses, nematodes, parasitic plants, and abiotic agents. Emphasis will be on disease diagnosis, conditions for disease development, disease epidemiology and control. This is a 3 credits core course offered in semester 6 and its pre-requisite is CSP 203: Introduction to Crop Pests (2L, 2P).

CSP403: Floriculture (3 credits)

The course will cover all aspects of growing and management of houseplants, flowers and other ornamental plants under outdoor, indoor and controlled environmental conditions. This is a three-credit core course offered in semester 7 and its pre-requisite is CSP 307: Plant Propagation. (2L, 2P).

CSP405: Diseases of Horticultural Crops (3 credits)

The course covers the diseases of horticultural crops caused by bacteria, fungi, viruses, nematodes, parasitic plants, and abiotic agents. Emphasis will be on disease diagnosis, conditions for development, ase epidemiology and control. This is a three-credit core course offered in semester 7 and its prerequisite is CSP 203: Introduction to Crop Pests. (2L, 2P).

CSP406 Fruit Production (3 credits)

The course will cover the economic importance of fruits, principles and practices of fruit production, physiology and biochemistry of fruits, orchard design, establishment, management, environmental and cultural requirements. This is a 3 credit core course offered in semester 8 and its pre-requisite is CSP: 307 Plant Propagation. (2L, 2P).

CSP408: Landscape Horticulture (3 credits)

The course will cover principles and practices of landscaping, types of landscape features and designs, planning, installation and maintenance of outdoor spaces. This is a three-credit core course offered in semester 8 and has no pre-requisites. (2L, 2P).

5.6.3 General Education Courses CSB341 Crops and Humankind (2 credits)

The course covers origin of agriculture, crop evolution, the hunter-gatherer stereotype, food crops in the wild habitat, Africa's contribution towards cultivated crops, crop uses, African agriculture and cropping systems, crop selection and improvement, crop pests, diseases and weeds, crop and soils of Botswana, soil-plant- animal relationships, forestry, agroforestry and sustainable agriculture, crops and the future of peasant agriculture in Africa, feeding the world. This is a two-credit GEC course offered in all semesters and has no pre-requisites. (1L, 2P).

CSP404: Postharvest Physiology and Technology (3 credits)

The course will cover the structure, composition, physiology and biochemistry of horticultural produce. Environmental conditions influencing the post-harvest behaviour of horticultural produce and control as well as physiological disorders and other factors leading to loss in quality and quantity of produce. Evaluation and management of quality will also be covered. This is a three-credit core course offered in semester 8 and its pre-requisite is BSB 323: Biochemistry. (2L, 2P).

CFB 421: Community Forestry (3 Credits)

The course will provide an opportunity for the students to understand concepts and principles of rural development and community forestry, community forestry approaches, inter-linkages with other sectors and rural livelihood strategies. The course further provides grounding in social elements of forest management and develops techniques for encouraging participatory management by forest-based communities and other stakeholders. (2L, 2P).

BACHELOR OF SCIENCE DEGREE IN FOOD SCIENCE AND TECHNOLOGY

Preamble

General Provisions

Subject to the Provisions of Academic General Regulations and Faculty Special Regulation, the following Departmental Regulations shall apply:

Programme and title of Degree

The Department of Food Science and Technology offers a single major degree programme leading to the award of a Bachelor of Science in Food Science and Technology.

Objectives of the Programme

At the end of the BSc Food Science and Technology programme the graduate should be able to:

- i. Apply methods of food analysis to assess composition, nutritive value, quality, safety, and compliance with national and international standards.
- ii. Apply methods of food processing and maintenance of food quality and safety in food industries.
- iii. Develop novel food products to meet the commercial needs of consumers.
- iv. Design affordable nutrition programmes for both children and adults to fight against hunger, malnutrition, and disease.
- v. Develop and maintain small and medium scale food enterprises and industries through self-employment.

Entry requirements

Admission into the Degree in Food Science and Technology shall be as stipulated in the Faculties Special Regulation AG 28.1.

Career opportunities for Bachelor of Science in Food Science and Technology graduates

Employment opportunities for graduates of the BSc Food Science and Technology exist within the Ministry of Agriculture, National Food Technology Research Centre, Ministry of Health, tertiary institutions, food manufacturing and catering companies, private companies, and non-governmental and international organizations

The opportunities for self-employment in the informal sector are many and their development will give rise to vibrant locally owned small and medium scale food industries.

4.1.2 Structure of the Programme

- i) The Degree courses in the Food Science and Technology programme shall be offered at levels 100 to 400 as outlined below.
- ii) In addition to agricultural courses, students enrolled in this programme shall take General Education Courses (GEC's) and Electives in accordance with Academic General Regulation 00.2124.
- iii) Students enrolled in the Food Science and Technology degree programme shall be required to complete two 6-week Industrial Attachment as

winter courses, between levels 200 and 300 and levels 300 and 400 in accordance with Faculties Special Regulation AG. 28.5.

- vi) Students enrolled in the Food Science and Technology degree programme shall be required to complete a project (APB410 and APB420) in accordance with the Faculties Special Regulation AG 28.7.

Level 100

Semester 1

In semester 1, the degree in Food Science and Technology Programme shall consist of the following courses:

Core courses

BSB110: Mathematics I (3 credits)

BSB111: General and Inorganic Chemistry (3 credits)

BSB112: Physics (3 credits)

BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)

ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the degree in Food Science and Technology Programme shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)

BSB121: Physical and Organic Chemistry (3 credits)

BSB122: Physics II (3 credits)

BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)

ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the degree in Food Science and Technology Programme shall consist of the following courses:

Core courses

AEB212: Introduction to Agric. Economics (2 credits)
ASB211: Animal Anatomy and Physiology (3credits)
BSB212: Introduction to genetics (2 credits)
BSB213: Fundamentals of Thermodynamics (2 credits)
BSB221: Biometry I (2 credits)
BSB323: Biochemistry (2credits)

Electives/GECs (2 credits)

ASB215: Livestock Production (3 credits) OR
CSB211: Principles of Crop Production (3 credits)

Total 18 credits

Level 200

Semester 4

In semester 4, the degree in Food Science and Technology Programme shall consist of the following courses:

Core courses

BSB228: Introduction to Fluid Mechanics (3 credits)
BSB322: General Microbiology (2 credits)
FSB223: Introduction to Food Science and Technology (3 credits)
FSB224: Food Chemistry (3 credits)
FSB227: Sanitation and Waste Management (3 credits)

Electives/GECs (4 credits)

Total 18 credits

Winter Session

FPB300: Industry Attachment (3 credits)

Level 300

Semester 5

In semester 5, the degree in Food Science and Technology Programme shall consist of the following courses:

Core Courses

FSB310: Food Microbiology (3 credits)
FSB312: Food Analysis (3 credits)
BSB321: Biometry II (2 credits)
ELB412: Food Engineering (3 credits)
FSB311: Food and Human Nutrition (3 credits)

Electives/GECs (4 credits)

Total 18 credits

Level 300

Semester 6

In semester 6, the degree in Food Science and Technology Programme shall consist of the following courses:

Core Courses

ASB424: Livestock Product Processing (3 credits)
ASB432: Dairy Science and Technology (3 credits)
FSB324: Food Quality and Safety (3 credits)
ELB415: Fruit and Vegetable Processing (3 credits)
FSB313: Nutrition in the Life Cycle (3 credits)

Electives/GECs (4 credits)

Total 16 credits

Winter Session

FPB400: Industry Attachment (3 credits)

Level 400

Semester 7

In semester 7, the degree in Food Science and Technology Programme shall consist of the following courses:

Core courses

APB410: Project (2 credits)
ELB450: Food Preservation and Storage (3 credits)
ELB413: Cereal Science and Technology (3credits)
FSB410: Sensory Evaluation (2 credits)
FSB411: Edible Oils and Fats Technology (3 credits)
FSB412: Beverage Science and Technology (2 credits)

Electives/GECs (2 credits)

Total 17 credits

Level 400

Semester 8

In semester 8, the degree in Food Science and Technology Programme shall consist of the following courses:

Core courses

PB420: Project (2 credits)
ELB414: Food Packaging (3 credits)
FSB420: Food Biotechnology (3 credits)
FSB421: Food Product Development and Evaluation (3 credits)
GEC371: Small Business Entrepreneurship (3credits)

Optional Courses (Take at least one course)

AEB228: Agricultural and Food Marketing (3credits) OR
AEB424: Production Economics (2 credits)

Total 16/17credits

Assessment

The overall performance in each course shall be assessed in accordance with the Academic General Regulation 00.842.

Assessment of courses in Degree in Food Science and Technology programme shall be in accordance with the Faculties Special Regulation AG 28.30.

Assessment of the Project courses (APB410, APB420) for the Degree in Food Science and Technology programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Assessment of the Field Practical Training courses (FPB300 and FPB400) for the Degree in Animal Science programme shall be in accordance with the Faculties Special Regulation AG 28.55.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (Cumulative GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree in Food Science and Technology, a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852.

The degree in Food Science and Technology shall be classified in accordance with the provisions of Academic General Regulation 20.4, with cumulative Grade Point Average Cumulative (GPA) computed in accordance with the Academic General Regulation 00.86.

COURSE SYNOPSES

FSB223: Introduction to Food Science and Technology (3 Credits)

History, development and careers in food science and technology. An introduction to concepts and principles of: food production, processing and distribution; food and human nutrition; food preservation, quality, safety, packaging, legislation and labeling, with examples from food industries. (2L, 1P).

FSB224: Food Chemistry (3 Credits)

The course will cover the chemistry and importance of water, carbohydrates, amino acids, lipids, proteins, vitamins and minerals pertaining to their roles in food processing and nutrition. Pigments, flavours and food additives. Understanding the role of enzymes in food industry will be emphasized. Its pre-requisite is BSB323. (2L, 1P).

FSB227: Sanitation and Waste Management (3 Credits)

Water types, sources, purification and treatment for drinking; and food processing. Management of industrial waste. Sewage treatment and possible re-use of water. Laws governing sanitation and waste management. (2L,1P).

FSB310: Food Microbiology (3 Credits)

The course provides students with knowledge and skills in the following areas: intrinsic and extrinsic factors which are responsible for microbial association with foods; identifying hazards in foods; principles of safe food production; examine foods for spoilage and food borne pathogens including emerging pathogens; management aspects of control of pathogenic micro-organisms in foods with special reference to HACCP systems; desirable micro-organisms which amend our foods. (2L,1P).

FSB311: Food and Human Nutrition (3 Credits)

This course will cover locally available foods, nutrients, digestion and functions of nutrients in the body. Formulation of balanced diet for each stage of human life cycle. Anthropometric measurements: Body Mass Index (BMI), Basal Metabolic Rate (BMR) and Physical Activity Level (PAL). Nutritional disorders resulting from deficiency and excesses. Food additives. Nutritional management of diseases, such as hypertension, diabetes and HIV/AIDS. Nutraceuticals and functional foods. Food tolerance and food allergies. A review of food and nutrition problems, policy and programmes in Botswana and internationally. 2L,1P).

FSB312: Food Analysis (3 Credits)

Introduction to food analysis. Sampling techniques and proximate food analysis. Quantitative and qualitative chemical and physical methods in food analysis. Specialised techniques in food chromatography, spectroscopy, radiochemical and microscopic methods will be covered. Use of enzymes in food analysis and food quality and safety. Its pre-requisite is BSB 323. (2L,1P).

FSB313: Nutrition in the Life Cycle (3 Credits)

Understand nutritional changes throughout the lifecycle including pregnancy, lactation, childhood, adolescence, adulthood and aging. The emphasis will be on maternal and child nutrition. Discussion of topics relevant to lifecycle changes including body composition, immunity and sports nutrition.

FSB324: Food Quality and Safety (3 Credits)

Introduction of food quality management systems, assurance and quality control: Good Hygiene Practice (GHP) and Good Management Practice (GMP). Hazard Analysis and Critical Control Points (HACCP) and International Standards Organization (ISO) 22000 series. The use of statistical tools in quality assurance. Legislation: production, for mulation, processing, additives, storage, transport, packaging and labeling. Food laws and regulations in Botswana and Botswana Bureau of Standards. Codex Alimentarius, food safety throughout the food chain. Its pre-requisite is BSB221 (2L,1P).

FSB410: Sensory Evaluation (2 Credits)

This course will cover the history and uses of sensory evaluation in food industry. Principles and applications of sensory evaluation; types of panels, tests, test conditions and their specific functions; selection and training of panelists for descriptive sensory evaluation. Instrumental sensory quality measurements; sensory parameters: colour, flavour, texture, taste, aroma, and general acceptability. Difference and preference tests. Statistical analysis and interpretation of data. Its pre-requisite is BSB221 (1L,2P).

FSB411: Edible Oils and Fats Technology (3 Credits)

This course covers edible oils and fats chemistry. Physical properties, processing: extraction and refining; storage, packaging, shelf life. Nutritional aspects of oils and fats. Methods of analysis utilization and quality control; current issues of importance for health, fat and oil industries; oil tasting. Cooking oils, margarine, lard, butter and butter substitutes and salad oils (2L,1P).

FSB412: Beverage Science and Technology (2 Credits)

Processing and technologies of alcoholic and non- alcoholic beverages. Physical, chemical and microbiological properties. Their economic importance. Quality control and quality assurance applicable to the beverage industry. Laws governing the production and sale of alcoholic and non- alcoholic beverages. (1L,1P).

FSB420: Food Biotechnology (3 Credits)

Food Biotechnology: introduction, importance, advances and trends, techniques and applications. Fermentation and genetic modification in food industry. Yeast and mold based products. Other microbial based products. Comparison of traditional and modern biotechnology. Safety evaluation of novel food products and genetically modified foods. Social, economic and public perceptions of biotechnology and regulatory issues. Its pre-requisites are BSB212 and FSB310 (2L,1P).

FSB421: Food Product Development and Evaluation (3 Credits)

Principles and procedures involved in the development of new products, identification of indigenous foods, design, production and evaluation of new food products.





FACULTY OF ANIMAL AND VETERINARY SCIENCES

Dean: Dr R G Chabo,
(Dip APH, BSc Agric & Biol Sci, MSc Anim Sci, PhD Anim Sci)

Acting Director: MITI
Dr. K Sehularo,
(Dip APH, BVM & S, MVS Vet Public Health)

Department of Animal Science and Production
Head of Department
Associate Professor P M Kgwatalala,
(BSc Agric, MSc Agric, PhD Anim Breeding)

Department of Veterinary Sciences
Head of Department
Dr S S Ramabu, (BVM&S, MVSc, PhD Vet Sci)

Faculty Administrator
Mrs L Maruatona,
(BA Public Admin, MPA HR)

HIGHER DIPLOMA IN ANIMAL HEALTH AND PRODUCTION

Preamble

General Provisions

Subject to the provisions of Academic General Regulations and the Faculty of Agriculture Special regulations for Diploma Programmes, the following Departmental Regulations shall apply:

Programme and Title of Diploma

The Department of Veterinary Sciences offers a single major diploma programme leading to the award of a Higher Diploma in Animal Health and Production.

Objectives of the Programme

- i) To train middle level cadre of staff capable of surveillance and evaluating livestock disease outbreaks and responding appropriately to such situations in collaboration with all stake holders.
- ii) To train, in conjunction with other departments of the University, middle level manpower that can advise farmerson animal production and management practices.
- iii) To impart skills and positive attitude necessary for learners to venture into animal agricultural industry as entrepreneurs.

Entry requirements

Admission into the Higher Diploma in Animal Health and Production shall be as specified in the Faculties Special Regulation AG 11.20.

Career opportunities for holders of a Higher Diploma in Animal Health and Production

There are opportunities in Government, parastatals, and private companies and in self-employment where the graduates of this diploma may work in the areas of animal health, animal production, research, extension and management of farms and agro-businesses. In addition, the graduates may be self-employed as farmers or in agro- businesses.

Programme Structure

- i) The Higher Diploma in Animal Health and Production shall be offered at levels 100 to 300 as outlined below.
- ii) In addition to the Agricultural courses, students

enrolled in this diploma programme shall take General Education and Elective Courses in accordance with Academic General Regulation 00.21.

- iii) Students enrolled in this programme shall be required to complete a 6-week Industrial Attachment (FPB 300) as a winter course between levels 200 and 300 in accordance with the provisions of the Faculties Special Regulation AG 11.60.

Level 100

Semester 1

In semester 1, the Higher Diploma in Animal Health and Production Programme shall consist of the following courses:

Core courses

- BSB110:** Mathematics I (3 credits)
- BSB111:** General and Inorganic Chemistry (3credits)
- BSB112:** Physics I (3 credits)
- BSB113:** Biology of Cells (3 credits)

General Education Courses

- COM 141:** Communication and Academic Literacy Skills I (3 credits)
- ICT121:** Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Higher Diploma in Animal Health and Production Programme shall consist of the following courses:

Core courses

- BSB120:** Mathematics II (3 credits)
- BSB121:** Physical and Organic Chemistry (3 credits)
- BSB122:** Physics II (3 credits)
- BSB123:** Biodiversity (3 credits)

General Education Courses

- COM 142:** Communication and Academic Literacy Skills II (3 credits)
- ICT122:** Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Higher Diploma in Animal Health and Production Programme shall consist of the following courses:

Core courses

AEB212: Introduction to Agricultural Economics (2 credits)

ASB211: Animal Anatomy and Physiology (3 credits)

ASB213: Introduction to Range Science (2 credits)

ASD222: Pharmacology and Toxicology (2 credits)

ASD223: Parasitology (2 credits)

BSB212: Introduction to Genetics (2 credits)

Electives/GECs (2 credits)

Total credits 15 credits

Level 200

Semester 4

In semester 4, the Higher Diploma in Animal Health and Production Programme shall consist of the following courses:

Core courses

AEB 417: Agricultural Extension (3 credits)

ASB221: Livestock Feeds and Feeding (3 credits)

ASB327: Reproduction and Obstetrics (3 credits)

ASD221: Non-Infectious Diseases (2 credits)

ASD225: Food Hygiene and Public Health (2 credits)

BSB322: General Microbiology (2 credits)

Total credits 15 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Higher Diploma in Animal Health and Production Programme shall consist of the following courses:

Core courses

ASB425: Fodder Production (2 credits)

ASD226: Infectious Diseases (3 credits)

ASD312: Basic Epidemiology (2 credits)

ASD313: Basic Surgery (2 credits)

ASD315: Pathology (2 credits)

BSB221: Biometry I (2 credits)

Electives/GECs (2 credits)

Total credits 15 credits

Level 300

Semester 6

In semester 3, the Higher Diploma in Animal Health and Production Programme shall consist of the following courses:

Core courses

ASB412: Beef Production (2 credits)

ASB417: Poultry Production (3 credits)

ASB422: Dairy Production (3 credits)

ASB423: Sheep and Goat Production (2 credits)

ASB428: Pig and Rabbit Production (3 credits)

Electives/GECs (2 credits)

Total credits 15 credits

Assessment

The overall performance in each course shall be assessed in accordance with the Academic General Regulation 00.842.

Assessment of courses in the Higher Diploma in Animal Health and production shall be in accordance with the Faculties Special Regulation AG 11.40.

Assessment of Field Practical Training (FPB 300) shall be in accordance with the Faculties Special Regulation AG 11.60.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (GPA) which is in accordance with the Academic General Regulation 00.9.

Award

To be awarded a Higher Diploma in Animal Health and Production a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852.

The Higher Diploma in Animal Health and Production shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative



Grade Point Average (GPA) computed in accordance with Academic General Regulation oo.86.

BACHELOR OF SCIENCE DEGREE IN ANIMAL SCIENCE

Preamble

General Provisions

Subject to the Provisions of Academic General Regulations and Faculties Special Regulations, the following Departmental Regulations shall apply:

Programme and title of Degree

The Department of Animal Science and Production offers a single major degree programme leading to the award of a Bachelor of Science in Animal Science with specialization in ruminant or non- ruminant production systems.

Objectives of the Programme

The overall objectives of this degree programme are:

- i) To train graduates with a strong foundation in science and practice of animal Agriculture.
- ii) To produce graduates with specialization in ruminant animal production.
- iii) To train graduates with specialization in non-ruminant animal production.
- iv) To produce graduates with skills, knowledge and attitudes that will prepare them as entrepreneurs in the animal agriculture industry.
- v) To produce graduates who can further their knowledge in animal science at post graduate level in order to prepare themselves for careers in research and teaching.

Entry requirements

Admission into the Degree in Animal Science shall be as stipulated in the Faculties Special Regulation AG 28.1. Career opportunities for Bachelor of Animal Science graduates

Graduates of this programme may apply their knowledge of genetics, physiology, animal reproduction and nutrition in livestock management on range and feedlot enterprises, fodder production and marketing as well as, feed manufacturing, poultry and dairy production. They may also find opportunities in agricultural product processing and marketing, be self-employed as farmers or run agri business. There are also opportunities in meat trade, animal care, education and research.

Structure of the Programme

- i) The Degree courses in Animal Science shall be offered at levels 100 to 400 as outlined below.
- ii) In addition to agricultural courses, students enrolled in this programme shall take General Education Courses (GEC's) and Electives in accordance with Academic General Regulation oo.2124. 60.
- iii) Students enrolled in the degree in Animal Science programme shall be required to complete two 6-weeks Field Practical Training as a winter courses, between levels 200 and 300 and levels 300 and 400 in accordance with Faculties Special Regulation AG 28.5.
- iv) Students enrolled in the Animal Science degree programme shall be required to complete a project (APB410 and APB420) in accordance with the Faculties Special Regulation AG 28.7.

Level 100

Semester 1

In semester 1, the degree in Animal Science Programme shall consist of the following courses:

Core courses

BSB110: Mathematics I (3 credits)

BSB111: General and Inorganic Chemistry (3 credits)

BSB112: Physics (3 credits)

BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)

ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the degree in Animal Science Programme shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)

BSB121: Physical and Organic Chemistry (3credits)

BSB122: Physics (3 credits)

BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)

ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the degree in Animal Science Programme shall consist of the following courses:

Core courses

AEB212: Introduction to Agric. Economics (2 credits)

ASB210: Introduction to Animal Science (3 credits)

ASB211: Animal Anatomy and Physiology (3 credits)

ASB212: Livestock Production Systems (2 credits)

ASB213: Introduction to Range Science (2 credits)

BSB212: Introduction to Genetics (2 credits)

Electives/GECs (2 credits)

Total 16 credits

Level 200

Semester 4

In semester 4, the degree in Animal Science Programme shall consist of the following courses:

Core courses

ASB221: Livestock Feeds and Feeding (3 credits)

ASB327: Reproduction and Obstetrics (3 credits)

AEB417: Agricultural Extension (3 credits)

BSB322: General Microbiology (2 credits)

Optional courses (take at least one course)

BSB225: Vertebrate Zoology (3 credits) OR

BSB226: Invertebrate zoology (3 credits)

Electives/GECs (2 credits)

Total 16 credits

Winter course

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the degree in Animal Science Programme shall consist of the following courses:

Core courses

ASB313: Livestock Feed Processing (2 credits)

ASB321: Meat Science (3 credits)

ASB325: Animal Breeding (2 credits)

BSB221: Biometry I (2 credits)

BSB323: Biochemistry (2 credits)

Optional Courses (take at least one course)

ASB317: Animal behavior (2 credits) OR

ASB318: Environmental Physiology of Farm animals (2 credits)

Electives/GECs (2 credits)

Total 15 credits

Level 300

Semester 6

In semester 6, the degree in Animal Science Programme shall consist of the following courses:

Core Courses

ASB226: Animal Health (3 credits)

ASB322: Feedstuff Analysis (3 credits)

ASB324: Animal Diseases (3 credits)

ASB326: Principles of Animal Nutrition (2 credits)

Optional Courses (take at least one course)

ASB314: Animal Biotechnology (2 credits) OR

ASB414: Applied Animal Breeding (2 credits)

Electives/GECs (4 credits)

Total 17 credits

Winter course

FPB400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, students in this programme shall choose to join either the Ruminant or Non-ruminant stream.

- i) Ruminant stream in semester 7, the degree in Animal Science Programme shall consist of the following courses:

Core Courses

ASB415: Range Plant Taxonomy (2 credits)
ASB416: Ruminant Nutrition (2 credits)
ASB419: Range Survey and Monitoring (2 credits)
ASB425: Fodder Production (2 credits)
APB410: Project (2 credits)
BSB321: Biometry II (2 credits)

Electives/GECs (4 credits)

Total 16 credits

Level 400

Semester 7

ii) Non-ruminant stream

Core courses

ASB418: Monogastric Nutrition (2 credits)
ASB427: Equine management (2 credits)
ASB 429: Aquaculture (2 credits)
ASB 431: Pet Management (2 credits)
APB410: Project (2 credits)
BSB321: Biometry II (2 credits)
CSB413: Beekeeping (2 credits)

Electives/GECs (2 credits)

Total 16 credits

Level 400

Semester 8

i) In the Ruminant stream in semester 8, the degree in Animal Science Programme shall consist of the following courses:

Core courses

ASB412: Beef Production (2 credits)
ASB413: Game Farming and Ranching (2 credits)
ASB422: Dairy Production (3 credits)
ASB 423: Sheep and Goat Production (2 credits)
ASB424: Livestock Product Processing (3 credits)
APB420: Project (2 credits)

Electives/GECs (4 credits)

Total 18 credits

Level 400

Semester 8

ii) In the Non-ruminant stream in semester 8, the degree in Animal Science Programme shall consist of the following courses:

Core courses

AEB322: Farm Business Management (2 credits)
APB420: Project (2 credits)
ASB417: Poultry Production (3 credits)
ASB424: Livestock Product Processing (3 credits)
ASB428: Pig and Rabbit Production (3 credits)
ASB430: Ostrich Production (2 credits)

Electives/GECs (2 credits)

Total 17 credits

Assessment

The overall performance in each course shall be assessed in accordance with the Academic General Regulation 00.842.

Assessment of courses in Degree in Animal Science programme shall be in accordance with the Faculties Special Regulation AG 28.30.

Assessment of the Project courses (APB410, APB420) for the Degree in Animal Science programme shall be in accordance with the Faculties Special Regulation AG 28.70.

Assessment of the Industrial Attachment (FPB300 and FPB400) for the Degree in Animal Science programme shall be in accordance with the Faculties Special Regulation AG 28.55.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (Cumulative GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree in Animal Science, a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852.

The degree in Animal Science shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (Cumulative GPA) computed in accordance with the Academic General Regulation 00.86.

COURSE SYNOPSES

Courses for Higher Diploma Programmes

ASD221: Non-Infectious Diseases (2 Credits)

Definition, aetiology, epidemiology, pathogenesis, clinical signs, post mortem, diagnosis, treatment, control and prevention of general systemic states, metabolic disease and deficiencies of energy, proteins, minerals and vitamins. (1L, 2P)

ASD222: Pharmacology and Toxicology (2 Credits)

Action and uses of different classes of drugs. Dosage drugs. Sources, clinical signs and treatment of poisons. Laws on drugs. (1L, 2P).

ASD223: Parasitology (2 Credits)

The definition of common terms used in Parasitology would be covered. There would be emphasis on the importance of knowing parasite life cycle and the association with treatment/control. Zoonotic and economic importance of parasites and the host-parasite relationship, as well as the general effects of parasites on hosts. (1L, 2P).

ASD225: Food Hygiene and Public Health (2 Credits)

Animal Welfare Safety of staff, meat hygiene, abattoir design and hygiene, chemical residues in food, food poisoning (1L, 2P).

ASD 226: Infectious Diseases (3 Credits)

Disease diagnosis in animals. Important diseases of farm animals. (2L, 2P).

ASD 312: Basic Epidemiology (2 Credits)

Introduction to the basic principles and practices of epidemiology and immunology. (1L, 2P).

ASD313: Basic Surgery (2 Credits)

Introduction to basic surgical equipment, techniques and procedures; emphasis on surgical sterilization and disinfection (asepsis), and wound and fracture management. (1L, 2P).

ASD315: Pathology (2 Credits)

Basic concepts of disease. Selected pathologic changes of body systems. Practical diagnostic skills. Pathology of some important disease conditions. (1L, 2P).

Courses for Bachelors Degree Programmes

ASB210: Introduction to Animal Science (3 Credits)

Agricultural animals of the world and their distribution; the role and functions of livestock in providing nutrition and income to humans; breeds of various classes of livestock and their functions; handling and husbandry of various livestock. (2L, 2P).

ASB 211: Animal Anatomy and Physiology of Farm Animals (3 Credits)

Embryological development of Primary body tissues; gross anatomy of farm animals including poultry, histology and functions of vertebrate tissues; physiology of digestive, urogenital, circulatory, excretory, respiratory, musculoskeletal and nervous systems (2L, 2P).

ASB 212: Livestock Production Systems (2 Credits)

The course focuses on systems of production practiced in animal agriculture and their potentials and constraints, including their impact on the environment and the health of the human population (1L, 2P).

ASB215: Livestock Production (3 Credits)

This is a basic course on general livestock production and factors limiting livestock production in Botswana (2L,2P). It should be taken only by non-animal science majors.

ASB216: Animal Nutrition and Range Management (3 Credits)

An introduction to the principles of range management and their application; factors influencing land use in Botswana; forage allocation; grazing systems; fodder production; range improvements; poisonous plants and their effect on the livestock industry; food and the animal; digestive process and requirements of different animal species. (2L, 2P).

ASB221: Livestock Feeds and Feeding (3 Credits)

Characteristics of basic feedstuffs; Assessment of the feeding value of feedstuffs. Feed formulation for different species and classes of livestock and poultry; hay and silage making. (2L, 2P).

ASB226: Animal Health (3 Credits)

General causes of disease. Diagnosis, management and control diseases of importance to Botswana. Animal Diseases Act. (2L, 2P)

ASB311: Wildlife Ecology and Management (3 Credits)

An introduction to the principles of range management; ecology of rangelands; rangeland utilization and improvement; range plants response to grazing pressure;

management and utilization of wildlife; policies associated with grazing lands in Botswana and other countries. (2L, 2P).

ASB313: Livestock Feed Processing (2 Credits)

Feed preparation, processing and packaging. Feed laws and regulations. Feed standards and quality control. (1L, 2P).

ASB314: Animal Biotechnology (2 Credits)

The course will cover the history of biotechnology, application of biotechnology in animal agriculture, gene manipulation, animal reproductive biotechnology, Biotechnology and human health, Ethical issues in biotechnology. (1L, 2P).

ASB 317: Animal Behaviour (2 Credits)

Terms used in describing animal behaviour. Normal social behaviour in domestic animals. Description of common behavioural disorders and how they are managed. Impact of behavioural disorders on animal productivity and welfare. (1L, 2P)

ASB318: Environmental Physiology of Farm Animals (2 Credits)

Definition of the physical environment. Description of how domesticated vertebrates function in their natural and man-made environments. Impact of the environment on animal productivity and welfare. (1L, 2P)

ASB321: Meat Science (3 Credits)

Chemical composition, structure and types of meat. Post-mortem changes in muscle. Meat quality and grading. Meat hygiene and preservation. The nutritive value of meat. Meat quality. Meat by-products. Meat processing and marketing. (2L, 2P).

ASB322: Feed Stuff Analysis (3 Credits)

Proximate feedstuff analysis to estimate nutritive value of feeds; analytical methods for determining metabolites; in vitro fermentation trials and in sacco degradability of feeds. (2L, 2P).

ASB324: Animal Diseases (3 Credits)

Recognition of notifiable disease and other diseases of importance including plant poisoning. Implementation of laws governing notifiable diseases in Botswana. (2L, 2P).

ASB325: Animal Breeding (2 Credits)

An introductory course of genetics applied to livestock

improvement inter alia the principles of Mendelian genetics, population genetics, quantitative genetics and the impact of new technologies on genetic improvement of farm animals. (1L, 2P).

ASB326: Principles of Animal Nutrition (2 Credits)

Digestion of proteins, carbohydrates, lipids. Biochemical metabolism and utilization of the digestible energy. Requirements and functions of vitamins and minerals. Nutrient requirements of farm animals for growth, maintenance and for other production purposes. Nutrient recycling. Signs of mineral and vitamin deficiencies. (1L, 2P).

ASB327: Reproduction and Obstetrics (3 Credits)

Basic reproduction physiology and perinatal events. (2L, 2P).

ASB412: Beef Production (2 Credits)

This course focuses on beef cattle production as an agricultural enterprise that can have commercial benefits. The origin and domestication of cattle. Breeds of beef cattle. The beef cattle industry and systems of production. Marketing of beef cattle and by-products. (1L, 2P).

ASB413: Game Farming and Ranching (2 Credits)

This course focuses on the potentials and constraints of game farming and ranching. It shall include objectives and ecological principles in establishment of game farming. Game species of interest and their interaction with other livestock farming systems. Game capture, transport and adaptation. Legislative aspects of game farming. (1L, 2P).

ASB414: Applied Animal Breeding (2 Credits)

An applied course of animal genetics inter-alia estimation of breeding values, construction of selection indices, use of biotechnology and current issues in animal breeding. (1L, 2P).

ASB416: Ruminant Nutrition (2 Credits)

The gastro-intestinal tract of ruminant animals and nutrition. Nutrient utilization and requirement. Feeding standards and the productive functions. Factors affecting feed intake. Ration formulation for ruminant animals. Metabolic disorders. (1L, 2P).

ASB417: Poultry Production (3 Credits)

Domesticated birds. The poultry industry in Botswana. Poultry, breeding and rearing. Houses and equipment.

Nutrient requirements of poultry. Prevention and control of diseases and parasites in poultry. The business of poultry keeping. (2L, 2P).

ASB418: Monogastric Nutrition (2 Credits)

General management of different monogastric animals. Nutrient digestibility absorption, metabolism of feeds and raw ingredients in non-ruminants. Nutrient requirements, use of mixed feeds and food formulation of different monogastric animals and poultry. (1L, 2P).

ASB 422: Dairy Production (3 Credits)

This course focuses on the study of the principles and management systems involved in the nutrition, breeding, reproduction, animal health, growth and development as they influence milk composition and yield of dairy animals. The course equips students with knowledge and skills that will enable them adopt new strategies to tackle problems incurred in dairy farms. (2L, 2P).

ASB 423: Sheep and Goat Production (2 Credits)

Domestication of sheep and goats. Production systems. Functional roles. Origin and breeds. Routine management, housing; feeding, handling breeding, reproduction. Control and prevention of diseases and parasites. Milk, meat, wool, pelts and skins production. Condition scoring, aging and marketing. (1L, 2P).

ASB 424: Livestock Product Processing (3 Credits)

This course focuses on basic processing techniques performed to all livestock products. Together with the processing, the preservation methods and storage facilities of livestock products are explored. The quality traits of eggs, milk, meat, wool, hides and skins including factors affecting quality are identified. Other components include public health hazards, bio security and consumer concerns. (2L, 2P).

ASB 425: Fodder Production (2 Credits)

Pasture establishment. Use and maintenance of cultivated forages. Integrating cultivated forages into farming systems. Use of specific fodder e.g. lablab, Lucerne, cenchrus ciliaris, panicum maximum etc. Forage conservation and supplementation. Pasture seed production. Effect of pasture cultivation on ecosystem stability. (1L, 2P).

ASB 427: Equine Management (2 Credits)

Management of horses, donkeys and mules. Use of equines for traction. Important diseases of equines. Equine welfare. (1L, 2P).

ASB 428: Pig and Rabbit Production (3 Credits)

The biology of the pig and rabbit, their distribution and common breeds, the feeding and husbandry of pigs and rabbits, reproduction, herd health, production records and marketing. Housing and equipment. (2L, 2P).

ASB429: Aquaculture (2 Credits)

Fish pond construction, Pond and fish management, Harvesting and preservation, Fish health. (1L, 2P).

ASB430: Ostrich Production (2 Credits)

An introduction to Ostrich farming and the systems under which ostrich can be raised, their nutrient requirements, the prevalent diseases, slaughtering and marketing of ostrich products. (1L, 2P).

ASB431: Pet Management (2 Credits)

Care of different types of pets such as dogs and cats, birds and ornamental fish. Animal welfare and public health Aspects of pet keeping. (1L, 2P).

ASB432: Dairy Science and Technology (3 Credits)

This course covers an in-depth technical understanding of the chemistry and process aspects relevant to milk composition, processing technology, fermented milk products, cheese manufacturing and maturation, butter and spreads technology, milk powder, and the chemical, microbiological and physical conversion processes linked to manufacturing practices.

General Education Courses

GEC248: Human Nutrition (3 Credits)

Define nutrition: Define food: The difference amongst food, food supplements and food as a drug: identify both the macro and micro-nutrient constituents of a diet: food quality: read food labels and assess the nutritional value of the food cribbed: use food tables to assess the nutritional and energetic value of food, special diets, and basic principles for prescribing diets. (2LP, 2P).

ASP231: Food Hygiene and Safety (2 Credits)

Food handling and risk of contamination; food poisoning; recognition and control of food borne diseases in man; quality control programmes in the food industry.

ASB 213: Introductory Range Management (2 Credits)

An introduction to the principles of range management; ecology of rangeland; rangeland utilization and improvement; range plants response to grazing pressure;

management and utilization of wildlife; policies associated with grazing lands in Botswana and other countries (1L, 2P).

ASB415: Range Plant Taxonomy (2 Credits)

An introduction to the history of plant taxonomy and its significance to understanding of the natural resources of the earth; how plants are identified; use of keys in plant identification; collecting and pressing plants. (1L, 2P).

ASB 419: Range Survey and Monitoring (2 Credits)

An introduction to sampling range vegetation weight, cover and density; determination of rangeland carrying capacity; measuring vegetation utilization and animal distribution.(1L, 2P).

ASP332: Animal Welfare and You (2 Credits)

Animal rights; areas of conflicts between animal and human rights; ethical issues in the use of animals; animal welfare registration and inspection services.





FACULTY OF NATURAL RESOURCES

Dean: Professor D T Fanta,
(BSc Agric, MSc Plant Taxonomy, PhD Forest Veg Ecol)

Department of Range and Forest Resources

Head of Department
Associate Professor W Mojeremane,
(Dip HR, Dip Forestry, BSc (Hons) Forestry, MSc Tropical Enviro Forestry,
PhD Ecol & Resources Mngt)

Department of Wildlife and Aquatic Resources

Coordinator
Mr M Mzuku,
(Bachelor of Natural Resources, MSc Watershed Sci)

Faculty Administrator
Mr O A Rankosha, (BA Infor Mngt)

HIGHER DIPLOMA IN FORESTRY AND RANGE ECOLOGY

Preamble

General provisions

Subject to the provisions of Academic General Regulations, and the Faculty Special Regulations, the following Departmental Regulations shall apply:

Programme and Title of Diploma

The Department of Range and Forest Resources shall offer a single major programme leading to the award of a Higher Diploma in Forestry and Range Ecology.

Objectives of the Programme

- i. To develop well trained human resources to meet the growing needs of the various sectors of agriculture and natural resources and allied industries in Botswana.
- ii. To co-operate with other Departments in the Faculty and outside the Faculty in training and producing high quality human resources in natural resources and related fields.
- iii. To combine theory and practices in order to inculcate critical thinking in all agricultural courses.

Entry Requirements

Admission into the Higher Diploma in Forestry and Range Ecology Programme shall be as stipulated in the Faculties Special Regulation AG11.20.

Career Opportunities for holders of a Higher Diploma in Forestry and Range Ecology

There are career opportunities for the graduates of the Higher Diploma in Forestry and Range Ecology in Government, Parastatal organizations, Private, sector and the NGOs. Graduates of Higher Diploma in Forestry and range Ecology can also opt for self-employment.

Programme Structure

- i). Courses for the Higher Diploma in Forestry and Range Ecology programme shall be offered at levels 100 to 300, as outlined below.
- ii) In addition to the agricultural courses, all Higher Diploma in Forestry and Range Ecology students shall take the General Education Courses (GEC) and Electives in accordance with General Academic Regulation 00.2124.

- iii) Students enrolled in the Higher Diploma in Forestry and Range Ecology programme shall be required to complete a 6-week Industrial Attachment (FPB300) as a winter course between levels 200 and 300 in accordance with the Faculties Special Regulation AG 11.60.

Level 100

Semester 1

In semester 1, the Diploma in Forestry and Range Ecology shall consist of the following courses:

Cores Courses

- BSB110:** Mathematics I (3 credits)
BSB111: General and Inorganic Chemistry (3credits)
BSB112: Physics I (3 credits)
BSB113: Biology of Cells (3 credits)

General Education Courses

- COM 141:** Communication and Academic Literacy Skills I (3 credits)
ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the Higher Diploma in Forestry and Range Ecology shall consist of the following courses:

Core Courses

- BSB120:** Mathematics II (3credits)
BSB121: Physical and Organic Chemistry (3 credits)
BSB122: Physics II (3 credits)
BSB123: Biodiversity (3 credits)

General Education Courses

- COM 142:** Communication and Academic Literacy Skills II (3 credits)
ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the Higher Diploma in Forestry and Range Ecology shall consist of the following courses:

Core courses

AEB212: Introduction to Agricultural Economics (2 credits)
CSD211: Forest and Range Botany (3 credits)
CSD212: Plant Propagation (3 credits)
CSD213: Seed Technology and Tree Improvement (3 credits)
CSD322: Mensuration (2 credits)
CSB211: Principles of Crop Production (3 credits)

Total Credits 16 credits

Level 200

Semester 4

In semester 4, the Higher Diploma in Forestry and Range Ecology shall consist of the following courses:

Core courses

AEB417: Agricultural Extension (3 credits)
CSB221: Soil Science (3 credits)
CSD221: Ecology of Forest and Rangelands (2 credits)
CSD222: Tree Establishment and Tending Operations (2 credits)
CSD223: Nursery Practices (2 credits)
ELB210: Land Surveying and Evaluation (3 credits)

Electives/GECs (2 credits)

Total Credits 17 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the Higher Diploma in Forestry and Range Ecology shall consist of the following courses:

Core courses

BSB221: Biometry I (2 credits)
CSD311: Forest Fire and Other Damaging Factors (2 credits)
CSD312: Forest Entomology (2 credits)
CSD313: Forest Pathology (2 credits)
CSD314: Forest and Range Inventory and Monitoring (3 credits)
CSB413: Bee-Keeping (2 credits)

Electives/GECs (2 credits)

Total Credits 15 credits

Level 300

Semester 6

In semester 6, the Higher Diploma in Forestry and Range Ecology shall consist of the following courses:

Core courses

ASB311: Wildlife Ecology and Management (3 credits)
CSD214: Forest and Range Policy and Administration (2 credits)
CSD321: Community Forestry (3 credits)
CSD323: Wood Processing and Product (2 credits)
CSD324: Agroforestry (2 credits)
CSD325: Timber Harvesting (2 credits)

Electives/GECs (2 credits)

Total Credits 16 Credits

5.2.3 Assessment

The overall performance of a student in each course shall be assessed in accordance with the General Academic Regulation 00.842.

Assessment of courses in the Higher Diploma in Forestry and Range Ecology programme shall be in accordance with the Faculties Special Regulation AG 11.40.

Assessment of the Industrial Attachment (FPB 300) for the Higher Diploma in Forestry and Range Ecology Programme shall be in accordance with the Faculties Special Regulation AG11.60.

Progression from one semester to the next

In order to progress from one semester to the next, a student must obtain a Cumulative Grade Point Average (GPA) which is in accordance with the General Academic Regulation 00.9.

Award

To be awarded the Higher Diploma in Forestry and Range Ecology, a student must satisfy the appropriate provisions of General Academic Regulations 00.851 and 00.852.

The Higher Diploma in Forestry and Range Ecology shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the General Academic Regulation 00.86.

BACHELOR OF SCIENCE DEGREE IN RANGE SCIENCE

Subject to the Provisions of Academic General Regulations and Faculty Special Regulation, the following Departmental Regulations shall apply:

Programme and title of Degree

The Department of Range Forest Resources shall offer a single major degree programme leading to the award of a Bachelor of Science in Range Science.

Objectives of the Programme

At the end of programme the graduates should be able to collect, organize and analyse range resource data by applying various inventory and survey methods and compose suitable results for management and planning of rangeland and its resources.

- ii) Assess and apply appropriate range animal management practices such as proper stocking rates, monitoring, application of appropriate grazing systems and mixing of different kinds of animals to ensure resource stability for sustainable utilization of rangelands.
- iii) Identify the different land use systems, interpret Tribal Land Act and other related Acts and also use these as frameworks to regulate and bring about sustainable management and utilization practices in consultation with other land users.
- iv) Demonstrate skills in managing integrated range resources at commercial, subsistence and recreational levels by identifying the socio-economic values of range products and showing how to process, package and market range products.

Entry requirements

Admission into the Degree in Range Science shall be as stipulated in the Faculties Special Regulation AG 28.10.

Employment Opportunities

Employment opportunities for graduates of BSc Range Science exist within the Non-Governmental Organization (NGOs) Graduates of BSc Range Science can gainfully be employed in various research organizations and academic institutions. They can also undertake consultancies and/or operate their own ranch businesses.

Programme Structure

- i) Courses for the Degree in Range Science shall be offered at levels 100 to 400 as outlined below.
- ii) In addition to agricultural courses, students enrolled in this programme shall take General Education Courses (GEC's) and Electives in accordance with Academic General Regulation 00.2124.
- iii) Students enrolled in the Degree in Range Science programme shall be required to complete two 6-week Industrial Attachment (FPB 300 and FPB 400) as winter courses, between levels 200 and 300 and levels 300 and 400 in accordance with the provisions of the Faculties Special Regulation AG 28.5.
- iv) Students enrolled in the Range Science degree programme shall be required to complete a research project (APB410 and APB420) in accordance with the Faculties Special Regulation AG 28.7.

Level 100

Semester 1

In semester 1, the degree in Range Science Programme shall consist of the following courses:

Core courses

BSB110: Mathematics I (3 credits)

BSB111: General and Inorganic Chemistry (3 credits)

BSB112: Physics I (3 credits)

BSB113: Biology of Cells (3 credits)

General Education Courses

COM 141: Communication and Academic Literacy Skills I (3 credits)

ICT121: Computer Skills Fundamentals I (2 credits)

Total credits 17 credits

Level 100

Semester 2

In semester 2, the degree in Range Science Programme shall consist of the following courses:

Core Courses

BSB120: Mathematics II (3 credits)

BSB121: Physical and Organic Chemistry (3 credits)

BSB122: Physics II (3 credits)

BSB123: Biodiversity (3 credits)

General Education Courses

COM 142: Communication and Academic Literacy Skills II (3 credits)

ICT122: Computer Skills Fundamentals II (2 credits)

Total credits 17 credits

Level 200

Semester 3

In semester 3, the degree in Range Science Programme shall consist of the following courses:

Core Courses

AEB212: Introduction to Agric. Economics (2 credits)

ASB213: Introduction to Range Science (2 credits)

BSB214: Biological Systematics (3 credits)

RSB211: Range Ecology (3 credits)

RSB223: Range Grasses, forbs and Woody plants (3 credits)

Electives/GECs (3 credits)

Total 16 credits

Level 200

Semester 4

In semester 4, the degrees in Range Science programme shall consist of the following courses:

Core Courses

AEB230: Development of Entrepreneurial Skills in Agribusiness (3 credits)

ASB 311: Wildlife Ecology and Management (3 credits)

CSB221: Soil Science (3 credits)

CSB 204: Forest and Range Entomology (3 Credits)

RSB 212: Range Plant Eco-physiology (3 credits)

Total 15 credits

Winter Session

FPB300: Industrial Attachment (3 credits)

Level 300

Semester 5

In semester 5, the degree in Range Science Programme shall consist of the following courses:

Core Courses

AEB310: Environmental Economics (3 credits)

BSB221: Biometry 1 (2 credits)

ELB210: Land Surveying and Evaluation (3 credits)

GEC350: Environmental Change in Southern Africa (2 credits)

RSB 311: Conservation Ecology (3 credits)

Electives/GECs (3 credits)

Total 17 credits

Level 300

Semester 6

In semester 6, the degree in Range Science Programme shall consist of the following courses:

Core Courses

AEB322: Farm Business Management (2 credits)

CFB421: Community Forestry (3 credits)

ELB330: Remote Sensing (3 credits)

ELB440: Geographic Information Systems (3 credits)

Optional Courses (take at least one course)

ELB421: Watershed Management (3 credits) OR

RSB322: Fresh Water System Management (3 credits)

Electives/GECs (3 credits)

Total 16 credits

Winter Session

FPB400: Industrial Attachment (3 credits)

Level 400

Semester 7

In semester 7, the degree in Range Science Programme shall consist of the following courses:

Core Courses

APB 410: Project (2 credits)

BSB 321: Biometry II (2 credits)

RSB 321: Range Development and Improvements (3 credits)

RSB 424: Range Analysis (3 credits)

Electives/GECs (3 credits)

Total 15 credits

Level 400

Semester 8

In semester 8, the degree in Range Science Programme shall consist of the following courses:

Core courses

AEB 417: Agricultural Extension (3 credits)
ASB 413: Game Farming and Ranching (2 credits)
APB420: Project (2 credits)
RSB 412: Range Animal Management (3 credits)
RSB 421: Range Resource Management (3 credits)
RSB 422: Forage Husbandry and Range Animal Nutrition (3 credits)

Electives/GECs (2 credits)

Total 16 credits

Assessment

The overall performance in each course shall be assessed in accordance with the Academic General Regulation 00.842.

Assessment of courses in Degree in Range Science programme shall be in accordance with the Faculties Special Regulation AG 28.30. Assessment of the Project courses (APB410, APB420) for the Degree in Range Science programme shall be in accordance with the Faculties Special Regulation AG 28.70. Assessment of the Industrial Attachment (FPB300 and FPB400) for the Degree in Range Science programme shall be in accordance with the Faculties Special Regulation AG 28.55.

Progression from one semester to the next

In order to proceed from one semester to the next, a student must obtain a Cumulative Grade Point Average (Cumulative GPA) that is in accordance with the Academic General Regulation 00.9.

Award

To be awarded the degree in Range Science, a student must satisfy the appropriate provisions of the Academic General Regulations 00.851 and 00.852.

The degree in Range Science shall be classified in accordance with the provisions of Academic General Regulation 20.4, with a Cumulative Grade Point Average (GPA) computed in accordance with the Academic General Regulation 00.86.

COURSE SYNOPSES

Courses for Higher Diploma Programmes

CSD 211: Forest and Range Botany- (3 Credits)

The coverage of this course includes general description of plant structure, the use of different standard keys in the identification of trees and grasses and their collection and preservation. This is a three-credit core course offered in semester 2 Level 100. (2L,2P)

CSD 212: Plant Propagation- (3 Credits)

The course covers the concepts of plant propagation, structures and materials for propagation, plant propagation techniques, controlled and uncontrolled environments, nursery techniques and management. This is a three-credit core course offered in semester 2 Level 100 and has no pre-requisite. (2L,2P)

CSD 213: Seed Technology and Tree Improvement - (3 Credits)

The course covers the genetics basis of tree improvement, genetic conservation, tree improvement methods, biotechnology in improvement of trees species, seed technology, seed collection, seed processing, storage and enhancement, seed certification and marketing. This is a three-credit core course offered in semester 3 Level 200 and has no pre-requisites. (2L,2P)

CSD 214: Forest and Range Policy and Administration- (2 Credits)

This course covers the importance of legislation and policies, Acts related to forestry and rangeland management, management strategies of forestry and range organizations, policies and strategies related to forests and rangelands. This is a two-credit core course offered in semester 2 Level 200 and has no pre-requisites. (1L,2P)

CSD 221: Ecology of Forests and Rangelands- (2 Credits)

The course covers concepts of plant and animal ecology, wildlife ecology and management as well as different types of forest vegetation. This is a two-credit core course offered in semester 3 Level 200 and has no pre-requisites. (1L,2P)

CSSD 222: Tree Establishment and Tending Operations - (2 Credits)

The course covers purposes of tree establishment, land clearing, site preparation, tree establishment, weeding thinning; pruning, types of forest stands, silvicultural systems and types of plantations. This is a two credit core course offered in semester 3 Level 200 and its pre-

requisite is CSD 212, Plant Propagation. (1L,2P)

CSD 223: Nursery Practices- (2 Credits)

The course covers uses of a nursery, selection of a nursery site, growth media, growing seedlings in containers; pricking out and potting on, management and marketing of nursery produce. This is a two-credit core course offered in Semester 3 Level 200 and has no pre-requisites. (1L,2P)

CSD 311: Forest Fire and other Damaging Factors- (3 Credits)

The course covers types of forest fires, fire ecology, fire prevention measures, fire-fighting techniques, organization for fire-fighting, forest fire-fighting equipment, other damaging factors. This is a two-credit core course offered in semester 4 Level 200 and has no pre-requisites. (1L,2P)

CSD 312: Forest Entomology - (3 Credits)

The course covers the morphological and ecological diversity of forest and rangeland insects, diagnostic characteristics of insects and their natural enemies, beneficial insects, damage caused on plants and management of pests of forests and rangelands. This is a two-credit core course offered in semester 5 Level 300 and has no pre-requisites. (1L,2P)

CSD 313: Forest Pathology- (3 Credits)

The course covers concepts of forest and range pathology, characteristics of the major groups of plant pathogens, disease diagnosis, assessment of losses due to plant disease, common diseases of forest and range plants and how they managed. This is a two-credit core course offered in semester 5 Level 300 and has no pre-requisites. (1L,2P)

CSD 314: Forest and Range Inventory and Monitoring- (3 Credits)

The course covers map reading, vegetation measurements, range condition, trend and condition monitoring, inventory methods, elementary photogrammetry and types of maps., inventory field work and data collection. This is a three-credits core course offered in semester 5 Level 300 and has no pre-requisites. (2L,2P)

CSD 321: Community Forestry- (3 Credits)

The course covers concepts and principles of rural development and community forestry, community forestry approaches, inter-linkages with other sectors, rural livelihood strategies, Botswana land –use systems and policies, and the role of community forestry in income generation, protection of the environment and food

security. This is a three-credit course offered in semester 6 Level 400 and has no pre-requisites. (2L,2P)

CSD 322: Mensuration- (2 Credits)

The course covers concepts of mensuration, measurement of trees, volume of individual trees and tree stands, and accuracy in forest mensuration. This is a two-credit course and has no pre-requisite. (1L,2P)

CSD 323: Wood Processing and Products- (2 Credits)

The course covers structure and properties of wood, Factors influencing utilization of wood, fuel wood, and charcoal making. This is a two-credit core course offered in semester 4 Level 200 and has no pre-requisites. (1L,2P)

CSD 324: Agroforestry - (2 Credits)

The course covers concepts of agroforestry and integrated production systems, agroforestry technologies, sustainability of agroforestry. This is a two-credit core course offered in semester 4 level 200 and has no pre-requisite.

CSD 325: Timber Harvesting - (2 Credits)

The course covers forest harvesting technology, planning and implementation of harvesting operations, and road construction and maintenance. This is a two-credit core course offered in semester 4 level 200 and has no pre-requisites. (1L,2P)

RSB 211: RANGE ECOLOGY (3 Credits)

This course covers the following areas: interactions of rangeland organisms; structure and functioning of range ecosystems; species distribution, the role of fire and herbivory on ecosystem stability. (2L,2P)

RSB 212: Range Plant Eco-physiology (3 Credits)

This course provides students with an integrated knowledge of life processes of plants and the impact of environmental factors on range Plants. It will explore the major plant functional processes and how environmental constraints affect plant performance as a basis for understanding rangeland ecology. Pre-requisite is RSB 211- Range Ecology. (2L, 2P).

RSB 223: Range Grasses, forbs and Woody plants (3 Credits)

This course covers ecological importance and usage of grasses, forbs and woody plants. The course also covers the procedures in the keying and identification, herbarium establishment and management of forbs and woody plants. (2L,2P)

RSB311: Conservation Ecology(3 Credits)

The course discusses conservation issues as they relate to terrestrial and aquatic ecosystems. It also explains management and legislative issues of conservation. Preerequisite is RSB 211- Range Ecology (2L,2P)

RSB 321: Range Development and Improvement- (3 Credits)

The course provides students with skills and knowledge on restoration of degraded rangelands, control of noxious plants, control of rangeland degradation and ranch development approaches. (2L, 2P)

RSB 322: Freshwater Systems Management- (3 Credits)

The course introduces students to freshwater systems management as well as concepts of their conservations. The course also focuses on the major influences on freshwater wildlife population dynamics and techniques to measure and manage the freshwater wildlife populations and systems. (2L,2P)

RSB 412: Range Animal Management- (3 Credits)

This course covers range animal management and production systems such as extensivise and semi-intensive sytems. It also covers execution and

implementation of management plants as well as emergency feeding plans, and wildlife, forage allocation and off takes. (2L,2P)

RSB 421: Range Resource Management- (3 Credits)

The course covers the importance of range resources to society; concepts of range resource management; grazing mamangement; land degradartion and its causes; and sustainable use of rangelands. (2L,2P)

RSB 322: Forage Husbandry and Range Animal Nutrition- (3 Credits)

The course covers characteristics of the forage sytems, forage resources and forage quality. The course also covers nutrition of range animals. (2L,2P)

RSB 424: Range Analysis- (3 Credits)

This course covers a wide range of procedures of inventorying and analysis rangelands. The procedures cover plant frequency, cover, density and biomas as well as various ways of monitoring and evaluation of range and pasture land (2L,2P).







FACULTY OF SCIENCES

Dean: Dr B Sebolai,
(BSc Agric, MSc Agronomy & Biometry, PhD Agronomy & Biometry)

Department of Biological Sciences & Physical and Chemical Sciences

Head of Department
Dr O Tibe
(BSc Chem & Environ Sci, MSc Chem, PhD Chem)

Department of Biometry and Mathematics

Head of Department
Professor M Kgosimore,
(BSc Maths, MSc Maths, PhD Maths)

Faculty Administrator
Ms R Wiggett, (BEd, MEd)

BSB110: Mathematics I (3 Credits)

Algebraic expressions; functions and graphs, equations and quadratic functions; inequalities; polynomials; remainder and factor theorem; system of equations; exponential and logarithmic functions; series and sequences; trigonometric functions; analytic trigonometry; coordinate and analytic geometry. (3L, 1T)

BSB111: General and Inorganic Chemistry (3 Credits)

Measurements and Units; Composition of Matter; Chemical Reactions; Stoichiometry; Atomic Structure; Periodic properties; Chemical Bonding; Molecular Geometry. Practical will include experiments on measurements, purification techniques, chemical reactions, stoichiometry experiments, inorganic qualitative analysis (2L, 2P, 1T).

BSB112: Physics I (3 Credits)

Newtonian Mechanics: – vectors, motion, Newton's laws, work, energy, power, impulse and momentum, circular motion, oscillations and gravitation. Fluid Mechanics: –Hydrostatic pressure, Buoyancy, Fluid flow continuity and Bernoulli's equation. Thermal Physics: –Temperature and heat, Kinetic model, Ideal gas law, Laws of thermodynamics, first law and second law of thermodynamics. Geometric Optics (2L, 2P, 1T).

BSB113: Biology of Cells (3 Credits)

This course covers the scientific method, use of microscopes, structure and function of cells, and roles of biomolecules in living organisms. It comprises biochemistry; cell structure; transport across membranes; and genetics, focusing mainly on chromosome theory of inheritance, and significance of mitosis and meiosis (2L, 2P, 1T).

BSB120: Mathematics II (3 Credits)

Complex numbers; vectors; matrices; limits and continuity; differentiation and integration; partial differentiation. (3L, 1T)

BSB121: Physical and Organic Chemistry (3 Credits)

Experiments on gases, thermochemistry, physical equilibria, chemical kinetics, acids, bases and the pH concept, chemical equilibrium, some organic chemistry experiments (2L, 2P, 1T).

BSB122: Physics II (3 Credits)

Electricity:–Discrete Charge Distribution; Electric Potential; Electrostatic Energy and capacitance; Electric Current and Direct Current Circuits. **Magnetism:**–Force Exerted by Magnetic Field, Motion of Point Charge in Magnetic Field, Torque on Current Loop of Magnets.

Modern Physics: – Electromagnetic Wave Spectrum, Black body Radiation, Atomic Structure: Particle Nature of Light: Photons, Wave Particle Duality. (2L, 2P, 1T).

BSB123: Biodiversity: (3 Credits)

Diversity of life: principles of systematics-taxonomy and classification; survey of prokaryotes, protists, fungi, plants and animals; using examples of agricultural importance evolution and biogeography. Introduction of Ecology: Population dynamics, community interactions, ecosystems, the biosphere; human impact on biosphere; agricultural ecology (2L, 2P, 1T).

BSB 212: Introduction to Genetics (2 Credits)

The course discusses the principles of Mendelian genetics, different patterns of inheritance and applications of Mendelian ratios in genetic analyses like the χ^2 test. It studies sex linkage and its effects. The structure of the genetic material, DNA, at the molecular level is studied and the function of the gene in protein synthesis. Mutations and other molecular anomalies of DNA are also considered (2L).

BSB213: Fundamentals of Thermodynamics (2 Credits)

Basic concepts and definitions of thermodynamics. Properties of pure substances. The first law of thermodynamics for the closed and open systems. The second law of thermodynamics. Refrigeration cycles. Its pre-requisites are BSB110, BSB112, BSB120 and BSB122. (2L, 1T).

BSB 214: Biological Systematics (3 Credits)

This course covers principles of biological systematics with an up-to-date treatment of aspects of systematic biology concerned with the description and inventory of biodiversity, introduction to phylogenetic reconstruction and practical aspects of biological nomenclature and classifications, identification, keys and an introduction to some taxonomic databases. Its Prerequisite is BSB 123 - Biodiversity. (2L, 2P).

BSB 221: Biometry I (2 Credits)

Introduction to Biometry, Data description and presentation, Measures of central tendency, Measures of variability, Introduction to probability.

BSB 225: Vertebrate Zoology (3 Credits)

Classification of vertebrate animals of the world and their respective adaptations to their different environments. Peculiar adaptations, particularly those of agricultural importance.

Evolutionary relationships between the various groups. Symbiotic relationships. Domestication from the wild and livestock used in animal husbandry (2L, 1P).

BSB 255: Economic Botany (2 Credits)

Introduction to Economic Botany, Ethno-botany, origin of plant uses, traditional plants that are used for food, medicine and other uses, indigenous plants with economic crop value, plant identification, classification and collection (2L).

BSB 226: Invertebrate Zoology (3 Credits)

Classification of the invertebrate animals of the world and their respective adaptations to their environments. Peculiar adaptations, particularly those of protozoan and helminth parasites of agricultural importance. Economic arthropods. Evolutionary relationships between the various animal groups (2L, 1P).

BSB228: Introduction to Fluid Mechanics (3 Credits)

Introduction and Basic Concepts; Properties of Fluids; Pressure and Fluid Statics; Bernoulli and Energy Equations; Momentum Analysis of Flow Systems; Dimensional Analysis and Modeling. Its pre-requisites are BSB110, BSB112, BSB120 and BSB122. (2L, 2P).

BSB321: Biometry II (2 Credits)

Goodness of fit tests, Design and analysis of experiments, Data transformation, Introduction to non-parametric statistics (2L).

BSB322: General Microbiology (2 Credits)

Introduction to microbiology-eukaryotic and prokaryotic cells-morphology and physiology. Life function and cycles of common bacteria, virus, fungus, rickettsias and chlamydiae. Microbes in everyday life; Acquired Immunity. Applications of microbiology.

Laboratory work: Microscopy, Staining techniques, Simple culturing techniques, enumeration of bacteria, chemical control of bacteria and sterilization techniques (1L, 2P).

BSB323: Biochemistry (2 Credits)

Basic chemistry of biomolecules in the cell: carbohydrates, proteins, lipids and nucleic acids. Basic principles of enzyme kinetics and inhibition. Introduction to energy production by cells: glycolysis, tricarboxylic acid cycle, electron transport chain and oxidative phosphorylation (cellular ATP generation). Beta-oxidation of fatty acids,

pentose phosphate pathway, glycogen metabolism and urea cycle. Biochemistry of photosynthesis; adaptive photosynthesis; gene expression; protein synthesis; and operons (1L, 2P).

BSB353: History of Biology (3 Credits)

This course covers the history of biology over time: the early philosophers and their influence; the renaissance period which experienced a flurry of scientific activity and discoveries; the beginning of scientific experimentation which led to the scientific process; the Industrial Age and modern biology culminating in the elucidation of the structure of the --genetic material, DNA (3L). (not captured as shown here)

BSB354: Bioethics (3 Credits)

This course is concerned with the study of moral conduct in the area of the practice of biological disciplines, including those related to agriculture, medicine and research. Focus will be placed on understanding and appreciating relevant biological facts while addressing the principles and practices of ethical decision making at the level of the individual, the community and the nation (3L). (not captured as shown here)

ICT121: Computer Skills Fundamentals I (2 Credits)

In addition, students will develop practical skills in file management, word processing and internet skills. (1L, 3P).

ICT122: Computer Skills Fundamentals II (2 Credits)

This course is designed to help learn computing hardware and develop presentation skills using Microsoft PowerPoint; Introduction to spreadsheet concepts and principles; Use of basic spreadsheet application package facilities; Introduction to database concepts and principle. (1L, 3P).

GEC247: HIV/AIDS Prevention and Control in Botswana (2 Credits)w3

This course is designed to promote HIV and AIDS awareness among students from the various faculties within the University. The global nature of the HIV and AIDS epidemic is emphasized with special attention being given to the nature of the epidemic in Botswana. It is hoped that students taking the course will use the knowledge, skills and attitudes gained to protect themselves from infection with HIV and to empower others to engage in health-promoting behaviour (2L).



BOTSWANA UNIVERSITY OF AGRICULTURE AND NATURAL RESOURCES ACT, 2015



No. 12 of 2015

ARRANGEMENT OF SECTIONS

SECTION

PART I — Preliminary

Short title and commencement

2. Interpretation

PART II — Establishment and functions Of Botswana University of Agriculture and Natural Resources

3. Establishment Of University
4. Objectives of University
5. Powers and functions of University
6. Seal of University

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PART III — Governance of University

7. Principal officers of University
8. Chancellor
9. Vice-Chancellor
10. Chairperson and Vice-Chairperson of Council
11. University Council
12. Powers of Council
13. Tenure of office for Council members
14. Disqualification, suspension and removal from office
15. Vacation of office and filling of vacancies
16. Meetings of Council
17. Disclosure of interest
18. Confidentiality
19. Remuneration and allowances
20. Secretary of Council
21. Senate

PART IV — Miscellaneous Provisions

22. Internal organisation of University
23. Property and contracts
24. Accounts and audit
25. Annual report
26. Statutes

27. Indemnity
28. Independent assessor
29. Repeal
30. Savings and transitional provisions

An Act to provide for the establishment of the Botswana University of Agriculture and Natural Resources and to provide for its powers and functions and for the governance structures of the University, and for matters connected or incidental thereto.

Date of Assent: 29.09.2015

Date of commencement;

ON NOTICE

ENACTED by the Parliament of Botswana

PART 1 — Preliminary

1. This Act may be cited as the Botswana University of Agriculture Short title and and Natural Resources Act, 2015, and shall come into operation on such date as the Minister may, by Order published in the Gazette, appoint. comnncenrnt
2. In this Act, unless the context otherwise requires —
“Council” means the University Council established under section II; “member” means a member of the Council; Interpretation repealed Act” means the Botswana College of Agriculture Act; “Statutes” means the Statutes of the University enacted under section 26; and “University” means the Botswana University of Agriculture and Natural Resources.

PART II — Establishment and Functions of Botswana University of Agriculture and Natural Resources cap. 57:02

3. (1) The Botswana College of Agriculture established under Establishment section 2 of the repealed Act, is hereby continued under the new name of the Botswana University of Agriculture and Natural Resources and shall continue to exist as if established under this Act.
(2) The University shall be a body corporate with perpetual succession and a common seal, capable of suing and being sued under its own name, and subject to the provisions of this Act, performing such acts as bodies corporate, may by law perform.
Of University
4. (1) The objectives of the University shall be to provide higher Objectives Of education and training in the field of agriculture and natural resources or related sciences and such other allied and related subjects as the Council may. from time to time determine.

(2) Without derogating from the generality of subsection (1), the University shall — University

(a) undertake, promote and facilitate research and scholarly investigations in the field of agriculture and natural resources or related sciences; A.104

(b) advance and disseminate knowledge and skills through teaching, learning and practical skills training in the field of agriculture and natural resources or related sciences;

(c) contribute to national and international scientific and technological development in the field of agriculture and natural resources or related sciences;

(d) support and contribute to the realisations of national economic and social development in the field of agriculture and natural resources or related sciences;

(e) contribute to the cultural and social life of the community in the field of agriculture and natural resources or related sciences; and (j) advance the intellectual and human resource capacity of the nation of Botswana and the international community in the field of agriculture and natural resources or related sciences. Powers and

5. (1) Subject to this Act and the Statutes, the University shall have Functions Of University the power to do all things necessary and expedient for the exercise and discharge of its functions.

(2) Without derogating from the generality of subsection (1), the University shall have the power to —

(a) establish faculties, institutions, schools, departments or other academic units, whether in Botswana or elsewhere. as the Council may from time to time consider necessary;

(b) establish professorships, lectureships and other posts whether academic or administrative, and fellowships, bursaries, exhibitions, scholarships, prizes and certificates as the Council may from time to time consider necessary;

(c) conduct research on its own or in collaboration with other national or international organisations in the field of agriculture and natural resources or related sciences;

(d) arrange and conduct symposia, workshops, seminars, conferences or similar activities in the field of agriculture and natural resources or related sciences and take whatever steps the Council

considers appropriate to stimulate and promote interest in agricultural and economic development;

(e) provide advisory consultancy and other services for the benefit of the Government, organisations, and individuals in the field of agriculture and natural resources or related sciences;

(f) provide programmes and courses of study, conduct examinations and Other methods of assessment and award degrees and other qualifications;

(g) establish or participate in the establishment of such commercial, trading, research or other co-operations as may be deemed necessary in the discharge of its functions;

(h) collaborate with such business, professional, cultural, social or other interests within and outside Botswana, as may be deemed necessary in the discharge of its functions;

(i) collaborate with alumni and associations of alumni and graduates of the University;

(j) procure contributions to the funds of the University and raise funds in such manner as the University may deem fit;

(k) receive and accept donations of money or property, on such terms and conditions as shall not be inconsistent with this Act and the functions of the University; and

(l) do all such things IRI-form all such functions as may be necessary for. or incidental to the attainment of the objectives of the University.

6. (1) The seal of the University shall be such device as may be Seal of prescribed by or under the Statutes.

(2) The affixing of the seal shall be authenticated by the Vice Chancellor as the chief executive officer of the University or any person authorised in that behalf by the Council.

PART III — Governance Of University

7. The principal officers of the University shall be the Principal

- (a) Chancellor; officers of University
- (b) Chairperson of the Council;
- (c) Vice-Chairperson of the Council;
- (d) Vice-Chancellor; and
- (e) Deputy Vice-Chancellors as may be appointed under section 9 (3) of this Act.

8. (1) The Chancellor of the University shall be the President of the Republic of Botswana or such eminent person as may be appointed by the President.

(2) A person appointed as a Chancellor by the President under subsection (1) shall hold office for a period of five years, and shall be eligible for re-appointment for a further term of five years.

(3) A Chancellor shall have such powers and privileges and perform such functions as may be conferred on him or her by the Statutes.

(4) In the absence of a Chancellor who is not the President, or during the vacancy in the office of the Chancellor, the Chairperson of the Council shall act as the Chancellor. Chancellor

9. (1) The Vice-Chancellor shall be appointed by the Minister Vice- responsible for agriculture after consultation with the Council and the Chancellor Senate on such terms and conditions as may be provided for in the Statutes.

(2) The Vice-Chancellor shall be the chief executive officer of the University and, under the Council, shall be the academic and administrative head and the chief disciplinary officer of the University.

(3) The Council shall, after consultation with the Senate, appoint such number of Deputy Vice-Chancellors as the Council may, in accordance with Statutes, determine from time to time.

(4) When the post of Vice-Chancellor is vacant, or when the Vice Chancellor is absent, or for any reason unable to perform the function of Vice-Chancellor, there shall be appointed, in accordance with the Statutes, one of the Deputy Vice-Chancellors to act as Vice-Chancellor, or if no Deputy Vice Chancellor is available, any other suitable member of the University staff may be appointed to act as Vice-Chancellor.

10. (1) Subject to subsection (2), the Chairperson of the Council shall be appointed by the President.

(2) Where the Chancellor is not the President, the Chairperson of the Council shall be appointed by the President on the recommendation of the Chancellor made after consultation with the Council.

(3) The Vice-Chairperson of the Council shall be elected at the first meeting of the Council from amongst the members that are not employees or students of the University.

(4) The Chairperson of the Council shall perform

such functions as may be conferred on him or her by the Statutes.

(5) The Vice-Chairperson of the Council shall act as Chairperson in the absence of the Chairperson.

11. (1) The governing body of the University shall be the University Council which, subject to the provisions of this Act and the Statutes, shall be responsible for the management and administration of the revenue and property of the University and, except as may otherwise be provided in this Act, shall have general control over the University and its affairs, purposes and functions and all such other powers and duties as may be conferred upon it by the Statutes.

(2) The Council shall consist of the following members
(a) the principal officers of the University;
(b) seven persons, who are public officers —
(i) two of whom shall be appointed by the Minister responsible for agriculture,

(ii) one of whom shall be appointed by the Minister responsible for agriculture on the recommendation of the Minister responsible for education,

(iii) one of whom shall be appointed by the Minister responsible for agriculture on the recommendation of the Minister responsible for finance,

(iv) one of whom shall be appointed by the Minister responsible for agriculture on the recommendation of the Minister responsible for science and technology,
(v) two of whom shall be appointed by the Minister responsible for agriculture on the recommendation of the Minister responsible for environment;

(c) two persons —

(i) one of whom shall have an agriculture and science background or orientation representing the private sector, and

(ii) one from a research oriented institution, appointed by the Chancellor on the recommendation of the Council in accordance with the Statutes;

(d) one person who is not resident in Botswana, appointed by the Minister responsible for education by reason of their special knowledge and competence in relevant fields or tertiary education;

(e) two persons elected by the Senate, one Of whom shall be a Professor and one a Dean of a Faculty Of the University;

(f) one member of the academic staff who is not on the Senate, elected by members of the academic

staff;

(g) one member of the support staff elected by the support staff of the University; and

(h) one student elected by the student body of the University,

(3) The procedure for election Of members under subsection 2 (c), (e), (g) and (h) shall be as specified in the Statutes.

12. (1) Subject to the provisions of this Act, the Council shall have the power to do or provide for any act or thing in relation to the University which it considers necessary for the performance or exercise of its functions under this Act.

(2) Without prejudice to the generality of the provisions of subsection (1), the Council may, where it deems it necessary or desirable, or where public interest and security so requires, close the University for such period of time as may be specified after consultation with the Senate and the Minister.

(3) Notwithstanding subsections (1) and (2), the Minister may, where he or she considers it in the public interest or security to do so, cause or direct the Council to close the University for such period as may be specified by the Minister.

(4) The Council shall, among other things —

(a) determine the persons who are authorised to sign contracts, cheques, and other documents on behalf of the University, and otherwise regulate procedure in relation to transactions entered into by the University;

(b) provide for the safe custody and proper use of the seal of the University as provided for in section 6; and

(c) approve terms and conditions of service for employees of the University.

13. (1) The Chairperson and the Vice-Chairperson of the Council shall hold office for a period not exceeding three years and shall be eligible for re-appointment or re-election, as the case may be, for two further terms.

(2) All appointed or elected members other than the member elected by the student body of the University shall hold office for a period not Powers of Council
Tenure of office for Council members exceeding three years as may be specified in the notification of appointment, and shall be eligible for re-appointment or re-election for two further terms.

(3) The member elected by the student body shall hold office for a period not exceeding one year and shall be eligible for re-election for one further term.
Disqualification,

14. (1) A person shall not be appointed or elected as a member or be removal suspension from and qualified to continue to hold office where he or she — office
(a) has, in terms of any law in force in any country —

(i) been adjudged or otherwise declared bankrupt or insolvent, and has not been rehabilitated or discharged. or

(ii) made an assignment to. or arrangement or composition with his or her creditors, which has not been rescinded or set aside; or

(b) has, within a period of 10 years immediately preceding the date of his or her appointment, been convicted

(i) in Botswana, of a criminal offence, or

(ii) outside Botswana, of an offence which, if committed in Botswana would have been a criminal offence, and sentenced by a court of competent jurisdiction to imprisonment for six months or more without an option of a fine, whether that sentence has been suspended or not, and for which he or she has not received a free pardon.

(2) The Council may, in writing, suspend from office, a member against whom criminal proceedings are instituted for an offence in respect of which a sentence of imprisonment without an option of a fine may be imposed, and whilst that member is so suspended, he or she shall not carry out any duties under this Act or be entitled to any remuneration or allowances as a member of the Council.

(3) The Council may remove a member from office, after consultation with the appointing authority, if the member —

(a) is absent without reasonable cause from three consecutive meetings of the Council of which he or she has had notice;

(b) has been found to be physically or mentally unable to perform his or her duties efficiently, and a medical doctor has issued a certificate to that effect;

(c) contravenes this Act, the Statutes or other instruments stipulating the duties and responsibilities of members or otherwise misconducts himself or herself to the detriment of the objectives of the Council; or

- (d) has been convicted of an offence for which he or she is sentenced to imprisonment for a term of six months or more without an option of a fine.
- 15.** (1) The office of a member shall become vacant —
- if he or she becomes disqualified in terms of section 14 to hold office as a member;
 - if he or she is absent from three consecutive meetings of the Council without a reasonable excuse;
 - upon his or her death;
 - upon the expiry of 30 days' notice, in writing, to the Secretary Of the Council, of his or her intention to resign from office;
 - after a period of 30 days from the date the member is convicted of a criminal offence and sentenced to at least six months imprisonment term without an option of a fine and the member does not appeal;
 - after a period of 30 days from the date a ruling is made against a member on appeal, where a member appeals a conviction;
 - after a period of 30 days has elapsed from the date a member is given notice, in writing, by the Council of his or her removal from office; or
 - where a member is summarily dismissed by the Council on the grounds of the member contravening this Act or the Statutes or for misconduct detrimental to the objectives of the Council.
- (2) Where the office of the member becomes vacant before the expiry of the member's term of office, the vacancy shall be filled in the same way as the original appointment or election, and any person so appointed or elected shall hold office for a full term.
- 16.** (1) Subject to this Act and the Statutes, the Council shall regulate its own proceedings.
- The Council shall meet at least every three months on dates to be determined by the Council.
 - The Chairperson may, upon giving written notice of not less than 14 days, and upon a written request of not less than half of the members call a meeting of the Council.
 - If the urgency of any particular matter does not permit the giving of such notice referred to in subsection (3), a special meeting of the Council may be called upon the giving of a shorter notice period.
- (5) There shall preside at all meetings of the Council —
- the Chairperson;
 - in the absence of the Chairperson, the Vice-Chairperson; or
 - in the absence of the Chairperson and the Vice-Chairperson, such member as the members present may elect from amongst themselves, not being an employee or student of the University, to preside at that meeting.
- (6) The quorum at all meetings shall be formed by at least 50 per cent of the members.
- (7) All questions before the Council shall be decided by a majority of votes of the members present at the meeting at which the relevant question being considered, and in the event of an equal number of votes being cast, the Chairperson, or the person presiding at that meeting, shall have a casting vote in addition to that person's deliberative vote.
- (8) The Council may invite any person whose presence it considers necessary to attend and participate in the deliberations of a meeting of the Council, but such person shall have no right to vote.
- 17.** (1) If a member is present at any meeting of the Council, or Committee of the Council at which any matter in which the member or immediate family member of the member is directly or indirectly interested in a private capacity is the subject of consideration, the member shall, as soon as practicable after the commencement of the meeting, disclose to the Council his or her interest in the matter and shall not, unless the Council otherwise directs, take part in any discussion of, or vote on any question relating to the matter.
- The provisions of subsection (1) shall mutatis mutandis apply to a person co-opted in terms of section 16 (8).
 - A disclosure of interest under subsection (1) shall be recorded in the minutes of the meeting at which it was made.
 - A person who contravenes subsection (1) commits an offence and is liable to a fine not exceeding P2 000 or to imprisonment for a term not exceeding six months, or to both.
- 18.** (1) A member shall observe and preserve the confidentiality of all matters coming before the Council and such confidentiality shall subsist even after the termination of their terms of office or mandates.
- Any person to whom confidential information is

revealed through working with the Council shall not disclose that information to any other person unless he or she is required to do so in terms of any written law or for purposes of any judicial proceedings.

(3) A person who contravenes the provisions of this section commits an offence and is liable to a fine not exceeding P2 000 or to imprisonment for a term not exceeding six months, or to both.

19. A member or a person co-opted in terms of section 16 (8) may be paid remuneration and allowances, if any, as the Minister may from time to time determine.

20. (1) There shall be a Secretary to the Council who shall be appointed by the Council.

(2) The Secretary of the Council shall attend all meetings of the Council but shall have no right to vote, and shall be responsible for the recording of the Council's proceedings and decisions.

A.III

21. (1) There shall be a Senate of the University which, subject to the provisions of this Act, the Statutes and the general control and approval of the Council, shall be responsible for the academic work of the University, both in teaching and in research, and the superintendence of the education and discipline of the students of the University.

(2) Without derogating from the provisions of subsection (1), the Senate shall be responsible for —

(a) formulating and carrying out the academic policy of the University;

(b) devising and regulating courses of instruction and study and supervising research;

(c) regulating the conduct of examinations and the award of degrees, diplomas and certificates;

(d) advising the Council on the admission of students and the award of scholarships; and

(e) reporting on such matter as may be referred to it by the Council.

(3) The Senate may make representations to the Council on any matter connected with the University, and shall have such additional functions as may be conferred on the Senate by the Statutes.

(4) The Senate shall establish committees of its members, and may appoint, as additional members of such committees, persons who are not members of

the Senate, and may delegate to any such committee, any powers and functions which it is itself competent to perform.

(5) The Senate shall consist of the Vice-Chancellor and at least nine other persons drawn from the academic staff in accordance with the Statutes.

PART IV — Miscellaneous Provisions Senate

22. (1) Subject to the provisions of this Act, the Council may make internal arrangements as it thinks fit, regarding the internal organisation of the University, including the establishment, variation and supervision of organisation of University

(a) halls of residence, faculties, institutes, schools, departments and other bodies;

(b) professorships, lectureships and other posts, whether academic, administrative or otherwise; and

(c) fellowships, bursaries, exhibitions, scholarships, prizes, honorary degrees and other awards.

(2) In so far as they relate to matters which in the opinion of the Council are academic matters, the Council shall exercise the powers referred to in subsection (1) only after consultation with the Senate.

23. (1) The University shall have power, for any purpose which in the opinion of the Council is necessary or expedient for, or in connection with the exercise of the functions of the University, to acquire and hold any movable or immovable property, to sell, lease, mortgage or otherwise alienate or dispose of any such property and to enter into any other transaction.

(2) Where the Council has resolved that it is necessary or expedient to acquire any property under the provisions of subsection (1), the property may be treated as property required for public purposes and the Acquisition of Property Act shall apply accordingly with such modifications as are necessary to provide for the vesting of property acquired thereunder in the University and for the cost of acquisition to be defrayed by the University.

24. (1) The Council shall cause the accounts of the University to be drawn up, audited and published annually at such times and in such manner as the Minister may direct.

(2) The Council shall, within 30 days of receiving a copy of the audited accounts and the report required under section 25, give such copy of the accounts and the report to the Minister.

(3) The Minister shall, within 90 days of receiving a copy of the audited accounts and the report, lay the audited accounts and the report before the National Assembly.

25. The Council shall cause a report of the activities of the University during each academic year to be drawn up and made available to the public within six months after the end of that academic year.

26. (1) The Council shall enact Statutes for carrying into effect the provisions of this Act, and in particular for —

(a) regulating the appointment, conditions of service, termination of appointment and retirement benefits of the staff of the University and for determining the persons who form part of the academic staff for the purposes of this Act;

(b) determining the persons who are authorised to sign contracts, cheques, and other documents on behalf of the University, and otherwise regulating procedure in relation to transactions entered into by the University;

(c) fixing the academic year of the University; and

(d) ensuring that the seal of the University is kept in proper custody and is used only by authority Of the Council.

(2) A Statute shall be taken to be enacted if —

(a) a draft of the Statute has been circulated to the members of the Council at least 14 days before the meeting of the Council at which it is to be considered;

(b) after consideration by the meeting, the draft has been provisionally approved either without amendments or only with amendments of which notice, in writing, was circulated to the members at least seven days before the meeting;

(c) the Statute, as provisionally approved by the meeting of the Council, has been circulated to the members of the Council, and where in the opinion of the Council it affects academic matters, to the members of the Senate, at least seven days before the meeting at which it is proposed to confirm the Statute; and

(d) the Statute is confirmed without amendment at a meeting Of the Council held no less than one month nor more than six months after the meeting at which it was provisionally approved.

27. No matter or thing done or omitted to be done by a

member shall, if the matter or thing is done or omitted to be done bona fide in the course of the operations of the Council, render a member personally liable for any action, claim or demand.

28. (1) The Minister responsible for education, acting upon the recommendation of the Human Resource Development Council established under the Human Resource Development Council Act, may appoint an independent assessor to investigate and report on matters relating to the governance of the University which, in the opinion of the Minister, may require such investigation.

(2) An independent assessor may be appointed by the Minister responsible for education to investigate matters referred to the Minister by the Council, or matters which in the opinion of the Minister, the Council has failed to resolve satisfactorily.

(3) The Council, employees and students of the University shall cooperate with and assist the independent assessor appointed under subsection (1).

29. The Botswana College of Agriculture Act is hereby repealed.

30. (1) Any act lawfully performed by the Botswana College of Agriculture under the repealed Act and before the commencement of this Act shall continue to be valid as if performed under this Act.

(2) All Statutes, rules and ordinances made under the repealed Act and in force immediately prior to the coming into operation of this Act Indemnity Independent Act No. 17 of 2013 cap. 57:02 Savings and transitional provisions shall, to the extent consistent with this Act, continue to be in force as if made under this Act.

(3) Subject to the provisions of this Act, all property which vested in the Botswana College of Agriculture and its Governing Council, or was in any manner held on behalf of, or for the purposes of the Botswana College of Agriculture, shall similarly vest in or be held on behalf of, or for the purposes of the University.

(4) Every contract entered into by the Governing Council of the Botswana College of Agriculture shall have effect as if entered into by the University, and all obligations subsisting against the Governing Council shall continue to subsist against the University.

(5) Any legal proceedings pending immediately before the commencement of this Act, to which the Botswana College of Agriculture was a party shall be continued as if the University has been a party thereto

instead of the Botswana College of Agriculture.

(6) Any enquiry or proceedings, whether of a disciplinary nature or otherwise, instituted or pending in respect of any employee of the Botswana College of Agriculture before the commencement of this Act shall be dealt with, inquired into and determined in accordance with the procedures in place before the commencement of this Act concerning such enquiries or proceedings.

(7) The administrative and management structures of the Botswana College of Agriculture in existence under the repealed Act immediately before the commencement of this Act shall, to the extent that their continued existence is not inconsistent with this Act, continue in existence.

(8) All employees of the Botswana College of Agriculture shall become the corresponding employees of the University and shall continue in office for the period which, and subject to the conditions which, they were appointed, as employees of the Botswana College of Agriculture.

(9) The Governing Council under the repealed Act shall operate as a transitional council pending the constitution of the Council in terms of this Act.

(10) The Minister responsible for education may, by Order published in the Gazette, make such transitional arrangements as may be necessary for the implementation of this Act.

**PASSED by the National Assembly this
16th day of July, 2015.**

BARBARA N. DITHAPO,

Clerk of the National Assembly.

STATUTES

Date of Approval: 22nd March 2016

Date of Enactment: 28th April 2016

Date of Commencement: 03 April 2017

BOTSWANA UNIVERSITY OF AGRICULTURE AND NATURAL RESOURCES STATUTES

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PART I

PRELIMINARY AND INTERPRETATION

1 ENACTMENT, COMMENCEMENT AND CITATION

1.1 Enactment: These Statutes are enacted by the Council pursuant to the provisions of Section 26 of the Botswana University of Agriculture and Natural Resources (BUAN) Act.

1.2 Citation: These Statutes may be cited as the Botswana University of Agriculture and Natural Resources Statutes.

1.3 Date of Commencement: These Statutes shall come into force and effect on a date determined by the Council.

2 DEFINITIONS

In these Statutes, unless the context otherwise requires:

“Academic Staff” means an employee of the University whose terms and conditions of service include the obligation to undertake teaching, research and service and/or holders of posts declared by Council on the advice of Senate to be academic;

“Act” means the Botswana University of Agriculture and Natural Resources, Act No 12 of 2015;

“Auditor” means an Auditor appointed in terms of Section 24 of the Act;

“Board” means a body of elected or appointed members who jointly oversee activities of a Faculty or Department;

“Center” means a Center established under Section 5 (2) (a) of the Act involving staff from one or more departments or Faculties, engaged in a dedicated research, educational or service activity;

“Chancellor” means the person holding the office of Chancellor in accordance with Section 8 of the Act;

“Council” means the governing body of the University established under Section 11 of the Act;

“Dean” means the Dean of Faculty appointed under Statute 11.5;

“Department” means either an Academic Department of the University in which one or more programmes of study are offered, or an Administrative Department;

“Deputy means a Deputy Vice-Chancellor appointed in terms of Vice-Chancellor” Section 9 (3) of the Act;

“Head” means the head of an Institute, School, Center, Academic or Administrative Department;

“Faculty” Faculty established in terms of Section 5 (2) (a) of the Act means a group of academic departments comprising of one subject area or a number of related subject areas;

“Graduate” means any person who has received an

academic award on completing a programme of study at the University;

“Institute” means a specialised establishment of the University established in terms of Section 5 (2) (a) of the Act, involving staff from multiple departments with the mandate of teaching, conducting research and service. An institute may house within it one or more centers.

“Minister” means the Minister responsible for the University;

“Quorum” means the minimum number of members that must be present to constitute a valid meeting;

“School” means School established in terms of Section 5 (2) (a) of the Act, at which instruction is given in a particular discipline.

“Secretary to the means the Secretary appointed in terms of Section 20 of the Council” Act;

“Senate” means the Senate established under Section 21 of the Act;

“Student” means any person currently registered for the receipt of instruction in the University and following a programme of study leading to an award of an academic qualification;

“Support Staff” means an employee of the University whose terms and conditions of service do not include the primary obligation to undertake teaching and research;

“University” means Botswana University of Agriculture and Natural Resources established in terms of Act No 12 of 2015.

“Vice-Chancellor” means the Vice-Chancellor appointed pursuant to Section 9 of the Act or any person acting in that capacity.

3 INTERPRETATION

3.1 Words defined in these Statutes shall have the same meaning in the Regulations of the University.

3.2 Words in the singular shall include the plural and vice-versa unless the context indicates otherwise.

3.3 The masculine gender shall include the feminine or vice-versa unless the context indicates otherwise.

3.4 Except where otherwise specified by these Statutes or Act, the quorum of every committee shall be at least 50 percent of the membership thereof.

3.5 Tenure for elected members of all Committees shall be for three years renewable for two further terms.

3.6 Nothing in these Statutes shall be interpreted in such a manner as to conflict with the provisions of the Act and where such conflict occurs the provisions of the Act shall take precedence.

PART II

4 THE COUNCIL

4.1 The Council, established in terms of the provisions of Section 11 of the Act, is the governing body of the University.

4.2 The membership of Council is as provided for under the provisions of Section 11 (2) of the Act.

4.3 The Council may, in addition to any committee set out herein, establish any other committee which it considers necessary or desirable to achieve its objectives and carry out fully its mandate in terms of the Act.

4.4 No act of Council or of any committee thereof shall be invalidated by any vacancy in its membership or defects in the appointment or election of any of its members.

4.5 Recommendation for membership of Council under Section 11 (2) (c) of the Act shall follow public advertisement for vacancies.

4.6 Elections conducted to membership of Council under Section 11 (2) (e), (f), (g) and (h) of the Act shall be conducted by secret ballot.

4.7 There shall be Chairperson of Council whose responsibilities in terms of Section 10 (4) shall include:

- a) providing leadership and promoting cohesiveness and effectiveness of Council;
- b) Providing overall leadership to Council without limiting the principle of collective responsibility for Council decisions, while at the same time being aware of the individual duties of Council members;
- c) formulating (with the Vice Chancellor and Secretary of Council) the yearly work plan for Council against agreed objectives and playing an active part in setting the agenda for Council meetings and ensuring that a comprehensive agenda is presented at each meeting of Council;
- d) presiding over Council meetings and ensuring that time in meetings is used productively;
- e) ensuring that decisions by Council are executed.

PART III

5 COUNCIL MEETINGS

- 5.1 The Council shall hold at least four ordinary meetings in a year in accordance with Section 16 (2) of the Act.
- 5.2 Nothing in these statutes shall prevent Council from holding special meetings.
- 5.3 The Secretary to the Council appointed by Council pursuant to the provisions of Section 20 of the Act shall further be responsible for such matters as the Council may, from time to time, determine by Statute or Regulations.
- 5.4 Notice of an ordinary meeting shall be circulated by the Secretary at least fourteen calendar days before the date thereof.
- 5.5 An agenda and meeting information pack shall be circulated by the Secretary to Council at least seven days before an ordinary meeting of the Council.
- 5.6 The Council shall exclude from its meetings the student member and other conflicted members when it is considering the restricted agenda of the Council.
- 5.7 Subject to the Act and these Statutes, Council shall regulate its own procedure.

PART IV

6 THE UNIVERSITY SEAL

- 6.1 The Secretary to Council shall be responsible to Council for the safe custody of the University Seal.
- 6.2 The University Seal shall be affixed to leases, contracts and agreements to which the University is a party, and to parchments issued in respect of any degree, diploma or certificate conferred by the authority of the Senate, provided however, that it is specifically recorded that any failure by the University to affix the University Seal shall not affect the enforcement of such lease, contract or agreement in any manner whatsoever.
- 6.3 Except as may otherwise be provided in these Statutes, the University Seal shall be used only as Council may prescribe by resolution.

PART V

7 COMMITTEES OF COUNCIL

7.1 Audit Committee

- a) There shall be an Audit Committee of Council (in this Part referred to as “the Committee”) which shall consist of:
 - i) Three Council members provided they are not employees or students of the University;
 - ii) Two external members with audit background duly appointed by Council.
- b) The Council shall appoint a chairperson from among Council members of the Committee.
- c) The primary functions of the Audit Committee as prescribed by the Audit Committee Charter shall, inter alia, be to:
 - i) assist Council with the oversight of:
 - a) the financial and other reporting practices of the University;
 - b) the performance of the University's internal audit function and external auditor;
 - c) the University's internal control, governance and risk management processes.
 - ii) approve the appointment and removal of the Head of Internal Audit;
 - iii) recommend the appointment, and removal of external auditor;
 - iv) review any significant matters reported by the external auditor, including reports on weaknesses in internal controls and recommendations for improvement;
 - v) approve and review the Internal Audit Section Charter;
- d) Subject to any directions which may be given by Council, the Committee shall regulate its own procedure.

7.2 Appointments, Promotions and Nominations Committee

- a) There shall be an Appointments, Promotions and Nominations Committee of Council (in this Part referred to as “the Committee”) which shall consist of:
 - i) The Vice-Chancellor;

- ii) Deputy Vice-Chancellors;
- iii) Three other members of Council;
- iv) One external human resources expert appointed by Council;
- vi) Head of Human Resources.
- vii) Three Professors
- viii) Two Deans

b) The Council shall appoint a chairperson from amongst non-executive Council members of the Committee.

c) The Committee shall, inter alia and subject to the approval of Council:

- i) recommend to Council for Council's recommendation in terms of Section 11 (2) (c);
- ii) recommend appointment of Secretary to Council in terms of Section 20 of the Act.

d) Subject to such directions as may be given by Council, the Committee shall appoint or promote the following members of the University staff:

- i) Professors and Associate Professors
- ii) Deans of Faculties
- iii) Heads of Institutes, Centers and Schools or equivalent
- iv) Members of the support staff of the rank of Head of or equivalent
- v) Head of Internal Audit
- vi) Head of Legal Services

e) Subject to such directions as may be given by Council, the appointment or promotion of the academic staff of the University below the rank of Associate Professor, and of the support staff of the University below the rank of Head, shall be made by the Vice-Chancellor or such persons as to whom such powers may be delegated by the Vice-Chancellor.

f) No appointment or promotion of such members of the academic or the support staff of the University as are specified in sub (e) above, shall be made by the Vice-Chancellor or such person as to whom such powers may be delegated before the Vice-Chancellor has considered a recommendation made in that regard by the Departmental Appointments, Promotions

and Review Committees in accordance with these Statutes.

g) The Committee shall regulate its own procedure.

7.3 Human Resources Committee

a) There shall be a Human Resources Committee of Council (in this Part referred to as "the Committee") which shall consist of:

- ii) The Vice-Chancellor;
- ii) Deputy Vice-Chancellors;
- iii) Three other members of Council;
- iv) One external human resources expert appointed by Council;
- v) Head of Human Resources.
- vi) Two heads of support departments
- vii) Two Deans

b) The Council shall appoint a chairperson from amongst non-executive Council members of the Committee.

c) The Committee shall, inter alia and subject to the approval of Council:

- i) formulate human resources policies and procedures, in line with the Employment Act and other applicable laws then in force;
- ii) develop staff code of conduct, and rules and regulations;
- iii) develop guidelines on union-management relations in line with Employers Organizations and Trade Unions Act and the Trade Disputes Act or other legislation then in force;

iv) determine human resources needs and projections for the University;

d) The Committee shall regulate its own procedure.

7.4 Finance and Development Committee

a) There shall be a Finance and Development Committee (in this Part referred to as "the Committee") which shall consist of:

- i) The Vice-Chancellor;

- ii) Deputy Vice-Chancellors;
- iii) Three other members of Council who shall not be employees or students of the University, appointed by resolution of Council
- iv) One external member with relevant expertise appointed by Council
- v) Senate representative
- vi) One student elected by SRC
- b) The Council shall appoint a chairperson from amongst the members of the Committee
- c) The Committee shall, on financial matters and subject to the approval of Council inter alia be responsible for governing, managing, regulating, and advising Council on finances, accounts, investments, property, business, procurement, asset disposal and generally the financial affairs of the University.
- d) Without prejudice to the generality of the foregoing, the Committee will be responsible for:
 - i) proposing resource mobilization and allocation strategies and monitoring their implementation;
 - ii) establishing asset management mechanisms;
 - iii) developing and reviewing financial and accounting policies and systems;
 - iv) ensuring the production of monthly financial management reports, ensuring presentation of quarterly managements accounts to Council and ensuring production of the operating budgets and end of year accounts;
 - v) keeping proper books and records of account of the income, expenditure, assets and liabilities of the University;
 - vi) considering and making recommendations to Council in respect of the annual estimates of expenditure and any supplementary estimates;
 - vii) recommending to Council the form in which the annual estimates of revenue and expenditure and financial statement shall be prepared;
 - viii) recommending to Council rules and procedures for the control of expenditure and, generally, for the administration of financial affairs;
 - ix) recommending to Council the persons who shall be authorised to sign cheques, contracts, financial orders and other documents on behalf of the University.
- d) The Committee may establish such other Sub-Committees as may be deemed necessary.
- e) The Committee shall cause to be established a fund (in this Statute referred to as "the fund"). There shall be paid into the fund:
 - i) moneys representing any gift, donation, legacy or endowment received by the University without direction as to the purpose to which the same shall be applied;
 - ii) moneys appropriated in terms of Sub-Statute (iv);
 - iii) moneys accruing or realised from any investment or deposit made under Sub-Statute (v) or (vi);
 - iv) the annual estimates of the University shall make provision for the expenditure of any moneys to be appropriated by the Committee for payment into the fund, and shall specify the purposes for which those moneys may be paid from the fund;
 - v) pending payment from the fund, moneys of the fund (including moneys appropriated for payment into the fund) shall as far as is practicable be invested;
 - vi) moneys of the fund which are not invested in accordance with Sub-Statute (v) shall be deposited;
 - vii) subject to the supervision of the Committee, investments of the moneys of the fund may be released at any time;
 - viii) moneys may be paid from the fund either for the purposes under Sub-Statute (iv) or for such other purposes as the Committee may determine.
- f) Not later than six months after the close of each financial year, the Committee shall cause to be submitted to the auditor the account of the University together with:
 - i) a statement of income and expenditure during such a year; and
 - iii) a statement of the assets and liabilities of the University on the last day of such a year.
 - g) Subject to the approval of Council, the Committee shall, by regulation, prescribe the level of fees payable and the dates by which such fees shall be paid, in respect of tuition, and such other facilities and services of the University as Council may from time to time determine.
 - h) Subject to limitations as Council may specify, the

committee may exercise or perform any duty conferred or imposed on it with financial implications.

- i) The Financial year of the University shall be the period from 1 April in one year to 31 March the following year.
- j) On infrastructural development and procurement, the Committee shall be responsible for:
 - i) The overall physical development of the University and recommending to Council policies on the physical development of the University and the overall management of construction, maintenance and security of buildings, grounds, campus properties, equipment and vehicles of the University.
 - ii) The general development planning processes.
 - iii) Monitoring infrastructure development activities including feasibility studies, transaction advisory services, Public Private Partnership development and any other construction and services related requirements at the University site.
 - iv) Authorising the leasing of properties, staff and students accommodation, and office space and any other activity that may require acquisition of office space.
 - v) Developing tender and procurement policies, systems and procedures.
 - vi) Adjudicating all tenders for procurement of goods and services for the University.
 - vii) Reviewing financial, accounting and procurement policies as necessary.
 - viii) Monitoring procurement of necessary machinery and equipment required to facilitate the operations of the University.
 - ix) Ensuring the expedient purchase of goods and services necessary to support the goals and objectives of the University.
 - k) On Investment, the Committee shall be responsible for approval of investment and commercialization strategy.
 - l) The Committee shall regulate its own procedure.

7.5 Staff Appeals Committee

- a) There shall be a Staff Appeals Committee of Council which shall consist of the following members:

- i) Two external members of Council appointed by Council.
- ii) One representative from Council who shall also sit on the Human Resources Committee.
- b) Council shall appoint the Chairperson from amongst the members of the Committee
- c) Subject to and direction which may be given by Council, the Committee shall regulate its own procedures.
- d) Subject to and direction as may be given by Council, the Committee shall hear appeals by staff against decisions of Management and make appropriate recommendations to Council

PART VI

8.1 SENATE

- a) Pursuant to the provisions of Section 21 of the Act there shall be a Senate whose membership shall consist of:
 - i) Vice-Chancellor;
 - ii) Deputy Vice-Chancellors;
 - iii) Three representatives from each Faculty elected by the Faculty Boards, one of whom shall be Head of Academic Department, one of whom shall be Professor or Associate Professor, and the other a Senior Lecturer or Lecturer;
 - iv) Deans of the Faculties and Head of Schools
 - v) Two undergraduate student representatives
 - vi) One graduate student representative
 - vii) The Head of Library.
- b) The Vice-Chancellor shall be Chairperson of the Senate and in the absence of the Vice-Chancellor, the DVC Academic Affairs & Research (AA&R) shall act as Chairperson of Senate.
- c) Senate shall be the academic authority of the University under the general control and direction of Council in terms of Section 21 of the Act.
- d) Subject to the provisions of the Act, the Senate shall have power to:
 - i) make policies and regulations relating to teaching and instruction within the University including programmes

- of study and contents of courses, provided that the introduction of new programmes of study shall be subject to the approval of Council;
- ii) make regulations governing the admission of persons to programmes of study in the University;
 - iii) make regulations governing methods of assessing and examining the academic performance of students, and regulations for the conduct or examinations;
 - iv) make regulations governing the award of such fellowship, scholarships, studentship, exhibitions and other prizes as the Council may establish, subject to any conditions made by the founders or donors thereof and accepted by Council;
 - v) authorise the conferment and/or award of degrees, diplomas, certificates and other awards and shall determine their titles and abbreviations;
 - vi) revoke the award and conferment of degrees, diplomas, certificates and other awards as specified in the regulations
 - vii) define, by regulations, academic dress and prescribe the use thereof;
 - viii) initiate proposals relating to the conduct of the University generally, discuss matters relating to the University and make representations thereon to Council, exercise all such other powers as are or may be conferred upon the Senate by the Act, by the Statutes, or by Council, and make such regulations or rules as are necessary in the exercise of those powers.
- e) The Senate shall recommend to Council the establishment of Academic Departments and determine which Department and academic subjects shall form part of or be the responsibility of each Faculty or School and may determine that a Department or academic subjects shall form part of or be the responsibility of more than one faculty or school.
- f) The Senate may also:
- i) appoint any committee consisting of members of the Senate and such other persons as it deems appropriate;
 - ii) authorise any committee appointed under this Statute to act jointly with any committee appointed by Council; and
 - iii) delegate any of its powers and functions to any committee appointed under this Statute.
- g) The Senate shall meet at least twice each semester.
 - h) The Head of Academic Services shall be the Secretary to the Senate.
 - i) Senate shall regulate its own procedure by the standing orders formulated by itself.
- ## 8.2 EXECUTIVE COMMITTEE OF SENATE
- a) There shall be an Executive Committee of Senate (in this Part referred to as “the Committee”) which shall consist of the following members:
 - i) Vice-Chancellor
 - ii) Deputy Vice-Chancellors
 - iii) The Deans of the Faculties and Heads of Schools of the University
 - iv) Four persons elected by the Senate from its members two of whom shall be Professors or Associate Professors.
 - b) The Committee may make rules and regulations to govern its proceedings provided that the Vice-Chancellor may call for meetings whenever deemed necessary.
 - c) The Vice-Chancellor shall be Chairperson of the Committee and in his absence the Deputy Vice-Chancellor (AA&R) shall act as Chairperson.
 - e) The Head of Academic Services shall be the Secretary to the Committee
 - f) The Senate Executive Committee may:
 - i) act on behalf of the Senate on urgent matters between Senate meetings and deal with such matters as may be referred to it by Senate;
 - ii) at the request of the Vice-Chancellor, act as an advisory body to the Vice-Chancellor;
 - iii) deal with such other matter as may, from time to time, be referred to it by Senate.
- ## PART VII
- ### 9 OFFICERS, EMPLOYEES AND AGENTS OF THE UNIVERSITY
- #### 9.1 Chancellor
- a) The Chancellor shall be appointed in accordance with

- Section 8(1) of the Act.
- b) The Chancellor shall hold office for 5 years and shall be eligible for one more term of 5 years.
 - c) The Chancellor shall:
 - i) be the titular head of the University and shall be its ambassador, promoting goodwill and mobilizing resources for the University.
 - ii) preside over ceremonial assemblies of the University, confer awards of the University and perform and exercise other functions and powers as described in the Act and Statutes.
 - d) In the absence of Chancellor, the Chairperson of Council shall act as Chancellor.

9.2 Vice-Chancellor

9.2.1 Appointment and Removal of Vice-Chancellor

- a) There shall be a Joint Committee of Council and Senate to advise Council on what recommendation it should give to the Minister in terms of Section 9 (1) of the Act, on the appointment of a Vice-Chancellor, provided that in respect of the first Vice-Chancellor, such appointment shall be made by the Minister on the recommendation of Council alone.
- b) The Joint Committee shall consist of the following members:
 - i) Chairperson, who is not the Chairperson of Council, appointed by Council from among those of its members who are not employees of the University.
 - ii) three persons appointed by Council from among those of its members who are not members of Senate; and
 - iii) three persons appointed by Senate.
- c) No person shall be appointed Vice-Chancellor unless he possesses such qualifications, experience and training as the Minister may approve at the recommendation by Council.
- d) The Vice-Chancellor may resign from office by giving six months' notice thereof in writing to the Minister unless negotiated otherwise.
- e) The Vice-Chancellor may be removed from office by the Minister by giving him six months' notice thereof in writing or by paying him six months' salary in lieu of notice.

- f) Notwithstanding the provisions of these Statutes, the Minister may remove the Vice-Chancellor from office at any time without giving him notice for:
 - i) gross misconduct or incompetence; or
 - ii) Such conflict of interest as, in the opinion of the Minister, warrants his removal from office.
- g) A Joint Committee composed as in Statute 9.2.1 shall be appointed to advise the Council on what recommendation it should give to the Minister in the exercise of his powers in terms of Statutes 9.2.1 (f).

9.2.2 Powers and duties of the Vice-Chancellor

- a) Subject to the Act and these Statutes, the Vice-Chancellor shall be the Chief Executive Officer of the University and shall have overall responsibility for, inter alia:
 - i) academic and administrative leadership of the University;
 - ii) formulation and direction of policy and institutional planning;
 - iii) achievement of the vision, mission and objectives of the University; and
 - iv) monitoring and evaluation of the performance of the University.
- b) The Vice-Chancellor shall be responsible to Council for maintaining and promoting the reputation and good order, efficient and effective processes and procedures of the University, and shall have all such powers as are necessary or expedient for the performance of these duties, and may establish such committees as the Vice-Chancellor may deem necessary for the better carrying into effect of these functions.
- c) The Vice-Chancellor shall, subject to the Act and these Statutes, have overall direction and responsibility over the academic and administrative work of the University and shall perform such other duties as may be conferred upon or assigned to the Vice-Chancellor by Council.
- d) Subject to such regulations as Council may approve, the Vice-Chancellor may in, in the performance of his duties, by order:
 - i) prohibit the admission as a student of any person to the University;
 - ii) prohibit, for such period as shall be specified, any

- iii) prohibit any student from entering or remaining on such part or parts of the University precincts as shall be specified;
- iv) dismiss or suspend for such period as shall be specified by regulations, any student or group of students; and
- v) take any other action against any student as he or she may in the circumstances deem appropriate;

Provided the performance of his duties under this part is done to the extent that is reasonably practicable, after the observance of rules of natural justice.

- e) The Vice-Chancellor may appoint a disciplinary committee, with such membership as is deemed appropriate, to assist in the performance of his duties under this Statute.
- f) Subject to the Act and to these Statutes, the Vice-Chancellor may delegate such powers, duties or functions as is deemed fit and prescribe conditions governing the exercise of any delegated power, duty or functions, provided that, in the absence of express provision made by him, power delegated shall not include power to sub-delegate.
- g) The Vice-Chancellor shall by virtue of his office be a member of every Faculty and of every other entity of the University established by or under the Statutes and of every board or committee appointed by Council or the Senate.

Provided that the Vice-Chancellor shall not be a member of the Audit Committee established under these Statutes or of the Joint Committee established to advise on his removal.

9.3 Deputy Vice-Chancellor

9.3.1 Appointment and Removal of Deputy Vice-Chancellor

- a) There shall be a Joint Committee of Council and the Senate which shall make recommendations to Council in respect of the appointment or removal of Deputy Vice-Chancellor.
- b) The Joint Committee prescribed by this Statute shall be constituted as in Part VII of these Statutes except that the Vice-Chancellor shall also be a member.
- c) The Council shall appoint Deputy Vice-Chancellor after considering recommendations from the Joint Committee of Council and Senate, and for such period

and under such terms and conditions as Council shall determine.

- d) Nothing in these Statutes shall prevent Council from appointing or removal of a Deputy Vice-Chancellor on the recommendation of a Committee of the Council alone.

9.3.2 Powers and Duties of Deputy Vice-Chancellor

- a) The Deputy Vice-Chancellor shall be responsible to the Vice-Chancellor for providing leadership through policy formulation and planning, management and administration in his respective areas of responsibilities as may be defined in the Regulations provided for, if any.
- b) By virtue of his office, a Deputy Vice-Chancellor shall be a member of such other committee of Council and Senate as may from time to time be prescribed in these Statutes except that he shall not be a member of the Audit Committee or a Committee established to advise on his removal.
- c) The Deputy Vice-Chancellor (AA & R) shall be the Deputy Chief Executive Officer of the University.

9.4 Secretary to Council

- a) There shall be Secretary to Council appointed by Council in terms of Section 20 of the Act.
- b) The Secretary to Council shall be Secretary to Council and Council Committees.
- c) The Secretary shall be responsible for the signing and custody of notices and legal documents on behalf of the University and Council shall pass a resolution to such effect for the purpose of legal process.
- d) When a vacancy occurs in the membership of Council the Secretary shall notify the appointing or electing person or body, as appropriate, requesting the appointment or election of a successor to the vacant office, in accordance with Section 11 of the Act.
- e) The Secretary shall where appropriate, arrange the conduct of all elections to Council, its committees, and such other organs of the University as shall be determined from time to time by Council or Vice-Chancellor as the case may be.
- f) In the absence of the Secretary appointed in terms of Section 20 of the Act as aforesaid, the Council may appoint any suitably qualified person to act as Secretary.

9.5 Auditor

- a) Unless otherwise directed under the provision of Section 24 of the Act, the Council shall appoint an Auditor, provided that:
 - i) the person so appointed shall be a certified auditor in accordance with the laws of Botswana, with good professional standing and one actively practising their profession;
 - ii) no person shall be so appointed who or any of whose partners is a member of the Governing Council or staff of the University.
- b) The Auditor appointed in accordance with Statute 9.5 (a) shall be paid by the University such remuneration as Council may from time to time determine.
- c) The Auditor appointed in accordance with Statute 9.5 (a) may require:
 - i) any member, servant or agent of the University to give them such material information in regard to any transaction of the University or the management of its affairs as such a member servant or agent is able to give them; and
 - ii) the production to them for their inspection of any book or document relating to the affairs of, or any cash or securities belonging to the University by the member, servant or agent of the University in possession of such book, document, cash or securities.
- d) The Auditor appointed in accordance with Statute 9.5 (a) shall report directly to Council on whether in their opinion proper books of account have been kept and whether the financial statement of the University:
 - i) was prepared on a basis consistent with the requirements of the Act and is in agreement with the books of account; and
 - ii) in the case of the income and expenditure statement, gives a true and fair view of the income and expenditure of the University for the financial year; and
 - iii) in the case of the balance sheet, gives a true and fair view of the affairs of the University at the end of the financial year.

PART VIII

10 MANAGEMENT COMMITTEES

10.1 Executive Committee of Management

- a) There shall be an Executive Committee of Management which shall deal with strategic management of the University and give overall strategic direction and it shall consist of the Vice-Chancellor and the Deputy Vice-Chancellors of the University.
- b) The Vice-Chancellor shall be the chairperson of the Executive Committee of Management and in his absence the person appointed to act for Vice-Chancellor shall be the Chairperson.
- c) The Committee may convene a meeting with senior management for
- d) The Committee shall regulate its own procedure.

10.2 Internal Tender Committee

- a) There shall be an Internal Tender Committee which shall consist of:
 - i) Deputy Vice-Chancellor, Finance and Administration, who shall be the Chairperson
 - ii) Two Deans elected among themselves
 - iii) Head of Business Development
 - iv) Two representatives from Academic Staff
 - v) Two representatives from Support Staff
- b) The Secretariat of this Committee shall be Finance Department.
- c) Subject to such limitations as the Finance and Development Committee may impose, the Committee shall:
 - i) administer, manage, regulate and report to the Finance and Development Committee on the procurement of goods, services and works;
 - ii) consider and approve procurement of goods, services and works within set limits;
 - iii) approve the procurement procedure to be used on each tender;
 - iv) award or recommend award of tender as appropriate;
 - v) ensure compliance with Government requirements and provisions of the Procurement legislation and best practices in all procurement;
 - vi) adjudicate tenders (receive and resolve tender award queries).
- d) The Committee shall regulate its own procedure.

10.3 Research, Technology Development and Transfer Committee

- a) There shall be a Research, Technology Development and Transfer Committee which shall compose of:
- i) Deputy Vice-Chancellor, Academic Affairs and Research who shall be the Chairperson
 - ii) Dean, Research and Graduate Studies
 - iii) Deans of Faculties
 - iv) Manager, Graduate Studies
 - v) Head of Business Development
 - vi) One Professor / Associate Professor from each faculty
 - vii) Head of Library
 - viii) One graduate student
 - ix) One undergraduate student
 - x) Two representatives from among national research institutions
 - xi) One representative from the agriculture sector
 - xii) One representative from the natural resources sector
- b) The duties and responsibilities of the Committee shall be:
- i) to formulate from time to time, and recommend to Management as appropriate, regulations and procedures governing award of research grants, and ensure observance of such regulations and procedures as approved;
 - ii) to advise the University on Policy relating to research, technology development, technology transfer and intellectual property;
 - iii) to receive, consider and recommend to University financial estimates for research and publication activities;
 - iv) to receive, consider, and approve funding for proposals from members of staff for funding by the University or national or international agencies;
 - v) to receive and consider periodic progress reports on the research and publication activities being undertaken by the different University departments/programmes/projects;
 - vi) to ensure regular dissemination of information on the research and other activities undertaken by the University;
 - vii) to promote and facilitate the community outreach programs undertaken by the University;
 - viii) to perform such other functions as may from time to time be referred to it by Faculty Boards or University Management.

c) Head of Research and Development shall be the secretariat of the Committee.

d) The Committee shall regulate its own procedure.

10.4 Academic Advisory Committee

- a) There shall be an Academic Advisory Committee which shall comprise of the following members:
- i) DVC (AA&R) who shall be the chairperson
 - ii) Deans
 - iii) One academic staff representative from each Faculty
 - iv) Head of Academic Services
 - v) Head of Student Recruitment, Alumni and Career Services
 - vi) Head of Registration, Timetabling and Student Records
 - vii) Faculty Administrators
 - viii) Heads of Schools
 - ix) Head of Library
 - x) Head of Institutional Planning
 - xi) One graduate student
 - xii) One undergraduate student
 - xiii) Head of Information Communication Technology
 - xiv) Head of Marketing and Communication
 - xv) Two representatives from among national research institutions
 - xiv) One representative from the agriculture sector
 - xv) One representative from natural resources sector

b) The duties and responsibilities of the Committee shall be:

- i) to develop and recommend to Senate, general academic policies and regulations, and amendments to thereto for all academic programmes;
 - ii) to recommend to Senate new and reviewed programmes from Faculty Boards;
 - iii) to advise and develop guidelines on industrial attachment and practical training;
 - iv) to consider and make recommendations on any issue referred to it by the Faculty Boards or Senate relating to teaching timetabling, scheduling and sequencing of courses; teaching and space allocation;
 - v) to deal with any academic matters as referred to it by the Senate or Faculty Boards.
- c) The Secretariat of the Committee shall be the Academic Services.
- d) The Committee shall regulate its own procedure.

10.5 Library Advisory Committee

a) There shall be a Library Advisory Committee whose

membership shall comprise of:

- i) Dean, Research and Graduate Studies who shall be the chairperson
- ii) Head of Library
- iii) One representative from each faculty
- iv) Heads of divisions in the library
- v) One representative from Finance department
- vi) Head of Academic Services
- vii) Head of Information and Communication Technology
- viii) One undergraduate student
- ix) One graduate student
- x) Two external library professionals
- xi) One support staff representative

b) The duties and responsibilities of the Committee shall be:

- i) to receive, consider and recommend to the Management all issues relating to Administration (opening hours, etc.), and services provided by library to the staff and students of BUAN and other users;
- ii) to receive, consider and approve recommendations from departments on new subscriptions/acquisitions of journals, prescribed texts and general knowledge books and cancellation of subscriptions;
- iii) to decide on matters of general policy regarding the work of the library after consultations with library staff;
- iv) to generally direct and approve proposals for the activities of the library in pursuance of its objectives;
- v) to advise the University on the strategy, long-term vision and overarching policies of the Library Services.

vi) to advise on budgetary issues;

c) The Secretariat of the Committee shall be the Library.

d) Committee shall regulate its own procedure.

10.6 Information and Communication Technology Advisory Committee

a) There shall be an Information and Communication Technology Advisory Committee which shall comprise of:

- i) Deputy Vice-Chancellor (Finance and Administration) who shall be the chairperson;
- ii) Deputy Vice-Chancellor (AA&R)
- iii) The Head of ICT;
- iv) Deans of Faculties;
- v) Managers of ICT sections;
- vi) Heads of each administrative department;

vii) Heads of Centers and Institutes;

viii) One undergraduate student

ix) One graduate student

b) The duties of the Information and Communication Technology Advisory Committee are:

i) to give advice and direction in implementation of University ICT strategic goal priorities and those priorities from the faculties and departments;

ii) to represent the individual faculties and departments outlook in identifying University needs;

iii) to assist with planning and monitoring the implementation and progress in achieving ICT strategic Goals;

iv) to advise Management on any issues relating to ICT including policy.

c) The Secretariat of the Committee shall be ICT.

d) Committee shall regulate its own procedure.

PART IX

11 FACULTIES, SCHOOLS, INSTITUTES AND CENTERS

11.1 There shall be established such Faculties, Schools, Institutes and Centers within the University as Council may from time to time determine into which academic staff and students shall be grouped.

11.2 Subject to the provisions of the Act, the University shall establish Academic Departments and determine which academic programmes shall form part of and be the responsibility of each Faculty, and may determine that an academic programmes shall form part of and be the responsibility of more than one Faculty.

11.3 Faculty Board

a) The University shall establish a Faculty Board for each Faculty, which shall consist of:

i) Dean of the Faculty, who shall be Chairperson of the Faculty Board;

ii) All academic staff of the Departments, Centers and Institutes of the Faculty;

iii) One representative of each of the other Faculties and the relevant Centers and Institutes at the University;

- iv) Three students of the Faculty provided that such students shall cease to be members if they cease to be registered students of the University;
 - v) Head of Library;
 - vi) Such other persons as the University may determine.
- b) The quorum of Faculty Board shall be one third of the membership thereof.
- c) The members of a Faculty Board referred to in Sub-Statute (a)(iv) shall vacate their seats at the end of each academic year but shall be eligible for re-appointment.
- d) Part-time members of the academic staff may attend meetings of the Faculty Board at the discretion of the Dean but shall have no vote.
- e) A Faculty Board shall exclude from its meetings the student member or members when it is considering the academic performance in examinations or otherwise of individual students, or when it is discussing matters relating to a member or members of staff which a Faculty Board in its discretion shall consider confidential.
- f) Subject to the Act and the Statutes and to such limitations as the Council may impose in respect of the awards of the University and the Senate, a Faculty Board may:
- i) direct and regulate within the general academic policy formulated by Council and by the Senate, all matters relating to teaching instruction within the Faculty, including curricula and examinations, and advise Senate on such matters;
 - ii) make recommendations to Senate in respect of the appointment of external examiners;
 - iii) make recommendations to /Senate in respect of the award of degrees, diplomas, certificates and other awards, academic titles and distinctions within the Faculty;
 - iv) to consider and recommend manpower planning and development issues in line with Faculty needs;
 - v) discuss any matters relating to the work of the Faculty and submit recommendations thereon to Senate;
 - vi) from time to time consider the progress and conduct of the students of the Faculty and make regular reports to Senate;
 - vii) consider all matters referred to it for its consideration
- by Senate and report thereto;
- viii) receive at each meeting reports from Heads of Departments and Faculty representatives, on University Committees and Boards;
- ix) appoint Committees consisting of members of the Faculty and such other persons as it deems fit, and delegate any of its functions to the Committees so appointed.
- g) Every Faculty Board shall meet at least twice each semester.
- h) The Secretariat of this Committee shall be Faculty Administrators.
- i) Every Faculty Board shall regulate its own procedure as guided by senate.
- #### 11.4 Faculty Executive Committee
- a) There shall be a Faculty Executive Committee whose function shall be to act on behalf of the Faculty Board on urgent matters that may arise in between meetings of the Faculty Board.
 - b) The Committee shall comprise of:
 - i) Dean of the Faculty who shall be the Chairperson
 - ii) Head of Academic Services
 - iii) All Heads of Academic Departments
 - iv) One undergraduate student
 - v) One graduate student
 - vi) Head of Library or representative
 - vii) Head of Finance or representative
 - viii) Head of Institutional Planning and Campus Services
 - c) The Secretariat of the Committee shall be the Head of Academic Services.
 - d) The Committee shall regulate its own procedure.
- #### 11.5 Deans of Faculties
- a) Each Faculty shall have a Dean of the Faculty who shall be appointed by Appointments Promotions and Nominations Committee;
 - b) Subject to these Statutes, the Dean of a Faculty shall hold their appointment as such for not longer than two consecutive terms, each of which shall be of three years duration, and shall be eligible for re-appointment.
 - c) The Dean of a Faculty shall be Chief Executive Officer of the Faculty to which they are appointed and, subject to the control of the DVC (AA&R), has general supervision over and direction of the work

- of the Faculty, the academic staff, and the teaching and training of the students and shall have such other powers and duties as may be assigned to them by Council through the Vice Chancellor.
- d) The Dean of a Faculty, subject to the approval of the DVC (AA&R), may delegate any of their powers or duties under this Statute subject to such restrictions and conditions as may be imposed, provided that a power delegated shall not include a power of sub-delegation.
 - e) By virtue of their office, the Dean shall be a member of all the boards and committees in the Faculty.
 - f) As the Chief Executive Officer of the Faculty, the Dean shall be responsible for:
 - i) the co-ordination of the academic programmes and services offered by their Faculty as well as the liaison with other authorities in the University and the University on the harmonisation of such programmes and services with those offered by the rest of the University;
 - ii) the development, in co-operation with the members of the Faculty, of proposals for the extension, revision and improvement of the academic programmes offered by the Faculty;
 - iii) the promotion of research within the Faculty;
 - iv) the implementation, in co-operation with the DVC(AA&R), the Board of the Faculty and the Heads of Department, of long-term academic policy as approved by Senate and/or Council;
 - v) advising and assisting in the preparation of Departmental budgets, their assessment in light of the overall academic policies of the University and the establishment of priorities;
 - vi) generally supervising the performance of the academic staff and other staff required in the Faculty;
 - vii) the review and submission, with appropriate recommendations to the DVC(AA&R), of proposals made by Departments, on matters relating to academic personnel such as appointments, renewal of contracts, confirmation and/or termination of appointments, salary adjustment, and staff training and development;
 - viii) the welfare and progress of the students registered in the Faculty and, the handling of such student academic problems and the referral of their non-academic problems to the relevant authorities;
 - ix) advising the DVC(AA&R) on any matter relating to the students, staff and programmes of the Faculty.
 - g) Before taking a decision on matters which might significantly affect a Department, the Deans shall satisfy themselves that the Department has been consulted and they are fully aware of the views of the Department concerned.
 - h) Where the post of Dean of Faculty is vacant or when the Dean of Faculty is absent, or for any reason unable to perform his duties, the DVC (AA&R) may, after consulting the Dean, if that is reasonably practicable, and the members of the Executive Committee of the Faculty Board appoint a person of the rank of Senior Lecturer or above from among academic staff of the faculty to act as Dean of the Faculty.
 - i) Dean shall be removed by Appointments, Promotions and Nominations Committee following recommendation by DVC (AA&R).

11.6 Faculty Academic Appointments, Promotions and Review Committee

- a) There shall be a Faculty Academic Appointments, Promotions and Review Committee which shall consist of the following:
 - i) Dean of Faculty who shall be the chairperson of the committee;
 - ii) Heads of Departments, Centers and Institutes within the Faculty;
 - iii) Head of Human Resources or representative;
 - iv) One staff representative from each faculty;
- b) The functions of Faculty Academic Appointments, Promotions and Review Committee shall be:
 - i) to consider recommendations from Academic Departmental Boards on appointment of the academic staff;
 - ii) to recommend appointments and promotions of academic staff of the University to positions above Senior Lecturer, to the Appointment, Promotions and Nominations Committee, and positions below the rank of Associate Professor, to the Vice-Chancellor or such persons as to whom powers may be delegated by the Vice Chancellor.
 - c) The Faculty Administrator shall be the secretariat of the Committee.
 - d) The Committee shall regulate its own procedure.

11.7 Academic Departmental Board

- a) For every Academic Department, Center or Institute there shall be a Departmental Board which shall consist of:
 - i) Dean of Faculty;
 - ii) Head of Department, Center or Institute who shall be Chairperson of the Departmental Board;
 - iii) Chief Technicians;
 - iv) Library representative
 - v) All full-time members, including temporary full-time members, of the academic staff of the Department, Centre or Institute;
 - vi) Not more than three students, one of whom shall be a graduate student nominated annually, whose membership shall cease when they cease to be registered students of the University.
 - b) Part-time members of the academic staff may attend the meetings of the Departmental Board at the discretion of the Head of Department, Centre or Institute, but shall have no vote.
 - c) A Departmental Board may co-opt such other persons as the Department, Center or Institute may determine.
 - d) The functions of a Departmental Board shall be:
 - i) to make recommendations for programmes and courses in the Department, Center or Institute;
 - ii) to consider the general organisation of courses to study and research within the Department, Center or Institute and make recommendations to the Faculty Board;
 - iii) to make arrangements for the examination, consider and recommend approval of results of courses offered in the Department, Center or Institute;
 - iv) from time to time consider the progress and conduct of the students of the Department, Center or Institute and make regular reports to the Faculty Board;
 - v) to recommend candidates for appointment to positions within the Department to Faculty Academic Appointments, Promotions and Review Committee;
 - vi) to consider and recommend manpower planning and staff development issues in line with Departmental, Center or Institute needs;
 - vii) to consider and recommend the Departmental, Center or Institute budget;
 - viii) to consider and implement the Departmental, Center or Institute strategic plan.
 - e) A Departmental Board shall exclude from its meetings the student members when it is considering the academic performance in examinations or otherwise of individual students, or when it is discussing the appointment or promotion of a member of staff or any other matters relating to a member or members of staff which a Departmental Board in its discretion shall consider confidential.
 - f) The Head of Department, Center or Institute shall convene at least two meetings of the Departmental Board each semester.
 - g) A Departmental Board shall regulate its own procedure.
- ### 11.8 Heads of Academic Department
- a) The Head of Department shall be appointed or removed by the DVC (AA&R) after receiving a recommendation from the Dean of the Faculty concerned, who shall make such recommendation after consulting full-time members of staff of the department.
 - b) Subject to these Statutes, the Head of a Department shall hold their appointment as such for not longer than two consecutive terms, each of which shall be of three years duration.
 - c) The Head of Department shall participate in the formulation, implementation and evaluation of the academic policies of the University and shall promote academic excellence in the teaching, research and service programmes of the University. In addition, the Head of a Department shall provide academic leadership to the Department by planning, directing, and co-ordinating the formulation and implementation of the academic plans and programmes of the Department.
- ### 11.9 CENTERS AND INSTITUTES
- a) Subject to these Statutes and to such limitations as Council may impose, there shall be Centers and Institutes to:
 - i) promote, co-ordinate and deliver short-term courses in Agriculture, Natural Resources and related fields;
 - ii) document, develop, publish and disseminate training, extension, information and other materials;
 - iii) conduct and promote pilot studies, cutting-edge research, projects, workshops and other outreach

activities;

- iv) promote linkages between agricultural and natural resource research, extension services and training.
- b) The Heads of such Centers and Institutes shall plan and supervise programmes and projects offered or conducted thereat.
- c) The Council shall, on such terms as the Council may determine, establish committees to direct, manage and advise in respect of the administration and activities of established Centers and Institutes.

PART X

12 OTHER COMMITTEES/BOARDS

12.1 Support Services Departmental Boards

- a) For every support Department, there shall be a Departmental Board which shall consist of the following:
 - i) The Head of Department, who shall be the Chairperson;
 - ii) All Managers of sections/units within the Department. Head of Human Resources or representative shall be invited when issues of Human Resources are being considered.
- b) The functions of the Support Services Departmental Board shall be:
 - i) to recommend candidates for appointment and promotion to positions within the Department;
 - ii) to consider and recommend manpower planning and development issues in line with Departmental needs;
 - iii) to consider and recommend the Departmental budget;
 - iv) to consider and implement the Departmental strategic plan;
 - v) to consider and recommend University policies relating to the Department.
- c) The Board shall meet monthly and as and when necessary.
- d) The Board shall regulate its own procedure.

12.2 Support Staff Appointments, Promotions and Review Committee

- a) There shall be Support Staff Appointments Promotions, and Review Committees which shall consist of the following members:
 - i) The Heads of Support Departments;
 - ii) Head of Human Resources who shall be the chairperson;
 - iii) The Manager (Recruitment and Selection);
 - iv) One Chief Technician from each Faculty
 - v) Three Heads of Academic Departments
 - vi) At the discretion of the chairperson, not more than four additional members with special competence from within or outside the University.
- b) The Committee shall consider recommendations from departmental boards and recommend appointments and promotions for Vice Chancellors consideration or such persons as may be delegated by the Vice Chancellor.
- c) The Committee shall regulate its own procedure.

PART XI

13 SECONDED STAFF

Personnel seconded to the University by any Ministry, Institution, Company, Person or other entity may be appointed by the Council or Vice-Chancellor, as the case may be, to posts in the authorized establishment of the University on such special terms and conditions as may be necessary to secure their services under technical assistance or direct recruitment or as Council may prescribe in Regulations.

PART XII

14 SPECIAL APPOINTMENTS

14.1 Notwithstanding the provisions of these statutes, the Vice-Chancellor may, in the event that he is satisfied that exceptional circumstances so require, and on the recommendation of any academic, support or other unit of the University, appoint any person as a member of staff of the University for a period not exceeding twelve (12) months.

14.2 Appointments made under this provision shall be made within University establishment and reported periodically to the Human Resources Committee.

PART XIII

15 TERMS & CONDITIONS OF SERVICE OF MEMBERS OF THE UNIVERSITY STAFF

- 15.1 Subject to these Statutes, an employee of the University shall hold his appointment upon such terms and conditions of service as Council or the Vice-Chancellor shall in each case determine as the case may be.
- 15.2 The terms and conditions of service of every employee of the University shall be set out in a written contract of employment.
- 15.3 Without prejudice to the foregoing, every member of staff of the University shall be subject to the general authority of Council and of the Vice-Chancellor.
- 15.4 Every contract of employment between the University and an employee of the University shall contain or be deemed to contain a provision that the contract is subject to the Botswana Employment Act, University Act and Statutes, and to all regulations made thereunder.

PART XIV

16 AFFILIATED AND ASSOCIATE INSTITUTIONS

- 16.1 The Council may, on the recommendation of Senate, approve the affiliation of any institution of teaching or research, situated within or outside Botswana, with the University, and may designate it an affiliated or associate Institution of the University.
- 16.2 In respect of any affiliated or associate Institution, the Senate shall advise on and assist in the preparation of programmes of instruction.

PART XV

17. STUDENTS' REPRESENTATIVE COUNCIL

- 17.1 There shall be a Student Representative Council which shall be recognised by the University as the organisation representing the student body of the university and shall elect student members to such committees as may be specified by Statute or regulation or otherwise.
- 17.2 The SRC shall:
- a) represent the students of the University in their dealings with the authorities of the University and

other relevant bodies;

- b) promote the cultural, social and athletic life of the students;

- c) foster the corporate spirit of the students.

- 17.3 The constitution of the Students' Representative Council shall be subject to the approval of Council.
- 17.4 Council shall have power to make regulations governing the Student Representative Council and its officers.
- 17.5 Council shall take such steps as are reasonably practicable to secure that such SRC operates in a fair and proper manner and is accountable for its finances.
- 17.6 Subject to the observance by them of the Statutes and of regulations prescribed under the Statutes, the students shall enjoy all the privileges and facilities available to them in the University.
- 17.7 There shall be a Joint Committee of Executive Management with SRC for consultation with student members on non-academic matters of mutual interest such as student welfare and recreation.
- 17.8 There shall be a Graduate Student Association which shall be an Association of the Student body representing the interest of the graduate students and shall elect graduate student members to such committees as may be specified by Statute or regulation or otherwise.
- 17.9 The Graduate Student Association shall be the consultative body for graduate students' academic and research matters.
- 17.10 The SRC shall not use the University facilities to support national political activities.

PART XVI

18. SECURITY

The University reserves the right, through Regulations, to implement measures to control and to regulate access to, and movement within, its building and premises, and to promulgate such other regulations as may be required to establish and maintain good order, and to protect persons, information and property provided that such measures shall at all times be consistent with the preservation of individual rights of movement, association and privacy.

PART XVII

19. REGULATIONS

- 19.1 Subject to the Act and Statutes, Council may make Regulations prescribing any matter which, in the opinion of Council, is appropriate to be prescribed for the better carrying out of the University's functions and in furtherance of these Statutes.
- 19.2 Regulations may provide such information, activities or acts as, in the opinion of Council, may be appropriate.
- 19.3 The Council may, at any time, amend or repeal any Ordinances/Regulations.
- 19.4 Regulations need not be published in the University Calendar, but Council shall publish them in such a manner as Council considers will best make them known to the persons to whom they apply.

PART XVIII

20. AMENDMENTS/REVOCATION OF STATUTES

These Statutes, or any part thereof, may be added to, amended or revoked by Council provided that proposals for such additions, repeals or amendments shall be circulated in accordance with the provisions of Section 26 (2) of the Act.

PART XIX

21. COUNCIL MEMBERS' FEES AND ALLOWANCES

The members of Council shall be paid such fees and allowances as shall be determined from time to time by the Minister.

PART XX

22. ACADEMIC FREEDOM

Academic staff and students of the University shall have freedom within the law to conduct academic activity, and to put forward new ideas whether controversial or unpopular, without placing themselves in jeopardy of losing their jobs, enrolment in the University or privileges.

PART XXI

23. ANTI-DISCRIMINATION

The University shall not discriminate against any person on the grounds of race, nationality, ethnic origin, gender, marital status, disability, age, religion, social background or political belief and/or affiliation.

PART XXII

24. CONFLICT OF INTEREST

Each Council or Committee member shall submit a general declaration of interest in a prescribed format to the Chairperson and for noting by the full Council or Committee in accordance with Section 17 of the Act.

PART XXIII

25. CONFIDENTIALITY

- 25.1 Every member and any person co-opted to a committee shall observe and preserve the confidentiality of all matters coming before a committee, and such confidentiality shall subsist even after termination of his term of office or his co-option.
- 25.2 A person to whom confidential information is revealed through working with a committee shall not disclose such information to any other person unless he is required to do so in terms of any written law or for purposes of any judicial proceedings.
- 25.3 Breach of this clause shall make a member liable for sanctions as may be specified in confidentiality rules of the University.

ACRONYMS AND ABBREVIATIONS

BUAN	Botswana University of Agriculture and Natural Resources
DVC	Deputy Vice Chancellor
DVC (AA&R)	Deputy Vice Chancellor (Academic Affairs & Research)
ICT	Information and Communication Technology
SRC	Student's Representative Council
VC	Vice-Chancellor

CENTRE FOR IN-SERVICE TRAINING AND CONTINUING EDUCATION

Introduction

The Centre for In-Service and Continuing Education (CICE) is the outreach arm of the Botswana University of Agriculture and Natural Resources (BUAN). It extends BUAN's mandate through provision of quality in-service and continuing education in agriculture and natural resources. The CICE among others, designs, develops and delivers training on Botswana Qualifications Authority (BQA) accredited courses that are market driven. The mandate of the Centre is to;

1. Promote, coordinate and deliver short-term courses in Agriculture and related fields.
2. Produce, develop, publish and disseminate training, extension, information and other materials.
3. Promote and conduct pilot studies, projects and workshops.
4. Promote linkages between agricultural research, extension services and training

In-Service and Continuing Education

The Centre offers 46 BQA accredited short courses, the majority of which take 5 days to complete. The course participants are awarded certificates of attendance upon completion of the courses. The mode delivery for the courses includes lectures, but mostly practical work, demonstration, discussions and excursions with a 30:70 Theory to Practical proportions.

The CICE is supported by a team of highly qualified, experienced and dedicated staff of Botswana University of Agricultural and Natural Resources (BUAN) academic staff to teach the courses. Other expertise can be sourced locally from the Ministry of Agriculture Development and Food Security, other ministries, parastatals, private organizations and international organizations, as and when necessary.

Facilities

The Centre has 24 lodging rooms that can accommodate 48 people sharing which are available to course participants. The Centre also has 2 seminar rooms, a boardroom and an auditorium with a capacity of 35, 25, 40 and 140 participants in one seating respectively available to individuals and organizations at a cost. The facilities have open Wi-Fi access, audio visual equipment and secured parking.

Agripreneur Programme

The CICE coordinates the University's incubation programme, Agripreneur. It is a 12-month incubation programme geared towards providing both the technical and business skills for BUAN graduates. It is funded by the University and coordinated in conjunction with the Local Enterprise Authority (LEA), a parastatal organization of the Ministry of Finance and Development Planning to equip BUAN graduates with entrepreneurial skills to make them better prepared for employment by the private sector or self-employment.



CENTRE FOR IN-SERVICE AND CONTINUING EDUCATION

Course List 2020

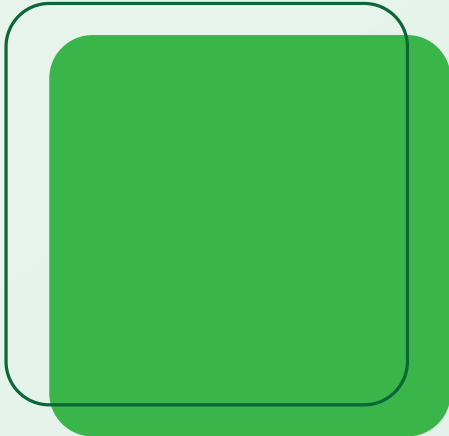
1	Pig Production	27	Designing with indoor plants and management
2	Sustainable Dry Season Feeding	28	Flower arrangement
3	How to Establish a dairy production unit	29	Mushroom Production
4	Sheep and Goats production	30	Lawn establishment & Management
5	Indigenous chicken and Guinea fowl production	31	Soil Fertility & Fertilizer Management (New)
6	Beef production management systems	32	Citrus Production
7	Broiler chicken Production	33	Beekeeping
8	Fish Farming and management	34	Borehole Sitting, drilling, Equipment & Maintenance
9	Layer Chicken Production	35	Irrigation with Treated Wastewater
10	Rabbit Production and Management	36	Soil & Rainwater Management in Agriculture
11	Fodder Production	37	Introduction to Irrigation Management and Scheduling
12	Dairy Goat Production	38	GIS Applications in Agriculture, Natural Resources and EIA
13	Livestock Health (Disease & Vaccination)	39	Advanced Irrigation Management & Scheduling
14	Business Proposal	40	Implementation of Irrigation Projects
15	Value Chain Management (New)	41	Design of Irrigation Systems
16	Agricultural Tax	42	Tractor Maintenance
17	Farm Records and Accounts	43	Generation of Energy using Livestock Waste
18	Marketing of Agricultural Products	44	Practical Application & Interpretation of SPSS
18	Extension Techniques	45	Data Analysis using SAS and SPSS
19	Nursery seedling and Tree Production	46	Epidemiology of infectious diseases
21	Vegetable Production	47	Qualitative & Quantitative Methods
22	Agro chemicals Management		
23	Introduction in Fruit Production		
24	Chainsaw Operation and Management		
25	Landscaping		
26	Diagnosis and Management of Vegetable, Pests and disease		



BOTSWANA UNIVERSITY OF
AGRICULTURE AND NATURAL RESOURCES

Inspiring Sustainable Growth

Building the future together.



UNDERGRADUATE PROSPECTUS (2020-2021)

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