

FACULTY OF HEALTH SCIENCES & VETERINARY MEDICINE

School of Pharmacy

Prospectus 2023



UNAM
UNIVERSITY OF NAMIBIA



The
ENGAGED@
University 30
1992 - 2022

PROSPECTUS 2023

SCHOOL OF PHARMACY



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SCHOOL OF PHARMACY PREAMBLE

The mission of the School of Pharmacy is to be a Regional centre of excellence in preparing graduates for a life-long professional career in the provision of pharmaceutical care that is in tune with the needs of society. The School shall provide a quality learning environment conducive to the pursuit of professional competence, while providing services to the community and undertaking relevant translational research for the enhancement of health. The School will continually strive for the establishment of training programs in the field of pharmacy, lending support to the human resource development initiatives of the country; this will include the provision of Continuing Professional Development and postgraduate education of pharmacists, and the training and education of technical cadres and scientists. Finally, the School will seek pharmaceutical solutions in medicines access and supply through pharmaceutical production with research and development of existing medicines and novel agents particularly those derived from the rich natural resources of Namibia.

The key objectives of the School of Pharmacy are:

- To promote equity of access to health care services for all;
- To promote affordable health care service delivery by strengthening health care systems that are sustainable, cost-effective, efficient, culturally relevant and acceptable;
- To institute pharmaceutical care measures to counter major health risks including the prevailing communicable diseases;
- To develop academically and professionally qualified pharmacists in sufficient numbers to support the health care infrastructure of Namibia;
- To conduct research directed to the health care needs of the Namibian society at large, and which is instrumental in ensuring quality health care service delivery;
- To utilise the natural resources available and the skills and research generated in producing commercially viable quality pharmaceutical products.

SCHOOL OF PHARMACY OATH

All (Students and Faculty):

We pledge to serve our patients, their families, our community and each other with respect, competence, compassion, and humility. We hold as our ideal to care and treat all of our patients. From them we will learn. We hold as our ideal the advancement of knowledge. Through it disease will be understood, prevented and cured. We hold as our ideal open-minded collaboration. To this we are collectively committed.

We hold as our ideal critical self-evaluation. Through this we will grow.

Faculty:

We, your faculty, promise to serve as worthy role models, as our own teachers have before us.

Students:

We, your students, recognize the excellence and commitment of those from whom we learn.

Faculty:

We promise to support your personal and professional growth, in healthcare settings, in the laboratory, in the community, and through your own teaching.

Students:

We promise to pursue responsibly our calling to patient care, to service, and to research.

Faculty:

We promise to maintain an environment where scientific integrity and ethical standards sustain your trust in us.

Students:

We commit ourselves to the highest standards of academic honesty, scientific integrity and ethical practice as students and in our professional lives.

All (students and faculty members):

We honour The University of Namibia, the Health Professions Councils of Namibia and our Government's history of service to the people of this nation. We accept the challenges and opportunities of those alumni whom we follow. We vow to be professional, punctual and courteous. We vow to honour and respect life on earth, in all forms, crawling and reasoning, with intellect or with handicap, to be ambassadors of healthy living and a prosperous future. We vow to take to heart and mind that all men are created equal. We vow to uphold this pledge and our assistance to others who do the same.

UNIVERSITY OF NAMIBIA
FACULTY OF HEALTH SCIENCES AND VETERINARY MEDICINE
STRUCTURE AND PERSONNEL

OFFICE OF THE DEAN

Executive Dean	Prof J Hall
Associate Dean: School of Pharmacy	Mr B Singu
Faculty Manager	Mr A Fledersbacher
Campus Administrator	Ms D Titus
Faculty Officer	Ms A Shipanga
Administration Officer	Ms S Amia
Examination Officer	Mr W Van Wyk
Student Records Officer	Mr M Nowaseb
Student Support Officer	Mr A Ngwagwama
Security Officer	Mr H Nakadiva
ICT Officer	Mr A Shikongo
Network Administrator	Mr S Shilongo

General enquiries regarding the school of Pharmacy and the qualifications offered by the School should be directed to:

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The Faculty Officer
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University of Namibia
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WINDHOEK

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Matters regarding specific subjects and departments should be addressed to the relevant Head of Department.

ACADEMIC CALENDAR – UNAM CORE DATES 2023

FIRST SEMESTER

12 January	University Open
24 January	Academic staff resumes office duties
30 January	Lectures commence for CORE SEMESTER – New Curriculum (Until 3 March)
15 February	Lectures commence for FIRST SEMESTER – Old Curriculum Students (Until 17 May)
06 March	Lectures commence for FIRST SEMESTER – New Curriculum Students (Until 7 June)
04 May	Long Weekend BREAK for students commences (Until 7 May)
08 May	Lectures commence after long weekend break
17 May	Lectures end for FIRST SEMESTER – Old Curriculum Students
22 May	First Opportunity Examinations commence – Old Curriculum Students (Until 9 June)
07 June	Lectures end for FIRST SEMESTER – New Curriculum Students
09 June	First Opportunity Examinations end – Old Curriculum Students
12 June	First Opportunity Examinations commence – New Curriculum Students (Until 23 June)
12 June	Second Opportunity Examinations commence – Old Curriculum Students (Until 27 June)
23 June	First Opportunity Examinations end – New Curriculum Students
26 June	Second Opportunity Examinations commence – New Curriculum Students (Until 5 July)
27 June	Second Opportunity Examinations end – Old Curriculum Students
05 July	Second Opportunity Examinations end – New Curriculum Students
07 July	End of FIRST SEMESTER
10 – 14 July	Mid-year recess

SECOND SEMESTER

19 July	Lectures commence for SECOND SEMESTER – Old Curriculum Students (Until 13 October)
24 July	Lectures commence for SECOND SEMESTER – New Curriculum Students (Until 20 October)
04 September	Second semester BREAK commences for New Curriculum Students (Until 10 September)
06 September	Second semester BREAK commences for Old Curriculum Students (Until 10 September)
08 September	Institutional Holiday
11 September	Lectures resume after second semester break
13 October	Lectures end for SECOND SEMESTER – Old Curriculum Students
18 October	First Opportunity Examinations commence – Old Curriculum Students (Until 7 November)
20 October	Lectures end for SECOND SEMESTER – New Curriculum Students
26 October	First Opportunity Examinations commence – New Curriculum Students (Until 10 November)
07 November	First Opportunity Examinations end – Old Curriculum Students
08 November	Second Opportunity Examinations commence – Old Curriculum Students (Until 24 November)
10 November	First Opportunity Examinations end – New Curriculum Students
13 November	Second Opportunity Examinations commence – New Curriculum Students (Until 24 November)
24 November	Second Opportunity Examinations end – All Students
01 December	End of SECOND SEMESTER
15 December	End of ACADEMIC YEAR
12 January 2024	University opens (2024 academic year)
24 January 2024	Academic staff resumes office duties

DRAFT SOM, SOP, SOD YEAR 1 (MBChB I, BPharm I, BChD I) CALENDAR DATES FOR 2023 (NEW CURRICULUM)

12 Jan	University Opens
24 Jan	Academic staff resumes office duties (Lecturers for 1 st years MBChB only)
30 Jan	Lectures commence for CORE SEMESTER – New Curriculum Students) (Until 3 March)
03 Mar	Lectures end for Core semester
06 Mar	Lectures commence for FIRST SEMESTER – New Curriculum Students (Until 9 June)
04 May	Long Week for students commence (Until 7 May)
08 May	Classes resume after long weekend
06 Apr	Last day to submit draft examination papers for external moderation for 1 st years (MBChB, BPharm, BChD)
12 May	Last day to submit final ready examination papers for 1 st years (MBChB, BPharm, BChD)
09 Jun	Lectures end for the SEMESTER 1– New Curriculum Year 1 MBChB Students Announcement of final CA marks 1 st years MBChB
15 Jun	First opportunity examinations commence – New Curriculum Year 1 MBChB Students (Until 30 Jun)
30 Jun	First opportunity examinations end – New Curriculum Year 1 MBChB Students
30 Jun	End of first semester
03-07 Jul	Mid-year Break
10 Jul	Second Opportunity examinations commence (until 6 Jul)
17 Jul	Second opportunity examinations end – New Curriculum Students
17 Jul	Lectures commence for SECOND SEMESTER – New Curriculum Students (until 20 October)
18 Aug	Last day to submit draft examination papers for external moderation for 1 st years MBChB
04 Sept	Semester BREAK starts for New Curriculum Students (Until 08 Sept)
11 Sep	Lectures resume after second semester break
22 Sept	Last day to submit final ready examination papers for 1 st years MBChB
20 Oct	Lectures end for SECOND SEMESTER – New Curriculum students (Year 1 MBChB) Announcement of final CA marks 1 st years MBChB
26 Oct	First opportunity examinations commence – New Curriculum Students (Until 10 November)
10 Nov	First Opportunity Examinations end – New Curriculum Year 1 MBChB Students
13 Nov	Second opportunity examinations commence – New Curriculum Year 1 MBChB Students (Until 17 Nov)
17 Nov	Second Opportunity Examinations end -1 st years MBChB
01 Dec	End of SECOND SEMESTER
15 Dec	End of ACADEMIC YEAR
12 Jan 2024	University opens

UNAM DUE DATES FOR THE 2023 ACADEMIC YEAR

GENERAL

DATE	GENERAL DATES
1 February	All New Curriculum Students – Late Fee payable (Until 3 February)
3 February	Last day for application of retention of continuous assessment (CA) mark and
8 February	Last date to approve promotional examinations applications by Schools
22 February	Promotion Examination
15 February	All Old Curriculum Students – Late Fee payable (Until 17 February)
12 April	Last date for change of offering types and examination centres – Distance Students (First Semester)
17 July	Addition and Cancellation of second semester modules – Fees payable (Until 21 July)
12 September	Last date for change of offering types and examination centres – Distance Students (Second Semester)
31 October	Last date to submit thesis for the April 2024 graduation

CANCELLATIONS

DATE	CANCELLATION DUE DATES
28 April	Last date for cancellation of first semester modules
29 September	Last date for cancellation of second semester and year modules

FINANCE

DATE	FINANCE DUE DATES
3 February	Last day to cancel Core Semester modules with 100% credits - New Curriculum Students
15 February	Last day to cancel Core Semester modules with 50% credit - New Curriculum Students
1 March	Last day to cancel Semester 1 and year modules with 100% credit – Old Curriculum Students
29 March	Last day to cancel Semester 1 modules with 50% credit – Old Curriculum Students
7 July	Last day to cancel Double modules with 50% credit – All Students
2 August	Last day to cancel Semester 2 modules with 100% credit – Old Curriculum Students
9 August	Last day to cancel Semester 2 modules with 100% credit – New Curriculum Students
1 September	Last day to cancel Second Semester modules with 50% credit – All Students

SCHOOL OF PHARMACY PLANNED ACTIVITIES 2023

JANUARY

12-Jan	University Opens
12-Jan	SoP Academic staff resume office duty
16-Jan	Lectures commence for 1st semester (Senior BPharm Students) (until 12 May)

FEBRUARY

06-Feb	1st block lecture commences (DipPharm 3 students) (until 10 February)
10-Feb	1st block lecture ends (DipPharm 3 students)
14-Feb	1st contact session commences (MPharm III students) (until 17 February)
17-Feb	1st contact session ends (MPharm III students)

MARCH

13-Mar	1st block lecture commences (DipPharm 2 students) (until 18 March)
17-Mar	1st block lecture ends (DipPharm 2 students)
28-Mar	1st contact session commences (MPharm I students) (until 17 March)
31-Mar	1st contact session ends (MPharm I students)
30-Mar	Last day to submit draft examination papers for external moderation

APRIL

3-Apr	1st semester Break Starts (until 7 April)
11-Apr	Lectures resume after semester break
17-Apr	2nd block lecture commences (DipPharm 3 students) (until 21 April)
21-Apr	2nd block lecture ends (DipPharm 3 students)
28-Apr	Last day to submit final print ready examination paper

MAY

08-May	Announcement of provisional CA Marks (Senior BPharm Students)
12-May	Announcement of final CA Marks (Senior BPharm Students)
12-May	Lectures end 1st Semester (Senior BPharm Students) (16 weeks)
8-May	2nd block lecture commences (DipPharm 2 students) (until 12 May)
12-May	2nd block lecture ends (DipPharm 2 students)
19-May	First opportunity Examination Commence (Senior BPharm Students) (until 2 June)
29-May	3rd block lecture commences (DipPharm 3 students) (until 2 June)

JUNE

02-Jun	3rd block lecture ends (DipPharm 3 students)
02-Jun	First opportunity examinations end (Senior BPharm Students)
05-Jun	Rural and Industrial Placements commence (2nd and 3rd BPharm students) (until 30 Jun)
06-Jun	2nd contact session commences (MPharm I students) (until 9 June)
09-Jun	2nd contact session ends (MPharm I students)
20-Jun	2nd contact session commences (MPharm III students) (until 23 Jun)
23-Jun	2nd contact session ends (MPharm III students)
26-Jun	Exam board meeting (14:00) (senior students)
30-Jun	Rural and Industrial Placements end (2nd and 3rd BPharm students)

JULY

03-Jul	Midyear Recess starts (until 7 July)
07-Jul	Midyear Recess ends
10-Jul	Lectures commence for 2nd Semester (Until 3 November)
10-Jul	Second opportunity examinations commence (Senior BPharm Students) (until 13 July)
10-Jul	3rd block lecture commences (DipPharm 2 students) (until 14 July)
14-Jul	3rd block lecture ends (DipPharm 2 students)
13-Jul	Second opportunity examinations end (Senior BPharm students)

AUGUST

14-Aug	4th block lecture commences (DipPharm 3 students) (until 18 August)
18-Aug	4th block lecture ends (DipPharm 3 students)
29-Aug	3rd contact session commences (MPharm I students) (until 1 Sept)

SEPTEMBER

1-Sep	3rd contact session ends (MPharm I students)
04-Sep	Semester Break Starts (until 8 Sep)
10-Sep	Lectures resume after Semester Break
01-Sep	Last day to submit draft examination papers for external moderation
18-Sep	4th block lecture commences (DipPharm 2 students) (until 22 September)
22-Sep	4th block lecture ends (DipPharm 2 students)

25TH SEPTEMBER

	World Pharmacy day
26-Sep	3rd contact session commences (MPharm III students) (until 29 Sept)
29-Sep	3rd contact session ends (MPharm III students)

OCTOBER

6-Oct Last day to submit final print ready examination paper
30-Oct Announcement of provisional CA Marks (BPharm senior Students)

NOVEMBER

03-Nov Lectures end for 2nd semester (BPharm senior students) (16 weeks)
03-Nov Announcement of final CA Marks (BPharm senior students)
06-Nov First opportunity examinations commence (All DipPharm and MPharm I & III students) (until 10 November)
09-Nov First opportunity examinations commence (BPharm senior students) (until 24 Nov)
10-Nov First opportunity examinations end (All DipPharm and MPharm I & III students)
24-Nov First opportunity examinations for 2nd semester end (BPharm senior students)
27-Nov Hospital and Community Placements commence (2nd and 3rd year BPharm students) (until 15 December)
28-Nov Second opportunity examinations commence (All BPharm, all Dip Pharm and all MPharm students) (until 1 December)

DECEMBER

01-Dec Admissions, Assessment and Graduations Committee agenda submission
01-Dec Second opportunity examinations end (All BPharm, all Dip Pharm and all MPharm Students)
04-Dec Moderation starts (until 6 December)
06-Dec Moderation ends
06-Dec Exam board meeting
15-Dec Admissions, Assessment and Graduations Committee
15-Dec Hospital and Community Placements end (2nd and 3rd year BPharm Students)
15-Dec End of academic year

JANUARY 2024

12-Jan University Opens

ACADEMIC DEPARTMENTS

DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS

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Acting Head of Department:	Mr. M. Mubita, BPharm, University of Zambia; MSc (Clinical Pharmacy), Queen's University, Belfast, UK, PhD (candidate)
Professor:	Prof. R Verbeeck, B.Sc. Pharm., Catholic University of Leuven, School of Pharmacy, Leuven, Belgium; M.Sc., Catholic University of Leuven, Ph.D., Catholic University of Leuven; Professional Society Memberships: American Association of Pharmaceutical Scientists (AAPS); American Society for Clinical Pharmacology and Therapeutics (ASCPT); American Society for Experimental Pharmacology and Therapeutics (ASPET); International Pharmaceutical Federation (FIP); International Society for the Study of Xenobiotics
Senior Lecturer:	Dr. F. Kalemeera, BSc Makerere University; BPharm (Hons), Makerere University; MSc (Clinical Pharmacy), University College Cork, Ireland, PhD (Pharmaceutical) University of Namibia
Senior Lecturer:	Dr. KDS Bamitale, Bachelor of Dental Surgery, Obafemi Awolowo University; MSc (Pharmacology), University of Lagos; PhD (Pharmacology)
Senior Lecturer	Mr. B Singu, BSc (Chemistry; Molecular & Physiological Biology); BPharm, University of Nairobi; MPharm (Clinical Pharmacology), University of Namibia; Registered Pharmacist with the Health Professions Council of Namibia; Member of Namibia Medicines Regulatory Council.
Assistant Lecturer:	Mr Moses Thikukutu, BPharm (Hons), University of Namibia, Registered Pharmacist with the Health Professions Council of Namibia.
Senior Technologist:	Ms. N Ananias, BSc (Chemistry and Molecular and Physiological Biology) University of Namibia; MSc Chemistry (University of Namibia).
Visiting Professor:	Professor E Ette

DEPARTMENT OF PHARMACEUTICAL SCIENCES

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Head of Department:	Dr A. Ishola, B. Sc. (Hons.) Applied Chemistry; Post Graduate Diploma in Education; M Phil HIV/AIDS Management, University of Stellenbosch; PhD (Pharmaceutical Chemistry) University of Namibia
Professor:	Vacant
Associate Professor:	Prof. Edet F. Archibong, B.Sc. (Hons) Chemistry, University of Nigeria; M.Sc. - Inorganic Chemistry, University of Ibadan; Ph.D –Physical (Theoretical/Computational) Chemistry, University of New Brunswick, Fredericton, Canada.
Associate Professor:	Prof. M Knott, B. Pharm, MSc (Pharmacy) dist, PhD (Rhodes), MPS (SA), PSN Registered Pharmacist: HPCNA (Namibia), SAPC (South Africa), PCM (Malta / EU)
Senior Lecturer:	Mr. D. Mavu, BSc (Chemistry/Biology) University of Zambia, BPharm University of Zambia, MPharm (Pharmaceutics) University of the Western Cape, Member of Pharmacy Council Namibia, Member of health Professions Council Zambia
Lecturer	Mr. S !Nowaseb, BSc (Pharmacology) University College London, MSc (Pharmaceutical Technology), Kings College London
Lecturer:	Ms. S. Ilonga, MSc (Chemistry), University of Namibia; BSc (Chemistry and Molecular & Physiological Biology), University of Namibia
Assistant Lecturer:	Ms T Enkara, BPharm (Rhodes), Member of Pharmacy Council Namibia
Assistant Lecturer:	Ms P Aiases, BPham (University of Namibia)
Senior Technologist:	Ms K. Angula, Chemistry, University of Stellenbosch; BSc (Chemistry and Molecular and Physiological Biology) University of Namibia. MSc Pharmaceutical Chemistry. North West University, Potchefstroom.
Senior Technologist:	Ms R Pick, BSc Biomedical Sciences, Cape Peninsula University of Technology
Technologist:	Ms. M. Lusepani, BSc (Chemistry and Molecular and Physiological Biology) University of Namibia.

DEPARTMENT OF PHARMACY PRACTICE AND POLICY

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Head of Department:	Ms. J. Lates, BPharm (Hons), University of Bradford; PGDip Clinical Pharmacy, University of Keele, MRPharmS; PGDip Higher Education, University of Namibia
Senior Lecturer:	Vacant
Lecturer:	Ms. E. Hango, BPharm, University of Nairobi; MPH, University of Namibia; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Lecturer:	Mr. Q. Niaz, BPharm, University of Punjab; Master of Public Health, University of Namibia;
Assistant Lecturer:	Ms M. Siwombe, BPharm (Hons), University of Namibia; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Assistant Lecturer:	Ms Irene Brinkmann, BPharm (Hons), University of Namibia; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms V. ulika Nangombe, BPharm (Hons), University of Namibia, MPharm (Clinical), University of Namibia; Pharmacist: Medicines Evaluation & Registration, Namibia Medicines Regulatory Council; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms. P. ia Simeon, BPharm (Hons), University of Namibia, MPharm (Clinical), University of Namibia; Akros Vaccine Safety Pharmacist, Namibia; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms. S. Shifotoka, BPharm (Hons), University of Nairobi; Senior Pharmacist Namibia Medicine Regulatory Council – Pharmaceutical Inspection and Control; Registered Pharmacist, Pharmacy Council of Namibia; Member of the Pharmaceutical Society of Namibia
Part – time Lecturer:	Ms. T. Johannes, BPharm (Hons), University of Namibia; Senior Pharmacist: National Medicines Policy Co-ordination, Pharmaceutical Services Directorate, Ministry of Health & Social Services; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms. A. Aluvilu, BPharm (Hons), University of Namibia; MSc (Clinical Pharmacology), King’s College London, UK; Pharmacist: National Medicines Policy Co-ordination, Pharmaceutical Services Directorate, Ministry of Health & Social Services; Registered Pharmacist, Pharmacy Council of Namibia; Member of Pharmaceutical Society of Namibia
Pharmaceutical technologist:	Ms. M. Ndeunyema, BPharm (Hons) University of Namibia
Visiting Professor:	Professor D. Hachey, PharmD, AAHIVP, Idaho State University, United States of America

REGULATIONS

The regulations should be read in conjunction with the General Information and Regulations prospectus

PROGRAMMES

DIPLOMA IN PHARMACY	(PHASING OUT AS OF 2024)	18DIPP
DIPLOMA IN PHARMACY	NEW INTAKE AS OF 2024	27DIPP
BACHELOR OF PHARMACY (HONOURS)	PHASING OUT AS OF 2023	18BPHA
BACHELOR OF PHARMACY (HONOURS)	NEW INTAKE AS OF 2023	27BPHA
MASTER OF PHARMACY (CLINICAL)		18MPHM

THE 7 STAR PHARMACIST

The School of Pharmacy aspires to produce a pharmacy graduate with the following qualities and characteristics herein referred to as the 7 Star Pharmacist.

- Care Provider
- Decision-maker
- Communicator
- Community Leader
- Manager
- Researcher
- Life-long Learner

CURRICULUM FOR THE DIPLOMA IN PHARMACY

Dip PHARM

(NEW INTAKE AS OF 2024)

COURSE CODE: 27DIPP

INTRODUCTION

PROGRAMME PURPOSE

The purpose of the transformed Diploma in Pharmacy (Level 6) curriculum is to prepare graduates with technical competences and skills relevant to the practice of pharmacy in fourth industrial revolution (4IR), including using digitalized pharmaceutical management information systems, provide a people centred care, use technology in the manufacture of medicines and provision of pharmaceutical services, as well as leaderships. In particular undertake roles to meet the national and global pharmaceutical development goals specified by the International Federation of Pharmacy and Pharmaceutical Sciences (IFPP, goal 1-24), the SDGs (goal 3 and 9), and NDP. The Diploma in Pharmacy (Level 6) programme prepares the student with both administrative and clinical skills for a position in the retail, hospital, manufacturing and regulatory environment as well as other relevant areas of pharmacy practice.

EXIT PROGRAMME OUTCOMES

Holders of the Diploma in Pharmacy (Level 6) qualification will be able to:

1. Undertake practice as a pharmaceutical technician within the legal requirements in a professional and ethical manner
2. Provide pharmaceutical care under the supervision of the pharmacist
3. Effectively manage medicines inventory in a primary healthcare setting
4. Design and implement strategies to promote rational and safe use of medicines in a primary healthcare setting
5. Use and maintain pharmaceutical equipment in an industrial setting, under the supervision of the pharmacist
6. Promote good dispensing and pharmacy practices in a primary healthcare pharmacy setting
7. Effectively control the medicine supply system at a primary healthcare facility
8. Design and conduct medicine use audits at the health facility
9. Assist the pharmacist in the provision of pharmaceutical information
10. Design and implement Standard Operating Procedures to control the quality of medicines and services
11. Organize and conduct activities in quality analysis and pharmaceutical sciences
12. Assist in the regulatory process of the registration of medicines
13. Competently administer and undertake management duties in a pharmacy under the supervision of a pharmacist
14. Competently contribute to therapeutic committee at a primary healthcare facility
15. Prepare and dispense quality pharmaceuticals in a professional manner under the supervision of a pharmacist

ADMISSION REQUIREMENTS

The admission for the Diploma in Pharmacy (Level 6) programme will be advertised on the University of Namibia website and the press. In order to be admitted to the Diploma in Pharmacy (Level 6) programme, candidates must satisfy at least one of the following requirements;

1. A candidate must be in possession of a National Senior Secondary Certificate – Advanced Subsidiary (NSSCAS) or any other equivalent qualification with at least:
 - i.) Twenty-seven (27) points in five subjects on the UNAM scale, and the five subjects must include Biology, Mathematics, Chemistry, Physics, and English
Subject to the above;
 - a) With three (3) subjects, preferably Biology, Mathematics and Chemistry on NSSCAS level with an average of Grade d, AND
 - b) Two (2) subjects on NSSCO level, with a C or higher, AND
 - c) A grade C or better in NSSCO level English

OR

- ii.) Twenty-seven (27) points in five subjects on the UNAM scale, and the five subjects must include Biology Mathematics, Physics and Chemistry

Subject to the above;

- a) With two (2) subjects, preferably Biology and Chemistry on NSSCAS level with an average a Grade d, AND
- b) Two (2) subjects on NSSCO level, with a D or higher, AND
- c) A grade C or better in NSSCO level English

(Please refer to the scale used by the University to calculate the UNAM score);

OR

2. To apply for the Diploma in Pharmacy (Level 6), a candidate must have successfully attained the Certificate in Pharmacy qualification with an aggregate of at least 60% in the cumulative grade in the course.

OR

3. Mature Entry: Candidates aspiring for admission to UNAM's Diploma of Pharmacy degree through the Mature Age Entry Scheme must satisfy the following conditions:
 - a. They should be at least 25 years old on the first day of the academic year in which admission is sought
 - b. They should have successfully completed senior secondary education
 - c. They should have proof of at least five years pharmacy relevant work experience (as determined by the School of Pharmacy).
 - d. They should pass all papers of the prescribed Mature Age Entry Tests with an overall average of 50%.

- e. Candidates who, in the opinion of the Faculty, merit further consideration, may be called for an oral interview before the final selection is made

OR

4. Recognition of Prior Learning (RPL): Potential candidates will attain recognition of the pharmaceutical-related competencies, skills and knowledge gained through non-certificated learning contexts. Candidates will present a portfolio of competences attained in the pharmaceutical sector and references.

Meeting the above student admission criteria DOES NOT necessarily ensure admission. Admission is awarded on merit based on places available on the programme and any other conditions that may be determined from time to time. The faculty reserves the right to administer special written entry tests and interviews before admission.

ADDITIONAL SELECTION CRITERIA

The selection for the Diploma in Pharmacy (Level 6) programme will constitute the following criteria;

- First choice applicants: only applicants who have **applied** for admission into the Diploma in Pharmacy (Level 6) as a first choice will be prioritized during the selection for admission into the School of Pharmacy
- Admissions will be based on a regional *quota system* based on the census of high school leavers, international students, holders of Certificate in Pharmacy, holders of a Sciences or Health Science degree, mature entry, RPL and previously marginalized populations. In this case the region of birth will be used to allocated an applicant to a specific region
- Highest points: all admissions into the Diploma in Pharmacy (Level 6) will be done on *MERIT*, that is among applicants that meet the minimum admission requirements, those with the highest points will be admitted, subject to the regional quota allocations and UNAM policies
- Admissions into the Diploma in Pharmacy (Level 6) is subject to the annual maximum intake determined by the University of Namibia and the Health Professional Councils of Namibia, as well as the number of students repeating year 1 of the programme.
- Holders of a Certificate in Pharmacy who may not meet the entry requirement through this route, may be considered under the category of RPL, and should present a portfolio of work experiences in the pharmaceutical sector.

ARTICULATION OPTIONS

Graduates of the Diploma in Pharmacy (Level 6), may be eligible to articulate into the UNAM Bachelor of Pharmacy Honours programme, and other degree programmes in the School.

ASSESSMENT CRITERIA

The assessment criteria for the Diploma in Pharmacy (Level 6) will constitute the following;

- 50% Continuous assessment (CA) including assignments, practicals, tests, quizzes, portfolios, oral examinations, work-books or logbooks, reports and presentations
- 50% examination (Written theory papers, Practical and oral examinations where applicable)
- A candidate will be eligible to write the examinations if he/she has attained the required minimum continuous assessment mark of 50% in each module. In addition, the candidate should have regularly and satisfactorily participated in the module of study, by attending not less than 80% of theory (online and/or face-to-face classes). Attendance of all clinical and practical classes is **COMPULSORY**.
- A candidate shall present himself/herself for the University examinations at such a time as indicated by the School Calendar of Examinations approved by the Senate.
- A student shall be declared to have passed examination if he / she attain at least 50% as final mark in each of the modules. Where a module has a theory, practical and oral examination, the student must pass each examination as per the University's policy on Assessment.

QUALITY ASSURANCE ARRANGEMENTS

The School of Pharmacy implements the university's policies and procedures regarding monitoring student progression and monitoring impact of the programme. Student progress at the school is monitored through various structures including;

- Monitoring of student progress is undertaken by the individual lecturers, Heads of Department, the School of Pharmacy management, School of Pharmacy Board, School of Pharmacy Examinations Board, a student-lecturer forum, and a quality assurance committee.
- The school has a functional student mentorship programme to support students' academic pursuits.
- There is a university wide peer and student evaluation system to assess the effectiveness of teaching and learning administration for every module and lecturer.
- All examinations papers and scripts are moderated internally and externally based on a standardized moderation criterion as outlined in the UNAM policy on assessments.
- The impact of the programme is regularly evaluated through stakeholder's consultative meetings and needs assessments or tracer surveys. There is a taskforce to undertake review and transformation of the curriculum.
- The accreditation of the professional programme will be sought from the Health Professional Councils of Namibia (HPCNA), National Council of Higher Education (NCHE), and registration from the National Qualification Authority (NQA).

MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE SCHOOL / PROGRAMME

A student will not be re-admitted into the Diploma in Pharmacy (Level 6) if she/he has not earned:

- At least 48 credits (*of which 34 must be non-core*) by the end of the first year of registration
- At least 60 credits (*of which 46 must be non-core*) by the end of the second year of registration
- At least 145 credits (*of which 130 must be non-core*) by the end of the third year of registration

The programme must be completed after a maximum of 5 years of registration

ADVANCEMENT AND PROGRESSION RULES

First year to second year of Diploma in Pharmacy (Level 6)

A student must have passed and obtained at least 82 credits of the 106 credits prescribed for first year modules to register for second year modules. Applicants with a certificate in pharmacy, if approved may be exempted from Year I modules, except for the UNAM core modules. If any of the failed modules is a pre-requisite for a second year module, the student cannot register for the affected second year module until the pre-requisite is passed.

Second year to third year of Diploma in Pharmacy (Level 6)

A student must have passed ALL the prescribed first year modules. In addition, the student must have passed and obtained at least 76 credits of the 108 credits prescribed for second year modules. If any of the failed modules is a pre-requisite for a third-year module, the student cannot register for the affected third year module until the pre-requisite is passed.

REQUIREMENTS FOR QUALIFICATION AWARD

A student can ONLY graduate with a Diploma in Pharmacy (Level 6) if she/he has passed the entire prescribed modules (358 credits) of the programme. A student must meet all requirements of this programme and the university regulations in order to be awarded the Diploma in Pharmacy (Level 6), including updating the financial and academic records, among others.

CAREER OPPORTUNITIES

Upon completion of the Diploma in Pharmacy (Level 6), and subsequent registration with the Health Professional Council, the graduates of the programme may be able to practice the full scope of a Pharmaceutical Technician was Gazetted by the government in October 2017.

The following acts must be regarded as acts pertaining to the profession of a pharmaceutical technician under the personal supervision of a pharmacist in a health facility

- practicing as a pharmaceutical technician within the legal requirements in a professional and ethical manner;
- providing pharmaceutical care;
- managing medicines inventory in a pharmacy setting;
- designing and implementing strategies to promote rational and safe use of medicines in healthcare;
- maintaining pharmaceutical equipment;
- promoting good dispensing and pharmacy practices;
- effectively controlling the medicine supply system at the health facility;
- participating and conducting medicine use audits and research at the health facility;
- assisting the pharmacist in the provision of pharmaceutical information;
- implementing and maintaining standard operating procedures to control the quality of medicines and services;
- implementing the basic concepts of primary healthcare related to pharmacy;
- organizing and conducting activities in quality analysis and pharmaceutical sciences; and
- Assisting in the regulatory process of the registration of medicines.

IMPLEMENTATION STRATEGY

The transformed Diploma in Pharmacy (Level 6) curriculum will be implemented as follows using a staggered approach. The old and transformed curriculum will be implemented in parallel.

IMPLEMENTATION OF THE TRANSFORMED DIPLOMA IN PHARMACY (LEVEL 6) CURRICULUM

Activity	Year of implementation				
	2023	2024	2025	2026	2027
Implementation of Transformed curriculum					
Year I (1 st year)					
Year II (2 nd year)					
Year III (3 rd year)					
Students on old curriculum repeating modules					
Repeating Year I modules					
Repeating Year II modules					
Repeating Year III modules					

Students repeating modules on old curriculum will repeat the equivalent modules in the new-transformed curriculum for the Diploma in Pharmacy (Level 6) as below;

COURSE EQUIVALENTS

Diploma In Pharmacy (Level 6)- EQUIVALENTS							
Old curriculum				Transformed curriculum			
Name	Code	NQF	Credits	Name	Code	NQF	Credits
English for General Communication	ULEG2410	4	(16)	Academic Literacy I	U3583UL	5	8
Computer Literacy	UCLC3509	5	8	Digital Literacy	U3483DD	5	8
Contemporary Social Issues	UCSI3580	5	(4)	National and Global Citizenship	U3420CN	5	2
Pharmaceutical Sciences I	PCPS2481	4	24	Pharmaceutical Sciences I	P2413SS	5	14
Pharmacy Practice I	PCPR2421	4	8	Pharmaceutical Technology Practice I	P2413PT	5	14
PPPP I	PCPP2411	4	16	PPPP I	P2413CP	5	14
Pharmaceutical Sciences II	PCPS2402	4	8	Pharmaceutical Sciences II	P2533SS	6	16
Pharmacy Practice II	PCPR2422	4	8	Pharmaceutical Technology Practice II	P2533PT	6	16
PPPP II	PCPP2482	4	24	PPPP II	P2533CP	6	16
Research & Audit Methods I	PCRM2422	4	8	Research & Audit Methods I	P2533PR	6	16
Primary Healthcare I	PCPH2422	4	8	Primary Health Care: Health Promotion	P25243PC	6	14
Pharmaceutical Sciences III	PCPS2510	5	(32)	Pharmaceutical Sciences II	P2533SS	6	16
Pharmacy Practice III	PCPR2510	5	(32)	Pharmaceutical Technology Practice II	P2533PT	6	16
PPPP III	PCPP2510	5	(32)	PPPP II	P2533CP	6	16
Primary Healthcare II	PCPH2520	5	(16)	Primary Health Care: Health Promotion	P25243PC	6	14
Pharmacy Supply & Business I*	PCSB2521	5	8	Pharmacy Supply & Business I	P2533PY	6	14
Placement I	PCPL2580	5	8	Placement I	P2539PL	7	16
Pharmaceutical Sciences IV	PCPS2610	6	(32)	Pharmaceutical Sciences III	P2613SS	6	18
Pharmacy Practice IV	PCPR2680	6	(24)	Pharmaceutical Technology Practice III	P2653PT	6	18
Rational use of medicines	PCRU2680	6	(24)	Rational use of medicines	P2653PU	6	16
PPPP IV*	PCPP2681	6	12	PPPP III*	P2653CP	6	16
Research & Audit Methods II	PCRM2620	6	(16)	Research & Audit Project	P2653PR	6	18
Pharmacy Supply & Business II	PCSB2620	6	(16)	Pharmacy Supply & Business II	P2553PY	6	14
Placement II	PCPL2680	6	8	Placement II	P2659PL	6	18

PPPP* Physiology, Pathophysiology, Pharmacology, Pharmacotherapy

CURRICULUM FRAMEWORK: SUMMARY TABLE FOR ALL MODULES IN THE PROGRAMME

Module code	Module name	NQF level	NQF credits	Contact hours per week (L / P / T)	Pre-requisites/ (Co-requisites)	Compulsory (C) / Elective (E)
Year 1: Semester 0 (TO BE IMPLEMENTED IN 2024)						
U3583AL	Academic Literacy I	5	8	2L+1T	None	C
U3483DD	Digital Literacy	5	8	2L+1T	None	C
U3420CN	National and Global Citizenship	5	8	2L+1T	None	C
Total credits Semester 0						24
Year 1: (Year modules)						
P2413SS	Pharmaceutical Sciences I	5	(14)	4L+2P	None	C
P2433PY	Pharmacy Supply & Business I	6	(14)	4L+2T	None	C
P2433PC	Primary Health Care: Health Promotion	6	(14)	4L+1T	None	C
P2413PT	Pharmaceutical Practice I	5	(14)	4L+2P	None	C
P2413CP	PPPP I	5	(14)	4L+2P	None	C
P2413SM	Pharmaceutical Mathematics	4	(12)	3L+2T	None	C
Total credits						82
Total credits YEAR 1						106
Module code	Module name	NQF level	NQF credits	Contact hours per week (L / P / T)	Pre-requisites/ (Co-requisites)	Compulsory (C) / Elective (E)
Year 2: Semester 0 TO BE IMPLEMENTED IN 2025)						
U3683AL	Academic Literacy II	6	8	2L+1T	None	C
U3420EM	Ethics	5	8	2L+1T	None	C
U3420RT	Entrepreneurship	5	8	2L+1T	None	C
Total credits Semester 0						24
Year 2: (Year modules) (
P2533SS	Pharmaceutical Sciences II	6	(16)	4L+2P	P2413SS	C
P2533PT	Pharmaceutical Practice II	6	(16)	4L+2P	P2413PT	C
P2533CP	PPPP II	6	(16)	4L+2P	P2413CP	C
P2533PR	Research & Audit Methods	6	(16)	4L+2P	None	C
P2553PY	Pharmacy Supply & Business II	6	(14)	4L+2T	P2433PY	C
P2533SB	Basic Biomedical Sciences	6	(14)	4L+2T	None	C
P2539PL	Placement I	7	(16)	35P x 3wks	None	C
Total credits Year 2 modules						108
Total credits YEAR 2						132
Module code	Module name	NQF level	NQF credits	Contact hours per week (L / P / T)	Pre-requisites/ (Co-requisites)	Compulsory (C) / Elective (E)
Year 3: (Year Modules) TO BE IMPLEMENTED IN 2026)						
P2613SS	Pharmaceutical Sciences III	6	(18)	2L+2P	P2533SS	C
P2653PT	Pharmaceutical Practice III	6	(18)	2L+2P	P2533PT	C
P2653CP	PPPP III	6	(16)	2L+2T	P2533CP	C
P2653PU	Rational Use of Medicines	6	(16)	2L+2T	(P2653PT)	C
P2653PR	Research & Audit Project	6	(18)	2L+2P	P2533PR	C
P2653PY	Pharmacy Supply & Business III	6	(16)	2L+2T	P2553PY	C
P2659PL	Placement II	6	(18)	35P x 3wks	None	C
Total credits YEAR modules						120
Total credits YEAR 3						120
Total credits in Transformed curriculum (Diploma in Pharmacy (Level 6) PROGRAMME						358
Total credits in "old" curriculum (Diploma in Pharmacy (Level 6) PROGRAMME						412
Total credits required by HPCNA (specific modules are specified) including, Pharmacy practice, , Biomedical sciences, Pharmacology, Pharmacotherapy, and Pharmacy practice						Not specified

BASIC BIOMEDICAL SCIENCES					P2533SB	
NQF Level 6	Notional Hours	140	Contact hours	4 Hours per week		
Additional learning requirements: Virtual simulations		NQF Credits		14		
(Co-requisites) Prerequisite None	Compulsory/Elective	Compulsory		Semester Offered	Year module	

Module Content

The module content covers aspects of structure and function of the primary tissues in relation to the primary organ systems. Terminology and definitions in anatomy. Introduction to all the major body systems. Cell biology, consisting of structure and function of cells and cell organelles and biological communication.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL MATHEMATICS					P2413SM	
Module Code P2413SM	NQF Level 4	Notional Hours	120	Contact hours	4 lectures plus 1 x 2h tutorial session per week for one semester.	
Additional learning requirements: None		NQF Credits		12		
(Co-requisites) Prerequisite None	Compulsory/Elective	Compulsory		Semester Offered	Semester 1	

Module Description:

The module will cover content on the following; rounding: rounding to a number of decimal places, rounding to significant figures; Simple proportions and ratios: basic fractions, ratios and percentages; Metric system and metric conversions, Pharmaceutical Calculations, Functions, exponential and logarithmic functions. Limit of a function, differentiation, and Trigonometry

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL SCIENCES I					P2413SS	
Module Code P2413SS	NQF Level 5	Notional Hours	140	Contact hours	3 hours per week for 4 weeks	
Additional learning requirements: None		NQF Credits		14		
(Co-requisites) Prerequisite None	Compulsory/Elective	Compulsory		Semester Offered	First year	

Module Content

Matter and measurements, Periodic table and electronegativity scale, Review of chemical bonding, Chemical formulae and nomenclature, Covalent bonding, Molecular shapes, orbitals and orbital, Hybridization, Resonance structures, Intermolecular forces, and Acids and bases

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL SCIENCES II					P2533SS	
Module Code P2533SS	NQF Level 6	Notional Hours	160	Contact hours	3 hours per week for 4 weeks	
Additional learning requirements: None		NQF Credits		16		
(Co-requisites) Prerequisite P2433SS	Compulsory/Elective	Compulsory		Semester Offered	Year II	

Module Content

Module covers content on organic chemistry of medicinal interest, quality control tests, purification of contaminated medicinal products, chemical analysis, and pharmaceutical calculations relevant to current practice.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL SCIENCES III					P2613SS	
Module Code P2613SS	NQF Level 6	Notional Hours	180	Contact hours	3L+2P	
Additional learning requirements: None		NQF Credits		18		
(Co-requisites) Prerequisite Pharmaceutical sciences II P2533SS	Compulsory/Elective	Compulsory		Semester Offered	Year module	

Module Content

The module covers content on Analytical methods and quality control, Pharmaceutical microbiology, Non-sterile manufacturing, Common pharmaceutical supplies, Pharmaceutical packages, Drug delivery systems, Pharmaceutical compendia for referencing, Common sterile pharmaceutical products and Pharmaceutical cleanrooms. The laboratory components will constitute aseptic preparation and disinfection, aseptic assays and formulation of liquid and solid dosage forms, as well as QC tests.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. In addition, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACY SUPPLY & BUSINESS I				P2533PY		
Module Code	P2533PY	NQF Level 6	Notional Hours 140	Contact hours 14	2 lecture hours per week for 14 weeks	
Additional learning requirements		None	NQF Credits 1	(Co-requisites) Prerequisite	None	
Compulsory/Elective	Compulsory	Semester Offered				

Module Content

The module will cover content on Selection & Quantification of Pharmaceutical needs. Ordering & Distribution. , Storage & Inventory Management. , aspects of rational use of medicines, Pharmaceutical Waste Management

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACY SUPPLY AND BUSINESS II				P2553PY		
Module Code	P2413SS	NQF Level 5	Notional Hours 140	Contact hours 14	3 hours per week for 4 weeks	
Additional learning requirements		None	NQF Credits 14	(Co-requisites) Prerequisite	None	
Compulsory/Elective	Compulsory	Semester Offered	First year			

Module Content

The module will cover content on, regulatory Affairs including GMP inspections and documentations, Medicines registration process and dossier evaluation, clinical trials and post-marketing surveillance, and Pharmacoeconomics

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACY SUPPLY AND BUSINESS III				P2653PY		
Module Code	P2653PY	NQF Level 6	Notional Hours 160	Contact hours 16	2 hours per week for 28 weeks	
Additional learning requirements		None	NQF Credits 16	(Co-requisites) Prerequisite	P2553PY	
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

The content will cover aspects of Entrepreneurship, Financial Management, Operations Management, and Pharmacoeconomics

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL PRACTICE I				P2413PT		
Module Code	P2413PT	NQF Level 5	Notional Hours 140	Contact hours 14	3 lecture hours per week for 28 weeks	
Additional learning requirements		None	NQF Credits 14	(Co-requisites) Prerequisite	None	
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

This module covers content on introduction to pharmacy and dispensing, preparing extemporaneous products including therapeutic incompatibilities, drug-drug interactions, sterility, packaging, labelling and storage. Good manufacturing and dispensing practices, and Good pharmacy and clinical practices

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL PRACTICE II				P2533PT		
Module Code	P2533PT	NQF Level 6	Notional Hours 160	Contact hours 16	3 lecture hours per week for 28 weeks	
Additional learning requirements		None	NQF Credits 16	(Co-requisites) Prerequisite	PCPR2510	
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

1.0 Symptoms in the Community Pharmacy: Acute respiratory infections and allergies. Gastrointestinal symptoms: motility, infections, Ulcers. Dermatological symptoms: Infections, allergies and sunburns. Body aches and pains: Headaches and muscle aches. Women's and men's health. Childhood conditions and Health promotion services

2.0 Symptoms in the Hospital Pharmacy: Medication history taking, Medication review, Medication counselling and vital signs and lab values in PHC

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHARMACEUTICAL TECHNOLOGY PRACTICE III				P2633PT		
Module Code	P2633PT	NQF Level 6	Notional Hours	180	Contact hours	4
Additional learning requirements		None	NQF Credits	18	(Co-requisites) Prerequisite	P2533PT
Compulsory/Elective	Compulsory	Semester Offered	1			

Module Content

The module covers content on Pharmacy Law and Ethics including the Pharmacy Act, Medicines and Related Substances Control Act, Professional code of conduct and jurisprudence. Good Manufacturing Practices (GMP), Quality assurance and control, Pharmaceutical calculations and compounding, Current good manufacturing practices. Good Pharmacy Practices (Laws and regulations); Good Dispensing Practices, Good Medicine Management Practices, and Good Distribution Practices

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PLACEMENT I (HOSPITAL OR COMMUNITY)				P2633PT		
Module Code	P2633PT	NQF Level 6	Notional Hours	180	Contact hours	4
Additional learning requirements		None	NQF Credits	18	(Co-requisites) Prerequisite	P2533PT
Compulsory/Elective	Compulsory	Semester Offered	1			

Module Content

The module covers content on hospital or community pharmacy practice: rational dispensing, extemporaneous preparation and the management of inventory in a real hospital or community setting, under the supervision of a pharmacist. Students will be initiated into good ethical practices and pharmacy professionalism. This placement will be in hospital or community depending on the student's background.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PLACEMENT II (INDUSTRY AND REGULATION)				P2659PL		
Module Code	P2659PL	NQF Level 6	Notional Hours	180	Contact hours	35 attachment hours/week for 3 weeks
for each rotation		NQF Credits	18	(Co-requisites) Prerequisite	None	Compulsory/Elective Compulsory
	Semester Offered	Year I				

Module Content

The module covers hands-on skills with regards to Pharmaceutical Manufacturing, Pharmaceutical Packaging, Pharmaceutical Quality Control, Pharmaceutical Legislation, Pharmaceutical Quality Assurance, Pharmaceutical stability, Pharmaceutical waste disposal, Pharmaceutical Surveillance.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHYSIOLOGY PATHOLOGY PHARMACOLOGY PHARMACOTHERAPY I (PPPP I)				P2413CP		
Module Code	P2413CP	NQF Level 5	Notional Hours	140	Contact hours	4 Hours per week
Additional learning requirements		None	NQF Credits	14	(Co-requisites) Prerequisite	None
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

The module is split into themes: Unit 1: Overview on physiology of main body systems; Unit 1: Overview on pathophysiology of primary healthcare diseases including, inflammatory process, and metabolic diseases. Unit 3: Principles of Pharmacology – including pharmacodynamics and

pharmacokinetics and special populations. Unit 3: Principles of Pharmacotherapy – including the application of the SOAP approach in a primary healthcare setting.

Unit 2: Infectious diseases & Antimicrobials – including the

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PHYSIOLOGY PATHOLOGY PHARMACOLOGY PHARMACOTHERAPY II (PPPP-II)					P2533CP	
Module Code	P2533CP	NQF Level 6	Notional Hours	160	Contact hours	4 Hours per week
Additional learning requirements		None	NQF Credits	16	(Co-requisites) Prerequisite	P2413CP
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

The module is split into themes: Introduction to Pathophysiology and Pharmacotherapy basis in infectious diseases; Infectious diseases & Antimicrobials. 1a: Pharmacotherapy of respiratory infections, 1b. Pharmacotherapy of Genito-urinary infections. 1c. Pharmacotherapy of skin and GIT infections, 1c. Pharmacotherapy of TB, HIV and Malaria. Oncology and Antineoplastic agents used in primary healthcare.

Learning and Teaching Strategies/Activities

The module utilises a blended approach for learning, teaching and assessments including; didactic face-to-face lectures, laboratory practicals, tutorials, virtual laboratory simulations, problem and problem-based learning and self-directed learning. Students will also evidence their learning through a portfolio.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PPPP III – NON-INFECTIOUS DISEASE					P2653CP		
Module Code	P2653CP	NQF Level 6	Notional Hours	160 hours	Contact hours	3	Lectures per
week (14 Weeks)		Additional learning requirements	None	NQF Credits	16		
(Co-requisites)Prerequisite	P2533CP	Compulsory/Elective	Compulsory	Semester Offered	1		

Module Content

Basic Pathophysiology and Pharmacotherapy, Classification and characteristics of diseases, Aetiology and pathogenesis of diseases, Subjective and objective manifestation of diseases, The SOAP medication review approach, Medicine use in special populations. Pharmacotherapy of Non-communicable diseases (NCD), Asthma and COPD Pharmacotherapy, Syndrome X: Hypertension-Diabetes- Hyperlipidemia, Psychopharmacotherapy: Anxiety-Depression-Psychosis-Epilepsy, and Medication reviews for non-communicable diseases

Unit 3: Pharmacotherapy Pain – Headache - Gouty arthritis, Medication reviews in pain-gout and headaches

Learning and Teaching Strategies/Activities

The module utilises a blended approach for learning, teaching and assessments including; didactic face-to-face lectures, laboratory practicals, tutorials, virtual laboratory simulations, problem and problem-based learning and self-directed learning. Students will also evidence their learning through a portfolio.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

PRIMARY HEALTH CARE & HEALTH PROMOTION					P2433PC		
Module Code	P2433PC	NQF Level 6	Notional Hours	140	Contact hours	2 hours per week for 28 weeks	
Additional learning requirements		None	NQF Credits	14	(Co-requisites) Prerequisite	None	
Compulsory/Elective	Compulsory	Semester Offered	Year 1				

Module Content

The module covers content on psychology and social pharmacy and health promotion: including the importance and concepts of psychology and sociology in pharmacy and the practice of primary healthcare. Psychological and sociological impact on a patient with diseases. Promoting good health in their community and the impact that health education can have. Students will also appreciate the role of pharmacy professionals on the organization, planning and management of primary health services, particularly in the Namibian. The module will also cover aspects of Complementary and alternative medicine, as well as veterinary pharmacy: including functional foods, nutraceuticals and herbal medicines. Medicines for veterinary purposes, and their manufacture and storage.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

RATIONAL USE OF MEDICINES					P2653PU	
Module Code	P2653PU	NQF Level 6	Notional Hours	160	Contact hours	3 hours per week for 28 weeks
Additional learning requirements		None	NQF Credits	16	(Co-requisites) Prerequisite	P2653PT
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

The module covers content on Medication Reconciliation & Medication History and related processes, medication history, rational medicine use, medicine use evaluation and strategies, and Medicine use surveys and evaluations, pharmacovigilance and drug development processes.

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

RESEARCH & AUDIT METHODS					P2533PR	
Module Code	P2533PR	NQF Level 6	Notional Hours	160	Contact hours	2 hours per week for 28 weeks
Additional learning requirements		None	NQF Credits	16	(Co-requisites) Prerequisite	None
Compulsory/Elective	Compulsory	Semester Offered	Year module			

Module Content

Introduction to research and audit, Undertaking a research project/audit, and Case studies on audit / research project

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

RESEARCH AND AUDIT PROJECT II					P2653PR	
Module Code	P2653PR	NQF Level 6	Notional Hours	12	Contact hours	180
NQF Credits	18	(Co-requisites) Prerequisite	P2533PR	Compulsory/Elective	Compulsory	Semester Offered
Year module						

Module Content

Types of research and audit approaches and processes methods. Types of data collection tools. Data management techniques. Analysis and interpretation of data and validity of conclusions. Development of research or audit proposal. Ethical principles in research. Presentation of data and report writing

Student Assessment Strategies

The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. Also, portfolio-based discussions will be conducted to assess the students' progress and learning throughout the module. The exams will be for a maximum of three (3) hours written paper.

CURRICULUM FOR THE DIPLOMA IN PHARMACY

Dip PHARM COURSE CODE: 18DIPP

INTRODUCTION

The ultimate purpose of the DipPharm programme is to strengthen the pharmaceutical sector and services in Namibia by training a cadre with unique pharmaceutical technical skills that cannot be adequately provided by either the pharmacist's assistant or the pharmacist. Thus the UNAM School of Pharmacy agrees to meet this legitimate need by offering a three-year diploma that will serve three major purposes:

1. To create a strong and sustainable pharmaceutical human resource base for the pharmaceutical manufacturing industry in Namibia and for the expansion of efficient pharmacy services to rural primary and secondary healthcare settings;
2. To strengthen the capacity for pharmaceutical service provision by training and empowering Namibian grade 12 graduates to pursue a career in Pharmacy who could otherwise not meet the entry requirements for the Bachelor of Pharmacy degree programme but exceed those required for the Pharmacist's Assistant Certificate course;
3. To strengthen the continuing professional development of pharmacy by creating a bridging programme that provides an opportunity for the Pharmacist's Assistant Certificate holders to reach their full potential in the career of pharmacy.

MAJOR LEARNING OUTCOMES AND CONTENT OF THE COURSE

Holders of the Diploma in Pharmacy qualification will be able to:

1. Undertake practice as a pharmaceutical technician within the legal requirements in a professional and ethical manner
2. Provide pharmaceutical care under the supervision of the pharmacist
3. Effectively manage medicines inventory in a pharmacy setting
4. Design and implement strategies to promote rational and safe use of medicines in healthcare
5. Use and maintain pharmaceutical equipment in an industrial setting
6. Promote good dispensing and pharmacy practices in a pharmacy setting
7. Effectively control the medicine supply system at the health facility
8. Design and conduct medicine use audits and research at the health facility
9. Assist the pharmacist in the provision of pharmaceutical information
10. Design and implement Standard Operating Procedures to control the quality of medicines and services
11. Implement the basic concepts of primary healthcare related to pharmacy
12. Organize and conduct activities in quality analysis and pharmaceutical sciences
13. Assist in the regulatory process of the registration of medicines
14. Competently administer and undertake management duties in a pharmacy under the supervision of a pharmacist
15. Competently contribute to therapeutic committee at a primary healthcare facility

STUDENT ADMISSION

Committee on Admissions

Admission to the Diploma in Pharmacy shall be administered by a Committee on Admissions, which shall be composed of members of the School of Pharmacy and the Administrative Officer in charge of admissions to the School. All committee members shall be appointed by the Dean of the Faculty of Health Sciences for a term of three years and may be reappointed for additional terms. The Committee shall have the authority to select students entering the School on condition that they fulfil the minimum admission requirements as set out below. The School shall exercise the responsibility of reviewing the requirements for admissions and recommending any revisions to Senate for approval.

Admission criteria

In order to be admitted to the programme, candidates must satisfy at least one of the following requirements:

A candidate must be in possession of a NSSC certificate or any other equivalent qualification with at least 25 points on the UNAM scale with a grade of D or better in mathematics, biological sciences, physical science and English in ordinary level or equivalent on the UNAM scale

OR

To apply for the DipPharm, a candidate must have successfully attained the Certificate in Pharmacist's Assistant with an aggregate of at least 60% in the cumulative grade in the course [credit towards the first year will be given for this category]

OR

Mature Entry: Candidates aspiring for admission to UNAM's Diploma of Pharmacy degree through the Mature Age Entry Scheme must satisfy the following conditions:

- a. They should be at least 25 years old on the first day of the academic year in which admission is sought
 - b. They should have successfully completed senior secondary education
 - c. They should have proof of at least five years pharmacy relevant work experience (as determined by the School).
 - d. They should pass all papers of the prescribed Mature Age Entry Tests with an overall average of 50%.
 - e. Candidates who, in the opinion of the Faculty, merit further consideration, may be called for an oral interview before the final selection is made
- Meeting the above student admission criteria DOES NOT necessarily ensure admission. Admission is awarded on merit based on places available on the programme and any other conditions that may be determined from time to time.

The Faculty reserves the right to administer special written entry tests and interviews before admission.

The admissions process will not be re-opened and a waiting list will be kept to choose from in the case of admitted student not turning up for registrations the following year.

DURATION OF STUDY

The duration of the study for a Diploma in Pharmacy will usually be three years, with a maximum duration of five years.

EXEMPTIONS

UNAM may give exemptions for equivalent modules taken at other recognized tertiary institutions but the exemptions shall not exceed 50% of the modules in the UNAM DipPharm programme and shall be limited to the first two academic years only. An application for exemption from (a) module(s) must be accompanied by documentary proof issued by the examining body concerned that the student has passed the relevant module (not older than 5 years). For detailed rules on exemption, see the General University Information and Regulations.

EXAMINATION REGULATIONS

For detailed examination and promotion rules, see the General University Information and Regulations.

Eligibility for Examinations

1. A candidate shall present himself/herself for the University examinations at such a time as indicated by the School Calendar of Examinations approved by the Senate.
2. A candidate will be eligible to write the examinations if he/she has attained the required minimum continuous assessment mark of 50% in each module. In addition, the candidate should have regularly and satisfactorily participated in the course of study, by attending not less than 80% of theory where applicable.

Attendance of all practical classes is COMPULSORY.

Mode of Examinations

1. Theory examinations shall be of three hours duration.
2. Practical examinations shall not exceed three and a half hours duration.
3. A viva-voce (oral) examination shall be of not more than half hour duration for all modules.
4. Field Attachment assessment: The student shall be evaluated by lecturer(s) and preceptor(s) using student evaluation forms for each rotation upon completion of the attachment and/or viva-voce.
5. For each examinable module, an external examiner shall moderate the examinations

Criteria for passing examinations

1. A The examination in each examinable module for any academic year shall constitute of:
 - a. 60% Continuous assessment (CA, practical's, term papers)
 - b. 40% Semester examination (Written theory papers, Practical and oral examinations where applicable)
2. A student shall be declared to have passed examination if he / she attain at least 50% mark in each of the modules. Where a module has a theory, practical and oral examination, the student must pass each examination with a minimum mark of 50%

ACADEMIC ADVANCEMENT RULES

First year to second year of Diploma in Pharmacy

A student must have passed at least six of the prescribed first year modules (80 credits) to register for second year modules. If any of the failed modules is a pre-requisite for a second year module, the student cannot register for the affected second year module until the pre-requisite is passed.

Second year to third year of Diploma in Pharmacy

A student must have passed ALL the prescribed first year modules. In addition, the student must have passed at least 5 of the prescribed second year modules (96 credits). If any of the failed modules is a pre-requisite for a third year module, the student cannot register for the affected third year module until the pre-requisite is passed.

Minimum requirements for re-admission

A student will not be re-admitted into the Diploma in Pharmacy if she/he has not earned:

- At least 57 credits by the end of the first year (at least three modules of year 1)
- At least 157 credits by the end of the second year (six modules of year 1 plus two modules of year 2)
- At least 295 credits by the end of the third year (all modules of year 1, plus five modules of year 2 and two modules of year 3)

GRADUATION

A student can ONLY graduate with a Diploma in Pharmacy if she/he has passed the entire prescribed modules (412 credits) of the programme.

GRADING OF EXAMINATIONS

The UNAM grading system shall apply to all modules in the course including the project.

AWARD OF THE DIPLOMA OF PHARMACY

A student must meet all requirements of this programme and the General University Information and Regulations in order to be awarded the Diploma in Pharmacy.

DELIVERY MODE OF COURSES

This diploma will be offered on a full time basis through face-to-face mode in conjunction with the Ministry of Health and Social Services (MOHSS) and/or private sector facilities. Technical training will be delivered in collaboration with assistance of the public/private health facilities, including hospital, community and industrial pharmacy sectors.

CURRICULUM STRUCTURE

The curriculum for the Diploma in Pharmacy is a three year full-time diploma. The first year of the programme is face-to-face didactic tuition split into two semesters and the last two years is predominantly work-based/self-directed and supported training with periodic release for specific trainings. In the first year each semester is 14 weeks in duration; in the second and third years the duration is 28 weeks. In addition, the curriculum includes 4 weeks of experiential learning in the form of field attachment at the end of years 2 and 3. The total number of credits for the diploma is 412.

YEAR 1 SEMESTER 1 (14 WEEKS)					
Course Title	Code	NQF	Credits	Hours per wk	Pre/Co-requisites
English for General Communication	ULEG2410	4	(16)	4	
Computer Literacy	UCLC3509	5	8	2	
Contemporary Social Issues	UCSI3580	5	(4)	1	
Pharmaceutical Sciences I	PCPS2481	4	24	6	
Pharmacy Practice I	PCPR2421	4	8	2	
PPPP I	PCPP2411	4	16	4	
TOTAL CREDITS			76		

YEAR 1 SEMESTER 2 (14 WEEKS)					
Course Title	Code	NQF	Credits	Hours per wk	Pre/Co-requisites
English for General Communication	ULEG2410	4	(16)	4	
Contemporary Social Issues	UCSI3580	5	(4)	1	
Pharmaceutical Sciences II	PCPS2402	4	8	4	PCPS2481
Pharmacy Practice II	PCPR2422	4	8	2	PCPR2421
PPPP II	PCPP2482	4	24	6	PCPP2411
Research & Audit Methods I	PCRM2422	4	8	2	
Primary Healthcare I	PCPH2422	4	8	2	
TOTAL CREDITS			76		
TOTAL CREDITS FOR YEAR			152		

YEAR 2 (28 WEEKS)					
Course Title	Code	NQF	Credits	Hours per wk	Pre/Co-requisites
Pharmaceutical Sciences III	PCPS2510	5	(32)	4	PCPS2412
Pharmacy Practice III	PCPR2510	5	(32)	4	PCPR2422
PPPP III	PCPP2510	5	(32)	4	PCPP2482
Primary Healthcare II	PCPH2520	5	(16)	2	PCPH2422
Pharmacy Supply & Business I*	PCSB2521	5	8	2	

* Semester 1 only (i.e. 14 weeks)

FIELD ATTACHMENT – YEAR 2 (4 WEEKS)					
Course Title	Code	NQF	Credits	Hours per wk	Pre/Co-requisites
Placement I	PCPL2580	5	8	2	
TOTAL CREDITS FOR YEAR			128		
YEAR 3 (28 WEEKS)					

Course Title	Code	NQF	Credits	Hours per wk	Pre/Co-requisites
Pharmaceutical Sciences IV	PCPS2610	6	(32)	3	PCPS2510
Pharmacy Practice IV	PCPR2680	6	(24)	3	PCPR2510
Rational use of medicines	PCRU2680	6	(24)	3	
PPPP IV*	PCPP2681	6	12	3	PCPP2510
Research & Audit Methods II	PCRM2620	6	(16)	2	PCRM2422
Pharmacy Supply & Business II	PCSB2620	6	(16)	2	PCSB2522

* Semester 1 only (i.e. 14 weeks)

FIELD ATTACHMENT – YEAR 3 (4 WEEKS)					
Course Title	Code	NQF	Credits	Hours per wk	Pre/Co-requisites
Placement II	PCPL2680	6	8	2	PCPL2580
TOTAL CREDITS FOR YEAR			132		

TOTAL CREDITS FOR COURSE			412		
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THE SYLLABI

UNAM CORE MODULES

COMPUTER LITERACY

UCLC3509

NQF level:	4
Contact hours:	2 hours per week for 14 weeks;
Credits:	8
Module Assessment:	Continuous Assessment 2 Practical tests 50% + 2 Theory tests 50%
Pre/Co-requisite:	None

Module description: This module introduces students to the basics of computer literacy, including the use of Microsoft Word and Excel programmes, and data entry to programmes such as HMIS and PMIS.

CONTEMPORARY SOCIAL ISSUES

UCSI3580

NQF	4
Contact Hours	1 hour per week for 28 weeks
Credits	8
Assessment	Continuous 100%
Prerequisite	None

Module Description:

The module raises awareness on the need for a personal, national and global ethics. The main objective of the course is to help students reflect on the social moral issues; to discover themselves in a learner-centered, contextual, and religious and life related setting. It also stimulates students' critical thinking and helps them to appreciate their values, standards and attitudes. Furthermore it orientates students with regards to the epidemiology of HIV/AIDS; the prevalence of the disease in Namibia, Africa and Internationally. It also informs students on the psycho social and environmental factors that contribute to the spread of the disease, the impact of HIV/AIDS on their individual lives, family and communities at large. The unit further seeks to enhance HIV/AIDS preventive skills among students by means of paradigm shift and behaviour change and also to impart general introductory knowledge on gender, to make students aware, as well as sensitize them towards gender issues and how they affect our society, Sub-Region and continent at large.

ENGLISH FOR GENERAL COMMUNICATION

ULEG2410

NQF level:	4
Contact hours:	4 lecture hours for 28 weeks
Credits:	32
Module Assessment:	40% continuous assessment, 60% final exam (1 x 3 hour paper)
Pre/Co-requisite:	None

Module Description:

This module develops a student's understanding and competencies regarding academic conventions such as academic reading, writing, listening and oral presentation skills for academic purposes. The main aim is to develop academic literacy in English.

DipPHARM MODULES

PHARMACEUTICAL SCIENCES I		PCPS2481
NQF level:	4	
Contact Hours	6 lecture hours + 2 practical hours per week for 14 weeks	
Credits:	24	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Basic chemistry and biochemistry: This module introduces students to the basic properties of chemical substances. Specific focus will be given to understanding atoms, their structures and the compounds or molecules formed. The use of the periodic table to discuss how different elements interact to form compounds will also be discussed. Students will also be introduced to the basic properties of organic compounds. They will gain an in-depth study on the classification, structures, properties and reaction pathways of organic compounds. Additionally, students will gain skills on the tests used in the laboratory to identify organic compounds.

PHARMACEUTICAL SCIENCES II		PCPS2402
NQF level:	4	
Contact Hours	6 lecture hours + 2 practical hours per week for 14 weeks	
Credits:	8	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPS2481	

Module description

Compounding: In this module students will gain skills in development of working formulae for compounding topical dosage formulations, including creams, lotions, pastes, liniments and ointments as well as using appropriate packaging and labelling materials. Techniques used in compounding such as extraction, filtration, distillation, evaporation, sterilisation, crystallisation, drying, precipitation and sublimation will also be taught.

PHARMACEUTICAL SCIENCES III		PCPS2510
NQF level:	5	
Contact Hours	4 lecture hours per week for 28 weeks	
Credits:	32	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPS2412	

Module description

Medicinal chemistry, basic pharmaceutical sciences, physical pharmacy, compounding, equipment and technology: This module equips learners with knowledge and skills pertaining to the nomenclature, physicochemical properties and classification of organic and inorganic compounds of pharmaceutical importance. Learners will be able to describe the functional groups of commonly used medicines and describe both the quantitative and qualitative methods used to identify them. Learners will also develop skills in the use of pharmacy reference books in the compounding solutions and suspensions for both internal and external use. Students will develop working formulae, weigh ingredients and compound them following a specific procedure and package and label the finished product with appropriate information. Additionally, students will be equipped with skills to identify equipment, the principles of function, operation, procedures of use, application, assembling and maintenance. Students will gain training on the use of various experimental techniques used in the pharmaceutical sciences and pharmacy, including phytochemistry, pharmaceutical chemistry, quality assurance and pharmacology.

PHARMACEUTICAL SCIENCES IV		PCPS2610
NQF level:	6	
Contact Hours	4 lecture hours per week for 28 weeks	
Credits:	32	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPS2510	

Module description

Pharmaceutical analysis, quality assurance (QA)/quality control (QC), sterile and non-sterile manufacture and radiopharmacy: This module equips learners with skills to perform activities related to quality control analysis of finished and raw pharmaceutical products as part of quality surveillance activities. Students will be exposed to tests including friability, weight variation, solubility testing, dissolution testing and content analysis as well as writing a report in the form of a certificate of analysis. They will become familiar with the use of references sources and standards used in the analysis of medicines. Analytical methods such as titration, potentiometric methods, UV methods and chromatographic methods will be studied. Students will also be able to describe the classification and growth of relevant microorganisms, their control by sterilisation, disinfection and preservation of pharmaceutical products, infection control and spoilage of pharmaceutical products. Students will prepare parenteral products and non-sterile

products and use equipment in the preparation of sterile and non-sterile pharmaceutical products. Additionally they will learn about the processes involved in radiopharmacy.

PHARMACY PRACTICE I		PCPR2421
NQF level:	4	
Contact Hours	2 lecture hours per week for 14 weeks	
Credits:	8	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Introduction to pharmacy and dispensing: This module develops the learner's skills on principles and procedures applicable in handling prescriptions and preparing extemporaneous products. Aspects of therapeutic incompatibilities, drug-drug interactions, sterility, packaging, labelling and storage in accordance with good manufacturing and dispensing practices will be elucidated.

PHARMACY PRACTICE II		PCPR2422
NQF level:	4	
Contact Hours	2 lecture hours + 2 practical hours per week for 14 weeks	
Credits:	8	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPR2421	

Module description

Good pharmacy and clinical practices: This module develops the student's skills and understanding of the principles of good pharmacy practice and clinical practice. Adherence to approved standard operating procedures, treatment guidelines and policies, ethics and professionalism and research protocols will also be emphasized in this module. Special emphasis will be given to good dispensing and manufacturing.

PHARMACY PRACTICE III		PCPR2510
NQF level:	5	
Contact Hours	4 lecture hours per week for 28 weeks	
Credits:	32	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPR2422	

Module description

Advanced pharmaceutical mathematics, dispensing and law and ethics: This module develops the learner's skills in handling prescriptions, developing pharmaceutical working formulae, compounding of dosage formulations, packaging and labelling dosage formulations, including extemporaneous products. In this module, special emphasis will be given to the preparation of liquid and solid dosage forms administered orally. Fundamental principles of good manufacturing practices will be emphasised to promote the preparation of high quality products, including the pre-packing of products. Learners will be equipped with knowledge of the laws, regulations and policies governing the manufacture, distribution, trade and use of pharmaceuticals in Namibia. The module also covers professional ethics governing the conduct of the pharmacy professional, including the Pharmacy Act 2004, the Medicines Policy and the Medicines and Related Substances Act 2003.

PHARMACY PRACTICE IV		PCPR2680
NQF level:	6	
Contact Hours	3 lecture hours per week for 28 weeks	
Credits:	24	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPR2510	

Module description

Rational use of medicines - top 200: This module enables learners to familiarise themselves with the therapeutic uses, administration and clinical uses and contraindications of the 200 most commonly used medicines in the public and private sectors of Namibia. Preference will be given to medicines listed on the Namibia essential medicines list (NEMLIST) and are commonly encountered at a primary healthcare setting. Students will be assessed on the ability to confidently describe therapeutic aspects of these medicines.

PHARMACY SUPPLY AND BUSINESS I		PCSB2521
NQF level:	5	
Contact Hours	2 lecture hours per week for 14 weeks	
Credits:	8	

Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)
Pre-requisites	None

Module description

Supply chain management: This module introduces learners to in-depth study on the principles of managing health commodities in a primary healthcare facility, including processes of rational selection, procurement, forecasting, distribution and inventory management, as well as monitoring the appropriate use of the commodities at the facility. Additionally, students will be equipped with knowledge and skills regarding the management of pharmaceutical waste. They will appreciate the impact of pharmaceutical waste on public health and the ecosystem, regulation of waste disposal, classes of pharmaceutical waste, policies governing the disposal of pharmaceutical waste and methods used to dispose of it.

PHARMACY SUPPLY AND BUSINESS II		PCSB2620
NQF level:	6	
Contact Hours	2 lecture hours per week for 28 weeks	
Credits:	16	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCSB2522	

Module description

Management, marketing, regulation and dossier evaluation: This module equips the learner with skills and knowledge on functions of management; management of pharmaceutical and health supplies, human resource development and utilisation, team building, team work, facilitation skills and intersectoral collaboration in primary healthcare, different administrative structures in the health sector and government. Additionally students' skills in regulatory activities, including dossier evaluation will be developed. Students will learn about pharmacoeconomics, pharmacoepidemiology, and the principles of clinical trials and regulation.

PLACEMENT I (HOSPITAL OR COMMUNITY)		PCPL2580
NQF level:	5	
Contact Hours	4 weeks full-time (80 notional hours)	
Credits:	8	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Hospital or community: This placement aims to develop students' skills in rational dispensing, extemporaneous preparation and the management of inventory in a real hospital or community setting, under the supervision of a pharmacist. Students will be initiated into good ethical practices and pharmacy professionalism. This placement will be in hospital or community depending on the student's background.

PLACEMENT II (INDUSTRY AND REGULATION)		PCPL2680
NQF level:	6	
Contact Hours	4 weeks full-time (80 notional hours)	
Credits:	8	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Industry and regulation: This placement provides unique practical experience to students within a pharmaceutical industry or regulatory setting. Areas of experience include batch production, quality assurance and control, pharmaceutical marketing, good manufacturing practices (GMP), dossier evaluation, pharmacovigilance and medicines information queries. Students will also become familiar with equipment used in the manufacture of pharmaceuticals.

PPPP I		PCPP2411
NQF level:	4	
Contact Hours	4 lecture hours + 2 practical hours per week for 14 weeks	
Credits:	16	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Basic anatomy and basic physiology: In this module, learners will be introduced to basic terminology used in anatomy to describe the body, the subdivisions and functions of the various organ systems. This module will focus on describing the anatomical and physiological aspects of the peripheral nervous system, cardiovascular system, endocrine system, respiratory system, urinary system, renal and fluid balance system, gastrointestinal system, reproductive system, sensory organs and lymphatic system.

PPPP II	PCPP2482
NQF level:	4
Contact Hours	6 lecture hours + 4 practical hours per week for 14 weeks
Credits:	24
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)
Pre-requisites	PCPP2411

Module description

Basic pharmacology and basic microbiology: In this module students gain an in-depth understanding of pathogenic organisms that commonly cause diseases, appreciate how they cause the diseases and how their life cycles cannot be interrupted by natural defence and immune systems. The public health challenge of antimicrobial resistance development will be discussed in this module. Learners will also be introduced to basic concepts of pharmacology including drug nomenclature and classification, pharmacodynamics, pharmacokinetics and toxicology. Mechanism of drug action and processes of administration, absorption, distribution and elimination of medicines will be discussed.

PPPP III	PCPP2510
NQF level:	5
Contact Hours	4 lecture hours per week for 28 weeks
Credits:	32
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)
Pre-requisites	PCPP2482

Module description

Advanced microbiology and pharmacology and pharmacotherapy of infectious disease: In this module students gain an in-depth understanding of pathogenic organisms that cause respiratory tract infections, urinary tract infections, skin infections, malaria, tuberculosis, HIV/AIDS, diarrhoea and meningitis. Additionally, learners are equipped with knowledge regarding medicines used to treat various diseases of various body systems, including: respiratory, gastrointestinal, renal, cardiovascular, nervous system, musculoskeletal and endocrine. Chemotherapy, analgesics and vitamins will be covered, along with anaesthetics and blood agents. Aspects regarding drug classes, rationale, adverse effects, mechanism of action, pharmacokinetics and special considerations will be discussed. Learners then progress to developing skills on critiquing treatment choices for individual patients. Students will gain insights into the pathophysiology of common diseases, clinical presentation, goals of therapy and weigh up alternative drug therapy for the patient based on evidence and the current treatment guidelines and policies. Infectious disease conditions common at primary healthcare settings will be discussed, including acute respiratory

tract infections, dermatologic infections, gastrointestinal infections, sexually transmitted infections and urinary tract infections, TB, malaria and HIV/AIDS.

PPPP IV	PCPP2681
NQF level:	6
Contact Hours	3 lecture hours per week for 14 weeks
Credits:	12
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)
Pre-requisites	PCPP2510

Module description

Pharmacotherapy – Non-infectious Disease: This module equips learners with skills on critiquing treatment choices for individual patients. Students will gain insights into the pathophysiology of common diseases, clinical presentation, goals of therapy and weigh up alternative drug therapy for the patient based on evidence and the current treatment guidelines and policies. Non-infectious disease conditions common in primary healthcare settings will be discussed, including diabetes mellitus, hypertension, allergic diseases, gouty arthritis, bronchial asthma and the use of medication in special patient populations.

PRIMARY HEALTHCARE I	PCPH2422
NQF level:	4
Contact Hours	2 lecture hours + 2 practical hours per week for 14 weeks
Credits:	8
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)
Pre-requisites	None

Module description

Psychology and social pharmacy and health promotion: This module introduces students to the importance and concepts of psychology and sociology in pharmacy and the practice of primary healthcare. Learners should be able to appreciate the impact of health and disease on a patient and the community in which they live. Specific focus will be given to the psychological and sociological impact on a patient with diseases. Students will also learn about their role in promoting good health in their community and the impact that health education can have. Students will also appreciate the role of pharmacy professionals on the organisation, planning and management of primary health services, particularly in the Namibian context.

PRIMARY HEALTHCARE II		PCPH2520
NQF level:	5	
Contact Hours	2 lecture hours per week for 28 weeks	
Credits:	16	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	PCPH2422	

Module description

Complementary and alternative medicine and veterinary pharmacy: This module will develop the student's understanding on the use of functional foods, nutraceuticals and herbal medicines as alternatives to Western medicines. The role of functional foods and nutraceuticals in public health and promotion of health will be discussed. Students will be able to educate the public and clients on the pros and cons regarding the use of supplements and hence promote wellbeing. This module also aims to equip students with a basic knowledge and application of medicines used for veterinary purposes, and their manufacture and storage.

RATIONAL USE OF MEDICINES		PCRU2680
NQF level:	6	
Contact Hours	3 lecture hours per week for 28 weeks	
Credits:	24	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Medicines reconciliation, medicines information, pharmacovigilance and clinical trials: This module aims to introduce the concept of medicines reconciliation and its importance in managing patients' medication effectively and safely. Students will be taught how to carry out a thorough drug history, using techniques tailored for the patient, and apply the information when

reconciling a patient's medicines to what is actually prescribed and refer as appropriate to the pharmacist. Additionally, students will be equipped with the skills to promote rational medicines use. The medicines use process and the importance of standard treatment guidelines and the NEMLIST will also be discussed. Students' skills in handling medicines information queries, post-marketing surveillance, and the processes for each stage of clinical trials involving medicines will be developed.

RESEARCH AND AUDIT METHODS I		PCRM2422
NQF level:	4	
Contact Hours	2 lecture hours + 1 practical hour per week for 14 weeks	
Credits:	8	
Assessment:	50% continuous assessment, 50% final exam (1 x 3 hour paper)	
Pre-requisites	None	

Module description

Biostatistics: This module introduces students to basic concepts of statistics and research methods and will focus on basic terminologies used, rationale for conducting research, types of research data and variables and methods of collecting data, sampling techniques, study variables, data analysis and interpretation and presentation of results (charts, curves/figures, tables). Specific attention will be given to measurements of central tendency and variation while interpreting research results.

RESEARCH AND AUDIT METHODS II		PCRM2620
NQF level:	6	
Contact Hours	2 contact hours per week for 28 weeks	
Credits:	16	
Assessment:	50% assessment of project by supervisor, 50% oral exam/defence of dissertation by a panel	
Pre-requisites	PCRM2422	

Module description

Research and audit methods, audit proposal and audit: This module develops the skills of the learner in designing a research protocol. Students will appreciate concepts regarding identification of a research/audit problem, and methods of standard research proposal writing, data collection, analysis and presentation. Students will then implement the audit proposal in a pharmaceutical or healthcare setting.

CURRICULUM FOR THE BACHELOR OF PHARMACY HONOURS

BPHARM (HONOURS)

NEW INTAKE AS OF 2023

COURSE CODE: 27BPHA

INTRODUCTION

The purpose of the transformed Bachelor of Pharmacy Honours curriculum is to enhance students with competences and skills relevant to the practice of pharmacy in fourth industrial revolution (4IR). In particular undertake roles to meet the national and global pharmaceutical development goals specified by the International Federation of Pharmacy and Pharmaceutical Sciences (FIP, goal 1-24), the SDGs (goal 3 and 9), and Namibia's Fifth National Development Plan, that call for industrialization, digitalized pharmacy and innovation, leadership, among others. Thus, new components pertaining to 4IR skills have been integrated in the curriculum e.g. such as digital pharmacy, research and innovation design, management and leadership as well as emphasis on work integrated learning. The curriculum focusses more on approaches to assess for competences rather than knowledge, through work-based assessments, research and innovation projects and case-based discussions. Also, a blended mode of learning, teaching and assessments is emphasized throughout the curriculum, with student centered learning and internationalization

MAJOR LEARNING OUTCOMES AND CONTENT OF THE COURSE

1. Holders of the Bachelor of Pharmacy Honours qualification are able to:
2. Practice pharmacy within legal requirements in a professional and ethical manner
3. Provide high quality patient-centred pharmaceutical care to optimize patient care and inter-professional relationships in the human and veterinary healthcare settings in public and private healthcare settings
4. Analyse, interpret and dispense prescriptions and medication orders pertaining to human and veterinary medicines
5. Provide information on medicines used in the prevention, control and treatment of human and veterinary diseases
6. Promote and support primary health care pharmaceutical services at health facilities and in the community
7. Manage the manufacture of pharmaceuticals and related substances in an industry
8. Manage pharmaceutical supply chain systems at all levels of healthcare
9. Manage physical facilities, budget and human resources to advance pharmaceutical operations in various sectors of the pharmaceutical industry
10. Conduct pharmaceutical and related research and audits to inform best practices
11. Apply information and communication technology to manage pharmaceutical information systems in provision pharmaceutical services in all sectors
12. Innovate pharmaceutical solutions to resolve problems in the workplace and community

ADMISSION REQUIREMENTS

In order to be admitted to the Bachelor of Pharmacy Honours programme, applicants must satisfy at least one of the following requirements:

5. A candidate must be in possession of a National Senior Secondary Certificate (NSSC) on Advanced Subsidiary (AS) level or any other equivalent qualification with at least:
 - iii.) Thirty-four (34) points in five subjects on the UNAM scale, and the five subjects must include; Mathematics, Biology, Chemistry, Physics and English;
Subject to the above;
 - d) With three (3) subjects on NSSCAS level, Chemistry, Mathematics and Biology,
 - e) Chemistry with a minimum "b" or better at NSSCAS Level
 - f) Biology and Mathematics with a "c" or better at NSSCAS Level
 - g) Two (2) subjects on NSSCO level, must include Physics each with a Grade B or better, AND
 - h) A grade B or better in NSSCO level English, OR a grade C in NSSCO level or e on NSSCAS English with 36 points

OR

 - iv.) Thirty-four (34) points in five subjects on the UNAM scale, and the five subjects must include Biology, Mathematics, Chemistry, Physics and English,
Subject to the above;
 - With two (2) subjects, Chemistry and Biology, on NSSCAS level, with a Grade b, AND
 - Three (3) subjects on NSSCO level, with a B or better, (must include Mathematics, Physics and English) AND
 - A grade B or better in NSSCO level English, OR a grade C in NSSCO level or e on NSSCAS English with 36 points
(Please refer to the scale used by the University to calculate the UNAM score);

OR

 - iii.) A minimum of 34 points in five subjects on the UNAM Evaluation Scale.
In addition, the following subjects and grades will be required:
 - English with a minimum B symbol or better at NSSC Ordinary Level (or C symbol with a minimum of 36 points) or a score of grade 3 or better at NSSC Higher Level
 - Biology (or Life Science) with a minimum B symbol at NSSC Ordinary Level, or a grade 2 or better at NSSC Higher Level
 - Mathematics with a minimum B symbol or better at NSSC Ordinary Level, or a grade 3 or better at NSSC Higher Level
 - Physical Science or Chemistry with a minimum B symbol or better at NSSC Ordinary Level, or a grade 2 or better at NSSC Higher Level
6. To apply for the Bachelor of Pharmacy Honours degree, a candidate must have successfully completed the extended programme of the School of Pharmacy.

OR

7. To apply for the Bachelor of Pharmacy Honours degree, a candidate must have successfully completed a Science or Health Science degree from a recognized University with passes in Sciences including biochemistry, mathematics, and Chemistry.

OR

8. To apply for the Bachelor of Pharmacy Honours degree, a candidate must be in possession of a Diploma in Pharmacy (NQF level 6) qualification with at least a lower second grade, and have average score of 60% or more in pharmaceutical sciences, pharmacology and pharmacy practice, and should be registered with the HPCNA having practiced for at least two (2) years as a Pharmacist's Assistant or Pharmaceutical Technologist.

Meeting the above student admission criteria DOES NOT necessarily ensure admission. Admission is awarded on merit and inclusivity based on places available on the programme and any other conditions that may be determined from time to time. The Faculty/School reserves the right to administer special written entry tests and interviews before admission.

The selection of applicants is done by the School of Pharmacy Admission Assessment Graduation committee (AAGC) that is inclusive of academics and other members from the public / registrar's office.

ADDITIONAL SELECTION CRITERIA

The selection for the Bachelor of Pharmacy Honours programme will constitute the following criteria;

- First choice applicants: applicants who have **applied** for admission into the Bachelor Pharmacy Honours as a first choice will be prioritized during the selection for admission into the School of Pharmacy
- Admissions will be based on a regional *quota system* based on the census of high school leavers, international students, holders of Diploma in Pharmacy, extended programme, Science or Health Science degree holders, and marginalized populations. In this case the region of birth will be used to allocate an applicant to a specific region
- Highest points: all admissions into the Bachelor of Pharmacy Honours will be done on *MERIT*, that is among applicants that meet the minimum admission requirements, those with the highest points will be admitted, subject to the regional quota allocations and UNAM policies.
- Admissions to the Bachelor of Pharmacy Honours is subject to the annual maximum intake determined by the University of Namibia and the Health Professions Councils of Namibia, as well as the number of students repeating year one of the programme.
- Transfer of students from other programmes in other Schools in the UNAM Faculty of Health Sciences and Veterinary Medicine, including Medicine, Dentistry, Nursing and public health, Allied health and veterinary medicine, will be subjected to the approval by both Associate Deans of the concerned schools, as well as approval by the School AAGC and if they have obtained the minimum UNAM points as outlined above or as determined by the School AAGC.
- Transfer of students from other degree Pharmacy programmes from other institutions or universities, may be considered by the School AAGC based on availability of space and meeting the requirements determined by the AAGC and if they have obtained the minimum UNAM points as outlined above or as determined by the School AAGC.

ARTICULATION OPTIONS

Graduates of the Bachelor of Pharmacy Honours programme may be able to articulate into other postgraduate masters and diploma in relevant programmes.

ASSESSMENT CRITERIA

The assessment criteria for the Bachelor of Pharmacy Honours will constitute the following;

- 50% Continuous assessment (CA) including assignments, practicals, tests, quizzes, portfolios, oral examinations, work-books or logbooks, reports and presentations
- 50% examination (Written theory papers, Practical and oral examinations where applicable)
- A candidate will be eligible to write the examinations if he/she has attained the required minimum continuous assessment mark of 50% in each module. In addition, the candidate should have regularly and satisfactorily participated in the module of study, by attending not less than 80% of theory (online and/or face-to-face classes). Full attendance of all clinical and practical classes is **COMPULSORY**.
- A candidate shall present himself/herself for the University examinations at such a time as indicated by the School Calendar of Examinations approved by the Senate.
- A student shall be declared to have passed an examination if he / she attains at least 50% in the examination. Where a module has a theory, practical and oral examination, the student must pass each examination as per the University's policy on Assessment.
- A student shall be declared to have passed a module if he/she attains a final mark of at least 50% in the module.

QUALITY ASSURANCE ARRANGEMENTS

The School of Pharmacy implements the university's policies and procedures regarding monitoring student progression and monitoring impact of the programme. Student progress at the school is monitored through various structures including;

- Monitoring of student progress is undertaken by the individual lecturers, Heads of Department, the School of Pharmacy management, School of Pharmacy Board, School of Pharmacy Examinations Board, a student-lecturer forum, and a quality assurance committee.
- The school has a functional student mentorship programme to support students' academic pursuits.
- There is a university wide peer and student evaluation system to assess the effectiveness of teaching and learning administration for every module and lecturer.
- All examinations papers and scripts are moderated internally and externally based on a standardized moderation criteria as outlined in the UNAM policy on assessments.
- The impact of the programme is regularly evaluated through stakeholder's consultative meetings and needs assessments or tracer surveys. There is a taskforce to undertake review and transformation of the curriculum.
- The accreditation of the professional programme will be sought from the Health Professions Councils of Namibia (HPCNA), National Council of Higher Education (NCHE), and registration from the National Qualification Authority (NQA). The School will pursue international accreditation of the Bachelor of Pharmacy Honours programme through the Accreditation Council for Pharmacy Education (ACPE).

MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE SCHOOL / PROGRAMME

A student will not be re-admitted into the Bachelor Pharmacy Honours degree if she/he has not earned:

- At least 60 credits (*of which 45 must be non-core*) by the end of the First year of registration
- At least 148 credits (*of which 120 must be non-core*) by the end of the Second year of registration
- At least 300 credits (*of which 250 must be non-core*) by the end of the Third year of registration
- At least 372 credits (*of which 320 must be non-core*) by the end of the Fourth Year of registration

- e) At least 585 credits (*of which 537 must be non-core*) by the end of the Fifth Year of registration
The programme must be completed after a maximum of 6 years of registration

ADVANCEMENT AND PROGRESSION RULES

First year to second year of pharmacy

A student must have obtained at least 154 credits of the 180 prescribed for First Year modules to register for Second Year modules. If any of the failed modules is a pre-requisite for a Second-Year module, the student cannot register for the affected Second Year module until the pre-requisite is passed. Furthermore, a student who is repeating one or more modules in the first year cannot register for any second year module that has a timetable clash with the repeated module/s.

Second year to third year of pharmacy

A student must have passed **ALL** the prescribed First Year modules. In addition, the student must have passed and obtained at least 192 credits of the 230 credits prescribed for Second Year modules. If any of the failed modules is a pre-requisite for a Third-Year module, the student cannot register for the affected Third Year module until the pre-requisite is passed. Furthermore, a student who is repeating one or more modules in the second year cannot register for any third-year module that has a timetable clash with the repeated module/s.

Third year to fourth year of pharmacy

A student must have passed **ALL** the prescribed First Year and Second Year modules. In addition, the student must have passed and obtained at least 185 credits of the 221 credits prescribed for Third Year modules. If any of the failed modules is a pre-requisite for a Fourth-Year module, the student cannot register for the affected Fourth Year module until the pre-requisite is passed. Furthermore, a student who is repeating one or more modules in the third year cannot register for any fourth-year module that has a timetable clash with the repeated module/s.

REQUIREMENTS FOR QUALIFICATION AWARD

Award of the Degree of Bachelor of Pharmacy Honours

A student can **ONLY** graduate with a Bachelor Pharmacy Honours degree if she/he has passed the entire prescribed modules and attained credits (847 credits) of the programme.

A student must meet all relevant UNAM requirements of this programme to be awarded the Bachelor of Pharmacy Honours Degree, including up-to-date financial and academic records.

CAREER OPPORTUNITIES

Upon completion of the Bachelor of Pharmacy Honours Degree and registration with the Health Professional Council, the graduates of the programme may be able to:

- Practice industrial pharmacy: manufacture medicines and comply to good manufacturing practices in a pharmaceutical industry.
- Practice hospital and clinical pharmacy; advance pharmaceutical care and clinical trial research, manage pharmaceutical supplies in the hospital setting and promote rational use of medicines as a medicine expert.
- Practice regulatory pharmacy: apply the provisions of acts and regulations relevant to pharmaceuticals and pharmacy practice, including registration, inspection, post-market surveillance of pharmaceuticals and provide medicines information.
- Practice community and public health pharmacy: provide comprehensive primary healthcare services including diagnosis, health education and promotion, give medicine related information to other health professionals.
- Pharmaceutical administration/management; as a leader to manage pharmaceutical services, supply chains, human resources, and finances, and medical aid schemes
- Pharmaceutical sales and Marketing; to promote the rational marketing and use medicines on behalf of the pharmaceutical manufacturers and distributor companies.
- Manage pharmaceutical management information systems to enhance service delivery in all sectors of the industry
- Establish self-employment and entrepreneurship opportunities in various sectors of the pharmaceutical industry including community pharmacy, small scale manufacture and quality control, veterinary pharmacy, medicine logistics, pharmaceutical sales and marketing, product research and development.

IMPLEMENTATION STRATEGY

The old and transformed Bachelor of Pharmacy Honours curriculum will be administered in parallel, until the old curriculum is phased out, as below;

IMPLEMENTATION OF THE TRANSFORMED AND OLD BACHELOR OF PHARMACY HONOURS CURRICULUM

Activity	Year of implementation				
	2023	2024	2025	2026	2027
New: Students on the transformed curriculum repeating modules					
Year I (1 st year)					
Year II (2 nd year)					
Year III (3 rd year)					
Year IV (4 th year)					
Year IV (Extended programme)					
Old: Students repeating modules in the old curriculum					
Repeating Year I modules					
Repeating Year II modules					
Repeating Year III modules					
Repeating Year IV modules					

Students repeating modules in old Bachelor or Pharmacy Honours curriculum will repeat the equivalent modules (credits, content) in the new-transformed curriculum as below;

COURSE EQUIVALENTS

OLD BACHELOR OF PHARMACY HONOURS CURRICULUM				TRANSFORMED BACHELOR OF PHARMACY HONOURS CURRICULUM			
Code	Name	NQF	Credits	Code	Name	NQF	Credits
Year 1							
Organic Chemistry	PCMO3511	5	16	Organic Chemistry	P3511SO	5	14
Mathematics	PCTM3511	5	16	Pharmaceutical Mathematics	P3511SM	5	14
Anatomy I	PPHA3511	5	16	Embryology & Introduction to Anatomy	M3511BA	5	14
Physiology I	PPHP3511	5	16	Integrated Physiology & Pathophysiology I	M3511PB	5	14
Sociology of Health & Disease	PCSS3511	5	16	Sociology of Health & Disease	M3511HS	5	14
English for Academic Purposes	ULEA3519	5	16	Academic literacy I	U3583AL	5	8
Computer Literacy	UCLC3509	5	16	Digital Literacy	U3583DD	5	8
Physical Chemistry	PCMO3512	5	16	Physical Chemistry	P3512SC	5	14
Anatomy II	PPHA3512	5	16	Systemic Anatomy I	M3512BA	5	14
Physiology II	PPHP3512	5	16	Integrated Physiology & Pathophysiology II	M3512BP	5	14
Biochemistry I	PPHB3512	5	16	Medical biochemistry I	M3512BB	5	14
Biostatistics	PCSB3512	5	16	Biostatistics	P3512PB	5	14
Introduction to Pharmacology	PPHH3632	6	16	Pharmacology I	P3632CO	6	16
Primary Health Care: Health Promotion	PCSP3512	5	16	Primary Health Care Pharmacy	P3510PC	5	12
Contemporary Social Issues	UCSI3580	5	8	National & Global and citizenship	U3420CN	5	8
Year 2							
Introduction to Pharmacy & Dispensing	PCTI3631	6	16	Introduction to Pharmacy & Dispensing	P3511PD	6	14
Physiology III	PPHP3631	6	16	Integrated Physiology & Pathology III	M3611BP	6	16
Biochemistry II	PPHB3631	6	16	Medical Biochemistry II	M3611BB	6	16
Inorganic Chemistry	PCMI3611	6	16	None equivalent			
General Pharmaceutics	PCTG3631	6	16	General Pharmaceutics & Biopharmaceutics	P3631SG	6	16
Introduction to Clinical and Nursing Skills	PCSN3632	6	16	Pharmacotherapy & Clinical Skills	P3752CS	6	16
Pharmaceutical Analysis	PCTA3632	6	16	Pharmaceutical Analysis	P3632SA	6	16
Pharmaceutical Organic Chemistry	PCMO3632	6	16	Pharmaceutical Organic Chemistry	P3632ST	6	16
Pharmacy Practice I	PCSP3622	6	8	Pharmacy Practice I	P3631PP	6	8
Physical Pharmacy	PCTP3632	6	16	Physical Pharmacy	P3632SP	6	16
Research Methods	PCSR3632	6	16	Research & Innovation Methods	P3632PR	6	16
Community Pharmacy	PCSC3739	7	16	Community Pharmacy Placement	P3639RC	6	16
Rural Attachment	PCSU3739	7	16	Rural Hospital Placement	P3639PU	6	16
YEAR 3							
Pharmacognosy and Phytochemistry	PCMH3751	7	16	Pharmacognosy and Phytotherapy	P3751SY	7	18
Pharmaceutical Microbiology	PCTM3751	7	16	Medical Microbiology I	M3631TM	7	16
Systems Pharmacology I	PPHS3732	7	16	Pharmacology II	P3751CO	7	16
Biopharmaceutics & Pharmacokinetics	PCTK3721	7	8	General Pharmaceutics & Biopharmaceutics	P3631SG	7	16
Pharmacy Law & Ethics	PCSL3721	7	8	Pharmacy Law & Ethics	P3620PL	7	8
Veterinary Pharmacy & Agrochemicals	PPHV3721	7	8	Veterinary Pharmacy Practice	P3742PV	7	18
Chemotherapy	PPHC3751	7	16	Chemotherapy	P3752CH	7	16
Medicinal Chemistry I	PCMM3752	7	16	Medicinal Chemistry & Analysis I	P3752MM	7	18
Applied Pharmaceutical Microbiology	PCTA3752	7	16	Applied Pharmaceutical Microbiology	P3752SA	7	18
Environmental & Occupational Health	PCSO3722	7	8	No equivalent			
Pathophysiology & Pharmacotherapeutics I	PCST3752	7	16	Pharmacotherapy & Clinical skills	P3752CS	7	18
Pharmaceutical Technology I	PCTT3752	7	16	Pharmaceutical Technology I	P3751ST	7	18
Systems Pharmacology II	PPHS3751	7	16	Pharmacology III	P3752CO	7	16
				Medical Microbiology II	M3612TM	6	16
Pharmacy Practice II	PCSP3742	7	8	Pharmacy Practice II	P3751PP	7	18
Hospital Pharmacy	PCSY3859	8	16	Clinical Pharmacy rotation I	P3871RR	8	18
Industrial/Manufacturing Facility	PCSF3859	8	16	Pharmaceutical Industrial Placement	P3759RI	8	18
YEAR 4							
Medicinal Chemistry II	PCMM3871	8	16	Medicinal Chemistry & Analysis II	P3871MM	8	20
Pathophysiology & Pharmacotherapeutics II	PCST3871	8	16	Clinical Pharmacy & Pharmacotherapeutics I	P3871CS	8	20
Pharmaceutical Technology II	PCTT3871	8	16	Pharmaceutical Technology III	P3871ST	8	20
Complementary and Alternative Medicine	PCSA3861	8	8	Pharmacognosy & Phytotherapy	P3751SY	8	18
Research Project	PCSR3870	8	16	Research & Innovation Design	P3870PI	8	20
Pharmacy Management	PCSM3872	8	16	Pharmacy Practice III	P3872PP	8	20
Clinical Pharmacokinetics and Therapeutic Drug Monitoring	PCSD3872	8	16	Clinical Pharmacokinetics and Therapeutic Drug Monitoring	P3871CD	8	18

Pharmacoepidemiology Pharmacoeconomics	& PCSE3872	8	16	Pharmacy Practice II	P3772PP	8	18
Clinical Toxicology	PPHT3862	8	8	Clinical Toxicology & Pharmacovigilance	P3872CX	16	8
Research Project	PCSR3870	8	16	Research and Innovation Project	P3870PI	20	16

CURRICULUM FRAMEWORK: SUMMARY TABLE FOR ALL MODULES IN THE PROGRAMME

Module code	Module name	NQF level	NQF credits	Contact hours per week (L / P / T)	Pre-requisites (Co-requisites)	Compulsory (C) / Elective (E)
Year 1: Semester 0 (TO BE IMPLEMENTED IN 2023)						
U3583AL	Academic Literacy I	5	8	2L+1T	None	C
U3583DD	Digital Literacy	5	8	2L+1T	None	C
U3520TH	Critical thinking	5	8	2L+1T	None	C
Total credits Semester 0						24
Year 1: Semester 1						
P3511SM	Pharmaceutical mathematics	5	12	2L+2T	None	C
P3511SO	Organic Chemistry	5	14	4L+2P+1T	None	C
M3511BA	Embryology & Introduction to Anatomy	5	14	3L+1T	None	C
P3511PT	Primary Health Care: Health Promotion	5	12	3L+1T	None	C
M3511BP	Integrated Physiology & Pathophysiology I	5	14	4L+2P	None	C
P3511PD	Introduction to Pharmacy & Dispensing	6	14	4L+2P	None	C
Total credits Semester 1						80
Year 1: Semester 2						
P3512SC	Physical Chemistry	5	14	4L+2P+1T	(P3511SM)	C
P3512PB	Biostatistics	5	14	2L+2T	(P3511SM)	C
M3512BA	Systemic Anatomy I	5	14	2L+2T	(M3511BA)	C
M3512BP	Integrated Physiology & Pathophysiology II	5	14	4L+4P	(M3511BP)	C
MP3512BB	Medical Biochemistry I	5	14	4L+2P	(P3511SO)	C
M3511HS	Sociology of Health and Disease	5	14	2L+2T	None	C
Total credits Semester 2						84
Total Credits YEAR I						188
Module code	Module name	NQF level	NQF credits	Contact hours per week (L / P / T)	Pre-requisites (Co-requisites)	Compulsory (C) / Elective (E)
Year 2: Semester 0 (TO BE IMPLEMENTED IN 2024)						
P3620PL	Ethics	6	8	2L+1T	None	C
U3683AL	Academic Literacy II	6	8	2L+1T	None	C
U3420PJ	Entrepreneurship	6	8	2L+1T	None	C
Total credits Semester 0						24
Year 2: Semester 1						
P3631SG	General Pharmaceutics & Biopharmaceutics	6	16	4L+2P	P3512SC	C
P3631PL	Pharmacy Law & Ethics	6	14	4L+2T	P3511PD	C
P3631PP	Pharmacy Practice I	6	16	4L+2P	P3511PD	C
M3611BP	Integrated Physiology & Pathophysiology III	6	16	4L+2P	M3511BP, M3512BP	C
M3611BB	Medical Biochemistry II	6	16	4L+2P	M3512BB	C
P3639PU	Rural Hospital Placement	6	16	35 hrs per week x 4wks	(P3631PP), P3511PD	C
Total credits Semester 1						94
Year 2: Semester 2						
P3632SP	Physical Pharmacy	6	16	4L+2P	P3512SC, P3631SG	C
P3632PR	Research & Innovation Methods	6	16	4L+2T	P3512PB	C
P3632SA	Pharmaceutical Analysis	6	16	4L+2P	P3511SO	C
P3632ST	Pharmaceutical organic Chemistry	6	16	4L+2P+1T	P3512SO	C
P3632CO	Pharmacology I	6	16	2L+2T	(M3611BP)	C
M3631TM	Medical Microbiology I	6	16	4L+2P	M3611BP	C
P3639RC	Community Pharmacy Placement	7	16	35 hrs per week x 3wks	(P3631PP), (P3631PL)	C
Total credits Semester 2						112

Total credits YEAR 2						230
MODULE CODE	MODULE NAME	NQF LEVEL	NQF CREDITS	CONTACT HOURS PER WEEK (L / P / T)	PRE-REQUISITES / (CO-REQUISITES)	COMPULSORY (C) / ELECTIVE (E)
Year 3: Semester 1 (TO BE IMPLEMENTED IN 2025)						
P3751ST	Pharmaceutical Technology I	7	18	4L+2P	P3631SG	C
P3751SY	Pharmacognosy & Phytotherapy	7	18	4L+2P	P3511SO	C
P3751PP	Pharmacy Practice II	7	16	4L+2T	P3631PP	C
P3751CO	Pharmacology II	7	16	4L+2T	P3632CO	C
M3612TM	Medical Microbiology II	6	16	4L+2T	M3631TM	C
P3741PV	Veterinary Pharmacy Practice	7	8	2L+1T	P3631PP	C
P3759RI	Pharmaceutical Industrial Placement	7	16	35P x 3wks	(P3751ST)	C
Total credits Semester 1						108
Year 3: Semester 2						
P3752ST	Pharmaceutical Technology II	7	18	4L+2P	P3751ST	C
P3752SA	Applied Pharmaceutical Microbiology	7	18	4L+2P	(P3612TM)	C
P3742PI	Research & Innovation Design	8	9	2P	P3632PR	C
P3752MM	Medicinal Chemistry & Analysis I	7	18	4L+2P	P3632SA P3511SO	C
P3752CO	Pharmacology III	7	16	4L+2T	(P3751CO)	C
P3752CH	Chemotherapy	7	16	4L+2T	M3612TM, (P3751CO)	C
P3752CS	Pharmacotherapy & Clinical skills	7	18	4L+2P	P3751PP/(P3752CO)	C
Total credits Semester 2						113
Total credits YEAR 3						221
Module code	Module name	NQF level	NQF credits	Contact hours per week (L / P / T)	Pre-requisites / (Co-requisites)	Compulsory (C) / Elective (E)
Year 4: Semester 1 (TO BE IMPLEMENTED IN 2026)						
P3871ST	Pharmaceutical Technology III	8	20	4L+2P	P3751ST P3752ST	C
P3871MM	Medicinal Chemistry & Analysis II	8	20	4L+2P	P3752MM	C
P3871CS	Clinical Pharmacy & Pharmacotherapy I	8	18	4L+2T	P3752CS P3752CO	C
P3871CD	Clinical pharmacokinetics & Therapeutic Drug Monitoring	8	18	4L+2T	P3752CO	C
P3873PI	Research/ Innovation Project	8	18	4P+2T	P3740PI	C
P3871RR	Clinical pharmacy rotations I	8	20	10P	P3752CS (P3871CS)	C
Total credits Semester 1						114
Year 4: Semester 2						
P3872CT	Clinical Pharmacy & Pharmacotherapy II	8	20	4L+2T	P3871CS	C
P3872 RR	Clinical pharmacy rotations II	8	20	10P	P3871RR (P3872CT)	C
P3872CX	Clinical toxicology & Pharmacovigilance	8	18	4L+2T	P3752CO	C
P3872PP	Pharmacy Practice III	8	18	4L+2T	P3751PP	C
P3873PI	Research/ Innovation Project	8	18	4P+2T	P3870PI	C
Total credits Semester 2						94
Total credits YEAR 4						208
Total credits in Transformed curriculum (Bachelor of Pharmacy Honours PROGRAMME)						847
Total credits in "old" curriculum (Bachelor of Pharmacy Honours PROGRAMME)						808
NB: The credits were bench marked against the HPCNA credit requirements. As per the Pharmacy Act of Namibia, 2004, the total credits required by HPCNA for registration as pharmacist are minimum of 355 credits, in five-units standards with minimum credits as follows, Pharmaceutics (86 credits), Pharmacology (79 credits), Pharmacotherapy (43 credits), Pharmaceutical Chemistry (50 credits) and Pharmacy practice (56 credits).						

THE SYLLABI

BPHARM MODULES

APPLIED PHARMACEUTICAL MICROBIOLOGY		P3752SA
NQF level:	7	
Contact Hours	2L+2P	
Credits:	18	
Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 60% and 40% to the final mark, respectively. The continuous assessments will consist of assignments, tests, quizzes, and practical assessments. The exams will be for a maximum of three (3) hours written paper.	
Pre-requisites	P3751CM	

Module description

This module covers theoretical and practical content on Applied Pharmaceutical Microbiology under five themes; (a) aseptic manufacture of pharmaceutical and biological products, using equipment and media, (b) disinfection, sterilization and decontamination, (c) microbial kinetics, and assays (d) Technologies, process and equipment for aseptic manufacture, and (e) Biopharmaceutical production of antimicrobials and vaccines.

CLINICAL PHARMACOKINETICS AND THERAPEUTIC DRUG MONITORING		P3871CD
NQF level:	8	
Contact Hours	3+2P	
Credits:	18	
Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 60% and 40% to the final mark, respectively. The continuous assessments will consist of assignments, tests, quizzes, and practical assessments. The exams will be for a maximum of three (3) hours written paper.	
Prerequisite	P3631SG	

Module description

This module covers theoretical and practical content on Clinical Pharmacokinetics and Therapeutic Drug Monitoring under six themes: (a) Introduction to Clinical pharmacokinetics, (b) Design of dosage regimens, (c) Pharmacokinetics of Drug Interaction, (d) Therapeutic Drug monitoring, (e) Dosage adjustment in Renal and hepatic Disease, and (f) Pharmacogenetics.

CLINICAL PHARMACY & PHARMACOTHERAPY I		P3871CS
NQF level:	8	
Contact hours:	4 lecture hours + 2 Practical hours	
Credits:	18	
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes. The exams will be for a maximum of three (3) hours written paper.	
Pre-requisite:	P3752CS, P3752CO	

Module Description:

This module covers content under two themes. (a) General principles of infectious diseases and oncology: Systemic inflammatory response syndrome and sepsis. antimicrobial resistance, antimicrobial stewardship, general principles of antimicrobial therapy, surgical site infections and surgical antibiotic prophylaxis, cancer biology, principles of anticancer chemotherapy, targeted agents, hormonal therapy and cytotoxic chemotherapy for cancer (b) Management of infectious and neoplastic diseases: HIV infection & opportunistic infections, central nervous system infections respiratory infections urinary tract infections, protozoal infections, gastrointestinal infections, fungal infections, infective endocarditis, sexually transmitted infections, emerging infections; haematological malignancies and solid organ tumours .

CLINICAL PHARMACY & PHARMACOTHERAPY II		P3872CT
NQF:	8	
Contact Hours:	4 lecture hours + 2 Practicals hours	
Credits:	20	
Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes. The exams will be for a maximum of three (3) hours written paper.	
Pre-requisite:	P3871CS	

Module Description

The module will cover content on clinical pharmacy with regards to non-communicable diseases leading to gastrointestinal disorders; respiratory diseases; cardiovascular diseases; central nervous system disorders; endocrine disorders; genito-urinary/ disorders and musculoskeletal disorders

CLINICAL PHARMACY ROTATIONS I: (INFECTIOUS DISEASES & ONCOLOGY)		P3871RR
NQF:	8	
Contact Hours:	10 practical hours/week for 16 weeks	
Credits:	20	
Assessment:	50% Continuous assessment (tests, online quizzes); 50% final examination (1 X 3 hours written paper). In addition, the clinical aspects will be assessed through clinical rotation case-presentations presentation and/or clinical workbooks. In this module, the assessment will constitute 50% Continuous assessment (Workbook, Viva voce, OSCE, online quizzes); 50% final OSCE (semester examination).	
Pre-requisite:	None	

Module Description:

The module content, introduction to clinical pharmacy and pharmaceutical care, Pharmaceutical care planning , HIV Infection & opportunistic infections, Central nervous system infections (meningitis, encephalitis), Respiratory infections (tuberculosis, pneumonia), Urinary Tract Infections, Protozoal Infections (malaria), Gastrointestinal infections, Fungal infections, Infective Endocarditis, Hematological malignancies (leukaemias & lymphomas) and Solid organ tumors (breast, prostate, bladder, lung, colo-rectal, AIDS-related)

CLINICAL PHARMACY ROTATIONS II (NON-COMMUNICABLE DISEASES)**P3872RR**

NQF level:	8
Contact hours:	10 practical hours/week for 16 weeks
Credits:	20
Module Assessment:	50% Continuous assessment (tests, online quizzes); 50% final examination (1 X 3 hours written paper). In addition, the clinical aspects will be assessed through clinical rotation case-presentations presentation and/or clinical workbooks. In this module, the assessment will constitute 50% Continuous assessment (Workbook, Viva voce, OSCE, online quizzes); 50% final OSCE (semester examination).
Pre-requisites:	P3871PS

Module Description:

The module will cover content on; cardiology (Hypertension, Heart failure, Arrhythmias, Congenital Heart Disease, Ischemic Heart Disease, Thromboembolic events). Nephrology (Acute Kidney Injury and Chronic Kidney Disease). Gastroenterology (Peptic Ulcer Disease, Diarrhea, Acute and Chronic Liver Disease). Endocrinology (Thyroid Disorders, Diabetes Insipidus, Diabetes Mellitus type 1 and type 2). Pulmonology (Asthma and COPD). Schizophrenia. Major Depressive Disorder. Bipolar Disorder. Relevant topics in Critical Care, Paediatrics, Obstetrics & Gynaecology, and Surgery.

CLINICAL TOXICOLOGY AND PHARMACOVIGILANCE**P3872CX**

NQF Level	8
NQF Credits	18
Compulsory/Elective	Compulsory Semester Offered 2
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 60% and 40% to the final mark, respectively. The continuous assessments will consists of assignments, tests, and quizzes. The exams will be for a maximum of three (3) hours written paper.
Co-requisites) Prerequisite	P3752CO

Module Description:

This module covers theoretical and practical content on Clinical Toxicology and Pharmacovigilance under six themes: (a) General clinical toxicology, (b) Treatment of Specific Poisonings, (c) Environmental Poisonings, (d) Poisonings relating to drugs of abuse, (e) Poisonings relating to flora and fauna, (f) Principles of pharmacovigilance.

COMMUNITY PHARMACY PLACEMENT**P3639RC**

NQF Level	7
NQF Credits	16
Compulsory/Elective	Compulsory Semester Offered 2
Module Assessment:	The assessment of this module will include continuous assessments (CA) which will contribute 100% to the final mark. The continuous assessments will consist of completing the placement workbook, report, quiz, and a viva voce.
Prerequisite	P3631PP (Pharmacy Practice I)

Module Description:

This module covers practical content on Community Pharmacy under five themes; (a) Community pharmacy management, inventory control in community pharmacy and information technology, (b) prescription screening and pharmacy law, (c) compounding and calculations, (d) Interprofessional interactions, Patient counselling and medicines information (e) responding to symptoms of minor ailments and selection of over the counter (OTC) medicines.

EMBRYOLOGY AND INTRODUCTION TO ANATOMY**M3511PA**

NQF Level	5
NQF Credits	12
Compulsory/Elective	Compulsory Semester Offered 1
Module Assessment:	This will constitute of Continuous assessment mark with at least three written assessment Class Tests, and one written examination of 3-hour examination paper. The final mark will consist of 40% of exam mark and 60% of Continuous assessment mark.
(Co-requisites) Prerequisite	None

Module Description:

The module consists of four entities: (a) Introduction to anatomy including topics: The evolution, humans and their environment, history of anatomy, anatomical concepts and terms. Introduction to all the major body systems. (b) Cell biology, consisting of structure and function of cells and cell organelles and biological communication. (c) Embryology, consisting of basic anatomy and physiology of reproduction, fertilization, implantation, the placenta, and development of the embryo up to the trilaminar stage. (d) Introduction to human histology in reference to the organs systems; including histology of the basic tissues, namely epithelial tissue, connective tissues, muscle tissue and nervous tissue, and introduction to hematology and immunology.

GENERAL PHARMACEUTICS & BIOPHARMACEUTICS**P3631SG**

NQF Level	6
NQF Credits	16
Compulsory/Elective	Compulsory Semester Offered 1
Module Assessment:	Students will be assessed through continuous assessment and Summative assessment.

1. Continuous assessment: Progressive Test/Quizzes and Individual assignments/ Group assignments
2. Summative assessment: Final Examination

(Co-requisites)

(P3512SC)

Module Description:

The module content will included four themes: Scientific principles of dosage form design, Particle science and powder technology properties of matter, Biopharmaceutical principles of drug delivery
Dosage form design and manufacture and pharmaceutical microbiology and sterilization,

INTEGRATED PHYSIOLOGY AND PATHOPHYSIOLOGY I

M3511PH

NQF Level 5

NQF Credits 14

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The continuous assessment (CA): 50 % (minimum of 2 tests and 3 laboratory exercises). Examination: 50 % (1 X 3 hour paper)

(Co-requisites) Prerequisite None

Module Description:

The module covers content on basic cell processes, molecular interactions as integral to the generation, storage and utilisation of energy, signalling and cellular dynamics. Cellular and tissue compartmentation, and how information flows within a cellular and mass context. Homeostasis pathophysiology, components and mechanics of the basic cell processes, energy and cellular metabolism, membrane dynamics and communication, integration, and homeostasis; genetics; body fluid compartments. Communication systems in the body; the endocrine system and the nervous system. Muscular Skeletal system and the control of body movement; as well as the structure and function of the endocrine system.

INTEGRATED PHYSIOLOGY AND PATHOPHYSIOLOGY II

M3512PH

NQF Level 5

NQF Credits 14

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: The continuous assessment (CA): 50 % (minimum of 2 tests and 3 laboratory exercises). Examination: 50 % (1 X 3hours paper)

Prerequisite M3511BP

Module Description:

The module covers content on divisions of the nervous system along with their pathophysiological conditions. Neurophysiology into the different divisions of neurophysiology, physiological basis of problems associated with most of the major organ systems. cell injury, pathophysiological mechanisms leading to the diseased state, changes in physiology lead to signs and symptoms of disease, systemic complications during organ or organ system failure and body's compensatory mechanisms to restore homeostasis. Laboratory activities include demonstrations of blood typing among others.

INTEGRATED PHYSIOLOGY AND PATHOPHYSIOLOGY III

M3611PH

NQF Level 6

NQF Credits 16

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The continuous assessment (CA): 50 % (minimum of 2 tests and 3 laboratory exercises). Examination: 50 % (1 X 3hours paper)

Prerequisite M3512BP

Module Description:

Physiology and Integrated Pathophysiology III is the integration of the normal functions of the body and the study of disordered physiological processes associated with disease or injury. This course is an introduction to physiology and pathophysiology designed specially to meet the needs of students preparing for careers in the health professions. This course will build on prior knowledge of anatomy and physiology as we explore body functions in altered health conditions.

The course lays the basis for understanding major human body systems with an emphasis on the organ functions. The body systems to be covered in this module will include cardiovascular, respiratory, digestive, renal and respiratory system along with their associated pathophysiology.

INTRODUCTION TO PHARMACY AND DISPENSING

P3511PD

NQF Level 6

NQF Credits 14

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The module will be assessed in two ways including the continuous assessment (CA) and summative assessments (SA) which will each contribute 50% to the final mark. The continuous assessment will consist of assignments, tests, quizzes and practical assessments. The examination will be a written paper for a maximum of three (3) hours.

Prerequisite None

Module Description:

This module covers the theoretical and practical content on Pharmacy practice and dispensing under the following themes; (a) History and scope of pharmacy, (b) Reference Materials used in Pharmacy Practice, (c) Properties of Medicines, (d) Compounding & Dispensing and (e) Introduction to Pharmacy Practice.

MEDICAL BIOCHEMISTRY I

M3512BB

NQF Level 5

NQF Credits 14

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: Continuous assessment (CA): 60% (tests, laboratory reports/assignments and assignments/quizzes).

Examination: 40% (1 x 3 hours written paper).

Co-Requisite

Organic Chemistry (P3511SO)

Module Description:

The module will cover the following topics: Cell biology, Protein structure and function; Enzymes; Lipid chemistry and lipoproteins; Chemistry of vitamins and minerals; Carbohydrate chemistry; Signalling Pathways; Nucleic acid chemistry and genetic information transfer; Protein synthesis; Introductory medical genetics; Recombinant DNA technology and Introduction to bioinformatics;

MEDICAL BIOCHEMISTRY II

M3631PB

NQF Level 6

NQF Credits 16

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: Continuous assessment (CA): 60% (tests, laboratory reports/assignments and assignments).

Examination: 40% (1 x 3 hours written paper).

Prerequisite

Medical Biochemistry I (M3512BB)

Module Description:

This module covers the following topics: Principles of bioenergetics; Principles of bioenergetics. Oxidative metabolism; Carbohydrate metabolism and the TCA cycle; Glycolysis; Oxidation of fatty acids in the liver and extrahepatic tissues; Metabolism of proteins and amino acid nitrogen; Principles of metabolic regulation and biochemical basis of cancer; Steroid and bile metabolism; Nutrition in health and disease; Xenobiotic metabolism; Cytochrome P450 (CYP) enzymes in biotransformation; Clinical correlations in xenobiotic metabolism.

MEDICAL MICROBIOLOGY I

M3631TM

NQF Level 6

NQF Credits 16

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: Continuous assessment (CA): 40%, Exam mark: 60%

Prerequisite

None

Module Description:

This module covers content on: Bacterial cell; Bacterial cell Processes; Bacterial virulence Bacterial Genetics, Normal Microbial flora, Immunology: Spread and Control of Infection including Sterilization and Disinfection. Mechanisms of action of major classes of antimicrobial agents; drug resistance; multidrug resistant organisms and the physical and chemical prevention and control methods

MEDICAL MICROBIOLOGY II

M3612TM

NQF Level 6

NQF Credits 16

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: Continuous assessment (CA): 40%, Exam mark: 60%

Prerequisite

M3631TM

Module Description:

The module will cover content on; Parasitology including parasitism; parasitic diseases prevalent in Namibia and world; Medical entomology (insects and arachnids) ; Mycology; including important fungi; superficial mycosis; deep or systemic mycoses; opportunistic mycoses; fungal toxin and Allergies fungal drugs. Virology; History and principles of virology; Taxonomy and replication strategies of various viruses and Bacteriophages; Oncogenic virus; prions; Antiviral drugs; Technique of Diagnostic virology.

MEDICINAL CHEMISTRY & ANALYSIS I

P3752MM

NQF Level 7

NQF Credits 18

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consists of assignments, tests, quizzes, portfolio or learning and practical assessments. The exams will be for a maximum of three (3) hours written paper.

Prerequisite

P3632SA, P3511SO

Module Description:

This module covers theoretical and practical content on Applied Pharmaceutical Microbiology under five themes; (a) Introduction to Medicinal Chemistry, (b) Physicochemical Principles of Drug Action, (c) Drug Metabolism and Bio-transformation: Mechanisms, Therapeutics Significance and Mechanism of drug actions and drug metabolisms (d) Optimization and drug design techniques, and (e) SARs, QSARs, CADD and Combinatorial Chemistry.

MEDICINAL CHEMISTRY & ANALYSIS II

P3871MM

NQF Level 8

NQF Credits 20

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consists of assignments, tests, quizzes, portfolio or learning and practical assessments. The exams will be for a maximum of three (3) hours written paper.

(Co-requisites) Prerequisite P3752MM

Module Description:

This module covers theoretical and practical content on Applied Pharmaceutical Microbiology under five themes; (a) Introduction to Medicinal Chemistry, (b) Physicochemical Principles of Drug Action, (c) Drug Metabolism and Bio-transformation: Mechanisms, Therapeutics Significance and Mechanism of drug actions and drug metabolisms (d) Optimization and drug design techniques, and (e) SARs, QSARs, CADD and Combinatorial Chemistry.

MEDICINAL CHEMISTRY & ANALYSIS II

P3871MM

NQF Level 8

NQF Credits 20

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. The exams will be for a maximum of three (3) hours written paper.

(Co-requisites) Prerequisite P3752MM

Module Description:

This module covers theoretical and practical content on Medicinal Chemistry & Analysis II under five themes; (a) Classes of Drug, Analgesics, Antipyretics and Anti-tussives, Central Nervous system Depressants, Psychotherapeutic Agents, Drugs Acting on the Peripheral Nervous System, Drugs Acting on the Cardiovascular. Renal and Haematopoietic systems,, (b) Autonomic nervous system agents; muscarinic and nicotinic receptors; structure and activity of acetylcholine and acetylcholinesterase, its inhibition and treatment of its poisoning, blocking agents and their use as muscle relaxants, (c) Adrenergic system agents: structure and function of noradrenalin and its inactivation by MAO and catechol- O- methyl transferase; (d) Explain various process in pharmaceutical biotechnology and (e) Demonstrate knowledge and understanding of radiopharmaceutical

ORGANIC CHEMISTRY

P3511S0

NQF Level 4

NQF Credits 14

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, portfolio or learning and practical assessments. The exams will be for a maximum of three (3) hours written paper.

(Co-requisites) Prerequisite **None**

Module Description:

This module covers theoretical and practical contents on Organic Chemistry under six themes; (a) Review of valence bond and Molecular orbital theories, (b) introduction to Organic Chemistry, (c) Molecular representation and nomenclature, (d) Major organic molecules and nomenclature, (e) Stereochemistry and (f) Introduction to Organic reactions

PHARMACEUTICAL ANALYSIS

P3632SA

NQF Level 6

NQF Credits 16

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: Continuous Assessments 60% Tests
15% Assignments
25% Laboratory assessment
Final assessment (mark) 60% Continuous assessment 40% Examination (1 X 3 hours written paper)

(Co-requisites) Prerequisite **None**

Module Description:

The module will cover content on; Basic calculations in Pharm Analysis, Physical & chemical properties of drugs, Good Laboratory Practice and lab equipment, pH-pKa, ionisation Acids-bases and buffers calculations, Partition coefficient, Potentiometric Methods – measurement; half-cells, Compleximetric titrations (redox application), Electrochemical methods of analysis, Precipitation and application, Karl Fischer titration, Non-aqueous titration, Introduction to UV and Beer-Lambert Law, UV spectra of some drugs molecules, TLC – Theory and applications, General theory of column chromatography, HPLC – Instrumentation Qualitative and quantitative, Spectrophotometry, Gas Chromatography, Atomic Absorption Spectroscopy, IR and FTIR spectroscopy, Emission spectroscopy, NMR

PHARMACEUTICAL INDUSTRIAL PLACEMENT

P3759RI

NQF Level 7

NQF Credits 16

Compulsory/Elective Compulsory **Semester Offered** 1

Module Assessment: The assessment of this module will include continuous assessments (CA) which will contribute 100% to the final mark. The continuous assessments will consist of completing the placement workbook, report, quiz, and a viva voce.

(Co-requisites) Prerequisite **P3751ST**

Module Description:

This module covers theoretical and practical content on Applied Pharmaceutical manufacturing, and Quality control under five themes; (a) Pharmaceutical Manufacturing and Packaging, (b) Pharmaceutical Quality Control (c) Pharmaceutical Quality Assurance (d) Pharmaceutical Legislation, (e) Pharmaceutical stability, Pharmaceutical waste disposal and Pharmaceutical Surveillance.

PHARMACEUTICAL MATHEMATICS

P3511SMI

NQF Level 5

NQF Credits 12

Compulsory/Elective	Compulsory	Semester Offered	1
Module Assessment:	A three-hour exam will be written at the end of the semester. To qualify a student CA mark must be at least 50%. To pass the module a student needs a final mark of 50% or more with an Exam mark of 40% or more.		
(Co-requisites) Prerequisite	None		

Module Description:

The module will cover content on Rounding: rounding to a number of decimal places, rounding to significant figures; Simple proportions and ratios: basic fractions, ratios and percentages; Metric system: metric conversions lengths, weights, volumes (kilo to milli), drug calculations. Introduction to Pharmaceutical Calculations: drug calculations, w/w (weight per weight), v/v (volume per volume), w/v (weight per volume), simple dilution problems. Functions: one-to-one and onto functions, horizontal line test, composition of functions, inverse of a function. Piece wise defined functions, Introduction to exponential and logarithmic functions. Limit of a function: definition of limit, left and right limits, infinite limits and improper limits. Differentiation: rules of differentiation, chain rule, increasing and decreasing functions and graph sketching. Trigonometry: further trigonometric identities, derivatives and integrals of trigonometric functions.

PHARMACEUTICAL ORGANIC CHEMISTRY

P3632ST

NQF Level	6
NQF Credits	16
Compulsory/Elective	Compulsory
Module Assessment:	Semester Offered 2 The final assessment for this module will consist of 50% continuous assessments and 50% final examination. The continuous assessments will consist of assignments, tests, quizzes and practical assessments. The final examination will be 3 hours written paper.
Prerequisite	P3511SO

Module Description:

This module covers theoretical and practical content on the organic chemistry of drugs under these themes: (a) basics of organic reactions and reaction mechanisms, (b) Stereochemistry, (c) Nucleophilic reactions, (d) Electrophilic reactions and (e) heterocyclic compound of medicinal importance.

PHARMACEUTICAL TECHNOLOGY I

P3751ST

NQF Level	7
NQF Credits	18
Compulsory/Elective	Compulsory
Module Assessment:	Semester Offered 1 The continuous assessments will include. The continuous assessments will consist of assignments, tests, quizzes and practical assessments. The assessments will include 50% Continuous assessment (tests, online quizzes); 50% final examination (1 X 3 hours written paper).
Prerequisite	P3631SG

Module Description:

This module will provide thorough understanding of pharmaceutical facility design and steps (including technologies) used in the pharmaceutical products on small scale, pilot and large scale. Thus, it deal with pharmaceutical facility design, layout and describe processes involved the manufacture pharmaceutical products. It will also describes the use of fundamental, primary and secondary unit processes in drug formulation design and manufacture. While both fundamental and primary unit process will be described, most of time will be spent on secondary processes involved in manufacture of various dosage forms. This knowledge will then be used to prepare various forms, including solid dosage forms (e.g. tablet, capsule), liquid dosage forms (e.g. syrups), and semi-solid dosage forms (e.g. creams, ointment). In addition, students will gain broader understanding of warehousing, packaging, labelling, and will be given a brief overview of quality management systems used in the pharmaceutical process.

PHARMACEUTICAL TECHNOLOGY II

P3752ST

NQF Level	7
NQF Credits	18
Compulsory/Elective	Compulsory
Module Assessment:	Semester Offered 2 The continuous assessments will include. The continuous assessments will consist of assignments, tests, quizzes and practical assessments. The assessments will include 50% Continuous assessment (tests, online quizzes); 50% final examination (1 X 3 hours written paper).
Prerequisite	P3751ST

Module Description:

This module covers content on industrial manufacture of medicines, which include analysis and quality assurance as applied to the development, manufacture, assembly, and distribution of medicinal products. The module exposes the students to stages of drug development from discovery of active ingredients to dosage form development and manufacture to the launch of the final pharmaceutical product. In addition, the major aspects of drug manufacture, including, dosage design (formulation), and manufacture through unit operations including mixing dry and wet granulation, direct compression, coating, and so on are carried out. The module takes the students through the history of the pharmaceutical industry to present constituent parts and operations.

PHARMACEUTICAL TECHNOLOGY III

P3871ST

NQF Level	8
NQF Credits	20
Compulsory/Elective	Compulsory
Module Assessment:	Semester Offered Year module The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 60% and 40% respectively, to the final mark. The continuous assessments will consist of practical assessments supported with assignments, tests, quizzes, portfolio or learning. The examination will be a for a maximum of three (3) hours practical examination.
Prerequisite	P3751ST, P3752ST

Module Description:

This module covers theoretical and practical content on Pharmaceutical compounding and dispensing under five themes; (a) introduction to official and non-official pharmaceutical compendia, (b) compounding of liquid dosage forms: solutions, suspensions and emulsions; (c) compounding of semi-solid dosage forms: creams, gels, ointments and pastes; (d) compounding of solid dosage forms: tablets, capsules, suppositories and powders; (e) compounding and reconstitution of sterile hospital unit dose systems: parenteral preparations, cancer chemotherapy, parenteral nutrition, and radiopharmacy.

PHARMACOGNOSY & PHYTOTHERAPY**P3751SY****NQF Level** 7**NQF Credits** 18**Compulsory/Elective** Compulsory **Semester Offered** 1

Module Assessment: The final assessment for this module will consist of 50% continuous assessments and 50% final examination. The continuous assessments will consist of assignments, tests, quizzes and practical assessments. The final examination will be 3 hours written paper.

Prerequisite P3511SO**Module Description:**

The module will cover theoretical and practical content on Pharmacognosy and Phytotherapy under these five themes: (a) Medicinal plant taxonomy, morphology and families, (b) Organized and unorganized drugs, (c) Regulation and Quality control of medicinal plant materials, (d) Application of phytotherapy medicines in clinical practice, and (e) Alternative medical systems.

PHARMACOLOGY I**P3632CO****NQF Level** 6**NQF Credits** 16**Compulsory/Elective** Compulsory **Semester Offered** 2

Module Assessment: The continuous assessment (CA): 40% of average marks scored in a minimum of 2 tests
Examination: 60% of marks scored in a 1 x 3 hours written paper

CO-Requisite (M3612BP)**Module Description:**

Mechanisms and equations of drug receptor interactions; nature and types of drug dose response curves; pharmacodynamic terms describing drug dose effectiveness and safety; agonist and antagonist drug dose response curves and spare receptor theory; drug receptor families, cellular signal transduction pathways and second messengers; drug formulations and routes of drug administration; drug transport process, drug absorption, distribution and elimination; drug extraction ratio and clearance; effects of organ perfusion, protein binding and enzymatic activity on rates of drug elimination; pharmacokinetic compartment models; Pharmacokinetic parameters – their definitions and implications in drug therapy; drug plasma concentration time curves; pharmacokinetic models and equations and the use of semi-logarithmic graphs for determining pharmacokinetic parameters; drug metabolism and drug metabolising enzymes; enzyme induction and inhibition; Fundamental principles of drug interactions

PHARMACOLOGY II**P3751CO****NQF Level** 7**NQF Credits** 16**Compulsory/Elective** Compulsory **Semester Offered** 1

Module Assessment: The assessment will include continuous assessments (CA) and summative assessments (SA) which each contribute 60% and 40% respectively to the final mark. The continuous assessments will consist of assignments, tests, quizzes, and laboratory practical based assessments. The examination will be for a maximum of three (3) hours written paper.

Prerequisite P3632CO**Module Description:**

This module covers the theoretical and practical contents on the principles of pharmacology as applicable to the physiological systems under four themes: (a) Pharmacology of the cardiovascular system (b) Respiratory system pharmacology (c) Gastrointestinal system pharmacology (d) Renal system pharmacology

PHARMACOLOGY III**P3752CO****NQF Level** 7**NQF Credits** 16**Compulsory/Elective** Compulsory **Semester Offered** 1

Module Assessment: The CA mark and the Exam mark will contribute for 50% and 50%, respectively, to the Final Mark. The CA marks will be based on the following assessments, a minimum of three, a written report plus oral presentation on at least one Summary of Product Characteristics of a medicinal product. The Final Exam will be for a maximum of at least three hours.

Co Requisite (P3751CO)**Module Description:**

The module content includes: classification, clinical application, adverse drug reactions, mechanism of action, and pharmacokinetic considerations of drugs used to treat CNS and musculoskeletal disorders. CNS drugs: antidepressants, antipsychotics, mood-stabilising agents, antiepileptics, sedative/hypnotic drugs, drugs used to treat neurodegenerative disorders, opioid analgesics, drugs to treat migraine, drugs of abuse and dependence. Musculoskeletal system: Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), Disease-Modifying Anti-Rheumatic Drugs (DMARDs), drugs used in the treatment of gout. Endocrine system: hypothalamus and pituitary, drugs to treat disorders, adreno- and Mineralocorticosteroids, estrogens and androgens including contraception, bone mineral homeostasis and osteoporosis.

PHARMACOTHERAPY & CLINICAL SKILLS		P3752CS
NQF Level	7	
NQF Credits	18	
Compulsory/Elective	Compulsory	Semester Offered 2
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, and practical assessments. The exams will be for a maximum of three (3) hours written paper.	
Prerequisite	P3631PP	
Module Description:		
The module covers content in five themes (a) ethics and history taking, (b) review of major bodily systems and pathophysiological basis of pharmacotherapy for various diseases, (c) medication review, reconciliation and history taking (f) pharmacotherapy of PHC conditions and hematological conditions and (e) interpretation of laboratory tests.		
PHARMACY LAW & ETHICS		P3631PL
NQF Level	6	
NQF Credits	14	
Compulsory/Elective	Compulsory	Semester Offered 1
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, and practical assessments. The exams will be for a maximum of three (3) hours written paper.	
Prerequisite	P3511PD	
Module Description:		
The module covers content under three themes: (a) pharmacy profession including characteristics and core features of a profession and pharmacists as professionals; (b) ethics in pharmacy practice including principles of ethics, ethical dilemmas, unprofessional conduct and professional negligence, (c) pharmacy law including the Namibian legal framework and laws governing healthcare delivery, laws governing pharmaceuticals and patent and intellectual laws.		
PHARMACY PRACTICE I		P3631PP
NQF Level	6	
NQF Credits	16	
Compulsory/Elective	Compulsory	Semester Offered 1
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, and practical assessments. The exams will be for a maximum of three (3) hours written paper.	
Prerequisite	P3511PD	
Module Description:		
The module covers theoretical and practical content on Pharmacy Practice under four themes; (a) general pharmacy practice and management, (b) Responding to symptoms and specific pharmaceutical care issues, (c) Dispensing practice and Patient counselling, (d) Practice laboratories with a focus on prescription screening, dispensing, assembly, extemporaneous preparations, and counselling.		
PHARMACY PRACTICE II		P3751PP
NQF Level	7	
NQF Credits	16	
Compulsory/Elective	Compulsory	Semester Offered 1
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, quizzes, and practical assessments. The exams will be for a maximum of three (3) hours written paper.	
Prerequisite	P3631PP	
Module Description:		
This module will be delivered in four learning themes including; pharmaceutical supply chain management; rational use of medicines; medicine regulation and policies; and good clinical practices. For each of the four themes the practice roles of a pharmacist will be emphasized.		
PHARMACY PRACTICE III		P3872PP
NQF Level	8	
NQF Credits	18	
Compulsory/Elective	Compulsory	Semester Offered 2
Module Assessment:	The continuous assessments will include group projects, tests, quizzes and practical assessments that will contribute 50% to the final mark. Summative assessment will be one three hour written paper that will also contribute 50% to the final module mark.	
Prerequisite	P3751PP	
Module Description:		
This module will use a combination of methods including group projects and blended learning. There will be heavy emphasis on self-directed learning and problem solving, while the group projects will require students to use basic entrepreneurship and management techniques in order to be successful.		
PHYSICAL PHARMACY		P3632SP

NQF Level	6
NQF Credits	16
Compulsory/Elective	Compulsory Semester Offered 2
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, viva voce and practical assessments. The exams will be for a maximum of three (3) hours written paper.
Prerequisite	P3631SG, P3512SC

Module Description:

This module covers theoretical and practical content on Physical Pharmacy under five themes; (a) diffusion and dissolution of drugs in vitro, using equipment in the laboratory (b) determining drug solubility, surface and interfacial tension (c) discover surface active materials and pharmaceutical complexes (d) Buffers and isotonic solutions and (e) ionization of drugs in solution (ionic equilibria)

PRIMARY HEALTH CARE: HEALTH PROMOTION **P3511PT**

NQF Level	5
NQF Credits	12
Compulsory/Elective	Compulsory Semester Offered 1
Module Assessment:	Continuous assessment (60%): 2x written tests, one individual assignment AND End of module examination (40%): 1 x 3 hours paper
Prerequisite	None

Module Description:

Learning and Teaching Strategies/Activities

The course will be facilitated through the following learning activities: lectures, individual and group work/assignments. Students will receive reading resources.

PHYSICAL CHEMISTRY **P3512SC**

NQF Level	5
NQF Credits	14
Compulsory/Elective	Compulsory Semester Offered 2
Module Assessment:	The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, viva voce and practical assessments. The exams will be for a maximum of three (3) hours written paper.
Co-requisite	(P3511SM)

Module Description:

This module covers theoretical and practical content on Physical Pharmacy under five themes; (a) diffusion and dissolution of drugs in vitro, using equipment in the laboratory (b) determining drug solubility, surface and interfacial tension (c) discover surface active materials and pharmaceutical complexes (d) Buffers and isotonic solutions and (e) ionization of drugs in solution (ionic equilibria)

RESEARCH AND INNOVATION METHODS **P3632PR**

NQF Level	6
NQF Credits	16
Compulsory/Elective	Compulsory Semester Offered 0
Module Assessment:	The continuous assessments will include. The continuous assessments will consist of assignments, tests, quizzes and practical assessments. The assessments will include 50% Continuous assessment (tests, online quizzes, problem based discussion); 50% final examination (1 X 3 hours written paper). In addition, the clinical aspects will be assessed through clinical rotation case-presentations presentation and/or clinical workbooks.
Co-requisite	(P3522PB)

Module Description:

Types of research and innovation approaches (quantitative and qualitative). Types of research and innovation designs, including experimental, quasi experimental, non-experimental, observational and interventional. Types of data collection tools. Data management techniques. Analysis and interpretation of data and validity of conclusions. Development of research proposal. Ethical principles in research. Presentation of data and report writing.

Drug development process: Various Approaches to drug discovery: Pharmacological, Toxicological, IND Application, Dosage form. Clinical development of drug: Introduction to Clinical trials: Various phases of clinical trial, Methods of post marketing surveillance, Abbreviated New Drug Application submission, Ethical guidelines in Clinical Research, Designing of clinical study documents (protocol), Informed consent Process, Data management and its components, Safety monitoring in clinical trials (pharmacovigilance).

RESEARCH AND INNOVATION DESIGN **P3740PI**

NQF Level	8
NQF Credits	9
Compulsory/Elective	Compulsory Semester Offered 2
Module Assessment:	The continuous assessments will include. The continuous assessments will consist of assignments, tests, quizzes and practical assessments, as well as written research proposal, research presentation, pitching of innovation concepts. The assessments will include 50% Continuous assessment (tests, online quizzes); 50% final examination (1 X 3 hours written paper).
Co-requisite	Research and Innovation Methods (P3620PR)

Module Description:

Types of research and innovation approaches (quantitative and qualitative). Types of research and innovation designs, including experimental, quasi experimental, non-experimental, observational and interventional. Types of data collection tools. Data management techniques. Analysis and interpretation of data and validity of conclusions. Development of research proposal. Ethical principles in research. Presentation of data and report writing

Drug development process: Various Approaches to drug discovery: Pharmacological, Toxicological, IND Application, Dosage form. Clinical development of drug: Introduction to Clinical trials: Various phases of clinical trial, Methods of post marketing surveillance, Abbreviated New Drug Application submission, Ethical guidelines in Clinical Research, Designing of clinical study documents (protocol), Informed consent Process, Data management and its components, Safety monitoring in clinical trials (pharmacovigilance).

RESEARCH AND INNOVATION PROJECT**P3870PI****NQF Level** 8**NQF Credits** 18**Compulsory/Elective** Compulsory **Semester Offered** Year **Module**

Module Assessment: The continuous assessments will include. The continuous assessments will consist of assignments, tests, quizzes and practical assessments, as well as written research proposal, research presentation, pitching of innovation concepts. The assessments will include 50% Continuous assessment (tests, online quizzes); 50% final examination (1 X 3 hours written paper).

Co-requisite **Research and Innovation Design (P3752PI)****Module Description:**

Types of research and innovation approaches (quantitative and qualitative). Types of research and innovation designs, including experimental, quasi experimental, non-experimental, observational and interventional. Types of data collection tools. Data management techniques. Analysis and interpretation of data and validity of conclusions. Ethical principles in research. Presentation of data and report writing.

RURAL HOSPITAL PLACEMENT**P3639PU****NQF Level** 8**NQF Credits** 18**Compulsory/Elective** Compulsory **Semester Offered** 1

Module Assessment: The assessment of this module will include continuous assessments (CA) which will contribute 100% to the final mark. The continuous assessments will consist of completing the placement workbook, report, quiz, and a viva voce.

Co-requisite **P3511PD; (P3631PP)****Module Description:**

This module covers practical content under the following themes; (a) Inventory and Pharmacy Management, (b) Good Dispensing Practices, (c) Communication, (d) Rational Medicine Use (e) Analysis, (f) Primary Health Care and (g) Professionalism and Ethics.

SYSTEMS ANATOMY I**M3512PA****NQF Level** 5**NQF Credits** 16**Compulsory/Elective** Compulsory **Semester Offered** 2

Module Assessment: This will constitute of Continuous assessment mark with at least three written assessment Class Tests, and one written examination of 3-hour examination paper. The final mark: will consist of 40% of exam mark and 60% of Continuous assessment mark.

Prerequisite **M3511PA****Module Description:**

Regional anatomy and topographical anatomy, organ development and histology of respiratory, gastro-intestinal and urogenital systems with dissections and microscopy practical sessions of each system. Examples of the applications of the anatomical knowledge in clinical cases and clinical examination techniques mastered in skills laboratory.

SOCIOLOGY OF HEALTH AND DISEASE**M3512PS****NQF Level** 5**NQF Credits** 12**Compulsory/Elective** Compulsory **Semester Offered** 2

Module Assessment: Consist of Continuous Assessment: 40% and final Examination:60%

Prerequisite **None****Module Description:**

The module will cover content on the following topics, sociological understanding of health, illness and disease considers the structural and social factors. The structural emphasis entails the political, economic and social cultural elements, as well as the forces that allows/ constrain the health care system and individuals' responses to illness. The module also focuses on the indirect pathway between sociology and health/disease, and emphasizes the role that beliefs and behaviours play in health and illness.

Furthermore, the module will address the sociological definition of disease; explore major theoretical perspectives in health, behavioural science, and sociology, the influence of class, gender and ethnicity on health; global and rural health problems; health promotion and community health services among others. This will enable the students to understand the social determinants of health, social construction of illness, social meanings of illness, patterns in the distribution of health and illnesses, people health seeking behaviours; interaction between patients and the health provider. The course will also explore medicine as power and social control and the role of alternative medicines.

Students will also examine health-related behaviours and apply many of the theories to specific behaviors, e.g. addictive behaviors and the factors that predict smoking and alcohol consumption as well as Gender Based Violence and HIV. Throughout the course students will focus on the interrelationships between beliefs, behavior and health using the example of placebo effects; illustration of this interrelationship in the context of illness, focusing on HIV, cancer, obesity and coronary heart disease; aspects of women's health; the problems with measuring health status and the issues surrounding the measurement of quality of life.

BIOSTATISTICS
P3512PS

NQF Level 5

NQF Credits 12

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: The continuous assessment (CA): 40% (minimum of 3 tests and 2 assignments).
Examination: 60% (1 x 3 hours written paper)

Prerequisite None

Module Description:

Describing Univariate Data: Central Tendency, Spread, shape and graphs. *Describing Bivariate Data:* Scatterplots and Correlation. *Introduction to Probability (elementary):* Simple probability, Conditional probability, Probability of A and B, Probability of A or B. *Normal Distribution:* Standard normal distribution, Converting to percentiles and back, and area under portions of the curve. *Sampling Distributions:* Sampling distribution of the mean, Standard error, Central limit theorem, Difference between means, Proportion, Difference between proportions. *Confidence Intervals:* Overview, Mean, σ known, Mean, σ estimated, General formula. Difference between means of independent groups, σ known, Difference between means of independent groups, σ estimated, Pearson's correlation, Difference between correlations. **The Logic of Hypothesis Testing:** Ruling out chance as an explanation, The null hypothesis, Steps in hypothesis testing and conclusion, The precise meaning of the p value, Statistical and practical significance, Type I and II errors, One- and two-tailed tests, Confidence intervals and hypothesis testing following a non-significant finding. **Testing Hypotheses with Standard Errors:** General formula Tests of μ , σ known, Tests of μ σ estimated, $\mu_1 - \mu_2$, independent groups, σ estimated, $\mu_1 - \mu_2$, dependent means, σ estimated. **Chi square:** Test for independence and goodness-of-fit and equality of proportion. **Power:** Factors affecting power, Size of difference between means, Significance level, Sample size, Variance.

VETERINARY PHARMACY PRACTICE
P3741PV

NQF Level 7

NQF Credits 8

Compulsory/Elective Compulsory **Semester Offered** 2

Module Assessment: The assessments will include continuous assessments (CA) and summative assessments (SA), which will each contribute 50% to the final mark. The continuous assessments will consist of assignments, tests, tutorials, case study presentation, problem-based discussion and practical excursions. The exams will be for a maximum of three (3) hours written paper.

Prerequisite Pharmacy Practice I (P3631PP)

Module Description:

The module covers content on veterinary pharmacy practice under five themes; (a) good veterinary pharmacy practice, (b) veterinary nutrition, growth promoters and husbandry; (c) basic comparative veterinary physiology; (d) veterinary medicines and agrochemicals; (e) the one health concept, public health and (f) pharmacotherapy of common animal diseases.

CURRICULUM FOR THE BACHELOR OF PHARMACY DEGREE

BPHARM (HONOURS)

PHASING OUT AS OF 2023

COURSE CODE: 18BPHA

INTRODUCTION

The education and training of pharmacists for award of the Bachelor of Pharmacy of the University of Namibia is conducted over a 4-year period. During the course a variety of instructional methodologies are used. Instructional strategies at the School combine didactic methods (lectures and seminars), practical work (laboratory, pre-clinical practice, and fieldwork), clinical apprentice, independent study and student scientific work. The overall goal of the degree program is to produce a graduate who has sound understanding of the scientific foundations for the practice of pharmacy, possesses a high standard of pharmacy practice and is able to provide leadership in the community. The graduates are also adequately prepared for future specialization in own area of interest and have the desire for lifelong learning

MAJOR LEARNING OUTCOMES AND CONTENT OF THE COURSE

At the end of the BPharm degree programme, the graduates will be able to demonstrate the following major learning outcomes:

1. Practise pharmacy within legal requirements in a professional and ethical manner
2. Provide high quality patient-centred pharmaceutical care
3. Interpret and dispense prescriptions and medication orders
4. Provide information on medicines
5. Promote and support Primary Health care
6. Manage the manufacture of pharmaceuticals and related substances
7. Manage the pharmaceutical supply chain system
8. Manage pharmaceutical human resources
9. Manage pharmacy budget and financial operations
10. Manage physical facilities for pharmaceutical operations
11. Manage pharmaceutical information systems
12. Conduct pharmaceutical and related research
13. Optimize patient care and inter-professional relationships
14. Apply information and communication technology

The content of the curriculum comprises but is not limited to the following:

- *Biomedical sciences:* anatomy, physiology, pathophysiology, microbiology, immunology, biochemistry, molecular biology, and biostatistics.
- *Pharmaceutical sciences:* medicinal and pharmaceutical chemistry, pharmacognosy and phytochemistry, pharmacology, toxicology, and pharmaceutics which encompasses physical and chemical characteristics of drugs and excipients, principles of dosage forms and drug delivery systems, biopharmaceutics, and pharmacokinetics.
- *Behavioral, social, and administrative pharmacy sciences:* pharmacoeconomics, communications applicable to pharmacy, the history of pharmacy, legal and ethical foundations to practice, management of pharmaceutical systems.
- *Pharmacy practice:* prescription processing, compounding and preparation of dosage forms, including parenteral products, drug distribution and drug administration, epidemiology, health promotion and disease prevention, clinical laboratory medicine, clinical pharmacokinetics, patient evaluation and ordering medications, pharmacotherapeutics, and drug information and literature evaluation.
- *Professional experience:* field attachments including rural, community, hospital and industrial practice attachments.

INTERNSHIP AND REGISTRATION

After graduating, candidates will have to complete a one year internship programme under the supervision of the Pharmacy Council of Namibia, the statutory body responsible for the registration of pharmacists. The internship is supervised by mentors registered with the Pharmacy Council of Namibia. Successful completion of the internship is a condition for registration to practise as a pharmacist in Namibia.

STUDENT ADMISSION

COMMITTEE ON ADMISSIONS

Admission to the pharmacy degree course shall be administered by a Committee on Admissions, which shall be composed of members of the School and the Administrative Officer in charge of admissions to the School. All committee members shall be appointed by the Dean for a term of three years and may be reappointed for additional terms. The Committee shall have the authority to select students entering the School on condition that they fulfil the minimum admission requirements as set out below. The School shall exercise the responsibility of reviewing the requirements for admissions and recommending any revisions to Senate for approval.

ADMISSION CRITERIA

In order to be admitted to the programme, candidates must satisfy at least one of the following requirements:

9. To apply for the BPharm degree, a candidate must be enrolled in Grade 12 studying towards a NSSC certificate or in possession of a NSSC certificate or any other equivalent qualification with at least:
 - a) 30 points on the UNAM scale with a grade B or better in ordinary level English OR 32 points on the UNAM scale with a grade C or better in ordinary level English

- b) A Score of "2" or better on higher level in Mathematics and Physical Sciences (or a 2 in Mathematics and a 3 in Physical Science) (or a 2 in Physical Science and a 3 in Mathematics) or a grade B or better in ordinary level Mathematics and Physical Sciences
- c) Grade B or better in ordinary level Biology/Life Science
(Please refer to the scale used by the University to calculate the UNAM score);

OR

- 10. To apply for the BPharm degree, a candidate must have successfully completed the entire first year Science curriculum and must have passed chemistry, Biology and Mathematics/Physics modules with an aggregate of at least 55%.

OR

- 11. To apply for the BPharm degree, a candidate must have successfully completed a Science degree from a recognised University with passes in Sciences including Chemistry and Biology

OR

- 12. Mature Entry: Candidates aspiring for admission to UNAM's Bachelor of Pharmacy degree through the Mature Age Entry Scheme must satisfy the following conditions:
 - a. They should be at least 25 years old on the first day of the academic year in which admission is sought
 - b. They should have successfully completed senior secondary education
 - c. They should have proof of at least five years pharmacy relevant work experience (as determined by the School).
 - d. They should pass all papers of the prescribed Mature Age Entry Tests with an overall average of 55%.
 - e. Candidates who, in the opinion of the Faculty, merit further consideration, may be called for an oral interview before the final selection is made

Meeting the above student admission criteria DOES NOT necessarily ensure admission. Admission is awarded on merit based on places available on the programme and any other conditions that may be determined from time to time.

The Faculty reserves the right to administer special written entry tests and interviews before admission.

The admissions process **will not be re-opened** and a waiting list will be kept to choose from in the case of admitted student not turning up for registrations the following year.

DURATION OF STUDY

Each academic year shall comprise of two semesters each of 16 weeks of lectures and 2 weeks of examinations. The programme shall be completed in not less than four (4) years of full time academic study. The BPharm degree MUST be completed within six (6) years of full time study, unless special permission is granted for this period to be extended.

EXEMPTIONS

UNAM may give exemptions for equivalent modules taken at other recognized tertiary institutions but the exemptions shall not exceed 50% of the modules in the UNAM BPharm degree programme and shall be limited to the first two academic years only. An application for exemption from (a) module(s) must be accompanied by documentary proof issued by the examining body concerned that the student has passed the relevant module (not older than 5 years). For detailed rules on exemption, see the General University Information and Regulations.

EXAMINATION REGULATIONS

For detailed examination and promotion rules, see the General University Information and Regulations.

ELIGIBILITY FOR EXAMINATIONS

1. A candidate shall present himself/herself for the University examinations at such a time as indicated by the School Calendar of Examinations approved by the Senate.
2. A candidate will be eligible to write the examinations if he/she has attained the required minimum continuous assessment mark of 50% in each module. In addition, the candidate should have regularly and satisfactorily participated in the course of study, by attending not less than 80% of theory. Attendance of all practical classes is **COMPULSORY**.

MODE OF EXAMINATIONS

1. THEORY EXAMINATIONS shall be of three hours duration, unless specified otherwise.
2. Practical examinations shall not exceed three and a half hours duration.
3. A viva-voce (oral) examination shall be of not more than half hour duration for all modules, except the Project and the Field Attachment assessment.
4. The Project shall be examined by:
 - a. Assessment of the dissertation by the Supervisor, and this shall constitute 50% of the mark
 - b. Assessment of an oral defence by a panel, and this shall constitute 50% of the mark
5. Field Attachment assessment: The student shall be evaluated by lecturer(s) and preceptor(s) using student evaluation forms for each rotation upon completion of the attachment.
6. For each module, an external examiner shall moderate the examinations

CRITERIA FOR PASSING EXAMINATIONS

1. The examination in each module for any academic year shall constitute of:
 - a. 60% Continuous assessment (CA, practicals, term papers)
 - b. 40% Semester examination (Written theory papers, Practical and oral examinations where applicable)
2. A student shall be declared to have passed examination if he / she attain at least 50% mark in each of the modules. Where a module has a theory, practical and oral examination, the student must pass each examination with a minimum mark of 50%

ACADEMIC ADVANCEMENT RULES

FIRST YEAR TO SECOND YEAR OF PHARMACY

A student must have passed at least 12 of the prescribed First Year modules (192 credits) to register for Second Year modules. If any of the failed modules is a pre-requisite for a Second Year module, the student cannot register for the affected Second Year module until the pre-requisite is passed.

SECOND YEAR TO THIRD YEAR OF PHARMACY

A student must have passed **ALL** the prescribed First Year modules. In addition, the student must have passed at least 11 of the prescribed Second Year modules (408 credits). If any of the failed modules is a pre-requisite for a Third Year module, the student cannot register for the affected Third Year module until the pre-requisite is passed.

THIRD YEAR TO FOURTH YEAR OF PHARMACY

A student must have passed **ALL** the prescribed First Year and Second Year modules. In addition, the student must have passed at least 13 of the prescribed Third Year modules (648 credits). If any of the failed modules is a pre-requisite for a Fourth Year module, the student cannot register for the affected Fourth Year module until the pre-requisite is passed.

MINIMUM REQUIREMENTS FOR RE-ADMISSION

A student will not be re-admitted into the Bachelor Pharmacy (Honours) Degree if she/he has not earned:

- At least 96 credits by the end of the first year (at least 6 modules of Year 1)
- At least 272 credits by the end of the Second year (12 modules of year 1 plus 5 modules of Year 2)
- At least 488 credits by the end of the Third Year (All modules of Year 1, plus 11 modules of Year 2 and 5 modules of Year 3)
- At least 608 credits by the end of the Fourth Year (All modules of Year 1 and 2, plus 10 modules of Year 3)
- At least 680 credits by the end of the Fifth Year (All modules of Year 1,2,3, plus 2 modules of Year 4)

GRADUATION

A student can **ONLY** graduate with a Bachelor Pharmacy (Honours) Degree if she/he has passed the entire prescribed modules (1104 credits) of the program.

GRADING OF EXAMINATIONS

The UNAM grading system shall apply to all modules in the course including the Project.

AWARD OF THE DEGREE OF BACHELOR OF PHARMACY

A student must meet all requirements of this programme and the General University Information and Regulations in order to be awarded the Bachelor of Pharmacy Degree (BPharm).

DELIVERY MODE OF COURSES

Learning outcomes relate to the three domains: cognitive (knowledge), affective (attitudes), and psychomotor (skills). All modules include practical components. The delivery modes and techniques include, but are not limited to, case studies that will require students to use higher cognitive skills, role plays and real life experiences.

CURRICULUM STRUCTURE

The curriculum for the degree of Bachelor of Pharmacy (BPharm) consists of four years of learning spread over 8 semesters each of 16 weeks of lectures and 2 weeks of examinations, resulting in an 18-week semester. A full module carries 16 credits and is offered at three (3) contact hours plus two (2) hours of tutorial (or 3 hours of practical) per week for 16 weeks while a half-module carries 8 credits and is offered at two (2) contact hours plus one (1) hour of tutorial (or 2 hours of practical) per week for 16 weeks unless specified otherwise in the module. In addition, the curriculum includes 8 weeks of experiential learning in the form of field attachment at the end of years 2 and 3. The total number of credits for the degree is 792.

YEAR 1 SEMESTER 1 (16 WEEKS)

Module Title	Code	NQF Level	Credits	Hrs	Pre requisites /Co-requisites
Organic Chemistry	PCMO3511	5	16	3+3P	
Mathematics	PCTM3511	5	16	3+1P	
Anatomy I	PPHA3511	5	16	3+2P	
Physiology I	PPHP3511	5	16	3+2P	
Sociology of Health & Disease	PCSS3511	5	16	3	
English for Academic Purposes	ULEA3519	5	16	4	
Computer Literacy	UCLC3509	5	16	2+1P	

YEAR 1 SEMESTER 2 (16 WEEKS)

Module Title	Code	NQF Level	Credits	Hrs	Pre requisites /Co-requisites
Physical Chemistry	PCMO3512	5	16	3+3P	PCTM3511
Anatomy II	PPHA3512	5	16	3	PPHA3511
Physiology II	PPHP3512	5	16	3+2P	PPHP3511
Biochemistry I	PPHB3512	5	16	3+2P	PCMO3511
Biostatistics	PCSB3512	5	16	3+1P	
Primary Health Care: Health Promotion	PCSP3512	5	16	3+2P	
Introduction to Pharmacy & Dispensing	PCTI3632	6	16	3+3P	
Contemporary Social Issues	UCSI3580	5	8	2	
TOTAL CREDITS			232		

YEAR 2 SEMESTER 1 (16 WEEKS)

Module Title	Code	NQF Level	Credits	Hrs	Pre requisites /Co-requisites
Pharmacy Practice I	PCSP3621	6	8	2+2P	PCTI3632
Physiology III	PPHP3631	6	16	3+2P	PPHP3512
Biochemistry II	PPHB3631	6	16	3+2P	PPHB3512
Inorganic Chemistry	PCMI3611	6	16	3+3P	
General Pharmaceutics	PCTG3631	6	16	3+3P	PCMP3512
Introduction to Pharmacology	PPHH3631	6	16	3+3P	

YEAR 2 SEMESTER 2 (16 WEEKS)

Module	Code	NQF Level	Credits	Hrs	Pre requisites /Co-requisites
Introduction to Clinical and Nursing Skills	PCSN3632	6	16	3+4P	PPHA3512 PPHP3631
Pharmaceutical Analysis	PCTA3632	6	16	3+3P	PCMI3611 PCMO3512
Pharmaceutical Organic Chemistry	PCMO3632	6	16	3+3P	PCMO3511
Systems Pharmacology I	PPHS3732	7	16	3+3P	PPHH3631
Physical Pharmacy	PCTP3632	6	16	3+3P	PCMO3512 PCTG3631
Research Methods	PCSR3632	6	16	3+1P	PCSB3512

FIELD ATTACHMENT -YEAR 2 (2 X 4 WEEKS)					
Module	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Community Pharmacy	PCSC3739	7	16	35P	PCSP3622
Rural Attachment	PCSU3739	7	16	35P	PCSP3622
TOTAL CREDITS			216		

YEAR 3 SEMESTER 1 (16 WEEKS)					
Module Title	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Pharmacognosy and Phytochemistry	PCMH3751	7	16	3+3P	PCMO3511
Pharmaceutical Microbiology	PCTM3751	7	16	3+3P	
Systems Pharmacology II	PPHS3751	7	16	3+3P	PPHS3731
Biopharmaceutics & Pharmacokinetics	PCTK3721	7	8	2+1P	PCTM3511 PCTG3631
Pharmacy Law & Ethics	PCSL3721	7	8	2	
Veterinary Pharmacy & Agrochemicals	PPHV3721	7	8	2+1P	PPHH3632
Chemotherapy	PPHC3751	7	16	3	PCTM3751

YEAR 3 SEMESTER 2 (16 WEEKS)					
Module	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Medicinal Chemistry I	PCMM3752	7	16	3+3P	PCMO3511
Applied Pharmaceutical Microbiology	PCTA3752	7	16	3+3P	PCTM3751
Environmental & Occupational Health	PCSO3722	7	8	2+2P	
Pathophysiology & Pharmacotherapeutics I	PCST3752	7	16	3+4P	PPHS3751
Pharmaceutical Technology I	PCTT3752	7	16	3+3P	PCTP3632
Pharmacy Practice II	PCSP3742	7	8	2+2P	PCSP3622

FIELD ATTACHMENT -YEAR 3 (2 X 4 WEEKS)					
Module	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Hospital Pharmacy	PCSY3859	8	16	35P	PCSP3742
Industrial/Manufacturing Facility	PCSF3859	8	16	35P	PCTT3752
TOTAL CREDITS			200		

YEAR 4 SEMESTER 1 (16 WEEKS)					
Module Title	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Medicinal Chemistry II	PCMM3871	8	16	3+3P	PCMM3752
Pathophysiology & Pharmacotherapeutics II	PCST3871	8	16	3+4P	PCST3752
Pharmaceutical Technology II	PCTT3871	8	16	3+3P	PCTT3752
Complementary and Alternative Medicines	PCSA3861	8	8	2	PCMH3751
Research Project	PCSR3870	8	16	6P	PCSR3632

YEAR 4 SEMESTER 2 (16 WEEKS)					
Module	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Pharmacy Management	PCSM3872	8	16	3	
Clinical Pharmacokinetics and Therapeutic Drug Monitoring	PCSD3872	8	16	3+2P	PCTK3721
Pharmacoepidemiology & Pharmacoeconomics	PCSE3872	8	16	3+1P	PCSB3512
Clinical Toxicology	PPHT3862	8	8	2+1P	PPHS3731PPHS3751
Research Project	PCSR3870	8	16	6P	PCSR3632
TOTAL CREDITS			144		

COURSE EQUIVALENTS

BACHELOR OF PHARMACY (BPharm)		BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (MBChB)	
Module Title	Code	Module Title	Code
Organic Chemistry	PCMO3511	Biochemistry I	MBSB3511
Anatomy I	PPHA3511	Anatomy I	MBSA3511
Physiology I	PPHP3511	Physiology I	MBSP3511
Sociology of Health & Disease	PCSS3511	Behavioural Sciences I	MBSC3511
Primary Health Care –Health Promotion	PCSP3511	Family Medicine I	MBSF3514
Anatomy II	PPHA3512	Anatomy II	MBSA3512
Physiology II	PPHP3512	Physiology II	MBSP3512
Biochemistry I	PPHB3512	Biochemistry II	MBSB3512
Biostatistics	PCSB3512	Community Medicine I	MCMC3612
Physiology III	PPHP3631	Physiology III	MBSP3631
Biochemistry II	PPHB3631	Biochemistry III	MBSB3531
Introduction to Clinical and Nursing Skills	PCSN3632	Internal Medicine I	MCMM3732
Research Methods	PCSR3632	Community Medicine III	MCMC3632
Environmental & Occupational Health	PCSO3721	Family Medicine III	MBSF3652

THE SYLLABI

UNAM CORE MODULES

COMPUTER LITERACY

UCLC3509

NQF level:	5
Contact hours:	4 Lectures, 1 Theory+6 Computer Practice/Week for 16 weeks;
Credits:	16
Module Assessment:	Continuous Assessment 2 Practical tests 50% + 2 Theory tests 50%
Pre/Co-requisite:	None

Module description: This module is aimed at assisting students to develop basic information technology skills that are necessary for studying at tertiary level. The module will impart skills necessary to communicate process documents, analyse and present data. The student will be better equipped to conduct literature searches. The module is necessary for future delivery of services by the pharmacy professional.

CONTEMPORARY SOCIAL ISSUES

UCSI3580

NQF	5
Contact Hours	1 hour per week 2 semesters (offered Online)
Credits	8
Assessment	Continuous 100%
Prerequisite	None

Module Description:

Course Content: The module, Contemporary Social Issues (UCSI3580), is designed to encourage behavioral change among UNAM students and inculcate the primacy of moral reasoning in their social relations and their academic lives. In providing students with critical and analytical thinking the module enables students to grow and develop into well rounded citizens, capable of solving contemporary social challenges experienced in their communities and societies. The teaching of the module takes three dimensions: the intellectual, the professional and the personal dimensions. The intellectual dimension is fostered through engaging students with subject knowledge, independent learning and module assessment. The professional dimension, on the other hand, is fostered through exposing students to real life situations of case studies and practical exercises that draws attention to social issues that attract ongoing political, public and media attention and/or debate. Finally, the professional dimension is fostered through group work and online discussions.

ENGLISH FOR ACADEMIC PURPOSES

ULEA3519

NQF level:	5
Contact hours:	4 Lectures/Week
Credits:	16
Module Assessment:	Continuous Assessment (40%) and Examination (60%) (1 X 3 hours written paper)
Pre/Co-requisite:	None

Module Description:

This module develops a student's understanding and competencies regarding academic conventions such as academic reading, writing, listening and oral presentation skills for academic purposes. Students are required to produce a referenced and researched essay written in formal academic style within the context of their university studies. Students are also required to do oral presentations based on their essays. The reading component of the course deals with academic level texts. This involves students in a detailed critical analysis of such texts. The main aim is therefore, to develop academic literacy in English.

BPHARM MODULES

ANATOMY I

PPHA3511

NQF level:	5
Contact Hours	3 Lecture hours per week + 2 hours of tutorial (or 3 hours of practice)
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 x 3 hours written paper)
Pre-requisites	None

Module description

Basic Human Histology: This course aims to provide a general introduction to cells, the structure of the developing human, as well as the histology of the resulting main tissue types. An overview will be provided to levels of organization of the human body which ranged from cells to organ systems. The primary focus will be structural embryology with emphasis on human reproduction, gametogenesis, fertilization, gastrulation and the derivatives of the three germ layers. Furthermore, the development of the placenta will also be studied and a general introduction to congenital defects and embryopathies will be provided. In addition, this course will also provide an introduction to the four basic tissue types namely, epithelium, connective tissue, muscle and nervous tissue. Histological slides will be used to examine tissues in context.

ANATOMY II

PPHA3512

NQF level: 5
Contact Hours 3 Lecture hours per week
Credits: 16
Assessment: 60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite: PPHA3511

Module description

Systemic Anatomy: This second module in anatomy will expose students to morphological and functional characteristics of the various organs and organ-systems of the human body. This module builds on the basic concepts that were acquired during the study of human development and the four basic tissue types. Both the macro and micro-anatomy of the human body systems will be scrutinized. Emphasis will be placed on the histology of the eye, ear, skin, circulatory system, nervous system, lymphoid system, gastrointestinal tract, gastrointestinal tract glands, respiratory system, urinary system, andrological and female reproductive systems and endocrine system. Relevant clinical anatomy will be studied. This will be achieved through the evaluation of case studies related to each system and use of relevant medical technology. Students will be exposed the morphological alterations and their manifestations in the normal variant and pathological states. Histological slides will be used to examine the various organ systems as well as their tissue constituents.

APPLIED PHARMACEUTICAL MICROBIOLOGY

PCTA3752

NQF level: 7
Contact hours: 3 lecture hours/week for 16 weeks;
 3 practical hours for 16 weeks
Credits: 16
Module Assessment: 60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite: PCTM3751
Assessment Methods: Assignment, tests, practicals, class presentation, student form evaluation

Module Description:

The module involves the application of basic microbiological principles in the production of clean and sterile pharmaceutical products in community and hospital pharmacies, and in industrial manufacture. This includes the principles and methods of sterilisation, aspects of disinfection and preservation; concepts of good manufacturing practice, aseptic techniques and infection control in health care settings.

BIOCHEMISTRY I

PPHB3512

NQF: 5
Contact Hours: 3 lecture hours + 2hours of laboratory practical
Credits: 16
Assessment: 60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite: PCMO3511

Module Description

Molecular Biology and Genetics: This module is the first of two, describing the biomolecules and biochemical processes that are required in all functioning cells. Building upon what they have learnt in organic chemistry, students will be acquainted with the chemistry of essential biomolecules and will also be able to explain the molecular basis underlying enzymatic reactions. The course gives an overview of cell structure and function and focuses on the metabolism and storage of macromolecules, energy transduction and the flow of information within cells and between individual cells. In this course, students will become acquainted with the central dogma of molecular biology and the interrelated roles that DNA, RNA and protein play. Students will study gene structure and expression, biochemistry of DNA and RNA, protein biosynthesis, genetic defects and inheritance and genetic recombination. Multifactorial genetic diseases will also be covered. Finally, genetic diseases will figure prominently in discussions of DNA testing, cloning, ethics and genetic counseling. At the end of this course, students will be able to describe the structural and functional relationships of the various components of a cell.

BIOCHEMISTRY II**PPHB3631**

NQF	6
Contact Hours:	3 lecture hours + 2 hours of practical per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite:	None

Module Description:

Metabolism and nutrition: The course gives an overview of cell structure and function and focuses on the metabolism and storage of macromolecules, energy transduction and the flow of information within cells and between individual cells. The course will give an integrated overview of the functions of protein, carbohydrate and major vitamins and minerals as determinants of health and disease in human populations. The structure and function of vitamins and chemical carcinogenesis will be studied in this course. Students will be acquainted with the structure and role of the various immunoglobulins in the body's response to foreign materials. Students will be able to explain laboratory findings and disorders of metabolism and provide an overview of the major macro and micronutrients relevant to human health, the role of key nutrients in the prevention of disease and major nutrition related diseases.

BIOPHARMACEUTICS AND PHARMACOKINETICS**PCTK3721**

NQF level:	7
Contact hours:	2 lecture hours/week 1 hour practicals/week
Credits:	8
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisites::	PCTM3511, PCTG3631
Assessment Methods:	Assignments, tests, student evaluation form

Module Description:

Biopharmaceutics: This module provides students with knowledge of drug dosage forms and drug delivery systems. The module develops the students understanding of the role of biopharmaceutics in the design of safe and effective medicines. It provides an understanding of the influence of formulation on the bioavailability of drugs. It covers routes of administration, biopharmaceutics, bioavailability, bioequivalence, rate and extent of availability, onset and duration of effect, getting to the site of absorption, dissolution, disintegration, first-pass effect, passive diffusion and active transport.

Pharmacokinetics: This module provides the students with an understanding of the process and kinetics of absorption, distribution and elimination of drugs and the application of such knowledge to the rational design of dosage regimens and to the *in vivo* evaluation of dosage forms. The module covers the quantitation of factors affecting absorption, distribution, and metabolism, and excretion of drugs; derivation of mathematical models to calculate the time course of drug concentrations following drug administration; analysis of drug concentration data sets graphically and using non-linear regression.

BIOSTATISTICS**PCSB3512**

NQF:	5
Contact Hours:	3 lecture hours + 1 hour of practice
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre/Co-requisite:	None

Module description

Biostatistics - Biostatistics is a core science for all medical staff. Skills in statistical analysis are critical for research, evaluation and audit, as well as critical appraisal of the medical literature. The Biostatistics module presents a broad approach to evidence based decision making, statistical analysis, and concentrates particularly on areas which are likely to impact on Medical care or research.

CHEMOTHERAPY**PPHC3751**

NQF level:	7
Contact hours:	3 lecture hours per week
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 x 3 hours written paper)
Co-requisite:	PCTM3751

Module Description:

This module is designed to provide students a basic understanding of the principles of chemotherapy including treatment of infections, infestations and cancer. It includes the rational use of specific drugs, problems of drug resistance, current anti-cancer and anti-infective drugs.

CLINICAL PHARMACOKINETICS AND THERAPEUTIC DRUG MONITORING

PCSD3872

NQF level:	8
Contact hours:	3 lecture hours/week for 16 weeks; 2 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 × 3 hours written paper)
Pre-requisite:	PCTK3721
Assessment Methods:	assignments, tests, practicals and student assessment forms

Module description:

This module develops the students' theoretical concepts acquired in the biopharmaceutics and Pharmacokinetics module. Emphasis is on practical and clinical applications.

CLINICAL TOXICOLOGY

PPHT3862

NQF level:	8
Contact hours:	2 lecture hours/week for 16 weeks + 1 practical hour
Credits:	8
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PPHS3632, PPHS3751
Assessment Methods:	assignments, tests, student evaluation

Module Description:

The module covers general toxicology and provides students with knowledge and understanding of basic toxicology relevant for drugs. The module covers the most common acute-toxic drugs and chemicals, poisoning symptoms, treatments and antidotes.

COMMUNITY PHARMACY

PCSC3739

NQF level:	7
Contact hours:	35 attachment hours/week for 3 weeks
Credits:	16
Module Assessment:	100 % Continuous Assessment (Student evaluation form, problem based learning)
Pre-requisite::	PCSP3622

This module provides students with knowledge and hands-on skills in the main sectors of pharmacy – hospital, community and pharmaceutical industry. The module provides students with the opportunity to develop professional skills through interaction with role model professionals and to develop interpersonal communication skills in practice.

COMPLEMENTARY AND ALTERNATIVE MEDICINE

PCSA3861

NQF level:	8
Contact hours:	2 lecture hours/week for 16 weeks;
Credits:	8
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCMH5715
Assessment Methods:	assignments, tests, class presentation, student evaluation form

Module Description:

This module equips students with knowledge, skills and attitudes to provide unbiased information and advice to patients on complementary and alternative therapies including African traditional medicine the medicinal uses of various naturally occurring drugs and their history, sources, distribution, methods of cultivation, active constituents, medicinal uses, identification tests, preservation methods, substitutes and adulterants.

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

PCSO3722

NQF:	7
Contact Hours:	2 lecture hours + 2 hour of practice
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre/Co-requisite:	None

Module description

Environmental and Occupational Health: This course, gives medical students the attitudes, skills and knowledge necessary to provide preventive health services to reduce the health impact of disease and injury resulting from workplace and community factors. The course caters for the special needs of medical practitioners, pharmacists, nurses, allied health personnel, scientists and occupational health and safety managers.

GENERAL PHARMACEUTICS**PCTG3631**

NQF level:	6
Contact hours:	3 lecture hours/Week for 16 weeks; 3 practical hours / week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1x 3 Hours written paper)
Pre-requisite:	PCMP3512
Assessment Methods:	assignments, tests, practicals, class presentations, student evaluation forms

Module Description:

This module builds on the foundation knowledge acquired from the module on the introduction to pharmacy and dispensing in the previous semester. It emphasises on properties of powders and other dosage forms and to do basic calculations related to the physical and chemical properties of drugs and common dosage forms

HOSPITAL PHARMACY**PCSY3859**

NQF level:	8
Contact hours:	35 attachment hours/week for 3 weeks for each rotation
Credits:	16 for each rotation
Module Assessment:	Student evaluation form
Co-requisite:	PCSP3742

Module Description:

This module provides students with knowledge and hands-on skills in the main sectors of pharmacy – hospital, community and pharmaceutical industry. The module provides students with the opportunity to develop professional skills through interaction with role model professionals and to develop interpersonal communication skills in practice.

INDUSTRIAL/MANUFACTURING FACILITY**PCSF3859**

NQF level:	8
Contact hours:	35 attachment hours/week for 3 weeks for each rotation
Credits:	16 for each rotation
Module Assessment:	Student evaluation form
Co-requisite:	PCTT3751

Module Description:

This module provides students with knowledge and hands-on skills in the main sectors of pharmacy – hospital, community and pharmaceutical industry. The module provides students with the opportunity to develop professional skills through interaction with role model professionals and to develop interpersonal communication skills in practice.

INORGANIC CHEMISTRY**PCMI3611**

NQF	6
Contact Hours:	3 lecture hours + 2 hours of practical per week
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 x 3 hours written paper + 1½ practical examination)
Pre-requisite:	None

Module Description:

GENERAL CHEMISTRY: This is an introductory course to inorganic chemistry. It builds upon what is covered in the First Year chemistry courses. Students are expected to review the structure of the atom on their own, then the course progresses into its reactivity to form simple and complex molecule. The following topics are covered: In-depth studies of chemical bonding; (valence bond theory (VBT), shapes of molecules and hybridization; molecular orbital theory (MOT) in diatomic and polyatomic molecules); Delocalized multiple bonding. S-block elements: The chemistry of alkali and alkaline earth elements (groups 1 and 2); reactivity with hydrogen, oxygen, halogens, water, and liquid ammonia; Classification of oxides, and their

reaction with water; P-block elements (groups 13 to 18): Reactivity with oxygen and halogens; The hydrides of P block elements; Hydrolysis and ammonolysis of P-block halides

INTRODUCTION TO CLINICAL METHODS AND NURSING SKILLS**PCSN3632**

NQF:	6
Contact Hours:	3 lecture hours + 3 hours of practice per week
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite:	PPHP3631
Pre-requisite:	PPHA3512,

Module description

Introduction to Clinical Methods and Nursing Skills: This module which is the mainstay and foundation of clinical medical practice is designed to introduce the students early on to the professional and technical skills, scientific knowledge, and human understanding necessary in the care of the sick, their families, and the community and build up on the art of medical practice to near perfection. The module also introduces students to basic nursing procedure through didactic teaching and hands-on practice. A student is also equipped with knowledge and skills for providing emergency First Aid resuscitation and support before arranging for secure and safe transfer to health facility. It emphasizes on the establishment of direct, one-to-one physician-patient relationships, the process of social communication, and the performance of physical examination based on competent use of professional skills. Topics covered include communication skills, medical ethics, general, regional, and systemic physical examination of patients; basic nursing skills; First Aid.

INTRODUCTION TO PHARMACOLOGY**PPHH3631**

NQF:	6
Contact hours:	3 lecture hours + 2 hours of practice
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 X 3 hours written paper)
Pre-requisite:	None
Co-requisite:	None

Module Description

This module highlights the fundamental principles of action of all medicinal drugs and is semi-integrated with the module on Internal Medicine. The module focuses on pharmacodynamics, pharmacokinetics, and toxicity of drugs used in diagnosis, treatment, and prevention of disease, with emphasis on drugs frequently encountered in clinical practice. Special focus will be given to medicines influencing the autonomic nervous system (ANS) as knowledge gained is generalizable to pharmacology of other systems. Students will also develop a further understanding of experimental pharmacology and how it can be used as a tool in the development and/or reformulation of new drugs. Upon completing this unit students will be able to correlate drug effects with physiological function and explain a given drug's mode of action as well as side effects and the mechanisms by which these drugs modify the physiological system. Topics: compliance, rational drug use; risk benefit ratio in prescribing; prescribing; use of generics or trade (brand); selection of drugs; route of administration; formulation and dosage; classification of drugs; metabolism and elimination of drugs; side effects;

INTRODUCTION TO PHARMACY AND DISPENSING**PCTI3632**

NQF level:	6
Contact hours:	3 lecture hours / week for 16 weeks 3 practical hours / week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	None
Assessment Methods:	assignments, tests, practicals, class presentations and student assessment forms.

Module description:

The module is intended to introduce students to the history and practice of Pharmacy in general and in Namibia. The module covers basic skills and knowledge for dispensing medicinal products including the assessment of the validity of a prescription, the use of appropriate reference sources for the interpretation and dispensing of prescriptions.

Students are provided with basic skills and knowledge on the application of information and communication technology in pharmacy and dispensing.

MATHEMATICS**PCTM3511**

NQF level:	5
Contact hours:	3 lectures per week for 16 weeks 1 tutorial per week for 16 weeks

Credits:	16
Assessment:	60% Continuous assessment(at least 2 tests), 40% final examination (3 hours examination paper).
Pre/Co-requisite:	None

Module description:

Functions: one-to-one and onto functions, horizontal line test, composition of functions, inverse of a function. Introduction to exponential and logarithmic functions. Limit of a function: definition, left and right limits, infinite limits, limits at infinity, continuity in terms of limits. Differentiation: rate of change, derivative of a function, rules of differentiation, increasing and decreasing functions and graph sketching. Integration: antiderivatives, the definite integral, area under a graph. Trigonometry: further trigonometric identities, area of a sector and segment of a circle, derivatives and integrals of trigonometric functions.

MEDICINAL CHEMISTRY I

PCMM3752

NQF level:	7
Contact hours:	3 lecture hours/week for 16 weeks; 03 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCMO3511
Assessment Methods:	assignments, tests, practicals, class presentation, student evaluation form

Module Description:

This module covers modern concepts of rational drug design. This includes introduction to Quantitative Structure Activity Relationship (QSAR), combinatorial chemistry, computer aided drug design (CADD), drug metabolism and prodrugs.

MEDICINAL CHEMISTRY II

PCMM3871

NQF level:	8
Contact hours:	3 lecture hours/week for 16 weeks; 3 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCMM3752
Assessment Methods:	assignments, tests, practicals, class presentation, student evaluation form

Module Description:

This module covers concepts of biotechnology and the medicinal chemistry of classes of drug molecules. Classes of drugs will be covered in detail with respect to their physico-chemical properties, mode of action, structure-activity relationship, synthesis, chemical, nomenclature, and their side effects.

ORGANIC CHEMISTRY

PCMO3511

NQF Level:	5
Contact Hours:	3 lecture hours + 3 hours of laboratory practical per week
Credits:	16
Assessment:	60% Continuous assessment 40% final examination
Pre/Co-requisites:	None

Module Description:

Organic Chemistry: This module administered over one semester is designed to acquaint students with the basic knowledge in the classification of organic compounds. This includes the analysis of the chemical and physical properties and the use of organic compounds in medicine. Topics covered include the chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines; aromatic and aliphatic chemistry, heterocyclic compounds; isomerism, stereoisomerism and reaction mechanisms. Upon completion of this course students will be acquainted with the molecular interactions that drive biosynthesis and bioenergetics within cells.

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS I

PCST3752

NQF level:	7
Contact hours:	3 lecture hours / week for 16 weeks; 4 practical hours / week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite:	PPTS3751
Assessment Methods:	assignments, tests, class presentation, student evaluation form, problem based learning

Module description:

This module introduces students to the structural changes of tissues and organs of the human body, which result in or from pathological changes, or are caused by excessive functional adaptation or accumulation of the same. The module also introduces students to clinical pharmacy, an increasingly important aspect of modern pharmacy practice. Emphasis will be placed on the integration of knowledge and skills gained from previous courses with pathophysiology and therapeutics to devise appropriate pharmaceutical care plans.

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS II**PCST3871**

NQF level:	8
Contact hours:	3 lecture hours/week for 16 weeks 4 practical hours / week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCST3752
Assessment Methods:	Assignments, tests, class presentation, student evaluation form, problem based learning

Module Description:

This module enables students to integrate knowledge and skills in pathophysiology and therapeutics to devise appropriate pharmaceutical care plans. It focuses on major body systems including: gastrointestinal, respiratory and cardiovascular; central nervous system; musculoskeletal system; endocrine system and infectious diseases. Students also develop skills in selecting drugs rationally.

PHARMACEUTICAL ANALYSIS**PCTA3632**

NQF level:	6
Contact hours:	3 lecture hours/week for 16 weeks; 3 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCMO3512, PCMI3611
Assessment Methods:	assignment, tests, practicals, class presentation, student form evaluation

Module Description:

This module provides students with the theoretical and practical foundation to assure the quality and efficacy of drugs. The module incorporates requirements for drug quality in connection with Good Laboratory Practices and Good Manufacturing Practices. It includes the use of official reference books for drug analysis.

PHARMACEUTICAL MICROBIOLOGY**PCTM3751**

NQF level:	7
Contact hours:	3 lecture hours/week for 16 weeks; 3 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre/Co-requisite:	None
Assessment methods:	assignments, tests, practicals, class presentations, student evaluation forms

Module description:

This module covers the various aspects of microorganisms, their classification, morphology, laboratory cultivation identification and maintenance. It includes sterilization of pharmaceutical products, equipment and media.

PHARMACEUTICAL ORGANIC CHEMISTRY**PCMO3632**

NQF level:	6
Contact hours:	3 lecture hours/week for 16 weeks 3 practical hours / week for 16 weeks
Module Assessment:	60% Continuous assessment 40% final examination (1 × 3 hours written paper)
Credits:	16
Pre-requisite:	PCMO3511
Assessment Methods:	assignments, tests, practical, class presentation and student assessment.

Module Description:

This module covers the classification of organic compounds. It includes the analysis of the chemical and physical properties and the use of organic compounds in pharmacy and medicines.

PHARMACEUTICAL TECHNOLOGY I**PCTT3752**

NQF level:	7
Contact hours:	3 lecture hours/week for 16 weeks; 3 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCTP3632
Assessment Methods:	assignments, tests, practical, class presentations, student evaluation form

Module Description:

This module introduces students to the basics of industrial and small-scale manufacturing. This includes the application of the principles involved in the formulation and evaluation of various pharmaceutical dosage forms, the packaging, labelling and storage of pharmaceuticals and the safe use of tools, equipment and materials during manufacturing.

PHARMACEUTICAL TECHNOLOGY II**PCTT3871**

NQF level:	8
Contact hours:	3 lecture hours/week for 16 weeks;
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCTT3752
Assessment Methods:	assignments, tests, practical, class presentations, student evaluation form, problem-based learning.

Module Description:

This module introduces students to the basics of industrial and small-scale manufacturing. This includes the application of the principles involved in analysis and quality assurance as applied to the development, manufacture, assembly and distribution of medicinal products. The module exposes the student to all stages of drug development from discovery of an active agent to launch. The varied components of the undergraduate core course in the context of Industrial Pharmacy and drug development will be consolidated.

PHARMACOGNOSY AND PHYTOCHEMISTRY**PCMH3751**

NQF level:	7
Contact hours:	3 lecture hours/week for 16 weeks; 3 practical hours for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCMO3511
Assessment Methods:	assignments, tests, practicals, class presentation, student evaluation form

Module Description:

This module provides students with knowledge of the medicinal uses of various naturally occurring drugs and their history, sources, distribution, methods of cultivation, active constituents, identification tests, preservation methods, substitutes and adulterants.

PHARMACOEPIDEMIOLOGY AND PHARMACOECONOMICS**PCSE3872**

NQF level:	8
Contact hours:	3 lecture hours/week for 16 weeks + 1 practical hour/week
Credits:	16
Module Assessment:	Continuous 60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCSB3512
Assessment Methods:	assignments, tests, class presentations, student evaluation form

Module Description:

This module introduces students to various aspects of pharmacoepidemiology that play important roles in therapeutics, medicine and public health. The module will also introduce students to basic principles of pharmacoeconomics and how they are used in the economic evaluation of health care policies and programmes.

PHARMACY LAW AND ETHICS**PCSL3721**

NQF level:	7
Contact hours:	2 lecture hours/week for 16 weeks
Credits:	8
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre/Co-requisite:	None
Assessment Methods:	assignments, tests, student evaluation form

Module Description:

This module exposes students to several important legislations related to the profession of pharmacy in Namibia. These includes the following: Pharmacy Act, No. 9, 2004, Medicine and Related Substances Control Act, No 13, 2003 and Amendment Act, No. 8, 2007; Medical Aid Funds Act, No. 23, 1995; Hospital and Health Facilities Act, No. 36, 1994; Hospital and Health Facilities Amendment Act, No. 1, 1998; Council for Health and Social Services Professional Repeal Act, No. 3, 2004; and Allied Health Professions Act, No. 7, 2004, Dangerous Drugs. The new Drug Policy, Professional Ethics, Patent and Design Act.

PHARMACY MANAGEMENT**PCSM3872**

NQF level:	8
Contact hours:	3 lecture hours/week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre/Co-requisite:	None
Assessment Methods:	assignments, tests, student evaluation form

Module Description:

The aim of this module is to develop the foundation for the management of activities in all pharmacy practice settings. These activities include financial management, supervision and marketing. While some challenges will be related to the clinical aspects of patient care and the management of patients with complex and intractable medical conditions, other significant challenges include managing other health professionals, pharmacy staff and resources

PHARMACY PRACTICE I**PCSP3621**

NQF level:	6
Contact hours:	2 lecture hours/week for 12 weeks; 2 practical hours / week for 16 weeks
Credits:	8
Module Assessment:	60% Continuous assessment 40% final examination (1 x 3 hours written paper)
Co-requisite:	PCT13632
Assessment Methods:	Assignments, tests, practicals, class presentations, student evaluation forms

Module Description:

This module provides students with the skills and knowledge to provide various pharmaceutical care services to the public in a community pharmacy setting. This includes the provision of pharmacist-initiated therapy, monitoring of patients, responding to minor ailments, counselling, provision of information to patients and the maintenance of all records. The students are introduced to the basics of pharmaceutical business management.

PHARMACY PRACTICE II**PCSP3742**

NQF level:	7
Contact hours:	2 lecture hours/week for 16 weeks; 2 practical hours / week for 16 weeks
Credits:	8
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCSP3622
Assessment Methods:	Assignments, tests, practicals, class presentation, student evaluation form

Module Description:

This module focuses on equipping students with the knowledge and skills for managing health commodities and pharmacy personnel within the hospital environment and working in a multi-disciplinary health care team.

PHYSICAL CHEMISTRY**PCMO3512**

NQF level:	5
Contact hours:	3 lecture hours +3 practical hours
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite:	PCTM3511
Assessment Methods:	Assignments, tests, practicals, class presentations, student evaluation forms

Module Description:

This module enables students to analyse the physicochemical properties of drugs from the perspective of pharmacy. The behavior of ions in solution and electrode potential and spectroscopy are discussed.

PHYSICAL PHARMACY**PCTP3632**

NQF level:	6
Contact hours:	4 lecture hours/week for 16 weeks; 3 practical hours / week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite:	PCTG3631
Pre-requisite:	PCMP3512
Assessment Methods:	Assignments, tests, practicals, class presentations, student evaluation forms

Module Description:

This module provides students with an understanding of the physical and physicochemical principles, design, formulation, manufacture and evaluation of pharmaceutical dosage forms. It introduces students to concepts such as diffusion and dissolution of drugs, drug solubilisation, surface and interfacial tension, surface active materials, micelle formation and pharmaceutical complexes.

PHYSIOLOGY I**PPHP3511**

NQF:	5
Contact Hours:	3 lecture hours + 4 hours of tutorial (or 3 hours of practice)
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre/Co-requisite:	None

Module description

Embryology and Developmental Biology: This course in physiology introduces students to the fundamental processes and concepts of embryonic development. These include the acquisition of multicellularity, organization of the early embryo, morphogenesis of tissues, major organ systems, foetal membranes, growth, differentiation and analysis of common developmental defects. Upon completion of this course students should be versed in the genetic aspects of early development as well as the interactions that occur in development leading to the formation of the ectoderm, mesoderm and endoderm and the further differentiation of these layers into tissues, organs and systems. Particular attention will be placed on cell-cell communication and the pivotal role signaling plays in development.

PHYSIOLOGY II**PPHP3512**

NQF	5
Contact Hours:	3 lecture hours + 2hours of tutorial (or 3 hours of practice)
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Co-requisite:	PPHP3511

Module description

Basic Cell Process and Homeostasis, and Control: The study of physiology encompasses a number of fields of study; from molecules to ecosystems. The module begins with an investigation of basic cell processes. The students will be expected to understand how molecular interactions are integral to the generation, storage and utilization of energy, signalling and cellular dynamics. Building upon this importance of cellular and tissue compartmentation will be stressed including how information flows within a cellular and mass context. The integration of these systems and how they may impact homeostasis is of critical importance. By the end of the course students will also be familiar with the components and mechanics of the Endocrine system, the cellular and network properties of neurons and how they function within the context of the central and peripheral nervous systems. The module covers autonomic and somatic motor control. Finally, the module covers muscles and the integration of all of the aforementioned systems.

PHYSIOLOGY III**PPHP3631**

NQF:	6
Contact Hours:	3 lecture hours + 2 hours of tutorial (or 3 hours of practice)
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PPHP3512

Module description

Integration of Function and Metabolism, Growth and Aging: This third course in physiology will expose students to the fundamental processes and mechanisms occurring in the remaining organ systems. They will leave the course with an in-depth understanding of cardiovascular physiology, blood flow and how it is regulated and blood. Students will understand fluid and electrolyte balance as well as gas exchange and transport. These processes integrate numerous organ systems. The students will investigate the integration of the respiratory, circulatory and urinary systems and their respective organ components. The remaining organ systems, the digestive, endocrine, immune and reproductive will also be covered and the interconnectivity of all the organ systems considered.

PRIMARY HEALTH CARE: HEALTH PROMOTION**PCSP3512**

NQF:	5
Contact Hours:	3 lecture hours + 2 hour of practice
Credits:	16
Assessment:	60% Continuous assessment 40% Examination (1 × 3 hours written paper)
Pre/Co-requisite	None

Module Description

Health Promotion is the provision of information and education to individuals, families, and communities that encourage family unity, community commitment, and traditional spirituality that make positive contributions to their health status. Health Promotion is the promotion of healthy ideas and concepts to motivate individuals to adopt healthy behaviours.

According to the World Health Organization, health promotion is the process of enabling people to increase control over, and to improve, their health.

Health promotion represents a comprehensive social and political process, it not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health. Participation is essential to sustain health promotion action.

The Ottawa Charter identifies three basic strategies for health promotion. These are advocacy for health to create the essential conditions for health indicated above; enabling all people to achieve their full health potential; and mediating between the different interests in society in the pursuit of health. Every contact between a doctor and a patient can be seen as an opportunity for health promotion and disease prevention. It is therefore essential that the new graduate knows how to make the most of these opportunities through demonstrable knowledge of the principles involved both for individual patients and populations.

RESEARCH METHODS**PCSR3632**

NQF:	6
Contact Hours:	3 lecture hours + 1 hour of practice
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite:	PCSB3512

Module description

Research Methods - The student is expected to be able to challenge the prevailing notion of a hierarchy of research methods from stronger experimental designs to weaker qualitative techniques and crude dichotomous thinking (hard versus soft, quantitative versus qualitative; understand that there is no right or wrong methodological approach - rather the central concern should be the appropriateness of the method to the problem being investigated, the knowledge base, the resources available (including both financial and person power), the socio-cultural context, and the level of analysis; recognize that most medical care and public health interventions still occur "downstream" and are unable to significantly affect the course of mortality, morbidity and disability in modern society and that "upstream" primary and secondary prevention is required, especially policy-level interventions designed to affect whole populations; understand that behavioural and social science research methods are particularly well suited to measuring, explaining and evaluating "upstream" public health activities; view quantitative and qualitative research methods as complementary partners in the public health research enterprise, rather than competing with each other.

RESEARCH PROJECT**PCSR3870**

NQF level:	8
Contact hours:	6 practical hours/week for 32 weeks
Credits:	32
Module Assessment:	50% assessment of dissertation by supervisor and 50% oral examination/defence of dissertation by a panel
Pre-requisite:	PCSR3632
Assessment Methods:	Assessment of written project and oral examination/defence of dissertation

Module Description:

Projects are intended to develop students' ability to evaluate scientific literature and engage in independent research. Projects will normally be of potential high impact value on health resource utilization and management of diseases relevant to Namibia. In this semester, students will focus more on literature search and research tool development. Data collection, analysis and write-up will be covered in the second semester.

RURAL ATTACHEMENT**PCSU3739**

NQF level:	7
Contact hours:	35 attachment hours/week for 3 weeks
Credits:	16
Module Assessment:	100 % Continuous Assessment (Student evaluation form, problem based learning)
Pre-requisite:	PCSP3622

Module Description:

This module provides students exposure to health care systems in rural areas based on the government's health policies. It gives the students an opportunity to explore the role of the pharmacist in the rural setting and to appreciate the potential problems encountered by the health care personnel in the rural areas. The module will involve students in projects and activities aimed at promoting primary health care and to identify possible interventions and solutions to problems in the rural health care service.

SOCIOLOGY OF HEALTH & DISEASES**PCSS3511**

NQF Level:	5
Contact Hours:	3 lecture hours + 2 hours of practice
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 x 3 hours written paper)
Pre/Co-requisite:	None

Module Description

This module is offered in the first semester of the first academic year. It focuses on the indirect pathway between sociology and health/disease, and emphasizes the role that *beliefs* and *behaviours* play in health and illness. The introductory lectures in this module reflect this emphasis and illustrate how different sets of beliefs relate to behaviours and how both these factors are associated with illness. Students will learn about changes in the causes of death over the twentieth century and why this shift suggests an increasing role for beliefs and behaviours. Students will also master theories of health beliefs and the models that have been developed to describe beliefs and predict health behaviour. Beliefs that individuals have about illness will be examined, followed by health beliefs in the context of health professionals–patient communication, as well as health care worker counselling. Students will then examine health-related behaviours and apply many of the theories and constructs to specific behaviours, e.g., addictive behaviours and the factors that predict smoking and alcohol consumption; eating behaviour drawing upon developmental models, cognitive theories and the role of weight concern; exercise behaviour both in terms of its initiation and methods to encourage individuals to continue exercising; screening of health behaviours and assessment of the factors that relate to whether or not someone attends for a health check, as well as the psychological consequences of screening programs. Since this module also focuses on the direct pathway between sociology and health/disease, this will be the focus of the second half of the module. Students will master the following topics: stress (definition and measurement); the links between stress and illness via changes in both physiology and behaviour and the role of moderating variables; pain and the factors in exacerbating pain perception; how psychological interventions can be used to reduce pain and encourage pain acceptance; the interrelationships between beliefs, behaviour and health using the example of placebo effects; illustration of this interrelationship in the context of illness, focusing on HIV, cancer, obesity and coronary heart disease; aspects of women's health; the problems with measuring health status and the issues surrounding the measurement of quality of life; ethics involved in physician/patient interaction and counselling.

SYSTEMS PHARMACOLOGY I**PPHS3732**

NQF level:	7
Contact hours:	3 lecture hours/week for 16 weeks; 3 practical hours / week for 16 weeks
Credits:	16
Module Assessment:	60% Continuous assessment 40% final examination (1 X 3 hours written paper)

Co-requisite: PPHH3631
Assessment Methods: Assignment, tests, practicals, class presentation, student form evaluation

Module Description:

This module provides students with knowledge on the pharmacology of drugs used in disorders of body systems such as cardiovascular, renal, respiratory, and digestive and peripheral nervous systems. The module develops students' understanding of and skills in experimental pharmacology as a tool in the development of drugs. It develops their ability to conduct experimental investigations in accordance with established standards of scientific procedures and critical thinking.

SYSTEMS PHARMACOLOGY II

PPHS3751

NQF level: 7
Contact hours: 3 lecture hours/week for 16 weeks;
3 practical hours / week for 16 weeks
Credits: 16
Module Assessment: 60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Pre-requisite: PPHS3632
Assessment Methods: Assignments, tests, practicals, class presentation, student evaluation form

Module Description:

This module provides students with knowledge on the pharmacology of drugs used in the treatment of conditions of the CNS and in chemotherapy of infections and cancers. It includes and actions for the restoration of physiological functions in the endocrine systems and control of inflammation and immune responses.

VETERINARY PHARMACY AND AGROCHEMICALS

PPHV3721

NQF level: 7
Contact hours: 2 lecture hours / week for 16 weeks + 1 practical work
Credits: 8
Module Assessment: 60% Continuous assessment 40% final examination (1 X 3 hours written paper)
Prerequisite: PPHI3631
Assessment Methods: Assignments, tests, class presentation, student evaluation form

Module Description:

This module will provide students with the basic knowledge of common animal diseases and their drug treatment. The manufacture and storage of common veterinary drugs will be covered.

CURRICULUM FOR THE MASTER OF PHARMACY (CLINICAL)

MPHARM (CLINICAL)

COURSE CODE: 18MPHM

INTRODUCTION:

MAJOR LEARNING OUTCOMES AND CONTENT OF THE COURSE

Holders of the Master of Pharmacy (Clinical) qualification will be able to:

- Consult effectively with patients, carers and the multidisciplinary healthcare team, respecting diversity and confidentiality;
- Independently develop clinical pharmacy knowledge and skills in order to identify, prioritise and resolve complex pharmaceutical problems in a range of common conditions;
- Critically review the overall management and monitoring of patients with a range of common disease states;
- Recognise the evidence-based approach to management of a range of common conditions and apply evidence-based medicine to individualised patient care;
- Identify, prioritise and resolve the medicines management needs of patients, carers and other social and health care professionals;
- Demonstrate a systematic approach to medicines management for patients with a range of common conditions;
- Apply pharmacokinetic and pharmacodynamic principles to the design of appropriate medicine regimens;
- Conceptual understanding of the initiative required when taking responsibility for clinical decision making;
- Ability to make decisions in complex situations where patients present with co-morbidities and/or poly-pharmacy;
- Comprehensive understanding of the role of independent learning when engaging in personal continuing professional development;
- In-depth understanding of the pharmacist's role and responsibilities with respect to contributing actively to the planning and delivery of pharmaceutical care in the workplace setting;
- Advance knowledge and understanding through continuing professional development and lifelong learning;
- To critically evaluate the drug treatment of general medical and surgical patients, in order to provide competent advice on the safe and effective use of medicines;
- To demonstrate systematic and critical understanding of the knowledge and skills required to work independently within a specific area of pharmacy practice.

STUDENT ADMISSION

Committee on Admissions

Admission to the Master of Pharmacy (Clinical) shall be administered by a Committee on Admissions, which shall be composed of members of the School of Pharmacy and the Administrative Officer in charge of admissions to the School. All committee members shall be appointed by the Dean of the Faculty of Health Sciences for a term of three years and may be reappointed for additional terms. The Committee shall have the authority to select students entering the School on condition that they fulfil the minimum admission requirements as set out below. The School shall exercise the responsibility of reviewing the requirements for admissions and recommending any revisions to Senate for approval.

ADMISSION CRITERIA

Candidates may be admitted to this programme if they meet the General Admission Requirements of the University of Namibia and comply with the additional requirements below:

- A candidate must have a good Bachelor of Pharmacy (Honours) degree with at least a C-grade average, from the University of Namibia or equivalent
- A candidate must be a qualified pharmacist, and if practicing/studying in Namibia, registered with the Health Professions Councils of Namibia, specifically the Pharmacy Council of Namibia.
- Students must be registered as pharmacists or in pursuance of registration within Namibia (or relevant country in the future) and be practising in either hospital or community pharmacy.
- A prospective student may be interviewed and assessed by the School of Pharmacy prior to admission.

DURATION OF STUDY

The duration of study for the programme will usually be three years, with a maximum duration of five years. An extension beyond three years' study must be granted by the Faculty on the recommendation of the School of Pharmacy and with the consent of the supervisor(s) involved.

EXEMPTIONS

UNAM may give exemptions for equivalent modules taken at other recognized tertiary institutions but the exemptions shall not exceed 50% of the modules in the UNAM MPharm programme and shall be limited to the first two academic years only. An application for exemption from (a) module(s) must be accompanied by documentary proof issued by the examining body concerned that the student has passed the relevant module (not older than 5 years). For detailed rules on exemption, see the General University Information and Regulations.

EXAMINATION REGULATIONS

For detailed examination and promotion rules, see the General University Information and Regulations.

Eligibility for Examinations

1. A candidate shall present himself/herself for the University examinations at such a time as indicated by the School Calendar of Examinations approved by the Senate.
2. A candidate will be eligible to write the examinations if he/she has attained the required minimum continuous assessment mark of 50% in each module. In addition, the candidate should have regularly and satisfactorily participated in the course of study, by attending not less than 80% of theory where applicable.

Mode of Examinations

1. Theory examinations shall be of three hours duration.
2. Practical examinations shall not exceed three and a half hours duration.
3. A viva-voce (oral) examination shall be of not more than half hour duration for all modules.
4. Field Attachment assessment: The student shall be evaluated by lecturer(s) and preceptor(s) using student evaluation forms for each rotation upon completion of the attachment and/or viva-voce.
5. For each examinable module, an external examiner shall moderate the examinations

Criteria for passing examinations

3. A The examination in each examinable module for any academic year shall constitute of:
 - a. 50% Continuous assessment (CA, practicals, term papers)
 - b. 50% Semester examination (Written theory papers, Practical and oral examinations where applicable)
4. A student shall be declared to have passed examination if he / she attain at least 50% mark in each of the modules. Where a module has a theory, practical and oral examination, the student must pass each examination with a minimum mark of 50%

ACADEMIC ADVANCEMENT RULES

First year to second year of Master of Pharmacy

A student must have passed at least three of the prescribed first year modules (72 credits) to register for second year modules. If any of the failed modules is a pre-requisite for a second year module, the student cannot register for the affected second year module until the pre-requisite is passed.

Second year to third year of Master of Pharmacy

A student must have passed ALL the prescribed first year modules. In addition, the student must have passed at least two of the prescribed second year modules (144 credits). If any of the failed modules is a pre-requisite for a third year module, the student cannot register for the affected third year module until the pre-requisite is passed.

Minimum requirements for re-admission

A student will not be re-admitted into the Master of Pharmacy (Clinical) if she/he has not earned:

- At least 48 credits by the end of the first year (at least two modules of year 1)
- At least 96 credits by the end of the second year (three modules of year 1 plus one module of year 2)
- At least 144 credits by the end of the third year (all modules of year 1, plus all modules of year 2 and one modules of year 3)

GRADUATION

A student can only graduate with an MPharm if she / he has passed the entire prescribed modules (276 credits) of the programme.

GRADING OF EXAMINATIONS

The UNAM grading system shall apply to all modules in the course including the project.

AWARD OF THE MASTER OF PHARMACY

A student can only graduate with an MPharm if she / he has passed the entire prescribed modules (276 credits) of the programme.

DELIVERY MODE OF COURSES

The MPharm will be delivered as a part-time, block-release programme.

CURRICULUM STRUCTURE

Year One					
Module Title	Code	NQF Level	Credits	Hours per Week	Pre /Co-requisites
Academic Writing for Postgraduate Students	UAE 5819	8	*	4	
Infectious diseases and infection control	CID 5920	9	24	2 (+4P)	
Field placement and portfolio I	CFP 5920	9	24	2	
Research methodology and scientific communication	CRM 5920	9	24	2	
Epidemiology and monitoring of priority public health conditions	CEM 5920	9	24	2	
Total credits year 1			96		

Year Two					
Module	Code	NQF	Credits	Hours per Week	Pre /Co-requisites
Clinical services rotation	CSS 5920	9	24	2	
Operational services rotation	COS 5920	9	24	2	
Field placement and portfolio II*	CFP 5940	9	24	2	
Total credits year 2			72		

*Includes audit/critical appraisal

Year Three					
Module	Code	NQF	Credits	Hours per Week	Pre /Co-requisites
Defined area of practice	CDP 5920	9	24	2	
Field placement and portfolio III	CFP 5960	9	24	2	
Pharmacy thesis	CMT 5910	9	60		All taught courses
Total credits year 3			108		
Total credits for this programme			276		

THE SYLLABI

INFECTIOUS DISEASES AND INFECTION CONTROL

Course Code	CID5920
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture plus 4 hours practicals per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment: Examination 40%	(1 x 3 hours paper); Continuous 60% (at least two written test plus assignments/ reports)

Course Content

This module reinforces basic pathophysiology and management of HIV and TB and introduces advanced concepts, such as management of side effects, drug resistance, co-infection, opportunistic and multi-drug-resistant (MDR) TB management, including extremely-drug-resistant (XDR). Students are encouraged to work in a multidisciplinary team in a clinical environment and pharmacist students will further develop their skills in pharmaceutical care plan development, drug history taking and medicines reconciliation, pharmacovigilance, and the management of complex patients and those on polypharmacy. Students will embark on their research project during this module.

FIELD PLACEMENT AND PORTFOLIO I

Course Code	CFP5920
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment: Portfolio, interventions log, mini-PAT, CBD	

Course Content

This module will enable to student to put into practice the various learning of other modules in clinical pharmacy but with particular emphasis on concurrent modules such as infectious disease. It will also provide an opportunity for students to build their portfolio of evidence around learning activities. Students will be expected to generate ideas for audit, research and change management topics as well as examples of critical appraisal and interventions.

FIELD PLACEMENT AND PORTFOLIO II

Course Code	CFP5940
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment: Portfolio, interventions log, mini-PAT, CBD	

Course Content

This module will enable to student to put into practice the various learning of other modules in clinical pharmacy but with particular emphasis on concurrent modules such as clinical and operational services. It will also provide an opportunity for students to build their portfolio of evidence around learning activities. Students will be expected to generate data for audit, research and change management topics as well as examples of critical appraisal and interventions.

FIELD PLACEMENT AND PORTFOLIO III

Course Code	CFP5960
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment: Portfolio, interventions log, mini-PAT, CBD	

Course Content

This module will enable to student to put into practice the various learning of other modules in clinical pharmacy but with particular emphasis on concurrent modules in defined areas of practice. It will also provide an opportunity for students to build their portfolio of evidence around learning activities. Students will be expected to analyse and present data for audit, research and change management topics as well as examples of critical appraisal and interventions.

RESEARCH METHODOLOGY AND SCIENTIFIC COMMUNICATION

Course Code	CRM5920
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment:	Examination 40% (1 x 3 hours paper); Continuous 60% (at least two written test plus assignments/ reports including audit, critical appraisal, drug use review)

Course Content

Students will be taught how to accurately write up research and present it in a format acceptable for publication. The ultimate aim is to prepare students to provide evidence-based practice that promotes quality outcomes for the population, the healthcare providers and the health system. Additionally, students should be able to use research findings in promoting and understanding health and illness and to implement effective interventions to promote health. As part of this module, students will complete a critical appraisal/drug use review and an audit, before choosing a research project which will then continue throughout their three years of study.

EPIDEMIOLOGY AND MONITORING OF PRIORITY PUBLIC HEALTH CONDITIONS

Course Code	CEM5920
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment:	Examination 40% (1 x 3 hours paper); Continuous 60% (at least two written tests plus assignments/ reports including portfolio review)

Course Content

Descriptive epidemiology will be covered in this course. Students will learn to use epidemiologic practices to conduct studies that improve healthcare delivery. Students will learn to structure research from problem framing to findings, dissemination through study design methods and data management and processing. This course will also refresh students on biostatistics, allowing them to apply these concepts to statistical tests and study designs. Students will cover the monitoring of infectious diseases patients as related to their pharmacotherapy, including therapeutic drug monitoring of antibiotics.

CLINICAL SERVICES ROTATION

Course Code	CCS5920
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	Both semesters
Assessment:	Portfolio, interventions log, mini-PAT, CBD, OSCEs

Course Content

The clinical services rotations build on skills gained during the first year, and focus on pharmacy practice, teaching a systematic approach to pharmaceutical care and incorporating all aspects of patient care, including disease states. Learning is both work-based to enable core skill development and online to provide essential clinical knowledge. Evidence-based practice and interprofessional collaboration is reinforced to ensure a strong and effective future workforce.

OPERATIONAL SERVICES ROTATION

Course Code	COS5920
NQF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NQF Credits	24
Pre-requisites	None
Compulsory/Elective	Compulsory

Semester Offered Both semesters
Assessment: Portfolio, interventions log, mini-PAT, CBD, OSCEs

Course Content

Operational services focuses on essential operational skills required for the safe and efficient running of a pharmacy. Rotations such as medicines information, quality control and assurance, dispensary, supply chain management and central medical stores all reinforce and build on basic pharmacy skills, placing emphasis on robust processes and good decision making, evidence-based practice and risk management.

DEFINED AREA OF PRACTICE

Course Code CDP5920
NQF Level 9
Notional Hours 240
Contact hours 2 hours lecture per week for 28 weeks
NQF Credits 24
Pre-requisites None
Compulsory/Elective Compulsory
Semester Offered Both semesters
Assessment: Portfolio, interventions log, mini-PAT, CBD, change management task

Course Content

The specialist area is chosen by the student and approved by the university. It focuses on an area of specialist interest, relevant to the student's workplace, for example a pharmacist working in a hospital may choose infectious diseases, pain management or management of surgical patients.

MASTER'S THESIS

Course Code CMT5910
NQF Level 9
Notional Hours 600
Contact hours Regular sessions with supervisor
NQF Credits 60
Pre-requisites All taught courses
Compulsory/Elective Compulsory
Semester Offered Both semesters
Assessment: Examination (100%). The thesis will be examined by one Internal Examiner and one External Examiner.

Course Content

The student will be required to undertake research activities in a selected topic of clinical or operational pharmacy and to submit a thesis. Students will work under the supervision on a researcher of their own choice which will enable the candidate to gain theoretical and analytical knowledge in course work to a substantive problem relevant to their area of specialization.

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