



UNAM
UNIVERSITY OF NAMIBIA



**FACULTY OF HEALTH SCIENCES
SCHOOL OF PHARMACY**

Prospectus 2017

PROSPECTUS 2016

SCHOOL OF PHARMACY



UNAM
UNIVERSITY OF NAMIBIA

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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 health care 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

STRUCTURE AND PERSONNEL

OFFICE OF THE DEAN

Dean: Faculty of Health Sciences	Prof P Nyarango
Associate Dean School of Pharmacy	Prof T Rennie
Deputy Associate Dean School of Pharmacy	Dr V Haakuria
Campus Administrator	Ms D Titus
Faculty Officer	Ms F Mario
Secretary	Mrs L Muraranganda
Examination Officer	Mr A Ngwangwama
Student Records Officer	Mr M Nowaseb
Administrative Officer	Ms A Nelenge
Field Officer	Mr J Hamalwa
Security Officer	Mr E Sinifwa
ICT Officer	Mr A Shikongo Mr S Shilongo

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

Ms F Mario
The Faculty Officer
School of Medicine
University of Namibia
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WINDHOEK

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E-mail: fmario@unam.na

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

ACADEMIC CALENDER FOR 2017

Semester One

January

- 11 January - University Opens
- 13 January - Registration senior students
- 16 January - Lectures commence for 1st semester (Senior Students)
- 30 January - Lectures commences for 1st semester (1st Students)

February

- 13 February - 1st block lecture commences (DipPharm 3)
- 17 February - 1st block lecture ends (DipPharm 3)

March

- 8 March - 4th block lecture commences (MPharm 1)
- 10 March - 4th block lecture ends (MPharm 1)
- 20 March - 1st semester Break Starts
- 20 March - 1st block lecture commences (DipPharm 2)
- 24 March - 1st block lecture ends (DipPharm 2)
- 27 March - Lecture resumes after Easter break

April

- 10 April - 2nd block lecture commences (DipPharm 3)
- 13 April - 2nd block lecture ends (DipPharm 3)

May

- 12 May - Lectures end 1st Semester (Senior Students) (16 weeks)
- 15 May - 2nd block lecture commences (DipPharm 2)
- 19 May - 2nd block lecture ends (DipPharm 2)
- 18 May - Regular Examination Commence (Senior BPharm Students)
- 26 May - Lectures End for 1st Semester (1st Year Students) (16 weeks)
- 29 May - Regular exam commences (MPharm 1)

June

- 1 June - Regular exam ends (MPharm 1)
- 01 June - Regular Examinations end (Senior BPharm Students)
- 02 June - Regular Examination Commence (1st Year Students)
- 5 June - Rural and Industrial placements commences (2nd and 3rd BPharm)
- 5 June - 3rd block lecture (DipPharm 3) commences
- 9 June - 3rd block lecture (DipPharm 3) ends
- 12 June - 1st block lecture commences (MPharm 1)
- 14 June - 1st block lecture ends (MPharm 1)
- 30 June - Rural and Industrial placements ends (2nd and 3rd BPharm)
- 15 June - Regular Examinations end (1st Year Students)
- 20 June - moderation starts
- 21 June - moderation ends

Semester Two

July

- 3 - 7 July - mid-year recess
- 10 July - Lectures commence for 2nd Semester
- 10 July - 3rd block lecture commences (DipPharm 2)
- 14 July - 3rd block lecture ends (DipPharm 2)
- 12 July - Special /Supplementary examinations commence (All BPharm and MPharm 1 Students)
- 14 July - Special /Supplementary examinations end (All BPharm and MPharm 1 Students)
- 24 July - 2nd block lecture commences (MPharm 1)
- 26 July - 2nd block lecture ends (MPharm 1)
- 26 July - 1st block lecture commences (MPharm 2)
- 28 July - 1st block lecture ends (MPharm 2)

August

- 28 August - Spring Break Starts
- 28 August - 4th block lecture (DipPharm 3) commences

September

- 1 September - 4th block lecture (DipPharm 3) ends
- 13 September - 2nd block lecture commences (MPharm 2)
- 15 September - 2nd block lecture ends (MPharm 2)
- 18 September - 4th block lecture (DipPharm 2) commences
- 22 September - 4th block lecture (DipPharm 2) ends
- 04 September - Lectures resume after Spring Break

November

- 3 November - Lectures end for 2nd semester (All BPharm students) (16 weeks)
- 6 November - Regular examinations commence (All DipPharm students)
- 13 November - 3rd block lecture commences (MPharm 1)
- 15 November - 3rd block lecture ends (MPharm 1)
- 15 November - 3rd block lecture commences (MPharm 2)
- 17 November - 3rd block lecture ends (MPharm 2)
- 10 November - Regular examinations ends (All DipPharm students)
- 10 November - Regular examinations for 2nd semester commence (All BPharm students)
- 23 November - Regular examinations for 2nd semester end (All BPharm students)
- 27 November - Special /Supplementary examinations commences (All BPharm and all Pharmacy Diploma students)
- 27 November - Hospital placements commences

December

- 1 December - Special /Supplementary examinations ends (All BPharm and all Pharmacy Diploma students)
- 4 December - moderation starts
- 5 December - moderation ends
- 4 December - Community placements commences
- 15 December - Hospital placements ends
- 22 December - Community placements ends

January 2018

- 10 January - University Opens

DUE DATES FOR THE 2017 ACADEMIC YEAR

(i) GENERAL

Last day for appeals (\$em 2 & Double modules – Reg & Supp/Spec exams of Nov 2016)	20 Jan
Last day for application of retention of continuous assessment (CA) mark&	
Last day for application for exemption(s).....	10 Feb
Last day for Late Registration (<i>Late fee payable</i>)	10 Feb
Last day for approval of exemption(s).....	10 Feb
Last day for approval of module(s) & qualification changes	10 Feb
Last day for recommendation of retention of continuous assessment mark and Promotion Exam by Faculties.....	15 Feb
Last day for approval of retention of continuous assessment mark and Promotion Exam by Examinations Office.....	17 Feb
Promotion Exam	03 Mar
Last day for change of offering types at Regional Centres (Semester 1 modules).....	28 Apr
Last day for Appeals (\$emester 1 modules (Reg & Supp/ Spec Exams of June 2017)	21 Jul
Last day to submit outstanding documentation	18 Aug
Last day to change offering types at Regional Centres (Semester 2 modules)	22 Sep
Last day to cancel enrolment	22 Sept
Last day to submit Theses and Dissertations for examinations.....	27 Oct

(ii) CANCELLATIONS

Semester 1 modules

Last day to cancel Semester 1 modules.....28 April

Semester 2 modules

Last day to cancel Semester 2 modules.....22 Sept

Double modules (A double module normally extends over one academic year)

Last day to cancel Double modules.....22 Sept

(iii) FINANCE

Semester 1 modules

Last day to cancel with 100 % credit.....03 March

Last day to cancel with 50 % credit.....18 April

Semester 2 modules

Last day to cancel with 100 % credit..... 04 August

Last day to cancel with 50 % credit..... 01 Sept

Double modules (a double module normally extends over one academic year)

Last day to cancel with 100 % credit..... 03 March

Last day to cancel with 50 % credit..... 02 June

ACADEMIC DEPARTMENTS

DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS

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Head of Department:	Mr. F. Kalmera
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
Associate Professor:	Vacant
Senior Lecturer:	Vacant
Lecturer:	Mr. D Kibuule, BPharm (Hons), Makerere University; MSc (Clinical Pharmacology), Makerere University, Registered with the Pharmacy Council of Namibia
Lecturer:	Mr. F. Kalemeera, BSc Makerere University; BPharm (Hons), Makerere University; MSc (Clinical Pharmacy), University College Cork, Ireland, Registered with the Pharmaceutical Society of Uganda
Lecturer:	Dr. KDS Bamitale, Bachelor of Dental Surgery, Obafemi Awolowo University; MSc (Pharmacology), University of Lagos; PhD (Pharmacology)
Lecturer:	Ms. B. Kayongo, Bachelor of Science: Pharmacology (University of Hertfordshire), MSc. Toxicology (University of Surrey)
Technologist:	Ms. N Ananias, BSc (Chemistry and Molecular and Physiological Biology) University of Namibia; MSc (candidate)

DEPARTMENT OF PHARMACY PRACTICE AND POLICY

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Head of Department:	Mr. D Kibuule
Professor:	Vacant
Associate Professor:	Dr. T Rennie MPharm (Hons), University of London; PhD, University of London; Member of the Royal Pharmaceutical Society; Member of the Pharmaceutical Society of Namibia
Senior Lecturer:	Mr. D Kibuule, BPharm (Hons), Makerere University; MSc (Clinical Pharmacology), Makerere University, PhD candidate; Registered Pharmacist, Pharmacy Council of Namibia; Member of Royal Pharmaceutical Society; Member of Pharmaceutical Society of Namibia
Lecturer:	Mr. M. Mubita, BPharm, University of Zambia; MSc (Clinical Pharmacy), Queen's University, Belfast, UK, PhD (candidate)
Assistant Lecturer:	Ms. E. Naikaku, BPharm, University of Nairobi, Kenya; Member Pharmacy Council of Namibia; MPH (candidate)
Assistant Lecturer:	Mr. B Singu, BPharm, University of Nairobi, Kenya; Member Pharmacy Council of Namibia; MPharm (candidate)
Technologist:	Vacant
Part-time Lecturer:	Ms. N Rudall, BPharm (Hons), University of Bath; MSc (Clinical Pharmacy), University of Derby; GPHC; MRPharmS; Independent Prescriber, University of Sunderland
Part-time Lecturer:	Associate Professor Lauren Jenifer Jonkman, PharmD, University of Pittsburgh, United States of America
Part-time Lecturer:	Ms. Saren Shifotoka, BPharm (Hons), University of Nairobi; Senior Pharmacist Namibia Medicine Regulatory Council – Pharmaceutical inspection and control; Member of the Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms. Ana Mensua, BPharm (Hons), MSc. Epidemiology; Member of Pharmacy Council of Namibia, Member of Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms. Ester Ndamono, BPharm (Hons), University of Nairobi; Senior Pharmacist Namibia Medicine Regulatory Council; Member of the Pharmaceutical Society of Namibia
Part-time Lecturer:	Ms. Fabiola Vahekeni, BPharm (Hons), University of Nairobi; Senior Pharmacist Central Medical Stores Namibia; Member of Pharmaceutical Society of Namibia

DEPARTMENT OF PHARMACEUTICS

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Professor:	Vacant
Associate Professor:	Vacant
Senior Lecturer:	Vacant
Lecturer:	Dr. V Haakuria, BSc (Chemistry/Molecular Microbiology) University of Namibia, BSc Honours (Biotechnology) Rhodes University, MSc (Biotechnology) University of the Witwatersrand, PhD (Biochemical Engineering) University College London
Technologist:	Vacant

DEPARTMENT OF PHYTOCHEMISTRY AND PHARMACEUTICAL CHEMISTRY

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Head of Department:	Mr. A. Ishola, M Phil HIV/AIDS Management, University of Stellenbosch; Post Graduate Diploma in HIV/AIDS Management, Stellenbosch; Post Graduate Diploma in Education; M.Tech. Analytical Chemistry; B. Sc. (Hons.) Applied Chemistry
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.
Senior Lecturer:	Dr. M Knott, B. Pharm, MSc (Pharmacy) dist, PhD (Rhodes), MPS (SA), PSN Registered Pharmacist: HPCNA (Namibia), SAPC (South Africa), PCM (Malta / EU)
Lecturer:	Ms. S. Ilonga, MSc (Chemistry), University of Namibia; BSc (Chemistry and Molecular & Physiological Biology), University of Namibia
Assistant Lecturer:	Vacant
Technologist:	Ms. K Amakali, BSc (Hons) – Chemistry, University of Stellenbosch; BSc (Chemistry and Molecular and Physiological Biology) University of Namibia

REGULATIONS

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

PROGRAMMES

Diploma in Pharmacy	18DIPP
Bachelor of Pharmacy (Honours)	18BPHA
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

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. 50% Continuous assessment (CA, practicals, term papers)
 - b. 50% 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 be 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 pharmacoconomics, 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 DEGREE

BPHARM (HONOURS)

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:

1. To apply for the B.Pharm 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

2. 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

3. 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

4. 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 (656 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 /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 /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	
Introduction to Pharmacology	PPHH3632	6	16	3+3P	PPHP3512
Primary Health Care: Health Promotion	PCSP3512	5	16	3+2P	
Contemporary Social Issues	UCSI3580	5	8	2	
TOTAL CREDITS			232		

YEAR 2 SEMESTER 1 (16 WEEKS)					
Module Title	Code	NQF Level	Credits	Hrs	Pre /Co-requisites
Introduction to Pharmacy & Dispensing	PCTI3631	6	16	3+3P	
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
Systems Pharmacology I	PPHS3731	7	16	3+3P	PPHH3632

YEAR 2 SEMESTER 2 (16 WEEKS)					
Module	Code	NQF Level	Credits	Hrs	Pre /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
Pharmacy Practice I	PCSP3622	6	8	2+2P	PCTI3631
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 Medicine	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 & Pharmacoconomics	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 2 Contact hours per week for 14 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 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 × 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 + 2 hours 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 × 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: PCT3751

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

PPHH3632

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:	MBSP3631; MBSB3531
Co-requisite:	MPCP3732; MPCM3631; MCMM3732

Module Description

INTRODUCTION TO PHARMACOLOGY: 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

PCTI3631

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 40% final examination
(at least 2 tests), (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: PPHS3751
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: PCMO3511, PCMI3512
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.

PHARMACOEPIDEMOLOGY 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

PCSP3622

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 × 3 hours written paper)
Co-requisite:	PCTI3631
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 + 2 hours 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 x 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**

NQFLevel:	5
Contact Hours:	3 lecture hours + 2 hours of practice
Credits:	16
Assessment:	60% Continuous assessment 40% final examination (1 × 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

PPHS3731

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: PPHI3631
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	MPH 5900	9	24	2 (+4P)	
Field placement and portfolio I	MPF 5900	9	24	2	
Research methodology and scientific communication	MPH 5920	9	24	2	
Epidemiology and monitoring of priority public health conditions	MPF 5940	9	24	2	
Total credits year 1			96		

Year Two					
Module	Code	NQF	Credits	Hours per Week	Pre /Co-requisites
Clinical services rotation	MPR 5900	9	24	2	
Operational services rotation	MPR 5920	9	24	2	
Field placement and portfolio II*	MPF 5920	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	MPH 5960	9	24	2	
Field placement and portfolio III	MPF 5940	9	24	2	
Master's thesis	MPR 5990	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	MPH 5900
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	MPF 5900
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	MPF 5920
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	MPF 5940
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 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	MPH 5920
NOF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NOF 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	MPF 5940
NOF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NOF 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	MPR 5900
NOF Level	9
Notional Hours	240
Contact hours	2 hours lecture per week for 28 weeks
NOF 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	MPR 5920
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	MPH 5960
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	MPR 5990
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.

