UNAM
UNIVERSITY OF NAMIBIA

FACULTY OF HEALTH SCIENCES
SCHOOL OF MEDICINE

Prospectus 2017

SCHOOL OF MEDICINE

UNAM

UNIVERSITY OF NAMIBIA

NOTE

This Prospectus is only valid for 2017 as regulations and syllabi may be amended for 2018. The general regulations and further information appear in the General Information and Regulation Prospectus.

Although the information contained in this Prospectus has been compiled as accurately as possible, it is possible that errors and omissions have inadvertently occurred, for which we apologise in advance. The University reserves the right to amend any regulation or stipulation without notice. The information is correct up to 30 November 2016.

The fact that particulars of a specific module or programme have been included in this Prospectus does not necessarily mean that the module or programme will be offered in 2017.

This Prospectus must be read in conjunction with the *General Information and Regulations Prospectus 2017*.

STRUCTURE AND PERSONNEL

OFFICE OF THE DEAN

Dean & Founding Dean School of Medicine	Prof P Nyarango
Associate Dean School of Medicine	Prof F Aamambo
Deputy Associate Dean SOM	Dr M M Morkel
Assistant Pro-Vice Chancellor	Dr K Shangula
Deputy Director - Administration and Finance	Mr A Flederbascher
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
Student Support Officer	Mr J Erastus
Field Officer	Mr J Hamalwa
Security Officer	Mr E Sinfwa
ICT Officer	Mr A Shikongo
ICT Officer	Mr S Shilongo

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

Ms F Mario
The Faculty Officer
School of Medicine
University of Namibia
Private Bag 13301
WINDHOEK

Telephone: +264-61-2065015
Fax: +264 61- 2065093
E-mail: fmario@unam.na

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

CONTENTS

SCHOOL OF MEDICINE PREAMBLE

The mission of the School of Medicine is to produce health professionals whose knowledge, professional skills, and practice in medicine are in tune with the needs of society (practice patterns, and scientific advancements). The School shall provide a learning environment conducive to the pursuit of professional competence by health workers, while providing quality services to the community and undertaking relevant translational research for enhancement of health. The School will continually strive for the establishment of training programs in a wide spectrum of health disciplines and lending support to the human resource development initiatives of the country, including post-graduate education of physicians and scientists. The School is mandated to prepare graduates for the medical degree of the University of Namibia.

The key objectives of the School of Medicine are:

- To promote equity of access to health care services for all;
- To promote affordable health care service delivery by strengthening health care systems which are sustainable, cost-effective, efficient and culturally relevant and acceptable;
- To institute measures to counter major health risks including the prevailing communicable diseases;
- To develop academically and professionally qualified medical doctors in sufficient numbers for manning various health care delivery systems;
- To contribute to the development of a national health care system that is capable of providing a fully comprehensive range of preventive, curative and rehabilitative health care that is cost-effective, sustainable and acceptable to the recipients of such health care services;
- 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.

SCHOOL OF MEDICINE 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 honor The University of Namibia, the Medical Board 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 honor 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.

ACADEMIC CALENDER

FIRST SEMESTER

09 January	Start of Summer School (until 27 January)
11 January	University Open
13 January	Registration: Seniors MBChB (2nd, 3rd, 4th , 5th & 6th)
16 January	SOM Academic staff resumes office duties
16 January	Lectures commence 2nd, 3rd, 4th & 5th year MBChB
17 January	School Board meeting
16 January	Clinical rotation starts 6th year MBChB
20 January	Lectures block end 5th year MBChB
23 January	Clinical rotation starts 5th year MBChB
24 January	Academic staff resumes office duties
30 January	Lectures commence 1st year MBChB
03 February	Agenda closes: SOM- School Board
06 February	Lectures commence for FIRST SEMESTER
08 February	SOM- School Board Meeting
10 February	Lectures block end 4th year MBChB
13 February	Clinical rotation starts 4th year MBChB
24 February	White Coat Ceremony 1st year MBChB
20 March	First semester BREAK starts
27 March	Lectures resume after first semester break
12 May	Lectures end for FIRST SEMESTER
12 May	Lectures end 2nd & 3rd year MBChB
12 May	Clinical rotation ends 4th year MBChB
18 May	Regular Examinations commence
19 May	Examinations commence 2nd, 3rd & 4th year MBChB
26 May	Lectures end 1st year MBChB
02 June	Examinations commence 1st year MBChB
02 June	Examinations end 2nd, 3rd & 4th year MBChB
02 June	Clinical rotation ends 6th year MBChB
05 June	COBES starts 3rd year MBChB
05 June	Lectures block commence 4th year MBChB
09 June	Regular Examinations end
09 June	Clinical rotation ends 5th & 6th year MBChB
12 June	Lectures block starts 5th year MBChB
15 June	Examinations end 1st year MBChB
16 June	Lectures block end 5th year MBChB
19 June	Special/Supplementary Examinations start
19 June	Clinical rotation starts 5th & 6th year MBChB
21 June	Agenda closes: School of Medicine – School Board Meeting
23 June	End of First Semester
26 June	Start of Winter School (until 15 July)
30 June	COBES ends 3rd year MBChB
30 June	Lectures block end 4th year MBChB
30 June	School of Medicine – School Board Meeting
3 – 7 July	Mid-year Break

SECOND SEMESTER

10 July	Lectures commence 1st, 2nd & 3rd year MBChB
11 July	Supplementary exams start 1st, 2nd, 3rd & 4th year MBChB
12 July	Supplementary exams end 1st, 2nd, 3rd & 4th year MBChB
12 July - 13 July	Moderation
14 July	Exam Board
17 July	Lectures commence for SECOND SEMESTER
17 July	Clinical rotation starts 4th year MBChB
28 August	Second semester BREAK starts
4 September	Lectures resume after second semester break
4 September	Agenda closes: SOM – School Board
8 September	SOM- School BoardMeeting
06 October	Clinical rotation ends 4th year MBChB
13 October	Lectures end for SECOND SEMESTER
13 October	Examinations commence 4th year MBChB

19 October	Regular Examinations commence
27 October	Examinations end 4th year MBChB
30 October	COBES starts 4th year students
03 November	Lectures end 1st, 2nd & 3rd year MBChB
03 November	Clinical rotation ends 5th & 6th year MBChB
09 November	Regular Examinations end
10 November	Examinations commences 1st, 2nd, 3rd & 5th year MBChB
13 November	Examinations commence 6th year MBChB
20 November	Special/Supplementary Examinations start
23 November	Examination ends 1st, 2nd & 3rd, 5th & 6th year MBChB
24 November	End of second semester
24 November	COBES ends 4th year MBChB
27 Nov – 01 Dec	Supplementary exams 1st, 2nd, 3rd, 4th & 5th year MBChB (written & practical for pre-clinical subjects)
04 Dec - 05 Dec	Moderation
04 December	Electives start 4th year MBChB
07 December	Exam board
14 December	End of academic year
29 December	Electives end 4th year MBChB
10 January 2018	University opens (2018 academic year)
17 January 2018	Clinical supplementary exams start 3rd to 5th year MBChB
19 January 2018	Clinical supplementary exams end 3rd to 5th year MBChB
22 January 2018	Academic staff resumes office duty

DUE DATES FOR THE 2017 ACADEMIC YEAR

(i) **GENERAL**

Last day for appeals (Sem 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 (*Late fee payable*) ..... 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 (Semester 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 ANATOMY

☎ (+264 61) 2065010 🖷 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof J H T Smit
Associate Professor:	Prof J H T Smit BMedSc University of Orange Free State; BMedSc Hons UOFS; MMedSc UOFS; PGC-HET Queens University Belfast; FHEA (UK); MIAS London.
Senior lecturer:	Dr Q Wessels BSc (Hons); MSc; PhD (University Pretoria); PGDip University of Edinburgh.
Lecturer:	Dr M M M Morkel BSc (Hons) University of Western Cape; MBChB University of Stellenbosch; DOH University of Stellenbosch
Lecturer:	Dr A Du Plessis MBChB University of Stellenbosch; DCH College of Medicine, South Africa.
Lecturer:	Mrs A M N Iikasha BSc (Hons); MSc University of Namibia.
Technologist:	Mrs D Bowman
Tecnician:	Mr T Broekman ; Mrs M Broekman

DEPARTMENT OF BIOCHEMISTRY

☎ (+264 61) 2065023 🖷 (+264 61) 20645090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr E. Nepolo
Professor:	Prof I Quaye, PhD, Medical Science (Medical Biochemistry/Cell & Molecular Biology), Ryukyus School of Medicine, Japan; M.Phil Biochemistry, University of Ghana; B Sc (Hons) Biochemistry, University of Ghana.
Senior Lecturer:	Dr. J A Sheehama, PhD Biology (Medical Microbiology and Medical Biochemistry) Kazan State University; Masters in Biology (Microbiology and Molecular Biology) Kazan State University
Senior Lecturer:	Dr J Misihairabgwi, PhD (Biochemistry) University of Zimbabwe; BSc (Hons) (Biochemistry); University of Zimbabwe
Senior Lecturer:	Dr E Nepolo, PhD (Biochemistry) University of Namibia, MSc (Applied Molecular Biology); University of Namibia; BSc (Molecular & Physiological Biology); University of Namibia
Technologist	Lusia Mhuulu
Technician	Vacant

DEPARTMENT OF FAMILY COMMUNITY MEDICINE

☎ (+264 61) 2065012 🖷 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr. F. Christians
Associate Professor:	Prof L Barongo, MD, M.Med University of Dar es Salaam; Advanced Diploma in Epidemiology London School of Hygiene and Tropical Medicine; MSc University of London
Lecturer:	Dr. F. Christians, MBChB (UCT), M Fam.Med (UCT), MPH (Umea University, Sweden, FCFP(SA) , Dip HIV Man(SA)
Lecturer:	Dr. M Goraseb, MPH Oklahoma Univ. USA; MD Silisian Medical School, Poland
Lecturer:	Dr L N Lukolo, PhD Nursing Science (Community Health) UNAM; Masters in Nursing Science (Community Health) University of Stellenbosch SA;
Lecturer:	Ms H Zaire (Absent), MSc Epidemiology Wageningen University,USA (in progress); BSc. Animal Science UNAM

DEPARTMENT OF INTERNAL MEDICINE

☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Prof CJ Hunter

Professor: Prof H Hodgson, Doctor of Medicine (MD) Oxford University
Associate Professor: Prof CJ Hunter, Doctor of Medicine (MD) Loma Linda University School of Medicine; PhD (Physiology) Loma Linda University, United States of America
Lecturer: Dr S Oloo, MBChB (MUK); MMED Internal Medicine (HUST)
Lecturer: Vacant

DEPARTMENT OF MICROBIOLOGY

☎ (+264 61) 2065018 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Dr J Ojulong

Senior Lecturer: Mr M Hedimbi, BSc (Biology and Chemistry), UNAM; MSc (Applied Microbiology), UNAM
Lecturer Dr. J A Sheehama, PhD Biology (Medical Microbiology and Medical Biochemistry) Kazan State University; Masters in Biology (Microbiology and Molecular Biology) Kazan State University
Lecturer: Dr J Ojulong, (M. Med. Microbiology-Makerere University Kampala), MBChB-Makerere University Kampala

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

☎ (+264 61) 2065080 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Dr L C Kimera

Lecturer: Specialized obstetrician/Gynaecologist: MBChB Mbarara University of Science and Technology, Uganda; MMed (Obstetrics & Gynaecology) Makarere University, Uganda;

DEPARTMENT OF PAEDIATRICS

☎ (+264 61) 2065026 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Dr F Sinyinza

Professor: Prof S V Hodgson (Visiting Professor). F. Soc. Biol. FRCP. MRCP. DCH. D (Obst)RCOG. DM (Oxon), University of Oxford: The genetics of Duchenne Muscular Dystrophy. BM BCh (Oxon), Somerville College, University of Oxford. Bsc Hons(Lond) Physiology (II.1), University College London.
Lecturer: Dr F Sinyinza, BSc(Human Biology), University of Zambia, School of Medicine; MBCHB, University of Zambia, School of Medicine; Masters of Medicine (Paediatrics & Child Health),University of Zambia, School of Medicine

DEPARTMENT OF PATHOLOGY

☎ (+264 61) 2065010 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Dr R. J. Kandando

Lecturer: Dr RJ Kandando, HND (Manchester Polytechnic, UK), DipHE (Wolverhampton Polytechnic, UK), Postgraduate Diploma (Clinical Laboratory Sciences) (University of Leeds, UK), M.Sc (Clinical Biochemistry) (University of Leeds, UK), Ph.D (University of Surrey, UK); Registered Specialist Clinical Biochemist (Medical and Dental Council of Namibia)
Lecturer: CD Izaaks, ND (Medical Technology) Cape Technicon, South Africa; B Tech (Biomedical Technology), Cape Peninsula University of Technology, South Africa; M Tech (Cape Peninsula University of Technology, South Africa; Registered Medical Technologist (Allied Health Professions Council of Namibia)

DEPARTMENT OF PHYSIOLOGY

☎ (+264 61) 2065009 💻 (+264 61) 20645090 ✉ Private bag 13301, Windhoek, Namibia

Coordinator:	Prof CJ Hunter
Professor:	Prof P O Odonkor BSc (Hons) University of Ghana; MBChB University of Ghana; PhD McGill University Canada
Associate Professor:	Prof CJ Hunter, Doctor of Medicine (MD) Loma Linda University School of Medicine; PhD (Physiology) Loma Linda University, United States of America
Lecturer:	Ms J Nelongo, BSc (Hons) University of Namibia; BTech (Biomedical Technology), Cape Peninsula University of Technology
Lecturer:	Mr M van der Merwe, BSc (Hons) North-West University, South Africa

DEPARTMENT OF PSYCHIATRY AND BEHAVIOURAL SCIENCES

☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Vacant
Lecturer:	Mrs. M. Perstling (MA - Clinical Psychology) University of Namibia
Lecturer:	Dr H. King

DEPARTMENT OF RESEARCH AND INSTITUTIONAL DEVELOPMENT

☎ (+264 61) 2065023 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Vacant
Lecturer:	Vacant

DEPARTMENT OF SURGERY

☎ (+264 61) 2065020 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Associate Professor G. Regalado
Associate Professor	Prof G Regalado (Orthopaedics) M.D. (University of Santo Tomas, Manila, Philippines), General Surgery (Kuopio University Hospital, Finland, Kuopio, Finland), Orthopaedics and Trauma (Kuopio University Hospital, Finland)
Senior Lecturer	Dr C B Mbangtang (*General Surgery*). MBBS (University of Ibadan, Nigeria); DA (Postgraduate Diploma in Anaesthesia, University of Ibadan, Nigeria); MMed (Surg), University of Zimbabwe; FRCS (Edin) Royal College of Surgeons of Edinburgh, Scotland; FCS (ECSA) College of Surgeons of East, Central and Southern Africa; FICS, International College of Surgeons.
Senior Lecturer	Dr Alex Van der Horst (*Orthopaedics*), MBChB (University of Cape Town). FCS Orth (SA), College of Medicine of South Africa.
Senior Lecturer	Dr. Manojkummar Kamble
Senior Lecturer	Dr E Fynn. MBChB (Ghana) DCH(SA), M. Med (Radiodiagnostics) FCRad(SA). Postgraduate Diploma in Management (Wales)

UNDERGRADUATE PROGRAMME OBJECTIVES

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

PROGRAMMES

Bachelor of Medicine and Bachelor of Surgery 15BMCH

PURPOSE AND RATIONALE OF THE QUALIFICATION
The purpose of the UNAM MBChB Degree Program is to produce health professionals whose knowledge, professional skills, and practice in medicine are in tune with the needs of society (practice patterns, and scientific advancements). The training shall accommodate the learning environment conducive to the pursuit of professional competence by health workers, while providing quality services to the community and undertaking relevant translational research for enhancement of health. The School will continually strive for the establishment of training programs in a wide spectrum of health disciplines and lending support to the human resource development initiatives of the country, including post-graduate education of physicians and scientists. The School is mandated to prepare graduates for the medical degree of the University of Namibia.

EXIT PROGRAMME OUTCOMES

Graduates of the MBChB degree will have satisfied the requirements to enter into a medical Internship immediately after graduation. Upon completion of Medical Internship they will be registrable as a medical practitioner.

The registered medical practitioner will be able to provide evidence based general medical care at a district hospital or similar setting and also manage the district health system. The graduate will be competent and be able to manage a private practice. In addition, graduate should be able seek further training in research or specialisation. In their practice, the graduates will be expected to remain competent throughout their professional life and be able to initiate and participate in change.

Upon successful completion of the program, the graduate will be able to *inter alia*:

Patient Care Competences

1. Independently obtain clinical information from a patient in a logical and organized manner and utilize such information to formulate a clinical diagnosis and develop a prioritized list of differential diagnosis.
2. Apply basic, clinical and social science knowledge to identify key clinical and social problems, formulate and initiate treatment of common medical and surgical conditions;
3. Request appropriate diagnostic investigations, interpret findings and utilize the findings to make evidence based clinical decisions;
4. Evaluate the validity of laboratory/diagnostic tests;
5. Prescribe appropriate medications and other instructions safely
6. Involve patients and their caregivers in all aspects of their care and at all times preserve and promote patient dignity and wellbeing.
7. Refer or make effective medical consultation including safe hand-over or takeover of patients;

Competences in emergency care

8. Identify promptly a patient with an acute medical and /or surgical problem;
9. Initiate treatment of medical and surgical emergencies and carry out basic life support;
10. Perform minor diagnostic and surgical procedures;

Competences for communication

11. Record accurately medical information and present clinical cases accurately including concise summaries;
12. Explain tests and other procedures to patients or caregivers and obtain consent;
13. Communicate effectively with colleagues, patients an relations;
14. Exhibit communication skills and ethical behaviour with patients and caregivers from diverse backgrounds and population groups.

Competences for Inter-professional activities

15. Identify the role of other healthcare professionals and function as an effective member of a multi-disciplinary healthcare team;

Competences for research and evidence based public health practice

16. Apply the technical procedures, goals, and results of medical research including laboratory and population or community based research and integrate the finings into clinical /healthcare delivery decision making;

17. Apply the knowledge on biological and non-biological determinants of illnesses and health and determine the economic, social cultural and psychological factors that contribute to development /continuation of diseases and formulate, sustainable disease prevention, health promotion and health maintenance strategies for a community or population group;

Competences for leadership and health systems management

18. Assess relevancy, efficacy, quality, cost-effectiveness and sustainability of healthcare service delivery and formulate a feasible plan;

19. Apply the technical procedures, concepts and principles of management and medical jurisprudence to administer a health facility, unit or district;

Competences of Self-directed learning activities and professionalism

20. Identify own limitations, seek, retrieve and utilize scientific information from a variety of resources and use this to improve patient care and personal competences;

21. Practice medicine with sound ethical behavior taking into account local social and cultural considerations and respect for human dignity and social justice

22. Exhibit sensitivity to the important role cultural backgrounds influence on health and wellbeing.

These core competences are designed to produce a medical graduate who is not only a physician, but is also a scientist and scholar exhibiting the qualities of the Seven Star Doctor, namely a ***Care Provider, Decision-maker, Communicator, Community Leader, Manager, Researcher and Life-long Learner***.

REGULATIONS

Criteria for Admission

Admission to the School of Medicine is based on the applicant's academic standing, essay writing skills, and a successful interview. All provisional selections are made by the Committee on Admissions. To be considered for admission into MBChB programme, a candidate:

1. Must hold a valid NSSC (Namibian Senior Secondary Certificate) or any other equivalent qualification with at least 35 points in five subjects (including English, Mathematics. Physical Sciences/Physics/Chemistry and Biology/Life Sciences) on the UNAM scale with a grade 2 or better on higher level OR a grade B or better on ordinary level for Mathematics and Physical Sciences/Physics/Chemistry, and a grade B or better on ordinary level for Biology/Life Sciences and English. Candidates with a C in English, meeting all the other subject requirements, may be considered provided that they have at least 37 points in five subjects.

   OR

2. Must have successfully completed the entire first year BSc curriculum with at least 60% in each of the Mathematics, Biology, Chemistry and Physics modules;

   OR

3. Must have successfully completed a relevant degree program such as Pharmacy, Nursing, Dentistry or other health related degree programmes.

   OR

4. Mature Entry: Candidates aspiring for admission to the MBChB programme through the Mature Age Entry Scheme must satisfy the following conditions:

   4.1. They should be at least 25 years old on the first day of the academic year in which admission is sought

   4.2. They should have successfully completed senior secondary education

   4.3. They should have proof of at least five years related work experience

   4.4. They should pass each of the papers in the prescribed Mature Age Entry Test with at least 60% in the Faculty specific papers, and 50% in the other papers.

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

Essay Writing
An applicant shall be required to write an essay on a topic or topics so determined by the *Committee on Admissions*. The essay exercise is designed to elicit communication skills and forms the basis of the interview. Topics are selected in order to provide candidates an opportunity to display understanding of health and medical practice in the Namibian context.

Letters of Recommendation
An applicant seeking admission to the School of Medicine shall submit a letter of recommendation from a previous supervisor or appropriate mentor. These letters should reflect the candidate's ability, understanding, and desire to become a successful health care provider.

Interviews
Eligible applicants shall be invited for personal interview. Video conferencing may be considered for students with special circumstances. Interviews are conducted in order to determine the candidate's ability to express themselves and give them opportunity to share formative experiences relevant to health care. Candidates will have opportunity to provide personal information, general awareness, aspirations, and values. Special care is taken to ensure equality among candidates.

Selection
The candidate's overall physical and mental status will be assessed without conducting a formal medical examination. The final recommendation for admission is based on a weighted score composed of 80% academic achievement, 10% interview, 10% essay.

UNAM EVALUATION SCALE:

	NSSC		CAMBRIDGE		SENIOR CERTIFICATE		GCE	
POINTS	H	O	HIGCSE	IGCSE	HG	SG	A-level	O-level
10							A	
9	1		1		A		B	
8	2	A*	2	A*	B		C	
7	3	A	3	A	C	A	D	A
6	4	B	4	B	D	B	E	B
5		C		C	E	C	N/O/Subsidiary	C
4		D		D	F	D		D
3		E		E		E		E
2		F		F		F		F
1		G		G				G

DURATION OF STUDY
The minimum period for completing the programme 6 years and the maximum is 8 years.

EXEMPTIONS
UNAM will give exemptions for equivalent modules taken at other tertiary institutions but the exemptions shall not exceed 50% of the modules in the MBChB degree program. 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 5 years).

EXAMINATION REGULATIONS

Assessment Criteria
A student will be eligible to write the examination if they have obtained a *Continuous Assessment Mark* of at least 50%. The regular UNAM requirement (40%) will apply to the UNAM core modules.

Unless otherwise indicated in the module descriptor, the Continuous Assessment Mark (CA mark) will count 40% towards the final mark while the examination mark will contribute 60%.

A student will pass a module when he/she has obtained a final mark of at least 50%, subject to a subminimum of 45% examination mark for all modules without a clinical/practical paper. For modules with a clinical/practical paper a subminimum of 50% will apply for both the written and practical/clinical examination.

A student may qualify for a supplementary examination in a module if he/she obtained a final mark of 45%-49%, subject to a subminimum of 45% in each of the papers (written, clinical/practical). As a student can only do one supplementary examination in a clinical module/year those who qualifies for a supplementary in more than one clinical model are now allowed to proceed.

A student who qualifies for a supplementary examination in a clinical module, should undergo a remedial clinical training period of four weeks per module before the supplementary examination.

For detailed examination and promotion rules see the *General Information and Regulations Prospectus.*

ACADEMIC ADVANCEMENT RULES

FIRST YEAR TO SECOND YEAR OF MEDICINE
A student must pass ALL the first year modules in order to advance to the second year. A student who has passed at least 96 credits of the first year, will be allowed to register for selected second year modules, provided that all pre-requisites are met and the maximum number of credits is not exceeded.

SECOND YEAR TO THIRD YEAR MEDICINE
A second year student must pass ALL the second year modules in order to advance to the third year. A student who has passed all first year modules and at least 96 credits of the second year, will be allowed to register for selected third year modules, provided that all pre-requisites are met and the maximum number of credits is not exceeded.

THIRD YEAR TO FOURTH YEAR MEDICINE
A third year student must pass ALL the third year modules in order to advance to the fourth year. A student who has passed all first and second year modules and at least 144 credits of the third year, will be allowed to register for non-rotation modules, provided that all pre-requisites are met and the maximum number of credits is not exceeded.

FOURTH YEAR TO FIFTH YEAR MEDICINE
A fourth year student must pass ALL the fourth year modules in order to advance to the fifth year. A student who has passed all first, second and third year modules and at least 144 credits of the fourth year, will be allowed to register for non-rotation fifth year modules, provided that all pre-requisites are met and the maximum number of credits is not exceeded.

FIFTH YEAR TO SIXTH YEAR (STUDENT INTERNSHIP)
A student must pass ALL the fifth year modules in order to advance to the final year.

STUDENTS REPEATING A YEAR
A student who is repeating a year may be allowed to take non-conflicting modules from the next academic year, subject to the above requirements and the MAXIMUM number of credits per year.

MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE PROGRAMME

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

1. At least 64 credits by the end of the first year of registration
2. At least 160 credits by the end of the second year of registration
3. At least 272 credits by the end of the third year of registration
4. At least 384 credits by the end of the fourth year of registration
5. At least 528 credits by the end of the fifth year of registration
6. At least 696 credits by the end of the sixth year of registration
7. At least 864 credits by the end of the seventh year of registration

In addition to the above regulations, a student will only be allowed to repeat a particular module twice – failure to clear any module after the third registration of the particular module, will result in termination of studies.

MAXIMUM NUMBER OF CREDITS PER YEAR

Year 1:	160 credits
Years 2-8:	A student will be allowed to register for a **maximum of 32 credits** more than the total credits of the particular curriculum year.

REQUIREMENTS FOR QUALIFICATION AWARD

A student can graduate with the MBChB degree upon successful completion of the prescribed 1024 credits in the curriculum. Following graduation, graduates will be required to successfully proceed into a two year medical internship in Namibia or as per requirement of the relevant country.

Summary Table

The curriculum of the MBChB is made up of the following components:

YEAR 1 semester 1					
Module Title	**Module Code**	**NQF**	**Credits**	**Hours / Week**	**Prerequisities**
Computer Literacy	CLC3409	5	8	2	
Contemporary Social Issues	CSI3480	5	4	1	
Embryology and Introduction to Anatomy	ATM3511	5	16	3+4P	
English for Academic Purposes	LEA3419	5	16	4	LCE3419
Medical Physics	PLG3501	5	8	2	
Organic Chemistry	BCM3501	5	8	2+2P	
Systems Physiology I	PLG3511	5	16	3+4P	
Semester Credits			76		
YEAR 1 semester 2					
Contemporary Social Issues	CSI3580	5	4	4	
General Biochemistry I	BCM3512	5	16	3+4P	
Sociology of Health and Disease	CMM3512	5	16	3+4P	
Statistics for Health Sciences	RID3512	5	16	4	
Systemic Anatomy I	ATM3512	5	16	3+4P	
Systems Physiology II	PLG3512	5	16	3+4P	
Semester Credits			84		
TOTAL CREDITS			160		

YEAR 2 semester 1					
Module Title	Module Code	NQF	Credits	Hours	Prerequisities
COBES I	CMM3600	6	8	4h of integrated learning and household attachment	
Developmental Psychology	PCT3600	6	8	2	
Family Medicine I	FMM3601	6	8	2+2P	
General Biochemistry II	BCM3611	6	16	3+4P	BCM3512
Pathophysiology	PLG3611	6	16	3+4P	PLG3511 and PLG3512
Professional Ethics	RID3601	6	8	2	
Systemic Anatomy II	ATM3611	6	16	3+4P	ATM3512
Semester Credits			80		
YEAR 2 semester 2					
Anatomical Pathology	PTG3612	6	16	3+4P	
COBES 1	CMM3600	6	8	4h of integrated learning and household attachment	
Developmental Psychology	PCT3600	6	8	2	
Internal Medicine I	ITM3612	6	16	3+4P	
Medical Microbiology I	MCB3612	6	16	3+4P	
Pharmacology I	PMG3612	6	16	4	
Semester Credits			80		
TOTAL CREDITS			160		

YEAR 3 semester 1					
Module Title	Module Code	NQF	Credits	Hours	Pre-requisities/ (Co-requisites)
Epidemiology	RID3712	7	16	3+1P	
Family Medicine II	FMM3701	7	8		FMM3601
Haematology	PTG3711	7	8	2+2P	PLG3611
Medical Microbiology II	MCB3711	7	16	3+4P	MCB3612
Pharmacology II	PMG3711	7	16	4	PMG3612
Surgery I	SUR3710	7	16	3+4P	ATM3611 and PLG3611
Semester Credits			80		
YEAR 3 semester 2					
Chemical Pathology	PTG3702	7	8	2+2P	BCM3611 and PLG3611
Clinical Microbiology	MCB3702	7	8	2+2P	MCB3612 and (MCB3711)
Obstetrics & Gynaecology I	OBG3712	7	20	40 hours for 5 weeks	ATM3611 and PLG3611
Paediatrics I	PDC3712	7	20	40 hours for 5 weeks	

Pharmacology III	PMG3712	7	16	4	PMG3612
Surgery I	SUR3710	7	20	40 hours for 5 weeks	BCM3611, ATM3611 and PLG3611
Semester Credits			92		
Total			172		
Year 3 Field work					
COBES II	CMM3719		16	4 weeks of integrated learning	CMM3512
TOTAL CREDITS			188		

YEAR 4 semester 1					
Module Title	Module Code	NQF	Credits	Hours	Pre-requisities/ (Co-requisites)
Anaesthesiology I	ANA3701	7	8	2	ATM3611, PMG3711 and PMG3712
Health Systems Management	CMM3701	7	8	2	
Medical Imaging and Diagnostics	PLG3701	7	8	2	
YEAR 4 semester 2					
Family Medicine III	FMM3702	7	8	1+2P	FMM3601 and (FMM3702)
Nutrition and Dietetics	CMM3702	7	8	1+2P	
Psychiatry I	PCT3702	7	8	2	ITM3612 and PCD3712
Both semester 1 and 2					
Research Methods and Proposal Writing	RID3780	7	8	1+2P	RID 3512
Internal Medicine II	ITM3789	7	20	40 hours for 5 weeks	ITM3612
Obstetrics & Gynaecology II	OBG3789	7	20	40 hours for 5 weeks	OBG3712
Paediatrics II	PDC3789	7	20	40 hours for 5 weeks	PDC3712
Surgery II	SUR3780	7	20	40 hours for 5 weeks	SUR3710
			128		
Year 4 Field work					
COBES III – Management	CMM3739	7	16	4 weeks of integrated learning	FMM3601 and (CMM3701)
Electives	MDC3789	7	16	6 weeks	
TOTAL CREDITS			168		

YEAR 5 Full year modules					
Module Title	ModuleCode	NQF	Credits	Hours	Prerequisities
Anaesthesiology II	ANA3880	8	8	1 hour per week	ANA3701
Internal Medicine III	ITM3880	8	40	40 hours for 10 weeks	ITM3789
Obstetrics and Gynaecology III	OBG3880	8	40	40 hours for 10 weeks	OBG3789

Paediatrics III	PDC3880	8	20	40 hours for 5 weeks	PDC3789
Psychiatry II	PCT3880	8	20	40 hours for 5 weeks	PCT3702, ITM3789 and PDC3789
Surgery III	SUR3880	8	40	40 hours for 10 weeks	SUR3789
Research Project	RPD3810	8	32	4 hours per week	
Credits			200		

YEAR 6 Full year modules					
Module Title	Module Code	NQF	Credits	Hours	Prerequisities
Internal Medicine IV	ITM3890	8	40	40 hours for 10 weeks	ITM3880
Obstetrics and Gynaecology IV	OBG3890	8	40	40 hours for 10 weeks	OBG3880
Paediatrics IV	PDC3890	8	20	40 hours for 5 weeks	PDC3880
Psychiatry III	PCT3890	8	20	40 hours for 5 weeks	PCT3880
Surgery IV	SGR3890	8	40	40 hours for 10 weeks	SUR3880
			160		

Module Descriptors

Unam Core Modules

ENGLISH FOR ACADEMIC PURPOSE

Code: **ULEA3519**
NQF level: 5
Notional hours: 160
Contact Hours: 4 hours per week for 14 weeks
NQF Credits: 16
Pre-requisite: LCE3419
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies: 60% Continuous assessment 40% Examination
(1x3 hours written paper)

Course 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.

CONTEMPORARY SOCIAL ISSUES

Code: **CSI3580**
NQF level: 5
Notional hours: 80
Contact Hours: 1 hour per week for 28 weeks
NQF Credits: 8
Pre-requisite: none
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies: **1**00% continuous assessment

Module Description:
This module, Contemporary Social Issues (CSI), encourages behavioural change among UNAM students, with special reference to their sexual behaviour and to inculcate the primacy of moral reasoning in their social relations and their academic lives.
In achieving the above aim, the following values and approaches will inform the CSI: Material will be presented on an integrative basis, stressing the interconnections amongst ethics, moral reasoning, citizenship, leadership, and values and approaches that direct to responsible social behaviour. Special emphasis will be placed on the construct of citizenship and its relation to democracy and the common good. Critical transformative theory will under gird the content of CSI. After completion of the CSI students will be empowered in the domains of human sexuality, reproductive health, democracy, the environment, sustainable development, and responsible leadership.

COMPUTER LITERACY

Code: **CLC3409**
NQF level: 5
Notional hours: 80
Contact Hours: 2 lecture hours
NQF Credits: 8
Pre-requisite: none
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies: 100% continuous assessment

Module Content:
Understanding computer systems and technology: The problem-solving approach. Structure and components of a modern computer - processor, memory, hard drives, disk drives, interfaces. The Windows environment.
Principles of information processing: word-processing, spreadsheets, presentations, databases. nature and use of software.
Practical exercises: Use of MS Word, Excel, PowerPoint. Communication using email. Overview of Internet.

MBChB Modules

MEDICAL PHYSICS

Code: **PLG3501**
NQF level: 5
Notional hours: 80
Contact Hours: 2 hours per week for 16 weeks
NQF Credits: 8
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies: 40% Continuous assessment 60% Examination
(1x3 hours written paper)

Module content
Topics: ***Units*** (standards, SI system, converting units, order of magnitude); ***Motion*** (displacement, velocity, acceleration, falling objects); Vectors (representation, adding, subtracting scalar product, vector product); ***Force*** (Newton's 1st on 3rd laws, mass, weight); Equilibrium (statics, equilibrium, elasticity); ***Fluids*** (density, specific gravity, pressure, Pascal's principle, measurement, flow, Bernouli's Principle, viscocity, surface tension, pumps); ***Waves*** (wave motion, types of waves, energy, amplitude and frequency, reflection and interference, resource, refraction and diffraction); ***gas laws***; ***Temperature*** (atomic theory, temperature and thermometers, thermal expansion, thermal stress, diffusion); ***Electricity*** (change, field, potential, currents, basic circuits; Magnetism (magnetic fields, electric currents, force, electric charge, ampere and out coulomb, Ampere's Law, torque); ***Electromagnetism*** (electromagnetic induction, transformers, transmission of power, production of electromagnetic waves, light and electromagnetic spectrum); ***Light*** (wave versus particles, diffraction, refraction, visible spectrum and dispersion); ***Molecules*** and Solids (bounding in molecules, weak bounds); **Radioactivity** (structure and properties of nucleus, binding energy and nuclear forces, radioactivity, alpha, beta, and gamma decay, half-life and rate of decay, radioactive dating).

EMBRYOLOGY AND INTRODUCTION TO ANATOMY

Code: **ATM3511**
NQF level: 5
Notional hours: 160
Contact Hours: 3+4P hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 1
Assessment Strategies 60% Continuous assessment 40% Examination
(1x3 hours written paper)

Module Content
The module provides building blocks to master the following topics i) man's place in the organismic kingdom. il) basic embryological concepts. iii) histological structure and function of the primary tissues in the body. iv) terminology and definitions in anatomy. The module includes an introduction to microscopy and methods in microscopy. Cardio-vascular Systemic Anatomy will be covered at the end of the semester with initiation to dissection hall and cadaver care.
The module consists of four entities:
(1)*Introduction to anatomy* including topics: Organismic kingdom, evolution, humans and their environment, history of anatomy, anatomical concept and terms. Introduction to all the major body systems (neurological, cardiovascular, respiratory , digestive and urogenital).
2) *Cell biology*, consisting of structure and function of cells and cell organelles and biological communication.
(3) *Embryology*, consisting of basic anatomy and physiology of reproduction, fertilization, implantation, the placenta, and development of the embryo till trilaminar stage.
(4) *Introduction to human histology* including histology of the basic tissues, namely epithelial tissue, connective tissues, muscle tissue and nervous tissue, and introduction to hematology and immunology.

SYSTEMIC ANATOMY I

Code: **ATM3512**
NQF level: 5
Notional hours: 160
Contact Hours: 3+4P hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies 60% Continuous assessment 40% Examination
(1x2 hours written paper+ 1 practical examination)

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

SYSTEMIC ANATOMY II

Code: **ATM3613**
NQF level: 6
Notional hours: 160
Contact Hours: 3+4P hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: ATM3512
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 60% Continuous assessment 40% Examination
(1x2 hours written paper+ 1 practical examination)

Module Content
Regional anatomy and topographical anatomy, development and histology of musculo-sceletal and neurological systems including sensory organs. Dissection and microscopy practical sessions of each system. Examples of the applications of the anatomical knowledge in clinical cases.
Clinical examination of system in skills laboratory.

ORGANIC CHEMISTRY

Code BCM3501
NQF level 5
Notional hours: 80
Contact Hours: 2 lecture hours + 2 P per week for 16 weeks
NQF Credits: 8
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

Module content
The materials covered in this module are: Periodic table and electronegativity scale, acid base properties of solutions, thermodynamics, nomenclature of hydrocarbons, basic reactions of organic compounds, introductory spectroscopy, preparation of solution, principles of laboratory safety and laboratory procedures.

GENERAL BIOCHEMISTRY I

Code: **BCM3512**
NQF Level: 5
Notional hours: 160
Contact Hours: 3 lecture hours + 4 P hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

Module Content
The module will cover the following topics: Principles of Medical Biochemistry; cell structure and function; cell cycle; basic structure, biochemical properties and function of biomolecules in health and disease; glycoconjugates; complex lipids; eico-

sanoids and their role in inflammation; importance of lipoproteins in health and disease, definition of enzymes and their roles in cell function, therapeutics, diagnostics and inborn metabolic errors; cell signaling and communication; nucleotides and DNA organization; DNA replication, transcription and translation; mechanism of mendelian inheritance; mutations and disease; basic principles of chromosomal aberrations and cytogenetics; basic principles of bioinformatics; techniques in DNA isolation, pcr, sequencing and microarrays; DNA and protein electrophoresis; point of care diagnostics.

GENERAL BIOCHEMISTRY II

Code: **BCM3631**
NQF level: 5
Contact Hours: 3 lecture hours + 4 hours of practicals per week for 16 weeks
NQF Credits: 16
Pre-requisite: none
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

Module content
This modules covers the following topics: Principles of bioenergetics; cellular redox systems, inhibitors and regulators of oxidative metabolism; carbon monoxide poisoning; mitochondrial dysfunction in fertility and disease states; hematopoiesis, heme metabolism, jaundice and porphyrias; glycolysis, gluconeogenesis and oxidative metabolism; glycemic indices of foods, pentose phosphate pathway and maintenance of rbc redox status; importance of g6pd deficiency in primaquine therapeutics and malaria; glycogen metabolism, fatty acid metabolism in the liver, impaired oxidation of fatty acids and fatty liver; eicosanoids in health and inflammation; disorders of lipoprotein metabolism and cardiovascular disease, amino acid degradation, urea cycle and inborn errors of metabolism, principles of metabolic regulation and biochemical basis of cancer; food intake and control mechanisms, definition of kwashiokor, marasmus, malnutrition and diarrheal disease; sterols and bile acid metabolism, importance of nutrigenetics and nutrigenomics, xenobioticcs and role of CYP enzymes in metabolic regulation and drug-drug interactions.

MEDICAL MICROBIOLOGY I

Code: **MCB 3631**
NQF level: 6
Notation: 160
Contact Hours: 3 lecture hours + 4 hours of laboratory practical per week
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester2

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

Module Content
This module will cover bacterial nomenclature, structure, growth, nutrition, metabolism, pathogenicity and pathophysiological changes resulting from bacterial infections as well as the immunological responses to infection will be discussed; mechanisms of action of major classes of anti-microbial agents, drug resistance, multidrug resistant organisms and the physical and chemical methods used thereof in the prevention of infectious microorganisms; Basic concepts in immunology, components of the immune system, principles of innate and adaptive immunity, antigen recognition by B and T cells, development, maturation and survival of lymphocytes, adaptive Immunity to infection, failures of Host defense Mechanisms, (tolerance, allergy and hypersensitivity, autoimmunity, immunodeficiency, immunosuppression), tissue transplant, immune-surveillance, tumor immunity, transplant immunology, immunotherapy and immunization.

MEDICAL MICROBIOLOGY II

Code: **MCB 3711**
NQF level: 7
Notation 160
Contact Hours: 3 lecture hours + 4 hours of laboratory practical per week
NQF Credits: 16
Pre-requisite: MCB3612
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

Module Content
Topics include**: Parasitology;** Overview of parasite, host, parasitism, parasitic diseases prevalent in Namibia and world, Classification, geographical distribution, habitat, morphology, life cycle, pathogenicity (mode of infection, pathogenesis and pathology), immune response to parasitic invasion and escape mechanism and laboratory diagnosis and prevention and control of medically important protozoa and helminthes: *Entamoeba histolytica, Giardia lamblia, Trichomonas*, Ascaris, Ancyclostoma and Necator, *Enterobius vermicularis*, *Trichuris trichiura*, Strongloides, Taenia, Echinococcus, *Hymenolepsis nana*, Brugia, Loaloa, Onchocerca, Dracunculosus, Plasmodium, Leishmania, African and South American trypanosomiasis, Toxoplasma, Wucheria and; **Medical entomology** (insects and arachnids) **; Mycology**; Classification, general structure, physiology, pathogenesis, diagnosis treatment, prevention and control of medical important fungi; superficial mycosis, deep or systemic mycoses, opportunistic mycoses, fungal toxin and Allergies fungal drugs. **Virology**; History and principles of virology, Taxonomy and replication strategies of various viruses and Bacteriophages; Classification, structure, medical importance, pathogenesis and laboratory diagnosis of Poxviruses, Herpes viruses, Adenoviruses, Picornavirus, Orthomyxovirus, Paramyxovirus, Arbovirus, Rhabdo viruses, Hepatitis viruses, Retrovirus (HIV, HTLV etc), emerging viruses (SARS,MERS), Oncogenic virus, prions, Antiviral drugs; Technique of Diagnostic virology: Cultivation and purification of viruses.Principle and application of serodiagnostic methods-hemagglutination and haemagglutination inhibition tests, Complement fixation, neutralization.

CLINICAL MICROBIOLOGY

Code: **MCB3702**
NQF level: 7
Notation: 80
Contact Hours: 2 lecture hours + 2 hours of laboratory practical per week
NQF Credits: 8
Pre-requisite: MCB3612, MCB3711
Compulsory/Electives: Compulsory
Semester offered: semester 2
Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

Module Content
Organ-system approach will be use; Musculoskeletal system infections (osteomyelitis, septic arthritis,pyomyositis etc.); Respiratory system infections(pharyngitis, tonsillitis, Tuberculosis, pneumonia, empyema etc); cardiovascular systems(Septicemia, Rheumatic fever, infective endocarditis etc.) ; gastrointestinal system and the biliary system infections(Peptic ulcer disease, secretive & Inflammatory diarrhoeas, dysentery etc.) ; Urogenital system(UTI, STDs & STI): Central nervous system infections(Meningitis, encephalitis etc.); Skin conditions (Carbuncles, folliculitis, Tineas,etc), HIV and opportunistic infections, Hospital acquired infections and infection control and prevention. The entire topics will be taught under sub-titles of epidemiology, transmission, natural history of the common infections; pathogenesis and clinical manifestations; diagnosis; treatment; prevention and control.

SYSTEMIC PHYSIOLOGY I

Code: **PLG3511**
NQF level: 5
Notional hours: 160
Contact Hours: 3+4P hours per week for 14 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 40% Continuous assessment 60% Examination
(1x2 hours written paper)

Module Content
The study of physiology encompasses a number of fields of study; from molecules to ecosystems. Here we begin 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 we will stress the importance of cellular and tissue compartmentation, and how information flows within a cellular and mass context. The integration of these systems and how they may impact homeostasis is also of critical importance.
By the end of the course students will also be familiar with the components and mechanics of the: Basic Cell Processes, energy and cellular metabolism, membrane dynamics and communication, integration, and homeostasis; the cellular and network properties of neurons and how they function within the context of the central and peripheral nervous systems; the Muscular Skeletal system and the control of body movement; the structure and function of the endocrine system; digestive system; cardiovascular control including blood flow and the control of blood pressure; respiratory mechanics and gas exchange; blood and blood products; renal function and control including fluid and electrolyte balance; exercise and metabolism; reproduction and development.

SYSTEMIC PHYSIOLOGY II

Code: **PLG3512**
NQF level: 5
Notional hours: 160
Contact Hours: 3+4P hours per week for 14 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies 40% Continuous assessment 60% Examination
(1x2 hours written paper)

Module Content
The study of physiology encompasses a number of fields of study; from molecules to ecosystems. Here we begin 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 we will stress the importance of cellular and tissue compartmentation, and how information flows within a cellular and mass context. The integration of these systems and how they may impact homeostasis is also of critical importance. By the end of the course students will also be familiar with the components and mechanics of the:

1. Basic Cell Processes including cells and tissues, energy and cellular metabolism, membrane dynamics and finally, communication, integration, and homeostasis.
2. The cellular and network properties of neurons and how they function within the context of the central and peripheral nervous systems.
3. The Muscular Skeletal system and the control of body movement
4. The structure and function of the endocrine system
5. Digestive System
6. Cardiovascular control including blood flow and the control of blood pressure
7. Respiratory mechanics and gas exchange
8. Blood and blood products
9. Renal function and control including fluid and electrolyte balance
10. Exercise and metabolism
11. Reproduction and development

PATHOPHYSIOLOGY

Code: **PLG3611**
NQF level: 6
Notional hours: 160
Contact Hours: 3+4P hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: PLG3511,PLG3512
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 40% Continuous assessment 60% Examination
(1x2 hours written paper)

Module Content
The course focuses on the changes in cellular and systemic physiology that occur in prevalent or important medical conditions. At the cellular level we will cover the responses to tissue injury, abnormal cell growth and the immune system. From there we will investigate the physiological basis of problems associated with most of the major organ systems. In each case we will discuss the effect upon whole body homeostasis.
Topics include: (1) Describing cell injury and its importance in pathophysiological manifestations of disease, (2) Outlining the basic pathophysiological mechanisms leading to the diseased state, (3) Explaining how changes in physiology lead to signs and symptoms of disease (4) Synthesizing important systemic complications during organ or organ system failure and (5) Describing the body's compensatory mechanisms to restore homeostasis.

ANATOMICAL PATHOLOGY

Code: **PTG3612**
NQF level: 6
Notional hours: 160
Contact Hours: 3 lecture hours + 4hours of tutorial
NQF Credits: 16
Pre-requisite: None

Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

ModuleContent
This module intends to impart basic knowledge and skills of histopathology derived from surgical pathology, basic autopsy and cytopathology. There will be revision of basic knowledge of major pathological processes gained earlier in pathophysiology through topics that should include causes of and responses to cellular injury, acute and chronic inflammation, neoplasia, the effects and the environment in health and disease, infections and the basics of immunology. In general surgical pathology, for microscopy, students will be exposed to recognize normal histology and normal variations of common tissue types, select appropriate histochemical stains for glycogen, fat, mucins and amyloid; familiarize with basic immunohistochemical markers for major tissue and tumour types.; for macroscopic pathology, lymph node anatomy and dissection in cancer specimens, ink excision margins will be revisited. Apart from the general surgical pathology, organs/system surgical pathology will deal with the macroscopic and microscopic pathologies of the following: breast, upper and lower gastrointestinal tracts, respiratory, skin, lymphoreticular pathology, ENT, head and neck, female and male genital tracts, liver and gall bladder, cardiovascular system, endocrine pathology, soft tissue, neuropathology, renal and urological pathology, osteoarticular pathology and paediatric pathology.
Students will be introduced to autopsy pathology, with the hope that they will recognize histological changes that occur due to post-mortem artefact. Anatomical features and dissection techniques will be performed on the organ systems enumerated in the section of surgical pathology above. The anatomical features and dissection technique of the organ systems will be correlated with the clinico-pathology knowledge base, for instance osteoporosis during identification of fractures, splenic enlargement or atrophy during examination of spleen etc.
In cytopathology, students will be introduced to general technical aspects of cytology such as sampling devices used and the fixation of specimens, basic knowledge of the range of methods for converting a raw sample into a slide; morphological aspects such as the nuclear features used to diagnose malignancy, features used to determine differentiation of a neoplasm. Topics such as cervical screening, squamous carcinoma and adenocarcinoma will be covered in cervical cytopathology while the role of needle aspirate samples from lung, breast, thyroid, salivary gland, lymph node and other sites will be covered under the non-cervical pathology.

CHEMICAL PATHOLOGY

Code: **CMM3702**
NQF level: 7
Notional hours: 160
Contact Hours: 2 lecture hours + 2hours of practice
NQF Credits: 16
Pre-requisite: BCM3611, PLG3611
Compulsory/Electives: Compulsory
Semester offered: semester 1
Assessment Strategies
Continuous assessment mark: 40% Continuous assessment
Examination mark : 60% Examination (1 x 3 hours written paper+ 1½ practical examination)

ModuleContent
This module also commonly referred to as clinical chemistry or clinical biochemistry, is intended as a guide to offer a comprehensive programme on the biochemistry and physiology of human disease, with emphasis on the proper interpretation of information provided by the chemical pathology laboratory to the clinician. The thrust is on the theory, principles and practice of physiological chemistry, abnormal body chemistry and the different biochemical procedures used in the investigation of disease. The themes of the module are designed to outline background to chemical pathology; cover the routine analyses ("core biochemistry") that would form the basic repertoire of most hospital laboratories; the endocrinology, and specialized investigations which are less commonly requested, but important analyses.

In a nutshell, the module will focus on introduction to the practice of laboratory medicine that includes basic laboratory principles, quality control and quality assurance, few selected analytical methods, clinical chemical pathology (e.g water and electrolytes, renal, acid base regulation, carbohydrates and lipids, proteins and enzymes, liver and gastrointestinal tract, basic endocrinology), calcium and bone disease, magnesium and phosphate, haemoglobin and porphyrins, purine and pyrimidine metabolism, inborn errors of metabolism, paediatrics biochemistry, nutritional disorders, neurological diseases and psychiatric diseases, cancer and tumour markers,

HAEMATOLOGY

Code: **PTG3711**
NQF level: 7
Notional hours: 160
Contact Hours: 2 lecture hours + 2hours of practice

NQF Credits: 16
Pre-requisite: PLG3611
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper+ 1½ practical examination)

ModuleContent
The module provides comprehensive knowledge on the developmental process of all three haemopoetic cell lines of erythropoiesis, thrombopoiesis, lymphocyte and leucocyte maturation and differentiation; understanding the role growth factors in haemopoiesis and cytokines in haemopoietic proliferation differentiation and maturation; morphology (indication and interpretation of stains used in the peripheral blood smear; normal cellular morphology and composition of peripheral blood; qualitative and quantitative abnormalities of erythrocytes, platelets and white cells); haematologic malignancies (leukemia, polycythaemia vera, myelofibrosis, thrombocythaemia); haemostasis and thrombosis (comprehensive knowledge of function of the various components of haemostasis; diagnosis of various congenital bleeding disorders); blood transfusion (genetics and biochemistry of major blood cell antigens such as ABO, Rhesus, HLA; principles of pretransfusion testing such as basic blood grouping, procedures for compatibility testing, principles of cross match strategies, and principles of antibodies identification); specialized haematology diagnostic modalities (to acquire comprehensive knowledge of the commonly used diagnostic panels such as acute leukaemic screen, chronic screen, plasma screen, CD34 analysis, Platelet marker analysis).

MEDICAL IMAGING AND DIAGNOSTICS

Code: **PLG3701**
NQF level: 7
Notional hours: 80
Contact Hours: 2 lecture hours
NQF Credits: 8
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 1
Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Content
Medical Imaging: Introduction to medical physics, radiation and use of radioisotopes in medicine as a diagnostic tool and for treatment. The module discusses risks to radiation, radiation protection, and legislation on radiation, various imaging techniques, the normal appearance of various tissues and organs in plain films, angiography, contrast studies, tomography and resonance. At the end of the module, a student will be able to differentiate normal from abnormal findings in radiographs and diagnose common pathologies in the chest, abdomen, bone and the skeletal system. The student will also be able to institute due care practices in requesting for imaging investigations, be mindful of the comfort of the patient and obtain consent as necessary. Topics covered include principles of radiation physics and radiological technology; radiation protection; radiobiology; X-rays: normal systemic anatomy using plain X-rays (plain films, contrast studies); imaging modalities and their application; radio-isotope imaging, computerized tomography, magnetic resonance imaging, ultrasound, radiological, angiography, images of osteomyoarticular, respiratory, circulatory, digestive, urogenital, hemolymphopoietic, and endocrine systems; radio-therapeutics and bio-effects of radiation.
Applied radiology and diagnostics: cost-effective use of medical imaging, the use of plain films as an imaging primary technique for the general physician, actual working with the ultrasound in bedside care of patients, the benefits of tomography, angiography and radio-magnetic resonance. Topics in neuroscience include MRI, CT and plain films: hemorrhage, subarachnoid and subdural haemorrhage, infarct, oedema, mass and hydrocephaly; in the spine: metastatic mass, disc disease, compression; abdomen: bowel obstruction, aortic aneurysm, renal mass pancreatic mass, hepatic mass, abdominal mass; Chest: pneumonia, effusion, atelectasis, nodule, congestive heart failure, pulmonary oedema, pneumothorax; pelvis: prostate nodule, testicular mass; neck: thyroid nodule; indications of ECHO cardiograph, Doppler; bile duct ultra sound; use of ultra sound and radioisotopes in treatment

MODULE TITLE: SOCIOLOGY OF HEALTH AND DISEASE

Code: **CMM3511**
NQF Level: 5
Notional hours: 160
Contact Hours: 3 lecture hours + 4 P hours per week for 14 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies 40% Continuous assessment 60% Examination

(1x3 hours written paper)

Module Content
Sociological understanding of health, illness and disease considers the structural and social factors and not largely relies on biological medical explanations of health and disease. The structural emphasis will entail consideration of the political, economic and social cultural elements that foster ill/ health, as well as the forces that allows/ constrain the health care system and individuals' responses to illness. The module also focuses on the indirect pathway between sociology and health/disease, and emphasizes the role that beliefs and behaviors play in health and illness.
Furthermore, the module will address the sociological definition of disease, explore major theoretical perspectives in health, behavioral science, and sociology, the influence of class, gender and ethnicity on health; global and rural health problems; health promotion and community health services among others. This will enable the students to understand the social determinants of heath, social construction of illness, social meanings of illness, patterns in the distribution of health and illnesses, people health seeking behaviors; interaction between patients and the health provider. The course will also explore medicine as power and social control and the role of alternative medicines.
Students will also examine health-related behaviors and apply many of the theories to specific behaviors, e.g. addictive behaviors and the factors that predict smoking and alcohol consumption as well as Gender Based Violence and HIV. Throughout the course students will focus on the interrelationships between beliefs, behavior and health using the example of placebo effects; illustration of this interrelationship in the context of illness, focusing on HIV, cancer, obesity and coronary heart disease; aspects of women's health; the problems with measuring health status and the issues surrounding the measurement of quality of life.

DEVELOPMENTAL PSYCHOLOGY

Code: **PCT3600**
NQF Level: 5
Notional hours: 160
Contact Hours: 2 lecture hours per week for two semesters
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
This module focuses on applicable developmental theories such as the psychodynamic theory, particularly Freud's psychosexual theory and Erickson's psychosocial theory and developmental theories of cognitive development. To be considered here are Piaget's theory of cognitive development as well as Vygotsky's theory of cognitive development (sociocultural-historical theory, particularly the notions of the zone of proximal development and scaffolding in cognitive development). The course will examine perinatal/prenatal development, including the period from conception to birth. Environmental influences on prenatal development, hereditary/genetic influences on human development and hereditary/genetic transmission, genetic and chromosomal abnormalities, birth complications, and maternal stress will be explored. How infants sense and perceive the world will be examined. Furthermore, the course will examine the five domains of human development from infancy, adolescence, through adulthood (cognitive development, physical development, emotional development, social development and language development (attainment of normal developmental milestone)). Finally, chronic illness in childhood and hospitalization, as well as child physical, emotional, and sexual abuse will be covered. The development of the concept of death among children will also be discussed.

COMMUNITY BASED EDUCATION AND SERVICE I

Code: **CMM3600**
NQF Level: 5
Notional hours: 160
Contact Hours: 4 hours of integrated learning and Household attachment
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies 100% continuous assessment

Content
This module looks at a family as the basic unit of society in a urban setting. It examines the socio-economic and cultural determinants of health in a household, inter alia, access and demand as well as culturally mandated disposal of household income and allocation to health; antenatal care and health outcomes for pregnancy, an approach to childhood illnesses through IMCNI and chronic diseases in the community as well as provision of health care to the elderly and other vulnerable groups

such as people with disabilities. In this way a student will apply holistic approach to healthcare delivery as well as demonstrating a value based approach that emphasizes the role of families in assessing and analyzing their own health problems and finding solutions.
This is further strengthened by time spent in health centers observing, learning and applying basic nursing skills as well as screening of patients. The practical applications of community oriented and family oriented primary care are demonstrated during this module.

COMMUNITY BASED EDUCATION AND SERVICE II

Code: **CMM3719**
NQF Level: 7
Notional hours: 160
Contact Hours: 4 weeks
NQF Credits: 16
Pre-requisite: CMM3512
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies 100% continuous assessment

Content
The module is a rural practicum during which students live and work within the rural community and are attached to a rural health center. During a four week period students carry out a community diagnosis (disease profile) as a group in each of the designated rural communities and rural clinics of Namibia. The student uses the framework in the study guide to formulate the weekly activity timetable that includes provision of primary care services at the clinic, community, school or other setting. As part of learning, students will work in groups and with communities to design and implement a health intervention.
This module examines the role of the community in managing their own health and facilitate a process of health needs assessment for rural health centers: comprehensive, coordinated, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations; health centers as community-based and patient- centered organizations that serve populations with limited access to health care including low income populations, the functioning of a health care worker in delivering primary, preventive, enabling health services and additional health services as appropriate and necessary.
The student applies basic knowledge of: health promotion, health education and disease prevention; communicable and non-communicable disease management, childhood illnesses, maternal and infant mortality assessment, mental healthcare and rehabilitation; sources of data, evaluation methods and indicators, such as infant, child and maternal mortality.
The first of four cycles in the community leads to community diagnosis, while the subsequent attachment of new groups of students will work with the community to design and intervention, plan its implementation and lastly conduct an evaluation. This attachment is co-supervised with the Ministry of Health and Social Services health workers in the health center.

COMMUNITY BASED EDUCATION AND SERVICE III-MANAGEMENT

Code: **CMM3739**
NQF Level: 7
Notional hours: 160
Contact Hours: 4 weeks
NQF Credits: 16
Pre-requisite: FMM3601, CMM3701
Compulsory/Electives: Compulsory
Semester offered: 2

Assessment Strategies 100% continuous assessment

Content
This module follows a logical sequence from the household and urban primary care facilities
COBES 1) to a rural primary care attachment (living and working in rural facility and community (COBES 2) and finally to the District Hospital/District Medical Officers (COBES 3).
Whilst working under supervision students are able to sharpen their clinical skills and learn organizational and managerial skills. Part of the assessment is a quality improvement project/cycle of an identified health need/challenge as well as a patient study using their skills in evidence based health care.

STATISTICS FOR HEALTH SCIENCES

Code: **RID3612**
NQF Level: 5
Notional hours: 160
Contact Hours: 4 lecture hours for 14 weeks
NQF Credits: 16
Pre-requisite: None

Compulsory/Electives: Compulsory
Semester offered: Semester 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
Describing Univariate Data**:** Central Tendency, Spread, shape and graphs. Describing Bivariate Data**:** Scatterplots, Introduction to Pearson's Correlation, Computational formula for Pearson's Correlation, Example values of r , Effect of linear transformations on Pearson's Correlation, Spearman's rho. ***Introduction to Probability (elementary):*** Simple probability, Conditional probability, Probability of A and B, Probability of A or B, Binomial distribution. Normal Distribution: What is it? The standard normal distribution: Why is it important? Converting to percentiles and back, Area under portions of the curve, Sampling Distributions. Sampling Distributions: Sampling distribution of the mean, Standard error ,Central limit theorem ,Area under sampling distribution of the mean , Difference between means, Proportion ,Difference between proportions. Confidence Intervals: Overview ,Mean, σ known ,Mean, σ estimated ,General formula ,Difference between means of independent groups, σ known ,Difference between means of independent groups, σ estimated ,Pearson's correlation, Difference between correlations. The Logic of Hypothesis Testing**:** Ruling out chance as an explanation, The null hypothesis, Steps in hypothesis testing Why the null hypothesis is not accepted, The precise meaning of the p value, At what level is H_0 really rejected? Statistical and practical significance, Type I and II errors, One- and two-tailed tests, Confidence intervals and hypothesis testing following a non-significant finding. Testing Hypotheses with Standard Errors**:** General formula Tests of μ, σ known, Tests of μ σ estimated, $\mu_1 - \mu_2$, independent groups, σ estimated, $\mu_1 - \mu_2$, dependent means, σ estimated, Tests of Pearson's correlation, Differences between correlations Proportions Differences between proportions**.** ***Chi square*** **:**Testing differences between p and π **,**More than two categories ,Chi square test of independence (Introduction, Calculations, Assumptions)**,** Reporting results. ***Power:*** Factors affecting power; Size of difference between means, Significance level, Sample size, Variance Other factors, Estimating power. ***Measuring effects:*** Variance explained in ANOVA, Variance explained in correlation, Variance explained in contingency tables.

EPIDEMIOLOGY

Code: **RID3712**
NQF level: 7
Notional hours: 160
Contact Hours: 3 hours Lecture + 1 Practical per week for 14 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: Semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
This module covers the following topics: history of epidemiology, definition, functions, and characteristics of epidemiology, Definition, functions, and characteristics of epidemiology, routine data sources and descriptive epidemiology and analytic epidemiology; epidemiological triad, natural history of disease, exposure and outcome, incubation period and disease spread; determinants of health, epidemiology applied to specific areas (social epidemiology, infectious disease epidemiology, epidemiology of HIV/AIDS, Environmental epidemiology, occupational epidemiology, psychiatric epidemiology, etc.); population health, disease burden and its indicators: incidence, prevalence, measures of morbidity and mortality - morbidity rate, mortality rate, fertility rate, survival rate, life expectancy, proportion, ratio, rate, Measuring of Disease and Exposure; Comparison of health problem between different populations: Standardization of rates and ratio; Association and causality, Relating risk factors to health outcome; Analytic study designs; Causal inference; Sources of error; Multicausality — Confounding; Outbreak investigation; prevention strategies, diagnostics tests and screening: Sensitivity and specificity, Predictive value, Likelihood ratio (LR), Predictive value and prevalence, Stability of the sensitivity and specificity, Clinical case definition, measures of agreement.

RESEARCH METHODS AND PROPOSAL WRITING

Code: **RID3780**
NQF level: 7
Notional hours: 160
Contact Hours: 1 hour Lecture + 2 hours Practical per week for 14 weeks
NQF Credits: 8
Pre-requisite: RID3512
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies **4**0% Continuous assessment 60% Examination

(1x3 hours written paper)

Module Content
This module covers the following topics: Introduction to Quantitative research and Qualitative research, Literature Review, Identification, selection, analysis and formulation of the research problem, identification and formulation of the research question; Hypotheses formulation. Formulate a problem statement and justification of the study and formulation of the study objectives.
Classification of study types: Descriptive studies - Exploratory Studies, Cross-sectional studies, Case report, case series, correlational studies. Analytical studies - Cohort studies, Case control studies, Comparative Cross sectional studies. Intervention studies: Clinical trials, Experimental studies, Quasi-experimental studies, fields interventional studies. The advantages and disadvantages of the different of studies design.
Sampling Methods: Non-probability sampling, Probabilistic or random sampling; sample size determination. Study population, Specification study variables, and types of variables.
The Data collection methods – Data collection techniques, development of data collection tools and/or questionnaires. Report writing, Citation of references and referencing styles - The Harvard system, Vancouver style, APA. Ethical Considerations in health research, Research project administration. Research proposal development. This module will also teach the application of evidence based medicine skills to clinical decision making as well as critical appraisal of the medical literature.
This module will introduce students to consider the applicability of research, understand research design, analysis, and research ethics, consider patient autonomy, respect, plagiarism, confidentiality and ownership of intellectual property and a lifelong commitment to reflective learning

NUTRITION AND DIETETICS

Code: **CMM3702**
NQF level: 7
Notional hours: 160
Contact Hours: 1 hours Lecture + 2 Practical per week for 14 weeks
NQF Credits: 8
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: Semester 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
Major areas to be addressed include: fundamentals of nutrition and metabolism, disease-related malnutrition, practical nutritional assessment, therapeutic aspects of clinical nutrition, nutrition and public health, malnutrition in the community, disease and disordered eating. It will provide an overview of the importance of nutrition in health and will enable students to gain a general foundation in the different types of malnutrition (both under and over nutrition) including micronutrient deficiencies.
The student will be able to understand nutrition through the lifecycle i.e. in pregnant and lactating women; infants and young children; older children and adolescents; adults and the elderly.
Other areas include: Functions, dietary sources and deficiencies of essential nutrients in humans; nutritional management of certain diseases; weight control and eating disorders; vegetarianism; food safety; dietary supplements and government regulation of food supplies.
Clinical nutrition refers to nutrition of patients in both inpatient and outpatient health care settings. It incorporates primarily the scientific fields of nutrition and dietetics.

HEALTH SYSTEMS MANAGEMENT

Code: **CMM3701**
NQF level: 7
Notional hours: 80
Contact Hours: **4** hours per week for 8 weeks
NQF Credits: 8
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
Students will be introduced in leadership skills which is needed in health administration. It will also focus around effective communication and understanding the principles of theories used in organizational management.
Health economics applies the tools of economics to issues of the organization, delivery, and financing of health care. The ob-

jectives of this course are to: (1) develop an understanding of the relevance of economic concepts to the health care sector, (2) to describe the system of health care financing and delivery arrangements in the health care sector, and (3) to impart an understanding of the role of economic factors in the development of public policy concerning health and health care.
Financial management will include the ability to develop and assess a budget, to determine where monies are best spent, to set up systems to monitor and evaluate the outcomes, to complete a cost benefit analysis of the service provided, and the ability to write up reports.
Human resources training will deal with the personnel component of any organization. For a health services administrator, the responsibilities would include developing policy for hiring, disciplinary procedures and termination of services

ELECTIVES

Code: **MDC3789**
NQF level: 7
Notional hours: 240
Contact Hours: 35 hours fieldwork per week
NQF Credits: 24
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies 100% Continuous Assessment

Module Content
Three elective blocks of 8 weeks each have been established within the School of Medicine program in the second, third and fourth years (24 weeks total). This time is allocated within the MBChB program to allow students to investigate elements of medicine that are outside the core curriculum, that complement an area of interest or to study subjects in greater detail. In all, it is expected that students will complete 16 weeks of training in the allotted elective time. The student will have to develop the elective proposal, work plan and successfully defend it. The established eight-week blocks may be broken into blocks of four weeks (not smaller) but electives cannot run concurrently. Upon completing an elective the student is responsible for ensuring that his or her evaluation form is completed and submitted to the School of Medicine for credit. *The School of Medicine recognizes the importance rural practice and as such requires that at least two four week blocks must be undertaken as rural attachments domestically.* In all cases students must seek approval of a specific elective and the School reserves the right to approve and or cancel chosen electives. We will also actively discourage students from scheduling electives during periods the School has designated for vacation.

FAMILY MEDICINE I

Code: **FMM3601**
NQF: 6
Notional hours 80
Contact Hours: 2 + 2P hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: None
Compulsory/Elective: Compulsory
Semester offered: semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
The module introduces the student to the concepts of Family Medicine, Primary Health Care and Public Health and how they overlap. Primary Health Care, its origins, different approaches, challenges and its re-engineering; disease prevention and health promotion; definitions, approaches and behavior change theories; social determinants of ill health; communicable and non-communicable diseases and screening for preventable conditions; how to communicate health information; community orientated primary care (COPC) and how to apply the principles of COPC; family- orientated primary care and how to utilize different tools to assess family function eg genograms, ecomaps and family APGAR as well as how to conduct a home visit and family conference.

FAMILY MEDICINE II

Code: **FMM3701**
NQF: 7
Notional hours 160
Contact Hours: 2 + 2P hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: FMM3601

Compulsory/Elective: Compulsory
Semester offered: Semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
The module covers the principles of Family Medicine; the bio-psychosocial approach and the use of the three stage assessment; patient-centeredness and the dynamics of the consultation; comprehensive and coordinated primary care assessment (Stott's model); brief behavior change counselling, communication and basic counselling skills; an approach to recognizing, analyzing and solving ethical dilemmas using ethical theories, principles, legislation, medico-legal rules and professional values.

FAMILY MEDICINE III

Code: **FMM3702**
NQF: 7
Notional hours 80
Contact Hours: 1 + 2P hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: FMM3601 and FMM3702
Compulsory/Elective: Compulsory
Semester offered: semester 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
:
Environmental and Occupational health; Environmental health will look at the basic components which make up a healthy environment and practical examples of how health is affected by a deterioration in one or more of these components; how socio-economic factors are related to a healthy environment.; common environmental risk factors and environmental hazards and how these should be managed; key global environmental issues such as deforestation, global warming and climate and weather changes and how a sustainable development approach will help address these. Occupational Health includes all work related health and disease issues.
Gerontology will introduce the student to geriatric syndromes, the primary care needs of older persons and how to do a comprehensive assessment of an older person.
Disability: The management of disability in a primary care setting, various approaches to disability management, the international classification of function, disability and health (ICF)and the principles and management of rehabilitation in primary health care.

RESEARCH PROJECT

Code: **RPD3810**
NQF level: 8
Notional hours: 320
Contact Hours: 4 hours per week
NQF Credits: 32
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment strategies: 100% continuous assessment

Module Content

DATA COLLECTION AND ANALYSIS: The student focuses on data collection during the first semester of the fourth year as a longitudinal module from primary or secondary sources in Windhoek /Khomas region. According to the proposal, the data can be from the clinics, hospital, City Council, Ministry of Health and Social Services or its institutions or from the community in a specified income cluster. The student will apply the skills of research methodology and epidemiology to clean and process the data using a suitable software package. At the end of the semester, the student will make a presentation detailing the results of the field work, summary tables and preliminary findings. Feedback from the student conference assists the student to review the analytical framework and finalize the data analysis. The conference presentation rating will constitute the continuous assessment for the semester. The student can then proceed to write the thesis using the UNAM format. Optionally, students can write a scientific paper to be submitted in refereed journal.
WRITING AND PRESENTATION OF THESIS: This final stage is for the student to write the Thesis with regular advice from the Faculty

mentor. The student will be able to make revisions using advice from the mentor aiming at producing the final revised copy one month before the end of the tenth semester (end of year 5 academic year). The Thesis will be graded by two faculty appointed evaluators. The student will also make a presentation of the research study at the final student conference to be held before graduation. The mentor will assist a student who requests to prepare a manuscript for publication in a refereed scientific journal.

PHARMACOLOGY I

Code: FMM3601
NQF level: 6
Contact Hours: 4 lecture hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

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

PHARMACOLOGY II

Code: **PMG3711**
NQF level: 7
Contact Hours: 4 lecture hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: PMG3612
Compulsory: Compulsory
Semester offered: semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module content
Neurohormonal transmission and initiation of post junctional activity; autonomic and somatic nervous system: structure and organ innervations; peripheral neurotransmitters (acetylcholine, noradrenaline, dopamine) and co-transmitters(ATP, adenosine, nitric oxide, endothelin, neuropeptide Y, vasoactive intestinal polypeptides); cholinergic and adrenergic receptors: their tissue distributions and effects of their stimulations; cholinergic and anticholinergic drugs (choline esters, natural alkaloids, anticholinesterases, atropinic drugs, neuromuscular blocking agents): their mechanisms of action and clinical uses; sympathomimetics (α and β adrenoceptor agonists) and adrenergic receptor blockers (α and β adrenoceptor antagonists): mechanisms of action and clinical uses; angiotensin converting enzyme inhibitors, angiotensin II receptor antagonists and diuretics: mechanisms of action and clinical uses; Bacterial pathogens: staining properties and morphological classifications, virulent characteristics; associations with infections of given anatomical sites and mechanisms of resistance development; antibacterial agents (Beta-lactam antibiotics (*penicillins, cephalosporins, penems and monobactams*), Glycopeptides (*vancomycin and teicomycin*); Protein synthesis inhibitors: [50S ribosomal protein inhibitors (*chloramphenicol, macrolides and ketolides, lincosamides, spectogramins*); 30S ribosomal protein inhibitors (*Tetracyclines, glycylcyclines and aminoglycosides*); bacterial nucleic acid synthesis inhibitors (quinolones, sulphonamides and trimethoprim, metronidazole)

PHARMACOLOGY III

Code: **PMG3712**
NQF level: 7
Contact Hours: 4 lecture hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: PMG3612
Compulsory: Compulsory

Semester offered: semester 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module content
Receptors, neurohumours and neurotransmission in the central nervous system; general anaesthetics; local anaesthetics; analgesics: Opioid and non-steroidal anti-inflammatory analgesic agents; drug addiction and abuse; ethanol; hypnotics and sedatives, antiepileptic drugs; anti-psychiatric, antipsychotic and anti-maniac drugs; antidepressants and anxiolytics; principles of antibiotic prescribing; HIV replication; Antiretroviral drugs: Classifications and mechanisms of action and resistance development; principles antiretroviral therapy and HAART; non-antiretroviral and antifungal agents: mechanisms of their action and clinical uses particularly in opportunistic infections in immune compromised patients; chemotherapy of parasitic infections (anti-helminthics); chemotherapy of neoplastic diseases; tumour cell growth and cell kill hypothesis; sites of action of cytotoxic drugs in the cell cycle; antineoplastic drugs: Classes (*Cytotoxics, hormones and biologic response modifiers*) therapeutic uses; adverse effects of ctotoxic drug and their management, principles of cancer chemotherapy

PROFESSIONAL ETHICS

Code: **RID3601**
NQF: 6
Notional hours 80
Contact Hours: 2 hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: None
Compulsory/Elective: Compulsory
Semester offered: semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x2 hours written paper)

Module Content
Medical Ethics and Philosophy: This module is designed to describe the basic principles of professional conduct, ethics, and legal practice in health, with particular emphasis on social values, norms, and culture of the Namibian society. A student will be able to professionally engage in his/her medical practice, observe professional conduct with regard to patients, their families, and professional colleagues, evaluate ethical dilemmas and give professional evidence in a court of law. Topics covered include: basic principles of ethics and philosophy in health; social obligations, values, and norms with the emphasis of the Namibian society regarding health; the patient-physician relationship; common ethical dilemmas: fundamental ethical guidelines, conflicts between beneficence and autonomy, patients who lack making-decision capacity, decision about life-sustaining interventions, conflicts of interest; basic principles of medico-legal practice, review of the health related Namibian legislative code; forensic pathology: traumatic injuries in forensic medicine, asphyxia of medico-legal interest, sexual abuse, criminal abortion, individual identification; toxins, poisons, venoms, drug overdose; epidemiology, diagnosis, and general principles of treatment of alcoholism and drug dependency; HIV/AIDS; research and ethics; international codes and declarations; Hippocratic and other oaths in medicine.

ANAESTHESIOLOGY I

Code: **ANA 3701**
NQF level: 7
Notional hours: 80
Contact Hours: 2 hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: ATM3611, PMG3711, PMG3612
Compulsory/Electives: Compulsory
Semester offered: semester 1

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper + practical examination)

Module Content
This course reviews the physiology, pathophysiology and anatomy of the respiratory, cardiovascular and autonomic nervous systems as well as the pharmacology of medicines used in the context of anaesthesia.
The course will acquaint he students with pre-operative preparation of the patient and family; this includes consent to anaesthesia and choice of appropriate pre-operative additional medications and investigations.
Students will be taught the principles of General Anaesthesia including the choice of medicines for induction and maintenance, the application of intravenous and inhalational anaesthesia, the use of neuromuscular blocking and analgesic agents, as well as the function of appropriate monitoring during anaesthesia. Complications of General Anaesthesia, in par-

ticular in respect the airway management will be discussed in detail.
Students will be lectured on the principles of Regional Anaesthesia including the pharmacology of medicines used for local and regional anaesthesia, and pain management; emphasis will put on spinal anaesthesia and the management of its side effects and possible complications.

ANAESTHESIOLOGY II

Code: **ANA3880**
NQF level: 8
Notional hours: 80
Contact Hours: 1 hour per week two semesters
NQF Credits: 8
Pre-requisite: ANA 3701
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies 40% Continuous assessment 60% Examination
(1 X 2 hour OSCE, 1 x 1 hour clinical written paper)

Module Content
This course applies the practice of anaesthesia in different clinical settings: childhood and adulthood, the aged, in different surgical domains, including obstetric care, and under different medical conditions.
Students observe, experience and practice pre-operative assessment and pre-medication, as well as providing peri-operative care in the form of general and regional anaesthesia, in the set-up of clinical training by an anaesthesiologist.
Students will learn the application and interpretation of peri-operative clinical and technical monitoring of patients.
They will gain observational and practical experience in ICU management of patients.

INTERNAL MEDICINE I

Code: **ITM3612**
NQF level: 7
Notional hours: 160
Contact Hours: 3+4P hours per week for 14 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: semester 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
This module covers the following topics: Infection control, universal precautions, communication skills, medical ethics, general physical examination, systemic physical examination, First Aid, Basic Life support, physician-patient relationships, social communication.

INTERNAL MEDICINE II

Code: **ITM3789**
NQF level: 7
Notional hours: 160
Contact Hours: 3 +4P hours per week
NQF Credits: 16
Pre-requisite: ITM3612
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
This module covers the following topics: General Medicine: Homeostasis, Fluid and Electrolyte Imbalance; Haematological disorders; Heart Failure; Lund Disease and Respiratory Failure; Renal Conditions and Renal Failure;Metabolic Disorders; Endocrine Disorders in states of hypo function and hyper function; Liver disorders and llve failure; Gastrointestinal malignancies; Digestive and Pancreatic Disorders; Stroke and tumours/space occupying lesions of the brain and meninges, semi and paraplegia; allergy and autoimmune disease. Laboratory Medicine : Basic Chemistry of Body fluids,enzymatic, biochemical and haema-

tological tests on respiratory, circulatory, hemolymhphopoietic and endocrine systems.

INTERNAL MEDICINE III

Code: **ITM3880**
NQF level: 7
Notional hours: 160
Contact Hours: 10 weeks
NQF Credits: 16
Pre-requisite: ITM3789
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies **4**0% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
Approach to the patient with skin disorder, diagnostic techniques, common skin disorders.Infectious dermatosis ; superficial mycosis, dermatosis caused by viruses including HIV manifestations, dermatosis caused by zoo parasites, pyoderma, skin manifestations of sexually transmitted diseases, leprosy. Immunologically mediated skin diseases, papulosquamous disorders: psoriasis, lichen plans; benign and malignant pigmented lesions;drugs and preparations in common use for the treatment of common skin conditions.

INTERNAL MEDICINE IV

Code: **ITM3890**
NQF level: 7
Notional hours: 160
Contact Hours: 10 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: 1 & 2

Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper)

Module Content
A student intern has come across many medical conditions in the preceding years. At this point, the student intern should be able to manage many of the common medical conditions in Namibia including:- ***Medical emergencies:*** causes of acute pain (acute coronary syndrome), syncope and collapse, cardiac dysrhythmias, causes of acute breathlessness (pneumothorax, pulmonary embolism, pulmonary edema, life threatening asthma), causes of acute confusional state, causes of shock syndrome, acute abdomen, anemia and major bleeding, toxic and metabolic emergencies; common medical ***condition in Namibia including:*** cardiac condition (ischemic heart diseases, heart failure, hyperlipidemia, hypertension, common cardiac arrhythmias, infective endocarditis and rheumatic heart diseases);causes and management of stroke; causes and management of pneumonia; causes and management of pleural effusion; causes and management of ascites; causes and management of HIV and related conditions including administration of antiretroviral therapy; causes and management of pulmonary and extra pulmonary tuberculosis; causes and management of asthma; causes and management of COPD;
Causes and management of arthritis; causes and management of hepatitis, cirrhosis and hepatocellular carcinoma and causes and management of meningitis (viral, bacterial, fungal and tuberculosis).

MODULE TITLE: OBSTETRICS AND GYNAECOLOGY I

Module Code: **OBG3712**
NQF Level: 7
Notional hours: 200
Contact Hours: 1h lecture/week for 16 weeks and a 5 week clerkship
NQF Credits: 20
Prerequisite: ATM3611, PLG3611
Compulsory/Elective: Compulsory
Semester Offered: 2nd Semester

Exams / assessment 40% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical examination)

Module Content
This course is designed to introduce students to the management of common obstetrical conditions and their complications. Students will be able to evaluate normal and suspect high risk or abnormal pregnancy, carry out selected diagnostic investigations, develop an intervention plan, observe practical and surgical interventions as an assistant to clinical faculty member, prepare patient record, present findings to clinical faculty members, and make proper referrals of patients.
Topics to be covered include : Conception, pregnancy & the management of normal pregnancy; high-risk pregnancy; abnormal pregnancy; medical conditions and HIV in pregnancy; normal and abnormal labor; use of partograph for monitoring labour; operative vaginal delivery; patho-physiology of high risk and abnormal pregnancy; obstetric operations, e.g. caesarean section; ethical issues in obstetrics, all with specific reference to practicing in Namibia; Miscellaneous medical disorders: Haematological problems in pregnancy; Renal disease, Diabetes and endocrine disease; Heart disease; hypertensive disorders; malpresentation; malposition; cephalopelvic disproportion; obstetric procedures: induction and augmentation of labour; prolonged pregnancy; preterm labour; multiple pregnancy; disorders of fetal growth and assessment of fetal well-being; obstetric emergencies: APH,PPH, cord prolapse, etc.; neonatal care for obstetricians; puerperium and lactation; analgesia and anesthesia for obstetrics; fetal monitoring during labour; antenatal care; pre-conception counseling; Normal fetal growth; the placenta and fetal membranes; prenatal diagnosis and genetics.

OBSTETRICS AND GYNAECOLOGY II

Module Code OBG3789
NQF Level 7
Notional hours 200
Contact Hours 2h lectures/week for 5 weeks followed by a 5 week clerkship
NQF Credits 20
Prerequisite OBG3712
Compulsory/Elective Compulsory
Semester Offered 1 & 2

Assessment strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical examination)

Module Content
This module is designed to acquaint students with the use of their professional skills to identify diseases affecting the reproductive system, conduct appropriate investigations, interpret results, explain the underlying patho-physiological processes, and develop a management plan.
Topics to be covered include The menstrual cycle; Normal and abnormal development of the genital tract; gynaecological exploration; major gynaecological syndromes: leucorrhoea, pelvic pain; menstruation, menstrual abnormalities & menstrual problems: premenstrual syndrome (PMS) & dysmenorrhea; benign and malignant conditions of vulva and vagina; benign and malignant conditions of uterus; ovarian tumors; pelvic inflammatory disease; uterine prolapse; climacteric, menopause and post-menopause; contraception; infertility & assisted reproduction; sexual education and family planning; Hysteroscopy and laparoscopy; Urinary incontinence; Pelvic floor dysfunction – utero-vaginal prolapse; endometriosis; chronic pelvic pain; polycystic ovary syndrome; amenorrhea – primary & secondary; Gynaecological disorders of childhood and adolescence; Gestational Trophoblastic disease; spontaneous miscarriage; recurrent miscarriage; termination of pregnancy and the medico-legal aspect of termination of pregnancy; Ectopic pregnancy; Acute abdomen in gynaecology; the role of Ultrasound in Gynaecology; sexually transmitted infections (STIs); sexual assault and domestic violence.

OBSTETRICS AND GYNAECOLOGY III

Module Code: **OBG3880**
NQF Level: 8
Notional hours: 400
Contact Hours: 10 week
NQF Credits: 40
Prerequisite: OBG3789
Compulsory/Elective: Compulsory
Semester Offered: 1 & 2
Exams / assessment 40% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical examination)

Module Content
This module enables students to practice gynaecological and obstetrical care of patients and, under the supervision of a Gynaecologist-Obstetrician, shadow as an intern and gain practical hands-on-experience in the care of individual patients with conditions affecting the reproductive organ-systems and their functions in women during the entire reproductive cycle as well as during states of pregnancy and lactation and deliver reproductive health care in a health facility, household, or community.
Course includes performing the listed obstetrical procedures and assist in frequently performed obstetric/gynaecologic surgical operations. Students will acquire practical skills in the assessment of sexuality, hereditary conditions, normal pregnancy and high risk pregnancy, home delivery and institutional management of labour; complications during labour, caesarean

section and assisted/operative vaginal delivery; indications and contra-indications of frequently used procedures, drugs and interventions; puerperium; contraception; infertility; the epidemiology, pathogenesis and clinical manifestations of communicable and non-communicable diseases that affect the reproductive system and functions including sexually transmitted infections (STI), that are prevalent in Namibia and neighbouring countries; emergencies affecting pregnancy and the reproductive systems; evidence-based care for women and adolescents; invasive and non-invasive diagnostic and therapeutic procedures; cost-effective and rational use of drugs; surgical interventions and laboratory investigations; screening for disease markers for prevention of diseases; health care for populations and health groups; ethical issues and the gate-keeping role of physicians; health resource allocation and management, and health systems research in gynaecological-obstetrical care.

OBSTETRICS AND GYNAECOLOGY IV

Module Code **OBG3890**
NQF Level 8
Notional hours 400
Contact Hours 10 week
NQF Credits 40
Prerequisite OBG3880
Compulsory/Elective COMPULSORY
Semester Offered 1 & 2

Assessment 40% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)

Module Content
As a way of reducing maternal and neonatal mortality emphasis will be put on the following areas for student interns to gain more practical knowledge: Antenatal care – traditional and focussed ANC; Premature rupture of membrane (PROM) Preterm labour and Preterm birth**;** Induction and augmentation of labour; Hypertensive conditions in pregnancy particularly preeclampsia, eclampsia & HELLP syndrome; Cardiac disease in pregnancy; Operative vaginal delivery i.e. vacuum extraction and low forceps delivery; Caesarean section/delivery; Obstructed labour & ruptured uterus; Retained placenta; Post-partum haemorrhage; Puerperal sepsis; Acute abdomen in obstetrics – ectopic pregnancy, appendicitis in pregnancy, red degeneration, etc.

The following gynaecology topics will also be taught to the student interns: Post-abortal care – incomplete abortion, septic abortion, etc. (the 4 pillars of post-abortal care) Postpartum sterilization; Short term and long term contraceptive methods; Infertility; Medico-legal aspects of sexual assault and/or rape; Termination of pregnancy and Medico-legal aspects of termination of pregnancy**;** Sexually transmitted infections**;** Pelvic infections – pelvic inflammatory disease**;** Uterine fibroids**;** Pre- and post-operative assessment and care and Discharge plans.

PAEDIATRICS I

Code: **PDC3712**
NQF level: 7
Notional hours: 160
Contact Hours: 5 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered Semester 2
Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)

Module Content
Students will attend the paediatric wards and clerk patients, to develop an understanding of the normal and sick child, identify abnormalities in growth and development, and to learn how the child relates to their family and the community. The emphasis will be laid on clinical history and examination, making a correct diagnosis and formulating a management plan for the common childhood illnesses. They will learn the principles of administering first aid during medical emergency, make effective referral and follow-up of a baby or child who requires life-saving care.

MODULE TITLE: PAEDIATRICS II

Code: **PDC3789**
NQF level: 7
Notional hours: 160
Contact Hours: 5 weeks
NQF Credits: 16
Co/Pre-requisite: PDC3712
Compulsory/Electives: Compulsory
Semester offered 1 & 2
Assessment Strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)

Module Content
The purpose of this module is to continue to develop an understanding of the normal and sick child, identify abnormalities in growth and development, and to learn how the child relates to their family and the community. Students will attend out-patients, and in-patient wards, including neonatal and oncology wards, attend XR meetings and seminars. They will learn to take a full history and examination of children and come to a provisional diagnosis with differentials. They will learn about the investigations needed to help make a diagnosis. They will formulate a management plan for childhood illnesses. They will learn the principles of administering first aid during medical emergency, make effective referral and follow-up of a baby or child who requires life-saving care.
The student will gain masterly in the following areas: (1)Knowledge of, and skills necessary for safe and efficient paediatric practice, (2) Communicating and interacting effectively with patients, parents and carers, (3) Recognizing a sick child, knowledge of diseases as they occur in children, and how to identify problems in development and health of the child, by problem solving and clinical reasoning, (4) Neonatal care, both normal and abnormal, (5) Recognizing the impact of childhood illness within the family, including ethical issues, (6) Self-reflection on his/her own practice, (7) The principles of dealing with medical emergencies, make effective referral and follow-up of a baby or child who requires life-saving care.

MODULE TITLE: PAEDIATRICS III

Code **PDC3880**
NQF level: 8
Notional hours: 200
Contact Hours: 5 weeks
NQF Credits: 20
Pre-requisite: PDC3789
Compulsory/Electives: Compulsory
Semester offered 1 & 2

Assessment **4**0% Continuous assessment 60% Examination
(1x3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)

Course Content
The student will continue to develop an understanding of the normal and sick child, identify abnormalities in growth and development, and to learn how the child relates to their family and the community. Students will attend out-patients, and in-patient wards, including neonatal and oncology wards, attend XR meetings and seminars. They will spend 5 weeks in Windhoek and 5 weeks in the Northern Campus. They will learn to take a full history and examination of children and come to a provisional diagnosis with differentials. They will learn about the investigations needed to help make a diagnosis. They will formulate a management plan for childhood illnesses, and follow up patients during and after their hospital admission. They will also learn to manage children with chronic illnesses and disabilities. They will learn the principles of administering first aid during medical emergency, make effective referral and follow-up of a baby or child who requires life-saving care.

PAEDIATRICS IV

Code **PDC3890**
NQF level: 8
Notional hours: 200
Contact Hours: 5 weeks
NQF Credits: 20
Pre-requisite: PDC3880
Compulsory/Electives: Compulsory
Semester offered 1 & 2

Assessment strategies 40% Continuous assessment 60% Examination

Module content
The student interns will spend ten (5) weeks in the various units of the Paediatric of the Teaching Hospitals. They will be required to attend daily ward rounds and all academic meetings including periodic mortality statistics meetings. Clinical supervision will be provided by both hospital staff and UNAM SOM academic staff. The student interns will have encountered many medical conditions in the preceding years. They should be, at this point, able to recognize the normal child and his/her development and to manage many of the common paediatric conditions in Namibia, including the following: Anaphylaxis, asthma, eczema; Malnutrition, marasmus and kwashiorkor; acute and chronic infections; Gastro-enteritis, dehydration; Upper respiratory infections, otitis media, rhinitis, sore throat; Lower respiratory infections, bronchiolitis, croup, bronchitis, pneumonia; Meningitis and meningococcal septicemia; Renal diseases including nephrotic syndrome and acute nephritis; Febrile convulsions, epilepsy; anaemia and bleeding disorders; nappy rash; Diabetes mellitus; Down's syndrome and other chromosome disorders; Understand the investigation and management of the above conditions, fluid and electrolyte therapy and paediatric prescribing; and common neonatal disorders such as prematurity, neonatal sepsis and neonatal jaundice; Viral exanthema; congenital infections; Immunodeficiency; Coeliac disease; congenital heart disease; neural tube defects; Dysmorphic syndrome; inborn errors of metabolism; congenital hip dysplasia; Septic arthritis; transient synovitis; juvenile rheumatoid arthritis; Kawasaki's disease; gastrointestinal reflux; inflammatory bowel disease; Hirschsprung's disease; intussusception; pyloric stenosis; Henoch-Schonlein purpura; idiopathic thrombocytopaenia purpura; Sickle cell disease and other blood disorders, thalassaemia and acute leukemia; solid paediatric tumors; vesico-ureteric reflux; accidental poisoning; Munchausen by proxy; autism; attempted suicide; attention deficit hyperactivity disorder; and eating disorders.

PSYCHIATRY I

Code: **PCT3702**
NQF: 8
Notional hours: 2 hours
Contact Hours: 5 weeks
Credits: 8
Pre-requisite: ITM3612, PDC3712
Compulsory/Electives: Compulsory
Semester offered Semester 2

Assessment strategies 40% Continuous assessment 60% Examination

Content
Topics: Diagnoses of patients with mental/psychiatric disorders, neuropsychiatry, behavioral neurology and psychopharmacology; application of medical and psychopathological knowledge and procedural skills to collect and interpret data, make appropriate clinical decisions; carry out diagnostic procedures using an appropriate combination of biological, psychological and sociological methods, including up-to-date, ethical and cost-effective clinical practice and effective communication with patients, other health care providers and the community; psychiatrist as communicator, collaborator, health advocate, manager, scholar and professional; theories of personality and psychopathology; examination of the psychiatric patient; classification of mental/psychiatric disorders; close connections with neuropsychiatry and behavioral neurology, internal medicine, general pharmacology, psychopharmacology and gross and functional anatomy of the brain (including neuro-imaging) as tools for making psychiatric diagnoses; psycho-pathology.

PSYCHIATRY II

Code: **PCT3880**
NQF: 8
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: PCT3702, ITM3789, PDC3789
Compulsory/Electives: Compulsory
Semester offered 1 & 2

Assessment strategies 40% Continuous assessment 60% Examination

Content
Topics: Psychoanalysis and psychoanalytic psychotherapy, behavior therapy, group psychotherapy, combined individual and group psychotherapy, family and couple therapy, cognitive therapy, interpersonal psychotherapy and brief psychotherapy; Eriksonian clinical theory and psychiatric treatment, evaluation of psychotherapy), combined psychotherapy and pharmacotherapy, biological therapies, and principles to electroconvulsive therapy and neurosurgical treatments, with applications to special populations such as Primary Health Care settings; psychiatric emergencies; adult and child in- and outpatient psychiatry; geriatric psychiatry; hospice and palliative care; and community psychiatry (including rural settings). Special topics include: consultation liaison psychiatry, adult ambulatory services, substance abuse and addiction services, prevention and public awareness services; and legal and ethical issues in Psychiatry.

PSYCHIATRY III

Code: **PCT3890**
NQF: 8
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: PCT3880
Compulsory/Electives: Compulsory
Semester offered 1 & 2

Assessment strategies 40% Continuous assessment 60% Examination

Module content
Cumulatively, students master the following competencies: Assessment of patients with different psychiatric disorders; Management of psychiatric disorders; Handling of aggressive patient; Assessment of patients with suicidal/homicidal behavior; Management of substance withdrawal; Ethics and the law; Counseling and crisis intervention; Family interventions; Pharmacological and other treatments in psychiatry; Management of psychiatric emergencies

SURGERY I

Code: **SUR3710**
NQF: 7
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: ATM3611, PLG3512
Compulsory/Electives: Compulsory
Semester offered 1 & 2

Assessment strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper + clinical + viva voce examination)

Content
The course will concentrate on the core general surgery content areas including with *emphasis is on eliciting clinical signs and symptoms;* history of surgery; ethics, confidentiality, Supportive care; history taking and physical examination in cases of pain, lump, ulcer, sinus, fistula; principles of Disinfection and Sterilization; Wounds, Wound healing and complications; Infections of Surgical importance, specifically, microbial infections in surgery, Mycotic infections of surgical importance, Infections by Nematodes and Trematodes; HIV/AIDS and a surgical patient; Skin and Subcutaneous tissues specifically Ulcers, sinuses, fistulae, Mole and melanoma, papilloma and wart, carcinoma, lipoma, fibroma, lymph node, cyst, bursa, etc; Principles of fluid and electrolyte therapy & Acid Base Disturbance; Introduction to the Management of Multiple injured patient. Penetrating and non-penetrating injury; Shock; Use of blood & blood products. Normal & Abnormal Haemostasis; Metabolic response to trauma; Nutrition in Surgery; Burns and scalds; ***Abdominal wall & abdomen*** focusing on history taking and axamination of a patient with gastrointestinal complaints, Herniae, umbilicus, abdominal wall abnormalities, Technique of abdominal examination, Definition and Causes and signs of an acute abdomen, causes of abdominal distension and causes of abdominal mass; ***Rectum and anal canal*** specifically the symptoms of anorectal disease, technique of anorectal examination, conditions presenting with anal pain, conditions presenting with anal bleeding, conditions presenting with anal mass and Pruritus ani; ***Breast*** inclducing benign conditions, malignant conditions, axillary examination; ***Neck examination*** with focus on thyroid, midline masses and non-midline masses; ***vascular examination*** of arteries, veins and lymphatic; palliative care in surgery based on W H O definition of Palliative Care, Quality of Life, Pain assessment & management, total pain concept, distress thermometer & Psycho-social support and spiritual support; ***examination of the face*** especially general facial appearance, eyes and orbit, mouth, salivary glands.

SURGERY II

Code: **SUR3780**
NQF: 7
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: Surgery I
Compulsory/Electives: Compulsory
Semester offered 1 & 2

Assessment strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper + clinical + viva voce examination)

Content
The course will cover the core areas for the non-specialist medical practitioner including: **Orthopaedics:** the assessment of the musculoskeletal system; an approach to x-rays & other diagnostic imaging; fracture healing & complications; principals of operative treatment; bone & joint infections; skeletal Tuberculosis; osteoarthritis, gout and other joint pain; rheumatic disorders; bone tumours; Metabolic bone disease, osteonecrosis & osteochondritis; genetic disorders, dysplasias & malformations; neuromuscular disorders; an introduction to ATLS and assessment of the injured patient; general principals of fractures & dislocations; management of wounds & soft tissue including GSW's; brachial Plexus & peripheral nerve injuries; amputation & rehabilitation; acute pyogenic bone & joint infections in children; fractures & joint injuries in children; the child's hip; deformities of legs & feet in children; limb length inequalities
Urology: Benign Prostatic Hypertrophy (BPH); cancer prostate; urinary tract imaging; renal trauma; ureteric trauma; bladder trauma; urethral trauma; external genital trauma; urinary tract infection (uti); urolithiasis; cancer kidney; cancer bladder; cancer testis; dd of scrotal swelling; male infertility
otorhinolaryngology: introduction to otorhinolaryngology; applied anatomy & physiology of the external ear; external ear conditions; clinical examination of the ear; applied anatomy & physiology of the middle ear cleft; applied anatomy & physiology of the inner ear; hearing loss; balance disturbances; facial nerve and audiometry; applied anatomy & physiology – nose, paranasal sinuses and nasopharynx; applied immunology/allergology for ent (part i); specific conditions of the nose, paranasal sinuses, nasopharynx; applied anatomy & physiology of the mouth and pharynx (oro and laryngo pharynx); obstructive sleep apnoea, applied anatomy and physology of the larynx and trachea; specific conditions of the larynx and trachea; hiv and otorhinolaryngology; speech disorders.
Ophthalmology
Disorders of the lid; disorders of the lacrimal apparatus; conjunctivitis & ophthalmia; neonatorum; trachoma & other chronic conjunctivitis; keratitis and corneal ulcers; corneal ulcer; scleritis & episcleritis; refractive errors & method of correction; presbyopia; accommodation convergence; congenital cataract; senile cataract; metabolic & complicated cataract; primary angle closure glaucoma; congenital glaucoma; primary open angle glaucoma; secondary glaucomas; anterior uveitis; posterior uveitis; blindness prevalence, prevention & rehabilitation; retinopathies, hypertensive, toxaemia and pregnancy, diabetic retinopathy; retinal detachment, types, symptomsand pre-disposing
Retinoblastoma and other ocular neoplasms; binocular vision amblyopia & concomitant
Optic nerve lesions; ocular emergencies (traumatic) and non-traumatic); minor ophthalmic surgery; and general principles of intra ocular

SURGERY III

Code:	**SUR3880**
NQF:	8
Notional hours:	400
Contact Hours:	10 weeks
Credits:	40
Pre-requisite:	SUR3780
Compulsory/Electives:	Compulsory
Semester offered	1 & 2
Assessment strategies	40% Continuous assessment 60% Examination (1x3 hours written paper + clinical + viva voce examination)

Module Content
The course will cover the specific topics of pain & pain management; surgical nutrition; wound healing; metabolic response to trauma; Infections of surgical importance; disorders of the appendix; burns & scalds; disorders of the biliary tree; liver disorders of surgical importance; non-malignant thyroid disorders; oesophageal disorders; fluid & electrolyte disorders in surgery; pancreatitis; head injury; thoracic trauma; malignant thyroid disorders; stomach & duodenum; the small bowel; non-malignant large bowel disorders; peritonitis & principles of management; malignant large bowel disorders; breast disorders; breast cancers; arterial disease; aneurysmal disease; venous disease & vte; the paediatric surgical patient; paediatric trauma; common paediatric surgical emergencies; common paediatric solid tumours; thoracic malignancies; abdominal trauma; investigation & management of postoperative jaundice; principles of palliative care in surgical practice; palliative care: spiritual support; investigation & management of postoperative pyrexia; haemorrhoids & anal mass; peri-anal sepsis; principles of safe; surgery: who checklist; the spleen & lymphatic disorders.

SURGERY IV

Code:	**SUR3890**
NQF:	8
Contact Hours:	10 weeks
Credits:	40
Pre-requisite:	SUR3780, SUR3880
Compulsory/Electives:	Compulsory
Semester offered	1 & 2

Assessment strategies 40% Continuous assessment 60% Examination
(1x3 hours written paper + clinical + viva voce examination)

Content

Areas to be covered include: review of eliciting symptoms and signs in surgery as well as evidence-based clinical decision making; ***surgical biology*****,** with specific emphasis on wound healing, blood and blood products, anaemia, haemostasis, surgical pathology, shock, hypovolaemia and blood transfusion, gastrointestinal haemorrhage, surgical infection and basic surgical skills; ***perioperative care*****:** focusing on preoperative preparation, nutrition and fluid therapy, WHO surgical safety checklist, postoperative care and analgesia in the perioperative period, surgical nutrition; ***trauma and the injured patient***: specifically the assessment of the injured patient, ABCDE of trauma, pathophysiology and management of head injury & spine injury, soft-tissue injuries of the neck, chest trauma, abdominal and pelvic injuries, vascular trauma and compartment syndrome, burns and principles of skin grafting, bites and stings**; *priority surgical disorders:*** of the skin and soft tissues including perianal & perineal sepsis, abdominal wall hernias, oesophageal disorders, stomach and duodenum, acute abdomen, small bowel, colon and rectum, breast and endocrine surgery, liver, gallbladder and pancreas, infections and infestations of surgical importance; ***common paediatric surgical disorders; principles of palliative care in surgery***: being a member of a health team; and ***ethics and medico legal issues; patient consultation; patient discharge and follow-up.***