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UNIVERSITY OF NAMIBIA

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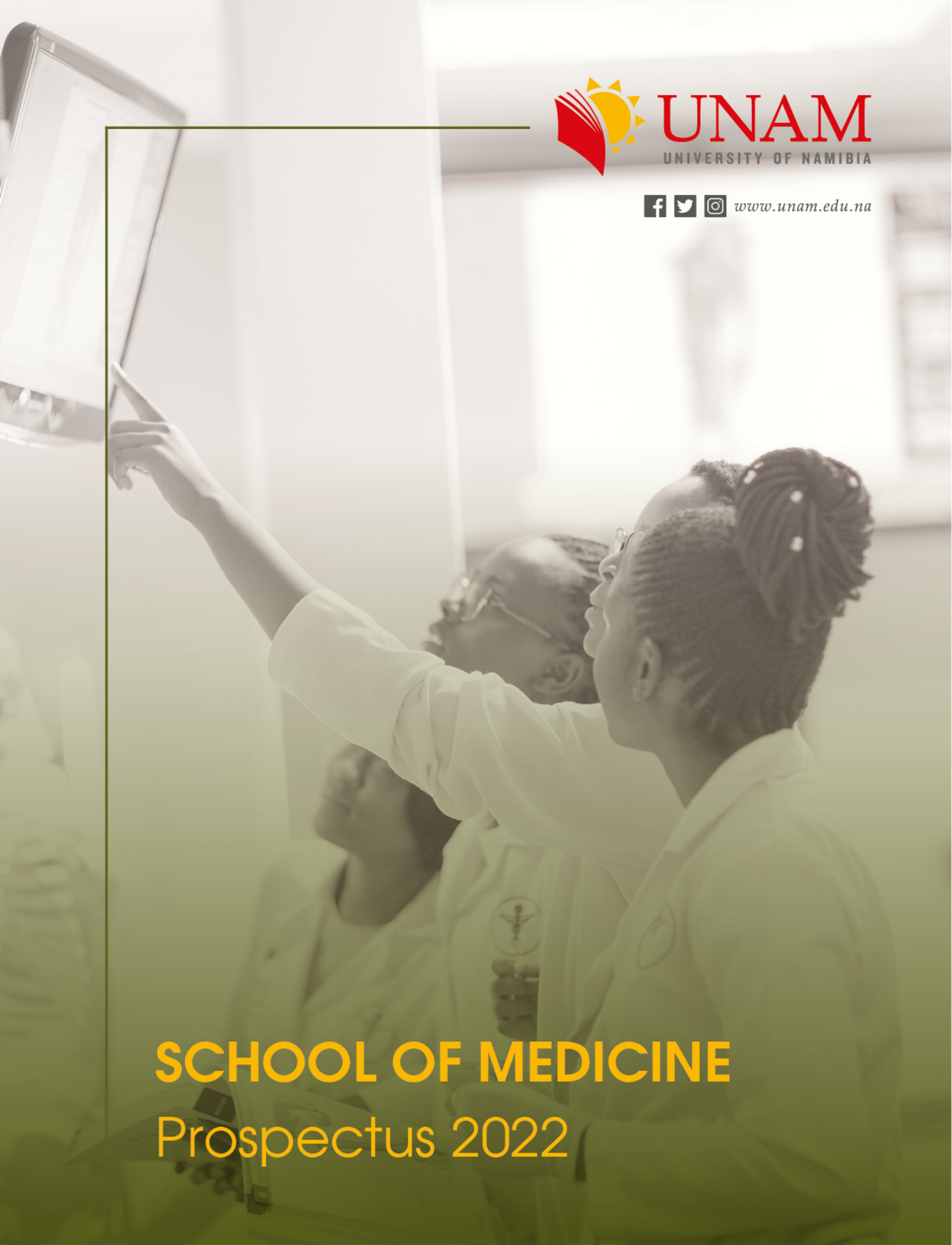

SCHOOL OF MEDICINE

Prospectus 2022

FACULTY OF HEALTH SCIENCES & VETERINARY MEDICINE

SCHOOL OF MEDICINE

NOTE

This Prospectus is only valid for 2022 as regulations and syllabi may be amended for 2022. 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 2021.

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 2022.

This Prospectus must be read in conjunction with the General Information and Regulations Prospectus 2022.

STRUCTURE AND PERSONNEL

OFFICE OF THE EXECUTIVE DEAN

Executive Dean	Prof J Hall
Associate Dean School of Medicine	Dr F Christians
Faculty Manager	Mr A Fledersbacher
Campus Administrator	Ms D Titus
Faculty Officer	Ms F Mario
Administrative Officer/Secretary: Office of the ED	Ms Y Shaanika
Administrative Officer/Secretary: School of Medicine	Ms T Kadhila
Examination Officer	Ms L Xoagus
Student Records Officer	Mr M Nowaseb
Student Support Officer	Mr A Ngwangwama
Administrative/Field Officer	Ms R Reinhold
Security Officer	Mr H Nakadiva
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
E-mail: fmario@unam.na

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

TABLE OF 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 honour and respect life on earth, in all forms, crawling and reasoning, with intellect or with handicap, to be ambassadors of healthy living and a prosperous future. We vow to take to heart and mind that all men are created equal. We vow to uphold this pledge and our assistance to others who do the same.

Due Dates for the 2022 Academic Year

DATE	GENERAL DATES
21 January	Last day for appeals (Semester 2 & Double modules – Regular and Supplementary/Special examinations of November 2021)
14 January	Last day for application of retention of continuous assessment (CA) mark and Last day for application for exemption(s) (Senior Students)
17 January	Last day for recommendation of retention of continuous assessment mark and Promotion Examinations by Faculties
24 January	Last day for approval of retention of continuous assessment mark and Promotion Examination by Examinations Department
07 February	Promotion Examination
11 February	Last day for application for exemption(s) - senior students
12 February	Last day for Late Registration for all Senior students (*Late fee payable*)
12 February	Last day for approval of module(s) & qualification changes (Senior Students)
04 March	Last day for application for exemption(s) – 1st year students
11 March	Last day for approval of exemption(s) changes – all students
29 April	Last day to submit Theses and Dissertations for examinations (for Spring Graduation 2022)
02 August	Last day for Appeals (Semester 1 Modules - Regular and Supplementary/Special examinations of June 2022)
31 August	Last day to submit outstanding documentation
07 October	Last day to cancel enrolment
28 October	Last day to submit Theses and Dissertations for examinations (For Autumn Graduation 2023)
DATE	**CANCELLATION DUE DATES**
13 May	Last day to cancel Semester 1 modules
07 October	Last day to cancel Semester 2 modules
07 October	Last day to cancel Double modules (module that extends normally over one academic year
DATE	**FINANCE DUE DATES**
18 March	Last day to cancel Semester 1 and Double modules with 100% credit
30 April	Last day to cancel Semester 1 modules with 50% credit
24 June	Last day to cancel Double modules with 50% credit
12 August	Last day to cancel Semester 2 modules with 100% credit
31 August	Last day to cancel Semester 2 modules with 50% credit

ACADEMIC CALENDAR – UNAM CORE DATES 2022

FIRST SEMESTER:

10 January	University Opens
10 January	Start of Summer School (until 22 January)
24 January	Academic staff resumes office duties
14 February	Lectures commence for FIRST SEMESTER – Senior Students
28 February	Lectures commence for FIRST SEMESTER – First Year Students
11 April	First semester BREAK commences
19 April	Lectures resume after first semester break
20 May	Lectures end for FIRST SEMESTER
31 May	Regular Examinations commence – Senior Students
07 June	Lectures end for FIRST SEMESTER – First Year Students
13 June	Regular Examinations commence – First Year Students
21 June	Regular Examinations end – Senior Students
24 June	Regular Examinations end – First Year Students
30 June	End of FIRST SEMESTER
04 July	Start of Winter School (Until 08 July)
04 July – 08 July	Mid-year Recess
11 – 15 July	Special/Supplementary/Winter Term Examinations start (until 15 July)

SECOND SEMESTER

25 July	Lectures commence for SECOND SEMESTER
22 August	Second semester BREAK commences
29 August	Lectures resume after second semester break
21 October	Lectures end for SECOND SEMESTER
27 October	Regular Examinations commence
18 November	Regular Examinations end
28 November	Special/Supplementary Examinations start (until 2 Dec)
09 December	End of SECOND SEMESTER
16 December	End of academic year
09 January 2023	Start of Summer School (until 21 January)
12 January 2023	University opens (2023 academic year)
24 January 2023	Academic staff resumes office duties

ACADEMIC ACTIVITIES – 2022

10 Jan	University Opens
10 Jan	Summer school start (until 21 January)
11 Jan	SoM Academic staff resumes office duty
12-14 Jan	Written and Clinical supplementary exams 4th, 5th & 6th years MBChB
13-14 Jan	Online registration (Senior Students MBChB) (Tentative as exact dates are not out)
17 Jan	Lectures commence for FIRST SEMESTER: 2nd & 3rd year MBChB (until 13 May)
	Block lectures start 4th year MBChB
	Clinical rotation starts 5th year MBChB
	Clinical rotation starts 6th year MBChB
21 Jan	Summer school ends
18 Feb	Block lectures end 4th year MBChB
	Clinical rotation ends 5th year MBChB
21 Feb	Registration commences 1st year MBChB (Tentative as exact dates are not out)
	Clinical rotation starts 4th year MBChB
	Clinical rotation starts 5th year MBChB
28 Feb	Lectures commence 1st year MBChB (until 17 June) (NO 1st SEMESTER BREAK)
25 Mar	Clinical rotation ends 4th year MBChB
	Clinical rotation ends 5th year MBChB
	Clinical rotation ends 6th year MBChB
28 Mar	Clinical rotation starts 4th year MBChB
	Clinical rotation starts 5th year MBChB
	Clinical rotation starts 6th year MBChB
01 Apr	Last day to submit draft examination papers for external moderation for 1st, 2nd and 3rd year MBChB
11 Apr	1st semester Break Starts (until 18 April) (NOT for 1st Year MBChB)
29 Apr	Last day to submit final ready examination papers for MBChB (1st, 2nd and 3rd year Students)
	Clinical rotation ends 4th year MBChB
	Clinical rotation ends 5th year MBChB
02 May	Clinical rotation starts 5th year MBChB
09 May	Announcement of provisional CA marks: MBChB (2nd and 3rd year)
	Examination commences 4th year MBChB
13 May	Announcement of final CA marks: MBChB (2nd and 3rd year)
	Lectures end for 1st semester: 2nd & 3rd year MBChB (16 weeks)
	Examination ends 4th year MBChB
16 May	Break: 4th Year MBChB (until 27 May)
19 May	Regular Examinations commence 2nd & 3rd year MBChB (until 3 June)
30 May	Clinical rotation starts 4th year MBChB
03 Jun	Regular Examinations end 2nd & 3rd MBChB
	Clinical rotation ends 5th year MBChB
	Clinical rotation ends 6th year MBChB
06 Jun	COBES starts 3rd year MBChB (until 1 July)
	Clinical rotation starts 5th year MBChB
	Clinical rotation starts 6th year MBChB
13 Jun	Announcement of provisional CA Marks 1st year MBChB
17 Jun	Announcement of final CA Marks 1st year MBChB
17 Jun	Lectures End for 1st SEMESTER 1st year MBChB
	Exam Board Meeting (Senior students)
21 Jun	Regular Examination Commence 1st year MBChB (until 1 Jul
01 Jul	Regular Examinations end 1st year MBChB
	COBES ends 3rd year MBChB

	Clinical rotation ends 4th year MBChB
04 Jul	Clinical rotation starts 4th year MBChB
08 Jul	Clinical rotation ends 5th year MBChB
11 Jul	Lectures commence 1st, 2nd & 3rd year MBChB, (Until 4 November) for SECOND SEMESTER Clinical rotation starts 5th year MBChB
12-15 Jul	Special/Supplementary exams 2nd , 3rd & 4th year MBChB
20-22 Jul	Special/Supplementary exams: 1st year MBChB
27 Jul	Exam Board Meeting (09:00) (for all exams)
05 Aug	Clinical rotation ends 4th year MBChB Examinations: Last day to submit draft examination papers for external moderation for 4th year MBChB
08 Aug	Block lectures start 4th year MBChB
12 Aug	Clinical rotation ends 5th year MBChB Clinical rotation ends 6th year MBChB
15 Aug	Clinical rotation starts 5th year MBChB (One week of this rotation will be used for Emergency Medicine Course in September) Clinical rotation starts 6th year MBChB (One week of this rotation will be used for Emergency Medicine Course in September)
22 Aug	Semester Break Starts (until 26 August)
02 Sept	Examinations: Last day to submit draft examination papers for external moderation for MBChB: 1st, 2nd, 3rd ,5th & 6th year Examinations: Last day to submit final ready examination papers for 4th year MBChB
09 Sept	Block lectures end 4th year MBChB
19 Sept	Examination commences 4th year MBChB
23 Sept	Clinical rotation ends 5th year MBChB
26 Sept	Clinical rotation starts 5th year MBChB
07 Oct	Examinations: Last day to submit final ready examination papers for MBChB: 1st, 2nd, 3rd, 5th, & 6th year Examination ends 4th year MBChB Last day to submit final ready examination papers for 5th & 6th year
10 Oct	COBES starts 4th year MBChB
28 Oct	Clinical rotation ends 5th year MBChB Clinical rotation ends 6th year MBChB
31 Oct	Announcement of provisional CA marks: 1st, 2nd & 3rd year MBChB
04 Nov	Lectures end 1st, 2nd & 3rd year MBChB for SECOND SEMESTER Announcement of final CA marks: 1st, 2nd & 3rd year MBChB COBES ends 4th year MBChB
07 Nov	Electives starts 4th year MBChB Regular Examination commences 5th and 6th year MBChB
10 Nov	Regular Examination commences 1st, 2nd & 3rd year MBChB &
25 Nov	Regular Examination ends 1st, 2nd ,3rd 5th & 6th year MBChB
30 Nov	Special / Supplementary exams 2nd and 3rd year MBChB starts for all written and practical papers for Preclinical modules
01 Dec	Moderation starts for MBChB
02 Dec	Special / Supplementary exams 2nd and 3rd year MBChB ends for all written and practical papers for Preclinical modules Moderation ends for MBChB
05 Dec	Exam board meeting
16 Dec	Electives ends 4th year MBChB
2023	
16-20 Jan	Written and Clinical Special/Supplementary exams 4th, 5th & 6th year MBChB

ACADEMIC DEPARTMENTS OF SCHOOL OF MEDICINE

DEPARTMENT OF HUMAN, BIOLOGICAL & TRANSLATIONAL MEDICAL SCIENCES
 (+264 61) 2065099 (+264 61) 2065090 Private bag 13301, Windhoek, Namibia

Head of Department:	Prof Q Wessels
Associate Professor:	Prof Q Wessels, NDip (Biomedical Technology) Tshwane University of Technology; BSc (Medical Sciences); BSc (Hons) Cell Biology; MSc (Anatomy) University of Pretoria; PhD (Anatomy) University of Pretoria; MSc (Clinical Education) University of Edinburgh; FHEA.
Associate Professor:	Prof J Misihairabgwi, PhD (Biochemistry) University of Zimbabwe; BSc (Hons) (Biochemistry); University of Zimbabwe; PGDHE (Health Sciences) University of Namibia
Associate Professor:	Prof Azu O O, BSc (Hons) Human Anatomy, College of Medical Sciences, University of Calabar; MSc, Anatomy, College of Medicine, (University of Lagos), Idi-Ababa, Lagos, Nigeria; PhD, Anatomy, College of Medicine, (University of Lagos), Idi-Ababa, Lagos, Nigeria; Certificate of Program Completion, Clinical Trials (Harvard Medical School, Boston), Cert. Plastique Technique (Germany)
Associate Professor:	Prof MM Claassens, MBChB (Stellenbosch), BSc Hons (Northwest), MPhil (Stellenbosch), PGDip (London), MSc (London), PhD (Amsterdam).
Senior Lecturer:	Dr JA Sheehama, PhD Biology (Medical Microbiology and Medical Biochemistry) Kazan State University; Masters in Biology (Microbiology and Molecular Biology) Kazan State University
Senior Lecturer:	Dr E Nepolo, PhD (Biochemistry) University of Namibia, MSc (Applied Molecular Biology); University of Namibia; BSc (Molecular & Physiological Biology); University of Namibia
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 Technikon, South Africa; B Tech (Biomedical Technology), Cape Peninsula University of Technology, South Africa; MTech [cum laude] (Cape Peninsula University of Technology, South Africa; PGDHE (UNAM); Registered Medical Technologist (Allied Health Professions Council of Namibia)
Lecturer:	Ms H Zaire, MSc Epidemiology Wageningen University,USA (in progress); BSc. Animal Science UNAM
Lecturer:	Dr A Du Plessis, MBChB University of Stellenbosch; DCH College of Medicine, South Africa, PgDip (Health Professionals Education) UCT
Lecturer:	Dr K van Niekerk MBChB University of Namibia; Msc Clin. Ed University of Edinburgh (in Progress)
Lecturer:	Mrs A M N Shatri BSc (Hons) Microbiology & Biochemistry; Master of Science (Applied Human Biology), University of Namibia.
Lecturer:	Mr Haindongo EHH, BSc Microbiology & Biochemistry; Master of Science (Biology), University of Namibia
Lecturer	Mr Nghoshi S, MSc in Applied Field Epidemiology (UNAM)
Lecturer:	Ms J Nelongo, MSc (Biology) & BSc (Molecular & Physiological Biology and Chemistry) University of Namibia; BTech & ND (Biomedical Technology) Cape Peninsula University of Technology; PGDHE (Health Sciences) University of Namibia.
Lecturer:	Dr Z Mkandla, PhD (Human Physiology) University of KwaZulu-Natal, MSc (Biomedical Technology) Cape Peninsula University of Technology, BTech (Biomedical Technology) Cape Peninsula University of Technology, ND (Biomedical Technology) Cape Peninsula University of Technology

Lecturer:	Ms LNN Shipingana, BSc (Hons) Molecular Biology & Biochemistry, University of Namibia; MSc Molecular Biology, JSS University, India
Lecturer:	Mr DH Haiyambo, BSc (Hons) Microbiology & Biochemistry; MSc Biology (UNAM)
Senior Technologist:	Ms A Poolman BSc Human Life Science; BScHons (Cum Laude) Human Anatomy; MSc Human Anatomy.
Technician:	Ms K Niiteta, BSc (Hons) Biochemistry & Chemistry, University of Namibia.
Technologist:	Mr FI Tshavuka, BSc (Hons) Biomedical Science, Namibia University of Science and Technology
Technician:	Mrs D Bouman, BSc Zoology & Physiology, University of South Africa
Technician:	Mr JJ van der Merwe, BMedSci University of the Free State, BMedSci (Hons), University of the Free State, HED University of South Africa
Assistant Technician:	Mr J Lakanemo
Technologist	Lusia Mhuulu, BSc (Biochemistry and Chemistry) University of Namibia, MSc (Biochemistry and Molecular Genetics) University of Namibia
Technician	Vacant
Technologist:	Ms. TE Nashihanga, BSc (Hons) Microbiology & Biochemistry, University of Namibia
Staff Development:	Ms J Namene. BSc (Hons) Microbiology & Biochemistry, University of Namibia; MSc (Forensics), JSS University, India.
Staff Development:	Ms TPT Keendjele, BSc (Physiology) University of Pretoria, BHSc with Honours (Physiology) University of the Witwatersrand
Staff Development:	Ms HH Eelu, BSc (Human Genetics) University of Pretoria, BSc Hons (Molecular and Cell Biology) University of Cape Town, PgDip (Health Professionals Education) UCT, MSc (Control of Infectious Diseases) London School of Hygiene and Tropical Medicine.

DEPARTMENT OF MEDICAL SCIENCES
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Head of Department:	Dr. F Yimer
Lecturer:	Dr F T Yimer, MD (Gondar University), Ethiopia; Internal Medicine Physician and Neurologist (Addis Ababa University College of Health Sciences) in collaboration with Mayo Clinic, Rochester.
Lecturer & skills lab coordinator:	S/r E Hamukwaya MNSc (UNAM), PM (UCT), PG Dip (critical care) (UNAM), 14DCNM (UNAM)
Lecturer:	Dr. F. Christians, MBChB (UCT), M Fam. Med (UCT), MPH (Umea University, Sweden, FCFP(CMSA), Dip HIV Management (CMSA)
Senior Lecturer:	Dr. Z Malan MBChB (University of Pretoria), MMed Family Medicine (University of Pretoria), PhD Family Medicine (Stellenbosch University)
Lecturer:	Dr. J Kuehne MBChB (University of Cape Town), M. Phil Applied Ethics (Stellenbosch University), Dip HIV Management (Colleges of Medicine South Africa), Master in Family Medicine (University of Cape Town), Cert. In Health Science Education (SAFRI)
Lecturer:	Dr H M Ndjaba. MMED Psych (University of Nairobi Kenya); MD of Medicine (Hubert Kairuki Memorial University), Dar Es Salaam, Tanzania; Diploma in Clinical Medicine (Tanga Medical Training School), Tanga Tanzania.

Lecturer & COBES coordinator:

Ms. Ndiitodino Kakehongo , MSc, (Applied Field Epidemiology) (UNAM), BNSc, (Clinical)(Hons) (Community Health, General Nursing Science & Midwifery Science) (UNAM).

Senior Lecturer: Dr L N Lukolo, PhD Nursing Science (Community Health) UNAM; Masters in Nursing Science (MCUR)(Community Health) University of Stellenbosch SA; Honors Degree in Nursing Education: University of Namibia (UNAM Bachelor's Degree in Nursing Sciences (**BCUR**): Nursing Education and Management: University of Namibia, Diploma in comprehensive Nursing Science: General nursing science, Psychiatric, Community Health and midwifery) University of Namibia, Diploma in Health System Management (Galilee International Management Institute, (Israel); Certificate in Nursing (Enrolled Nurse): Onandjokwe Lutheran hospital Nursing School.

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DEPARTMENT OF MATERNAL & CHILD HEALTH

☎ (+264) 816885223 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Dr BJ Nggada

Lecturer: Dr BJ Nggada, Specialist obstetrician/gynaecologist: MBBS(Unimaid), Fellow West African College of Surgeons (FWACS (Nigeria)), MIRD (UniAbuja)

Senior Lecturer: Dr F Sinyinza, BSc (Human Biology), University of Zambia, School of Medicine; MBCHB, University of Zambia, School of Medicine; Master of Medicine (Paediatrics & Child Health, University of Zambia, School of Medicine

Lecturer: Dr LC Kimera, Specialized obstetrician/Gynaecologist: MBChB Mbarara University of Science and Technology, Uganda; MMed (Obstetrics & Gynaecology) Makerere University, Uganda.

Lecturer: Dr A T Msusa. Specialist Obstetrician/Gynaecologist: MBBS University of Malawi; Fellow of the College of Obstetricians and Gynaecologists of South Africa (FCOG(SA))

Lecturer: Dr J Katumba, Specialist Obstetrician/Gynaecologist: MBChB Makerere University, MMed Obstetrics (Obstetrics & Gynecology) Makerere University, Fellow of Gynaecologic Oncology, East African Centre of Excellence for Oncology (EACO)

Lecturer: Dr AF Muyotcha Specialist Obstetrician/Gynaecologist: MBChB (UZ) MMed (Obstetrics and Gynaecology) (UZ)

Lecturer:

DR R Mano, Specialist Paediatrician, MBChB (UZ), MMED Paeds UZ), Dip HIV Man (SA), AHMP (FPD/Yale)

DEPARTMENT OF SURGICAL SCIENCES

☎ (+264) 812990066 💻 (+264 61) 2065090 ✉ Private bag 13301, Windhoek, Namibia

Head of Department: Dr Youssef Saad. MB. B Ch. (Assuit University, Egypt); Masters in General Surgery (M Sc., Assuit University, Egypt; MRCS (Membership of Royal College of Surgeons of Edinburgh, U.K.), Diploma of Laparoscopic Surgery (IRCARD, France).

Associate Professor Rukewe A. MBBS (University of Ilorin, Nigeria); DA (University of Ibadan, Ibadan, Nigeria); MSc (University of Ibadan, Ibadan,Nigeria); FMCA (National Postgraduate Medical College of Nigeria, Lagos, Nigeria)

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 E Fynn. MBChB (Ghana) DCH(SA), M. Med (Radiodiagnostics) FCRad(SA). Postgraduate Diploma in Management (Wales)
Senior Lecturer	Dr Kingsley U T. MBBS (Univeristy of Benin, Benin-City, Nigeria); DA (University of Benin, Benin-City, Nigeria); FMCA (National Postgraduate Medical College of Nigeria, Lagos, Nigeria); FWACS (West African College of Surgeons (Anaesthesia), Ibadan, Nigeria)
Senior Lecturer	Dr. Onochie Nweze, MBBCh., FWACS (Specialist Anaesthesiologist).
Lecturer:	Dr Dzvanga M T, Bachelor Degree in Surgery and Medicine, Postgraduate Diploma in Anaesthesia; University of Zimbabwe
Lecturer	Dr Ndhlovu Munyaradzi, Mb. B Ch., M Med General surgery, University of Zimbabwe.
Lecturer:	Mr. Nikanor Boas Johannes, S Sc. (UNAM), P Phill. Medical Physics (University of Ghana).

MASTER OF MEDICINE

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Coordinator	Prof Rekewe A
Senior Lecturer	Associate Professor Rukewe A. MBBS (University of Ilorin, Nigeria); DA (University of Ibadan, Ibadan, Nigeria); MSc (University of Ibadan, Ibadan,Nigeria); FMCA (National Postgraduate Medical College of Nigeria, Lagos, Nigeria)

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 and 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 behaviour considering 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 hold a valid NSSC (Namibia Senior Secondary Certificate) on Advanced Subsidiary (AS), or any other equivalent qualification with at least 35 points in five subjects (must include Mathematics, Biology, Chemistry and Physics) with English at either O-Level (B) or AS level (d) on the UNAM scale with a grade (b) or better on AS level for Mathematics, grade (c) or better on AS for Biology, Chemistry and Physics. Candidates with a C in English on O-Level and (e) on AS level, meeting all the other subject requirements, may be considered provided that they have at least 37 points in five subjects.

3. 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

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

   OR

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

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

   5.2. They should have successfully completed senior secondary education

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

   5.4. 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.

   5.5. 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			IB	
POINTS	**AS**	**H**	**O**	**HIGCSE**	**IGCSE**	**NSC**	**HG**	**SG**	**AS**	**A-level**	**O-level**	**HG**	**SG**
10										A		7	
9	a	1		1		7	A		a	B		6	
8	b	2	A*	2	A*	6	B		b	C		5	7
7	c	3	A	3	A	5	C	A	c	D	A	4	6
6	d	4	B	4	B	4	D	B	d	E	B		5
5	e		C		C	3	E	C	e		C		4
4			D		D	2	F	D		N/O/Subsidiary	D		3
3			E		E			E			E		2
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 than 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%. In clinical modules, a subminimum of 50% will apply for all written and practical/clinical examinations.

A student may qualify for a supplementary examination in a clinical 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).

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

1. MBChB I

FIRST YEAR TO SECOND YEAR OF MEDICINE

1.2.1 A student must have passed at least 128 credits the prescribed First Year credits to be promoted to Second Year. If any of the failed modules is a pre-requisite for a Second-Year module, the student cannot register for the affected Second Year module until the pre-requisite is passed.

1.2.2 A student who has passed at least 96 credits (but less than 128 credits) will not be promoted to Second Year, but will be allowed to take no more than 32 credits from Year 2 modules: 16 credits (equivalent to one full module) in Semester 1, and 16 credits (equivalent to one full module) in Semester 2, in addition to the failed Year 1 modules, provided that the required pre-requisites are passed.

1.2.2. Students are responsible for selecting their modules within the framework of the UNAM timetable. Students will not be allowed to register for more than one module in the same timeslot.

2. MBChB II

SECOND YEAR TO THIRD YEAR OF MEDICINE

2.2.1 A student must have passed ALL the prescribed First Year modules (160 credits). In addition, the student must have passed at least 128 credits from the prescribed Second Year modules. If any of the failed modules is a pre-requisite for a Third-Year module, the student cannot register for the affected Third Year module until the pre-requisite is passed.

2.2.2 A student who does not qualify for promotion to Year 3 based on 2.2.1 above, but has passed at least 256 credits from both first- and second-year modules, will be allowed to take no more than 32 credits from Year 3 modules: 16 credits (equivalent to one full module) in Semester 1, and 16 credits (equivalent to one full module) in Semester 2, in addition to the failed modules. Such students will not be allowed to register for any clinical module of Year 3.

2.2.3 A student who fails three or more modules, will not progress to Year 3, but can take limited modules from Year 3. The eligible student should have obtained at least 224 credits (all first-year modules plus 7 out of 11 second year modules) and can take not more than 36 credits (two full modules) from Year 3: 16 credits (one full module) in Semester 1, maximum of 20 credits (one full module) in Semester 2, provided that the required pre-requisites are passed.

2.2.4 Students are responsible for selecting their modules within the framework of the UNAM timetable. Students will not be allowed to register for more than one module in the same timeslot.

3. MBChB III

THIRD YEAR TO FOURTH YEAR OF MEDICINE

3.2.1 A student must have passed ALL the prescribed First Year and Second Year modules (320 credits in total). In addition, the student must have passed at least 148 credits of the prescribed Third Year credits. If any of the failed modules is a pre-requisite for a Fourth-Year module, the student cannot register for the affected Fourth Year module until the pre-requisite is passed.

3.2.2 A student who passed all first- and second-year modules, and at least 128 (but less than 148) credits from Third Year, will not progress to Year 4, but will be allowed to take any 4 of the 8 credit modules of Year Four, provided that the required pre-requisites are passed. Alternatively, such students will be allowed to register for any 2 of the 8 credit modules of Year four, as well as any one clinical from Semester 2 of Year 4, excluding Surgery II (SUR3780), provided that the required pre-requisites are passed.

3.2.3 Students are responsible for selecting their modules within the framework of the UNAM timetable. Students will not be allowed to register for more than one module in the same timeslot.

4. MBChB IV

FOURTH YEAR TO FIFTH YEAR OF MEDICINE

4.2.1 To be promoted to Year 5, a student must have passed ALL the prescribed First Year, Second Year and Third Year modules, as well as at least 132 credits of the prescribed Fourth Year modules. If any of the failed modules is a pre-requisite for a Fifth-Year module, the student cannot register for the affected Fifth Year module until the pre-requisite is passed.

4.2.2 Students who are not promoted to Year 5, but passed all first, second- and third-year modules, may continue with no more than 80 credits of Year 5 (in the North) provided that the logistical arrangements for such rotations and the repeat of the failed modules are agreed to in writing

and signed off by School of Medicine Management before the start of the academic year. Also note all pre-requisites are met.

4.2.3 Students are responsible for selecting their modules within the framework of the UNAM timetable. Students will not be allowed to register for more than one module in the same timeslot.

5. MBChB V

FIFTH YEAR TO SIXTH YEAR OF MEDICINE

5.2.1 In order to be promoted to Year 6, a student must have passed ALL the prescribed First Year, Second Year, Third Year and Fourth Year modules as well as 120 credits from Year 5. If any of the failed modules is a pre-requisite for a Sixth-Year module, the student cannot register for the affected Sixth Year module until the pre-requisite is passed.

5.2.2 Students who are not promoted to Year 6, but passed all first, second, third- and fourth-year modules, may continue with no more than 80 clinical credits of Year 6 (in Windhoek) in addition to the Research Project (RPD3810) where applicable, provided that the logistical arrangements for such rotations and the repeat of the failed modules are agreed to in writing and signed off by School of Medicine Management before the start of the academic year. Also note all pre-requisites are met.

5.2.3 Students are responsible for selecting their modules within the framework of the UNAM timetable. Students will not be allowed to register for more than one module in the same timeslot.

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.

6.1 MAXIMUM NUMBER OF CREDITS PER YEAR

Year 1: 160 credits
Years 2-4: A student will be allowed to register for a maximum of 32 credits more than the total credits of the particular curriculum year.
Years 5-6: A student will be allowed to register for a maximum of 60 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**	**Prerequisites**
Computer Literacy	CLC3409	5	8	2	
Contemporary Social Issues	CSI3580	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**	**Prerequisites**
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**	**Prerequisites/ (Co-requisites)**
Epidemiology	RID3711	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		
Year 3 Field work					
Research Methods and Proposal Writing	RID3780	7	8	1+2P	RID 3512
COBES II	CMM3719		16	4 weeks of integrated learning	CMM3512
TOTAL CREDITS			196		

YEAR 4 semester 1					
Module Title	Module Code	NQF	Credits	Hours	Prerequisites/ (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	
Family Medicine III	FMM3711	7	8	1+2P	FMM3601 and FMM3702
Nutrition and Dietetics	CMM3711	7	8	1+2P	
Psychiatry I	PCT3711	7	8	2	ITM3612 and PCD3712
Both semester 1 and 2					
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
TOTAL CREDITS			144		

YEAR 5 Full year modules					
Module Title	**Module Code**	**NQF**	**Credits**	**Hours**	**Prerequisites**
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	PCT3711
Surgery III	SUR3880	8	40	40 hours for 10 weeks	SUR3780
Research Project	RPD3810	8	32	4 hours per week	
Electives	MDC3789	7	16	6 weeks	
TOTAL CREDITS			216		

YEAR 6 Full year modules					
Module Title	**Module Code**	**NQF**	**Credits**	**Hours**	**Prerequisites**
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	SUR3890	8	40	40 hours for 10 weeks	SUR3880
TOTAL CREDITS			160		

Module Descriptors

UNAM Core Modules

Module Title: English for Academic Purposes

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: 1st year semester 1

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.

Assessment Strategies
Continuous Assessment: 60 %
Examination: 40 % (1 x 3 hours paper).

Module Title: Contemporary Social Issues

Code: **CSI3580**
NQF level: 5
Notional hours: 80
Contact Hours: 1 hour per week for 2 semesters (offered Online)
NQF Credits: 8
Pre-requisite: none
Compulsory/Electives: Compulsory
Semester offered: 1st year semesters 1 & 2

Assessment strategies: This is a 100% continuous assessment module with a variety of assessments which evaluate and test the students' individual learning and mastering of the course content (subject knowledge) through quizzes, tests, Moodle assignments, journal entries, reflections as well as service and experiential learning projects.

Course Content: The module, **Contemporary Social Issues** (**CSI3580**), is designed to encourage behavioural change among UNAM students and inculcate the primacy of moral reasoning in their social relations and their academic lives. In providing students with critical and analytical thinking the module enables students to grow and develop into well rounded citizens, capable of solving contemporary social challenges experienced in their communities and societies. The teaching of the module takes three dimensions: the intellectual, the professional and the personal dimensions. The intellectual dimension is fostered through engaging students with subject knowledge, independent learning and module assessment. The professional dimension, on the other hand, is fostered through exposing students to real life situations of case studies and practical exercises that draws attention to social issues that attract ongoing political, public and media attention and/or debate. Finally, the professional dimension is fostered through group work and online discussions.

Module Title: 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: 1st year semester 1

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.

Assessment: Continuous 100%:

Module Title: Medical Physics

Code: **PLG3501**
NQF level: 5
Notional hours: 80
Contact Hours: 2 hours per week for 16 weeks
NQF Credits: 8
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 1st year semester 1

Module Aims
The aim of this module is for students to learn core concepts of physics and relating these to their application in medical practice. Students will learn about motion, elasticity, fluids, gases, waves, temperature, electricity, magnetism and electromagnetism, lights, solids, and radioactivity all of which have direct application in studying some **disease processes** such as cardio-vascular disease with respect fluid mechanics or **diagnostics** such as the use of ultrasound and X-ray which are based on radiation and high frequency resonance; or **treatment** for example in radiation in cancer therapy or use of laser beams. Students will have opportunity to observe some of the equipment in use

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, viscosity, 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).

Assessment Strategies
Continuous assessment mark: 40% -
Examination mark: 60%

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 1st year semester 1

Module Aims
This module aims to provide a background to master certain principles of cell biology, histology, human embryology and anatomy. The module establishes the foundation for systemic Anatomy.

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 haematology and immunology.

Assessment Strategies
Examination mark: One 3-hour examination paper.
Final mark: 40% of exam mark and 60% of Continuous assessment mark.

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 1st year semester 2

Module Aims
This module aims to provide students with sound systemic anatomical and histological knowledge of the cardiovascular, respiratory, digestive and urogenital system to the extent that they can relate from and function and use this in practice in their further studies in medicine and future work.

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

Assessment Strategies
(All class tests in this block have a practical component contributing 40% of the class mark)
Examination mark: One 2-hour theory examination paper (60%)
One practical examination paper (40%)
Final mark: 40% of exam mark and 60% of Class mark.

Module Title: 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: Systemic Anatomy I
Compulsory/Electives: Compulsory
Semester offered: 2nd year semester 1

Module Aims
This module aims to provide students with sound systemic anatomical knowledge of the musculo-skeletal and neurological system to the extent that they can relate form and function and use this in practice in their further studies in medicine and future work.

Module Content
Regional anatomy and topographical anatomy, development and histology of musculoskeletal 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.

Assessment Strategies
(All class tests in this block have a practical component that contributes 40% of the mark)
Examination mark: One 2-hour theory examination paper (60%)
One practical examination paper (40%)

Final mark: 40% of exam mark and 60% of Class mark.

Module Title: Organic Chemistry

Code **BCM5311**

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: 1st year semester 1

Module Aims
This module introduces students commencing studies in health sciences to the concepts of general, physical and organic chemistry which are foundational for the understanding of biochemical and physiological processes.

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.

Assessment Strategies
The continuous assessment (CA): 40% (minimum of 3 tests and 2 assignments)

Examination: 60% Examination (1 x 3 hours written paper + 1½ h practical examination)

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 1st year semester 2

Module Aims:
This module is the first of two with a focus on cellular organization, biomolecules and cellular function, cell communication and immune recognition, introductory clinical/medical genetics and bioinformatics. The module will correlate changes in cell division, structure, function, biomolecules and genomes associated with homeostasis or disease state.

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; eicosanoids 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 signalling 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.

Assessment Strategies

The continuous assessment (CA): 40% (minimum of 3 tests and 2 assignments).
Examination: 60% (1 x 3 hours written paper + 1½ h practical examination)

Module Title: 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: 2nd year semester 1

Module Aims:
The module focuses on the metabolism and storage of macromolecules, energy transduction and the biochemical basis of nutrition. Students will learn about how the catabolism and anabolism of carbohydrates, lipids, proteins, and vitamins drive cellular homeostasis and how deregulation of these activities lead to disease. Students will also learn about metabolism of xenobiotics and principles of drug-drug interactions and basic haematopoiesis.

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; haematopoiesis, 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 kwashiorkor, marasmus, malnutrition and diarrheal disease; sterols and bile acid metabolism, importance of nutrigenetics and nutrigenomics, xenobiotics and role of CYP enzymes in metabolic regulation and drug-drug interactions.

Assessment Strategies
The continuous assessment (CA): 40% (minimum of 3 tests and 2 assignments).
Examination: 60% (1 x 3 hours written paper + 1½ h practical examination)

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 2nd year semester2

Module Aims
The module aims to introduce the basic principles and application of medical microbiology and immunology with relevance to clinical disease in the preparation of students to become physicians. Also, the module aims to enable students to understand the nature, metabolism, nutrition, growth, pathogenicity, and prevention of bacteria of medical significance and understand their interactions with the human body to cause disease. Furthermore, the module will give insight to students on understanding the basic characteristics and functions of the immune system and its responses to intrusion of pathogens and or foreign bodies into the body and the application of immune factors in the prevention and treatment of disease.

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 defence Mechanisms, (tolerance, allergy and hypersensitivity, autoimmunity, immunodeficiency,

immunosuppression), tissue transplant, immune-surveillance, tumour immunity, transplant immunology, immunotherapy and immunization.

Assessment Strategies
The continuous assessment (CA): 50 % (minimum of 2 tests and 2 practicals).
Examination: 50 % (1 X 3 hours paper and 1 ½ practical paper)

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 3rd year semester 1

Module Aims
The aim of Module is to introduce the basic principles and application of mycology, virology, parasitology and entomology to clinical disease with relevance. This module will give a student to develop both informatics and diagnostic skills in medical virology, mycology, parasitology and entomology so that they can apply this in clinical setting. The module will enable students understand the nature, metabolism, nutrition, growth, life cycles, pathogenicity, and prevention of viral, fungal and parasitic pathogens of medical significance and understand their interactions with the human body to cause disease.

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.

Assessment Strategies
The continuous assessment (CA): 50 % (minimum of 2 tests and 2 practicals).

Examination: 50 % (1 X 3 hours paper and 1 ½ practical paper)

Module Title: 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: MCM 3631 & MCM 3632
Compulsory/Electives: Compulsory
Semester offered: 3rd year semester 2

Module Aims
To able student apply the knowledge and skill they acquired in basic microbiology to elicit history, symptoms and clinical signs of infections in various human organ-systems, make appropriate request, take relevant specimen and be

able to interpret laboratory tests. The student should be able to grasp the principles of treatment, prevention and control infectious diseases in a healthcare setting.

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.

Assessment Strategies

The continuous assessment (CA): 50 % (minimum of 2 tests and 2 practicals).

Examination: 50 % (1 X 3 hours paper and 1 ½ practical paper)

Module Title: Systems 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: 1st year semester 1

Module Aims

The Systems Physiology Course is a two-semester module designed to provide an understanding how cells, tissues, organs, and organ systems function together to create one human organism. The course lays the basis for understanding diagnosis and treatment of diseases. Laboratories include presentations of clinical cases, practicing of clinical procedures, and debriefing of problem-solving skills.

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.

Assessment Strategies

The continuous assessment (CA): 50 % (minimum of 2 tests and 5laboratory exercises).

Examination: 50 % (1 X 2 hours paper)

Module Title: Systems 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: 1st year semester 2

Module Aims
The Systems Physiology Course is a two-semester module designed to provide an understanding how cells, tissues, organs, and organ systems function together to create one human organism. The course lays the basis for understanding diagnosis and treatment of diseases. Laboratories include presentations of clinical cases, practicing of clinical procedures, and debriefing of problem-solving skills.

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

Assessment Strategies
The continuous assessment (CA): 50 % (minimum of 2 tests and 5laboratory exercises).
Examination: 50 % (1 X 2 hours paper)

Module Title: Pathophysiology

Code: **PLG3611**
NQF level: 6
Notional hours: 160
Contact Hours: 3+4P hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: None
Compulsory/Electives: Compulsory
Semester offered: 2nd year semester 1

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

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.

Assessment Strategies
The continuous assessment (CA): 50 % (minimum of 2 tests and 5 laboratory exercises).

Examination: 50 % (1 X 2 hours paper)

Module Title: Anatomical Pathology

Code: **PTG3612**

NQF level: 6
Notional hours: 160
Contact Hours: 3 lecture hours + 4hours of tutorial
NQF Credits: 16
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 2nd year semester 2

Module Aims
Pathology (also commonly referred to as laboratory medicine) comprises those services which provide knowledge and diagnostic information for the care of individual patients through the scientific analysis of specimens of blood, fluids, tissues and other samples. Pathology services constitute an essential element of clinical services through the contribution they make to the effective prevention, detection, diagnosis, treatment and management of disease, especially chronic disease. This curriculum in pathology is organized in three modules comprised of histopathology, chemical pathology and haematology.

Module Content

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.

Assessment Strategies
Continuous assessment mark: 40% Continuous assessment
Examination mark: 60% Examination (1 x 3 hours written paper+ 1½ practical examination)

Module Title: Chemical Pathology

Code: **CMM3702**

NQF level: 7
Notional hours: 160
Contact Hours: 2 lecture hours + 2hours of practice
NQF Credits: 16
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 2nd year semester 1

Module Aims
Through this module students will learn about the biochemical and metabolic basis of disease, and the mechanisms involved in restoration and maintenance of normal state. Students will also learn about the approaches to clinical

reasoning guiding the choice of laboratory tests, interpretation of results of tests, decision making therefrom, the analytical methods themselves and their limitations.

Module Content
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,

Assessment Strategies
Continuous assessment mark: 40% Continuous assessment
Examination mark: 60% Examination (1 x 3 hours written paper+ 1½ practical examination)

Module Title: Haematology

Code: **PTG3711**
NQF level: 7
Notional hours: 160
Contact Hours: 2 lecture hours + 2hours of practice
NQF Credits: 16
Pre-requisite: PLG3511, PLG3412, PLG3611
Compulsory/Electives: Compulsory
Semester offered: 3rd year semester 1

Module Aims
This module will equip the students with knowledge and skills of the morphology and pathophysiology of blood. Student will also master skills and techniques investigating the number, structure and function of the cellular elements, using sophisticated technology to count and size all the types of cells and a variety of staining techniques to make a detailed morphological examination of cells leading to the elucidation of disorders of the blood. Finally, students will also learn about blood transfusion services and the use of blood and its products in medical practice.

Module Content

The module provides comprehensive knowledge on the developmental process of all three haemopoietic 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 (leukaemia, 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).

Assessment Strategies
Continuous assessment mark: 40% Continuous assessment

Examination mark: 60% Examination (1 x 3 hours written paper+ 1½ practical examination)

Module Title: Medical Imaging and Diagnostic

Code: **PLG3701**
NQF level: 7
Notional hours: 80
Contact Hours: 2 lecture hours
NQF Credits: 8
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 4th year semester 1

Module Aims
This module equips students with knowledge and skills of radiology and radiation, correlating it with normal anatomy. The student grasps clinical reasoning skills necessary for interpreting radiological studies, understanding the role of imaging in clinical investigation and management guidelines and legislation on radiation and radiation protection

Module 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, haemolymphopoietic, 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: haemorrhage, 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

Assessment Strategies
Continuous assessment mark: 40% Continuous assessment
Examination mark: 60% Examination (1 x 3 hours written paper)

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:
Compulsory/Electives: Compulsory
Semester offered: 1st year semester 2

Module Aims:
The module aims at equipping students with knowledge and skills necessary to practice in different social-cultural settings. Students will learn about the indirect pathways between sociology and health/disease with emphasis on the

role of that beliefs and behaviours play in health and illness. The goal of the module is to acquaint students with the sociological construct of health, illness and disease which considers the structural and social factors not necessarily relying on biological and medical explanations of health and disease. The structural discourse will amylase political, economic, and sociocultural elements that foster ill/health as well as the forces that allow or constrain the healthcare system and individual's responses to illness.

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 behaviours play in health and illness.

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

Students will also examine health-related behaviours and apply many of the theories to specific behaviours, e.g. addictive behaviours 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, behaviour and health using the example of placebo effects; illustration of this interrelationship in the context of illness, focusing on HIV, cancer, obesity and coronary heart disease; aspects of women's health; the problems with measuring health status and the issues surrounding the measurement of quality of life.

Assessment Strategies

Continuous Assessment: 40%
Final Examination: 60%

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 2nd year semesters 1 and 2

Module Aims:

Through this module students will gain knowledge of the theories of psychosexual development normal physical, cognitive and emotional development and their application in states of health and disease. Students will also learn about the approaches to the diagnosis, management and rehabilitation of people with suspected cognitive or psychological or behavioural conditions.

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.

Assessment Strategies

The continuous assessment (CA): 40% (minimum of 3 tests and 2 assignments).

Examination: 60% (1 x 3 hours written paper)

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 2nd year semesters1 and 2

Course Aims
The aims of this module are to prepare the student to practice in different socio-economic cultural and technological settings in Namibia, the region or internationally. This module integrates core principles of community medicine and family medicine and helps the student to gain knowledge and skills essential for evidence-based delivery of a continuum healthcare services to an individual patient, family, community or population groups. The module also assists students to internalize the ethical values particularly the tenets of human dignity, social justice, equity and right based healthcare services. The module gives opportunities for the students to address the root causes of health conditions to improve the well-being of the family. The experience gained will help the students to identify resources in the household and leverage this for health in support of health promotion, prevention, control, treatment and rehabilitation. The module also allows students to learn how through the application of principles and practice of Community Based Education leads to transforming of individuals, families and communities into well-informed, self–reliant and empowered society.

Module Content
The construct of a family; urban household set up; socio-economic and cultural determinants of health at household setting i.e. the basic unit of society; health seeking behaviour, access and demand factors as well as culturally mandated disposal of household income and allocation to health; longitudinal follow and observational techniques; health outcomes for pregnancy, childhood and in chronic disease as well among the elderly or aged persons; primary care elements, health education, health promotion, antenatal care, well baby and well mother clinics as well as making observation such as DOTS; household resources and resource allocation; the care for people with disabilities and mental illness or other vulnerable groups. In this way a student will apply holistic approach to healthcare delivery. This is also value-based approach that emphasizes on the role of family members in assessing and analysing their own health problems, allocate resources to health and develop solutions; interaction of household, families, environment and influencing factors; community strengths, resources available at household levels, socio-economic conditions, cultural practices, educational levels, use of information to develop intervention strategies; participatory identification of health problems, identify appropriate tools to sustain programmes developed; application of principles and practice of community based education approach, health promotion theories, integrated health education application.

Assessment Strategies
The continuous assessment 100%

Module Title: 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: 3rd year semester 2

Module Aims
This modules equips students with knowledge and skills to live and work in a rural setting as well as to formulate evidence based community intervention that are sustainable and beneficial to the community. Through this module students learn and practice the principles of community engagement, community entry strategies and how to provide quality primary health care services to medically underserved communities and vulnerable populations.

Module Content
The module covers principles of community engagement, community entry strategies; community diagnosis; assessment of the health status of the community, community organizational institutions and their capacities; role of the community in managing their own health and facilitate a process of needs assessment health care package for rural Health Centres: comprehensive, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations; Health centres as community-based and patient-directed organizations that serve populations with limited access to health care including low income populations, the uninsured, those with limited educational proficiency, migrant and seasonal farmworkers, individuals and families experiencing homelessness, and those living in public housing; the functioning of a Health in delivery of required primary, preventive, enabling health services and additional health services as appropriate and necessary, either directly or through established written arrangements and referrals.

Topics: health promotion; education; and knowledge of the disease profile in the community. Communicable and non-communicable disease management, childhood illnesses, maternal and infant mortality assessment, existing prevention and control programmes, communication, and behavioural impact activities; School and Place Health Programs; mental healthcare and rehabilitation; sources of data, evaluation methods implemented; categories of indicators used, such as infant mortality rate, maternal mortality rate, child mortality rate, sanitation morbidity (incidence/ prevalence rate); leadership in the community, development of health services, infrastructure, budget allocation for sustainability, human resources, referral system and catchment area; healthcare management

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 works in the health centre.

Assessment Strategies
The continuous assessment 100%

Module Title: Community Based Education and Service III

Code: **CMM3739**
NQF Level: 7
Notional hours: 160
Contact Hours: 4 weeks
NQF Credits: 16
Pre-requisite: Community Medicine II, Family Medicine III
Compulsory/Electives: Compulsory
Semester offered: 4th year

Module Aims
The aim of this module is equipping students with knowledge and skills necessary to manage healthcare delivery system at the district level; and to provide patient care at the first level hospital. Furthermore, through this module student learn through the practical application of the principles and concepts of management and leadership. Finally, students learn the core elements of family medicine by shadowing a family medicine physician in the district or by using the guidelines in the manual on Family Practice.

Content
This module covers important topics of: the district health systems and services; the essential district health package; the district health manager(s); the district health team; leadership; healthcare financing and health economics; human resource management; budgeting and financial management; health information management systems; assets security and management; health policy formulation and implementation; evaluation of projects and interventions.

Assessment Strategies
The continuous assessment 100%

Module Title: Statistics for Health Sciences

Code: **RID3512**
NQF Level: 5
Notional hours: 160
Contact Hours: 4 lecture hours for 14 weeks

NQF Credits: 16
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 1st year semester 2

Module Aims:
This module aims at teaching the students how to gather and analyse data that can be used to provide honest information about unanswered biomedical questions. The module will aim at equipping the students with technical skills in applied statistics that is concerned with the application of statistical methods to medicine, clinical trials, demography, population estimation, modelling, community diagnosis, surveys and survival analysis.

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.

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

Module Title: Epidemiology

Code: **RID3711**
NQF level: 7
Notional hours: 160
Contact Hours: 3 hours Lecture + 1 Practical per week for 14 weeks
NQF Credits: 16
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 3rd year semester 1

Module Aims
This module aims to introduce students to the principles and methods used in epidemiology as it applies to disease prevention and control in public health practice. Students will learn about the quantitative techniques of measuring health status and investigating underlying factors for the occurrence of diseases and health outcomes.

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.

Assessment Strategies
The continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

Module Title: 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:
Compulsory/Electives: Compulsory
Semester offered: 3rd year

Module Aims
This module aims to equip the students with principles, skills and methods to conduct scientific research and analysis required on any matter within the domain of health. Students will learn about the quantitative and qualitative research methods.

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, 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.

Assessment Strategies
The continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

Module Title: Nutrition and Dietetics

Code: **CMM3711**
NQF level: 7
Notional hours: 160
Contact Hours: 1 hours Lecture + 2 Practical per week for 14 weeks
NQF Credits: 8
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 4th year semester 1

Module Aims
This module aims to equip students with necessary knowledge on the role diet plays in health, disease causation, prevention, development, and treatment of most of today's major diseases. The clinical nutrition program prepares students to manage medical conditions using specific nutritional strategies. The module also will enable students to

discuss the interplay between availability of food (food security), culture, dietary supplementation and diversification, growth and development and individual life style.

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.
Other areas include: Nutritional concepts, nutritional needs through life cycle, including digestion, absorption, metabolism, storage, and excretion of nutrients and other markers of nutritional adequacy or excess with emphasis on micronutrients. Functions, dietary sources and deficiencies of essential nutrients in humans; a balanced diet; role of nutrients in heart disease, cancer, hypertension, osteoporosis; weight control and eating disorders; vegetarianism; food safety; dietary supplements; government regulation of food supply. This unit will cover the following area

Clinical nutrition: This is nutrition of patients in health care settings. Clinical in this sense refers to the management of patients, including not only outpatients at clinics, but also (and mainly) inpatients in hospitals. It incorporates primarily the scientific fields of nutrition and dietetics. It aims to keep a healthy energy balance in patients, as well as providing sufficient amounts other nutrients such as protein, vitamins and minerals

Assessment Strategies
The continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

Module Title: Health Systems Management

Code: **CMM3701**
NQF level: 7
Notional hours: 80
Contact Hours: 2 hours per week for 16 weeks
NQF Credits: 8
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: Year 4 semester 1

Module Aims
To provide student the skills to manage the different roles of individuals in the health system management is including skills in leadership, financial management, health care policy, marketing, and human resources

Module Content
As a manager of a primary care centres, responsibilities include coordination of the hiring and firing of clerical staff, instituting community outreach, marketing the services of the centres within the community, financial planning, and overseeing the billing sequence. The roles are site specific in that the needs of the different types of health services determine what responsibilities logically belong to the administrator
Students will be introduced in leadership skills which is needed for success in health service administration. It will also focus around effective communication and understanding the principles of many theories used to characterize organization management.

Health economics applies the tools of economics to issues of the organization, delivery, and financing of health care. The objectives 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 the needed reports. A meaningful budget that avoids overpayment of anything is a must in today's marketplace. Thus, health services administration is focused on insuring that costs (output) are offset by income through budgetary and fiduciary oversight

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, discipline, and termination of personnel through direct management or as a supervisor of the individual assigned to these services. Adherence to state employment law is an integral part of this responsibility

Assessment Strategies

1. Continuous assessment (40%)
2. End of module examination (60%): 1 x 3 hours paper

Module Title: Electives

Code: **MDC3789**
NQF level: 7
Notional hours: 240
Contact Hours: 35 hours fieldwork per week
NQF Credits: 16
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 5th year

Module Aims

This module aims to empower the student to plan his/her own learning and personal growth in perspective of his/her own future career development. The module also aims at developing the adaptation skills, cultural sensitivity and the practice of medicine in different socio-economic - technological settings.

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.

Assessment Strategies

The continuous assessment (CA): 100% Continuous Assessment

Module Title: Family Medicine I

Code: **FMM3601**
NQF: 6
Notional hours 160
Contact Hours: 2 + 2P hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: None
Compulsory/Elective: Compulsory
Semester offered: 2nd year semester 1

Module Aims

The module aims at introducing students to the principles of Family Medicine, the role of the Family Physician and the Synergy between Family Medicine, core concepts of Primary Health Care, Community and Family oriented primary care. It will explore the relationship between lifestyle and the health of a community, the application of health promotion theory and approaches, the planning and development of health promotion interventions. It will also introduce the student to the principles of Community Orientated Primary Care (COPC) and working with communities, as well as general systems theory as applied to Family Medicine and Family Orientated Primary Care (FOPC). This course builds on Public Health approaches such as Epidemiology which are covered in other modules.

Module Content

The module covers the following topics: Definitions of Family Medicine, Primary Health Care and Public Health and how they overlap; Primary Health Care –origins, different approaches and challenges; Disease Prevention and Health promotion – definitions, approaches and behaviour change theories, principles of disease prevention and social

determinants of ill health; Communicable and Non-communicable diseases and screening for preventable conditions; Brief behaviour change counselling and 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 e.g. genograms, ecomaps and family APGAR as well as conducting a home visit and family conference.

Assessment Strategies

- Continuous assessment (40%)
- End of module examination (60%): 1 x 3 hours paper

Module Title: 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: 3rd year semester 1

Module Aims

This module aims to introduce the student to the key components of Family Medicine. These include: The primary care consultation, communication and counselling skills, and ethics relevant to Family Medicine. The student will develop a clear understanding of what constitutes Family Medicine and how Family Medicine forms an integral part of other disciplines of medicine.

Module Content

The module covers the following topics; 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 primary care assessment (Stott's model); communication and basic counselling skills; bioethics and an approach to solving ethical dilemmas in clinical practice.

Assessment Strategies

1. Continuous assessment (40%)
2. End of module examination (60%): 1 x 3 hours paper

Module Title: Family Medicine III

Code: **FMM3711**
NQF: 7
Notional hours 80
Contact Hours: 1 + 2P hours per week for 14 weeks
NQF Credits: 8
Pre-requisite: FMM3601 and FMM3701
Compulsory/Elective: Compulsory
Semester offered: 4th year semester 1

Module Aims

This module aims to introduce students to environmental and occupational health and safety, disability and the management of disability within the primary health care setting and gerontology. Also, the module aims to equip students with the knowledge on management of common diseases and disability and people with health special needs in the community.

Module Content
The module covers the following topics; Environmental and Occupational health and Disability and Rehabilitation in primary health car as well as Gerontology and the primary care needs of older persons.

Assessment Strategies
1. Continuous assessment (40%)
2. End of module examination (60%): 1 x 3 hours paper

Module Title: Research Project

Code: **RPD3810**
NQF level: 8
Notional hours: 320
Contact Hours: 4 hours per week
NQF Credits: 32
Pre-requisite:
Compulsory/Electives: Compulsory
Semester offered: 5th year

Module Aims
The aim of the module is to enable able student to: develop and apply the knowledge and skills required in identifying and prioritizing public health problems and systematically investigating them with the view to finding practical answers. By carrying out a modest research project and producing a report in this module, students are provided the opportunity to consolidate the various research methods, statistical and epidemiological techniques and other public health theoretical lessons they studied in the previous years.

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 referred scientific journal.

Assessment Strategies
100 % continuous assessment of the project report by two designated Faculty members other than the supervisor.

Module Title: Pharmacology I

Code: PMG3612

NQF level: 6

Contact Hours: 4 lecture hours per week for 16 weeks

NQF Credits: 16

Pre-requisite: None

Compulsory/Electives: Compulsory

Semester offered: 2nd year semester 2

Module Aims:
The module introduces students to principles of pharmacodynamics and pharmacokinetics as integrated concepts that explain the effects and mechanisms of drug actions. It lays the foundation for students' understanding of drug therapy as will be taught in subsequent modules in the pharmacotherapy of systemic diseases.

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

Assessment Strategies
The continuous assessment (CA): 40%
Examination: 60% (1 x 3 hours written paper)

Module Title: 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: 3rd year semester 1

Module Aims:
The module aims at introducing students very early in the medical programme to drug therapy in both systemic and infectious diseases. A teaching strategy that gives preference to making students understand pharmacologic principles as a first step in drug therapy will be adapted. Course outlines principally focus on the pharmacological basis of drug therapy in disorders of the autonomic and somatic nervous system and renal control of the cardiovascular system as well as the chemotherapy of bacterial infections. Much emphasis will be laid on the development of students' ability to evaluate the therapeutic actions of drugs to be discussed from the perspectives of their mechanisms of action and pharmacological properties. Mechanisms of action, activity limitations posed by bacterial morphological characteristics, spectra of antibacterial activities, adverse effects, compatibilities and clinical applications of antibacterial agents will similarly be the focus in presentations dealing with chemotherapy of infectious diseases.

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)

Assessment Strategies
The continuous assessment (CA): 40%
Examination: 60% (1 x 3 hours written paper)

Module Title: Pharmacology III

Code: **PMG3712**
NQF level: 7
Contact Hours: 4 lecture hours per week for 16 weeks
NQF Credits: 16
Pre-requisite: General Pharmacology I
Compulsory: Compulsory
Semester offered: 3rd year semester 2

Module Aims
The module aims at preparing students to prescribe appropriate chemotherapy of antiviral, antifungal, anti-parasitic infections and cancer chemotherapy. The pharmacological basis of drug therapy in disorders of the central nervous system, the endocrine system and blood will particularly be covered. Much emphasis will continue to be placed on the development of students' ability to evaluate the therapeutic actions of drugs to be discussed from the perspectives of their mechanisms of action and pharmacological properties. Students will be assisted to gain knowledge of the importance of the health team in the care of patients.

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

Assessment Strategies
The continuous assessment (CA): 40%
Examination: 60% (1 x 3 hours written paper)

Module Title: Professional Ethics

Code: **RID3601**
NQF: 6
Notional hours 80
Contact Hours: 2 hours per week for 14 weeks
NQF Credits: 8
Pre-requisite:
Compulsory/Elective: Compulsory
Semester offered: 2nd year semester 1

Module Aims
The aim of this module is assisting students to develop a personal philosophy for lifelong practice of medicine and ongoing professional growth. In particular, students will be equipped with skills to examine the four cardinal principles of: respect for autonomy, beneficence, non-maleficence and justice. In addition, students explore issues on double effect (conflict between autonomy, beneficence, and non- maleficence), Codes on Medical ethics and deontology, end of life decisions, and continual learning as a means to remaining competent in the era of rapidly changing medical practice, genetic engineering and other technologic advances.

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.

Assessment Strategies
Continuous assessment (40%)
End of module examination (60%): 1 x 2 hours paper

Module Title: 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:	ATM3512, ATM3611, PMG3612
Compulsory/Electives:	Compulsory
Semester offered:	4th year semester 1

Module Aims
This module aims at acquainting medical students with the essential knowledge and the practice of anaesthesia in surgery. This module will equip the students with the commonly used anaesthetic drugs, their mechanisms of action, and their side effects. Also, the module will enable the students to master the relevant techniques of administering safe regional and general anaesthesia to patients.

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 particular 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.

Assessment Strategies
The continuous assessment (CA): 40 %
Examination: 60 % (1 X 3 hours paper, which includes practical examination paper)

Module Title: 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: 5th year

Module Aims
This module aims to deepen essential knowledge the essential knowledge and the practice of anaesthesia in surgery. This module will prepare students to determine appropriate anaesthetic method for the management of specific conditions. Also, the module will enable the students to apply different techniques and administer the relevant anaesthetic. The students will be equipped with skills to monitor the effectiveness of anaesthetic being used and manage the patients during the post anaesthetic period.

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.

Assessment Strategies
The continuous assessment (CA): 40 %
Examination: 60 % (1 X 2 hour OSCE, 1 x 1 hour clinical written paper)

Module Title: 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: 2nd year semester 2

Module Aims
This course aims to introduce students to basic clinical procedure through didactic teaching and hands-on practice. Students are equipped with knowledge and skills in Basic Patient Care, Interpersonal Communication, Physical Examination, First Aid and Basic Life Support.

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.

Assessment Strategies
Continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

Module Title: 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: 4th year semester 1&2

Module Aims
This module aims to introduce students to various disease processes exploring the aetiology, pathogenesis, natural history, treatment and prognosis of various systemic disorders. Students are also introduced to the process of conducting a medical interview and physical examination of patients in the health care setting.

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 liver 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 haematological tests on respiratory, circulatory, hemolymhphopoietic and endocrine systems.

Assessment Strategies
The continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

Module Title: 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: 5th year

Module Aims
This course introduces students to Infectious diseases and medical conditions affecting the skin. Students learn about different infectious agents, their modes of transmissions, diagnostic tools and therapeutic plans for individual patients as well as for community settings.

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.

Assessment Strategies
The continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

Module Title: Internal Medicine IV

Code: **ITM3890**
NQF level: 7
Notional hours: 160
Contact Hours: 10 weeks
NQF Credits: 16
Pre-requisite: ITM3880
Compulsory/Electives: Compulsory
Semester offered: 6th year semesters 1 & 2

Module Aims
This module equips the student with clinical skills in Internal Medicine and, under the supervision of a qualified Internist(s), gain practical hands-on-experience and under supervision provide professional care to individual patients, their families, and population groups within the setting of a hospital, a household, or community. Students also learn how to function as members of a team. The goals of the module are to prepare the student to independently carry out a professional interview and physical examination of an adult patient, suspect the presence of a medical condition(s), institute cost-effective investigative plan to confirm the diagnosis, develop safe and effective treatment plan, including therapeutic procedures, after-care management, and assess quality of care. Through this module the student acquires practical skills on the epidemiology, pathogenesis, preclinical and clinical manifestations of communicable and non-communicable diseases, including mental health conditions and finally, the students learns how to perform the professional tasks of a newly graduated physician in the management of illnesses resulting from physical agents, chemicals, infectious agents, physiological and anatomical abnormalities, and degenerative

processes affecting the nervous, respiratory, cardiovascular, urinary, digestive, and endocrine systems, haematological, locomotor apparatus, and epidemiological health problems.

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 oedema, life threatening asthma), causes of acute confusional state, causes of shock syndrome, acute abdomen, anaemia 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).

Assessment Strategies
The continuous assessment (CA): 50 %
Examination: 50 % (1 X 3 hours paper)

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 of 3rd YEAR

Module Aims
The goal of this clerkship is for a student gain knowledge, skills and professional attributes necessary for evidence-based practice in obstetrics.

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 labour; 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 foetal growth and assessment of foetal well-being; obstetric emergencies: APH,PPH, cord prolapse, etc.; neonatal care for obstetricians; puerperium and lactation; analgesia and anaesthesia for obstetrics; foetal monitoring during labour; antenatal care; pre-conception counselling; Normal foetal growth; the placenta and foetal membranes; prenatal diagnosis and genetics.

Exams / assessment
Continuous Assessment Mark (CA mark) 40%
Examination mark will contribute 60%.

Module Title: 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	4th year semesters 1 & 2

Module Aims

This course aims at making the student gain knowledge, skills and professional attributes necessary for evidence-based practice in Gynaecology.

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 tumours; 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.

Assessment strategies

The Continuous Assessment Mark (CA mark) 40%
Examination mark will contribute 60%.

Module Title: Obstetrics and Gynaecology III

Module Code:	**OBG3880**
NQF Level:	8
Notional hours:	400
Contact Hours:	10 weeks
NQF Credits:	40
Prerequisite:	OBG3789
Compulsory/Elective:	Compulsory
Semester Offered:	5th year semesters 1& 2

Module Aims

The goal of the clerkship is to make student to gain knowledge, skills and professional attributes necessary for evidence-based practice in Gynaecology.

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.

Exams / assessment
The Continuous Assessment Mark (CA mark) 40%
Examination mark 60%.

Module Title: Obstetrics and Gynaecology IV

Module Code	**OBG3890**
NQF Level	8
Notional hours	400
Contact Hours	10 weeks
NQF Credits	40
Prerequisite	OBG3880
Compulsory/Elective	Compulsory
Semester Offered	6th year

Module Aims
The aim of this module in to impart practical skills to the student interns through hands-on apprenticeship with minimum classroom work. In addition to learning the principles and practice of Obstetrics & Gynaecology, the student intern will go through practical education and training in major areas of elective & emergency Obstetric and gynaecological conditions. They will assist the intern doctors on duty and, as much as possible, shadow intern doctors in the management of common obstetric and gynaecological emergencies.
By practicing gynaecological and obstetrical care of patients under the supervision of a Gynaecologist/Obstetrician, the student interns will gain practical experience in the care of individual patients with conditions affecting the reproductive organ-systems in women during the entire reproductive life as well as during states of pregnancy and lactation and deliver reproductive health care in a health facility, household, or community.
Student interns will clerk patients, carry out investigations, make diagnoses and, in consultation with the medical intern or ward doctor or specialist, initiate appropriate treatment. They will prepare patients for operation; carry out simple ward procedures like conducting normal vaginal deliveries; repair of episiotomies and simple tears; evacuation (ERPOC) & manual vacuum aspiration (MVA) for incomplete miscarriage and assist during major operations like caesarean section and laparotomy for ectopic pregnancy, TAH, etc., all of which geared towards imparting practical skills to the student intern.
Mentoring of the student intern will make him/her become interested to Select obstetrics and gynaecology as a field for future specialization

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.

Assessment
Continuous Assessment (CA) 40%
Examination Mark 60%

Module Title: 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 3rd year semester 2

Module Aims
This module aims at equipping the students with knowledge and skills to recognize normal child growth and development identify abnormalities in growth and development, and to learn how the child relates to their family and the community. Also, the module will enable the students to implement public health interventions such as immunisation schedules, child health and nutritrion. Furthermore, the student will gain mastery in history taking, examination requesting of diagnostics' tests and diagnosis of common childhood illnesses including neonatology and paediatric oncology.
Develop understanding of the sick child, abnormalities in growth and development, and how the child relates to their family and the community. This will include studying many different diseases in the paediatric setting. Also learn the principles of how to provide emergency support in the paediatric setting. Interaction with aspects of obstetric care will be arranged to enable an understanding of how maternal health and delivery of the baby impacts on neonatal health.

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.

Assessment Strategies
40% Continuous assessment
60% Final Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)

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 4th year

Module Aims
The aim of this module is to equip the student with theoretical and clinical knowledge and skills necessary to diagnose and manage a sick child, abnormalities in growth and development, and how the child relates to their family and the community. This will include studying many different diseases in the paediatric setting, including neonatology and paediatric oncology. Also learn the principles of how to provide emergency support in the paediatric setting. Interaction with aspects of obstetric care will be arranged to enable an understanding of how maternal health and delivery of the baby impacts on neonatal health.

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.

Assessment Strategies
40% Continuous assessment
60% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce ` examination)

Module Title: Paediatrics III

Code	**PDC3880**
NQF level:	8
Notional hours:	200
Contact Hours:	5 weeks
NQF Credits:	20
Pre-requisite:	PDC 3789
Compulsory/Electives:	Compulsory
Semester offered	5th year

Module Aims

The aim of this module is to continue to improve the knowledge base and to enable the student to gain masterly in clinical skills necessary for managing a healthy child 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 history and examination of a child, making a correct diagnosis and formulating a management plan for the common childhood illnesses including neonatology and paediatric oncology; identifying and arranging appropriate investigations and interpreting these to help formulate an appropriate management plan. Students will also learn the principles of providing emergency support in the paediatric setting; interaction with aspects of obstetric care especially as it relates to how maternal health and delivery impacts on the health of the neonate.

Module 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.

Assessment
40% Continuous assessment
60% Examination (1 X 3 hours written paper + 2 hours clinical + 30 minutes viva voce examination)

Module Title: 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	6th year

Module Aims
The module aims at providing the student to gain masterly in the care of sick children from birth, in the neonatal period throughout childhood to and puberty. This is done in as a structured and skills development-oriented apprenticeship. The main aim is to facilitate the development of evidence-based practice of medicine, clinical reasoning and masterly of essential skills that will allow them to become competent medical interns.

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.

Assessment strategies

Continuous assessment: 40%

End of year examination: 60%

Module Title: Psychiatry I

Code: **PCT3711**
NQF: 8
Notional hours: 2 hours
Contact Hours: 5 weeks
Credits: 8
Pre-requisite: ITM3789I and PDC3789
Compulsory/Electives: Compulsory
Semester offered 4th year semester 1

Module Aim

This module aims at equipping the student with knowledge, skills and techniques for diagnosing and managing patients presenting with different psychiatric disorders. Student are assisted to integrate prior learning in the areas of neuro-anatomy, neuro-physiology, developmental psychology, neuropharmacology, internal medicine and paediatrics to recognize and explain the manifestation of psychiatric disorders, the diagnostic process and the general principles of disease prevention, treatment and rehabilitation. This is done through a combination of approaches of teaching and learning including didactic lectures and apprenticeship.

Module Content

Topics: Diagnoses of patients with mental/psychiatric disorders, neuropsychiatry, behavioural 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 behavioural 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.

Assessment strategies

Continuous assessment: 40%
End of year examination: 60%

Module Title: Psychiatry II

Code: **PCT3880**

NQF: 8
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: PCT3711
Compulsory/Electives: Compulsory
Semester offered 5th year

Module Aim

The aim of this module is to students to gain masterly of the principles underpinning the range of psychotherapies used to manage mental health patients and central theories in psychiatry as a branch of medicine. Students achieve this though didactic lectures, clinical apprenticeship and shadowing of health professionals.

Module Content

Topics: Psychoanalysis and psychoanalytic psychotherapy, behaviour 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.

Assessment strategies

Continuous assessment: 40%
End of year examination: 60%

Module Title: Psychiatry III

Code: **PCT3890**
NQF: 8
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: PCT3880
Compulsory/Electives: Compulsory
Semester offered 6th year

Module Aim

The aim of this module is to effectively prepare the student to manage common psychiatric conditions in Namibia. Students learn in a clinical setting to take care of children, elderly, and forensic psychiatric patients. In this module student learn how to take a comprehensive history; carry out mental state examination; make a psychiatric formulation, differential diagnosis; make a multiaxial formulation and manage a patient according to the biopsychosocial approach.

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 behaviour; Management of substance withdrawal; Ethics and the law; Counselling and crisis intervention; Family interventions; Pharmacological and other treatments in psychiatry; Management of psychiatric emergencies

Assessment strategies

Continuous Assessment 40%
End of year examination: 60%

Module Title: Surgery I

Code: **SUR3710**
NQF: 7

Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: ATM3611, PLG3512
Compulsory/Electives: Compulsory
Semester offered 3rd year

Module aims
This module aims at enabling students to master the principles and practice of general surgery and develop skills necessary to effectively practice the art and science of surgery. Students learn through didactic lectures and other modalities of active participation in learning including case based learning and clinical apprenticeship. Students are also assisted to learn and master technical skills by performing diagnostic and selected surgical procedures under supervision.

Module 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 examination 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 incldducing 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.

Assessment strategies

Continuous assessment 40%
Examination 60% (1x3 hours written paper + OSCE)

Module Title: Surgery II

Code: **SUR3780**
NQF: 7
Notional hours: 200
Contact Hours: 5 weeks
Credits: 20
Pre-requisite: SUR3710
Compulsory/Electives: Compulsory
Semester offered 4th year

Module aim
This modules aims at equipping the student with the basic knowledge and skills for managing common or live threatening medical conditions in the sub-specialties of urology, otorhinolaryngology, ophthalmology, trauma and orthopaedics. Students learn in a structured environment that integrates didactic lectures and clinical apprenticeship. Students also learn by performing selected first line procedures under the supervision of a quailed medical practitioner or quailed health professional.

Module 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, dysplasia & 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 physiology 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

Assessment strategies

Continuous assessment 40%
Examination 60% (1x3 written paper + OSCE)

Module Title: Surgery III

Code:	**SUR3880**
NQF:	8
Notional hours:	400
Contact Hours:	10 weeks
Credits:	40
Pre-requisite:	SUR3780
Compulsory/Electives:	Compulsory
Semester offered	5th year

Module Aim

The aim of the module is to enable the student master the principles and practice of surgery through didactic instructions and hands-on training. The students also learn though carrying out technical procedures under supervision of a qualified health professional. Further the modules equip the students with the knowledge and skills of prescribing appropriate medicines, the practice of, and administration of safe anaesthesia.

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.

Assessment strategies

Continuous assessment 40%
Examination 60% (1x3 hours written paper + OSCE)

Module Title: Surgery IV

Code:	**SUR3890**
NQF:	8

Notional hours: 400
Contact Hours: 10 weeks
Credits: 40
Pre-requisite: SUR3780 and SUR3880
Compulsory/Electives: Compulsory
Semester offered 6th year

Module Description
The aim of the module is to prepare each student for the surgical challenges of Namibia and the region as a medical intern and subsequently medical officer. The student will be groomed in the practice of the art, science, and principles of surgery including the surgical subspecialties of Orthopaedics and trauma, Ophthalmology, neurosurgery, Urology and Otorhinolaryngology.

Module 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.

Assessment strategies

Continuous assessment 40%

Examination 60% (1x3 hours written paper + OSCE)

PROGRAMME

Master of Medicine (Anaesthesiology, Critical Care and Pain Management) 15MANA

Purpose and Rationale of the Qualification

The purpose of the MMed in Anaesthesiology, Critical Care and Pain Management is to equip Medical Practitioners with appropriate knowledge and clinical skill for safe, effective administration of anaesthesia, adequate control of pain and optimal provision of critical care services as specialist Anaesthesiologists.
The rationale of this qualification emanates from the paucity of qualified Anaesthesiologists in most hospitals in Namibia resulting in unmet surgical and anaesthetic service.
The Ministry of Health and Social Services is unsuccessfully trying to recruit Anaesthesiologists beyond the borders of Namibia. Currently, there is no in-country training of Anaesthesiologists to improve the number of specialists in this field.
In Namibia, one of the pillars of the Harambee Prosperity Plan is the reduction of Maternal and Infant mortality rates. The University of Namibia would contribute enormously to this aspect of the plan by training this cadre of anaesthesiologists.

Exit Outcomes
Holders of this qualification will be able to: • Demonstrate analytical, interpretational, scientific writing, problem solving, managerial, planning, integration, and evaluation and presentation skills. • Exhibit and apply in clinical practice the knowledge required of a Specialist Anaesthesiologist. • Exhibit and practice clinically the skills required of a Specialist Anaesthesiologist in an Intensive Therapy Unit. • Exhibit and practice the application of the attitudes and competences required of a professional Anaesthesiologist (including organizational, management and leadership skills as well as applying strategies for health promotion, prevention of ill-health and co-morbidities). • Practice regional, local and general anaesthesia in complex situations • Teach, train and supervise trainees in Anaesthesiology. • Appraise clinical research critically and conduct clinical audits/high impact research.

CRITERIA FOR ADMISSION

- Prospective students must be in possession of a level 8 UNAM MBChB degree or equivalent from any other accredited institution with an average mark of at least 60% and must have completed **30 months** of clinical practice that must include at least **24 months** in a recognised supervised internship programme.
- A prospective student must be registered with the Health Professions Council of Namibia (HPCNA) as a Medical Practitioner.
- Prospective students whose medical education was not in English shall provide proof of proficiency in spoken and written English e.g. TOEFL (≥75) or IELTS academic version only (overall score of at least 7.5), not more than 2 years old at the time of application.
- Successful completion of the UNAM Level 8 Postgraduate Diploma in Anaesthesiology and registration with Health Professions Council of Namibia (HPCNA) and employment by the Ministry of Health & Social Services of Namibia (MoHSS) or supernumerary employment with the MoHSS, will be an advantage.

  All prospective students will be interviewed by the Postgraduate Admissions Committee of the School of Medicine. (Proof of practice in Anaesthetic unit/department for at least six months will be desirable).

MODE OF DELIVERY

The MMed (Anaesthesiology, Critical Care and Pain Management) is a full-time programme with a modern integrated spiral curriculum. This competency-based programme will combine intensive teaching blocks with simulations, clinical training, webinars and research. Furthermore, intensive Anaesthesiology (coupled with Surgery) camps will provide opportunities for students to collect the required number of cases, while it will simultaneously assist the Ministry of Health and Social Services to alleviate the pressing needs in the field.
Teaching will take place at designated teaching hospitals and the Health Sciences Campus of the University of Namibia.
The delivery is mostly based on adult learning principles with training spread over a period of 48 months. Modules are staggered with each module providing the basis for the next module. While students will be allowed to start with the subsequent module without having passed the previous one, the module must be passed before the student will be allowed to take the examination of the subsequent module. Students must pass the first integrated Part I examination before embarking on the second 24-month training period.

By definition, a spiral curriculum is a flexible model where the exact length of each individual module will be determined by the availability of cases and training opportunities. A particular module may thus span more than one calendar year.

DURATION OF STUDY

The programme cannot be completed in less than 4 years. The maximum duration of the programme is 5 years.

ASSESSMENT CRITERIA

Being a competency-based programme, the final mark of each module will consist of continuous assessment (60%) and a module examination (40%). Continuous assessment will include amongst others, an externally moderated student portfolio, case logbooks and tests.
A minimum continuous assessment mark of 50% will be required to qualify for each module examination. In addition, all previous modules must be passed before the student is allowed to take the modular examination in any given module.
For all modules, a pass mark of 50%, as well as a subminimum mark of 50% for the module examination is required.
Students will qualify for a supplementary if they fail the module examination irrespective of their mark in this examination.

Two integrated Part I and Part II examinations will take place – the first after completion of the first seven modules, and the second after completion of all the modules.

A minimum mark of 50% is required to pass these final integrated Part I and Part II examinations consisting of theory papers, OSCE's and semi-structured oral assessments.

Students who fail to obtain this pass mark, will be allowed to take a supplementary examination after a remedial period of at least one month. The supplementary examination will consist of all components of the regular examination irrespective of the performance of the student in the individual components during the regular examination.

MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE PROGRAM.
A student will not be readmitted into the MMed if she/he has failed the respective integrated Part I examinations on third attempt (i.e. three attempts to clear both examinations, not three attempts per examination). Please note that the regular examination and supplementary examination is considered as one attempt.

ADVANCEMENT AND PROGRESSION RULES
A student will advance to the second part (year 3) of the MMed only after passing the first integrated Part I examination. Other than this, there is no year to year advancement as modules in a spiral curriculum are flexible and could span a calendar year.

MAXIMUM NUMBER OF CREDITS PER YEAR
Not applicable – see above.

REQUIREMENTS FOR QUALIFICATION AWARD
The MMed (Anaesthesiology, Critical Care and Pain Management) will be awarded to the candidate who has successfully passed all the prescribed modules (694 credits), the two integrated examinations and has completed the one year extended clinical training in anaesthesiology (both core and electives).

CAREER OPPORTUNITIES
- The MMed (Anaesthesiology, Critical Care and Pain Management) is registrable as a specialist qualification by the Health Professions Council of Namibia (HPCNA).
- Graduates could work as specialists in various areas of anaesthesiology, critical care and pain medicine in public and private hospitals
- Graduates will further be equipped to become researchers in the field of anaesthesiology, critical care and pain medicine
- Graduates could be employed as academic staff in the School of Medicine

Summary Table for all Modules in the Programme:

Module code	Module name	NQF level	Credits	Total hours	Pre-requisite
PART 1					
ASB5989	Basic Concepts and Practice of Anaesthesiology	9	45	450	
ASM5989	Anaesthesiology and Trauma	9	45	450	
ASA5989	Comorbidities and Peri-operative Care	9	45	450	
ASH5989	Pathophysiology and Higher Care of Sick Patients	9	45	450	
ASP5989	Anaesthesiology in Pregnancy	9	45	450	
ASC5989	Anaesthesiology and the Child	9	45	450	
ASH5999	Clinical Research Methodology	9	20	200	ASH5999
TOTAL PART 1			290		
PART 2					
UAE 5819	Academic Writing for Postgraduate Students.	8	(24)*	4h/week for 14 weeks	
ASA5999	Advanced Anaesthesiology I	9	60	600	
ASP5999	Pain in Clinical practice.	9	60	600	
ASM5999	Management in Anaesthesiology Practice	9	40	400	
ASC5999	Clinical Training Core	9	30	300	
	Advanced Anaesthesiology II		40	400	
ASB5999	Clinical Training Elective	9	30	300	
AST5999	MMed (Anaesthesiology) Thesis	9	120	1200	
TOTAL PART 2			380		
TOTAL			**694**		

Module Title: Basic Concepts and Practice of Anaesthesiology	
Module Code	ASB5989
NQF Level	9
Notional Hours	450
Contact hours	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
NQF Credits	45
(**Co-requisites**) **Prerequisite**	None
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aims	
Module aims to: • provide an introduction to the basic principles of safe general and regional anaesthesia in overview. • provide training in the management of basic anaesthetic emergencies • provide a thorough understanding of the basic, key science concepts underlying anaesthesia	
Learning Outcomes On successful completion of this module, students will be able to: 1. explain how to assess a patient pre-operatively for simple basic general and regional anaesthesia, including airway assessment; 2. communicate their findings to a senior colleague; 3. describe and demonstrate rapid sequence induction; 4. describe, recall and critique the use of induction agents and analgesics; 5. describe and recall the neuromuscular junction and describe, recall and critique the use of muscle relaxants; 6. manage anaesthetic emergencies and CPR; 7. discuss the physics of the anaesthetic machine and anaesthetic monitoring critically.	

Module Content

The curriculum consists of the following topics: Pre-operative assessment, including scoring systems; Basic principles of general anaesthesia, simple spontaneous anaesthesia; The principles underlying a Rapid Sequence Induction; Basic airway management and choice of airway; Basic principles of regional anaesthesia, including anatomy, physiology (including the autonomic nervous system), practice of regional anaesthesia and complications and their management; Introduction to the pharmacology of core anaesthetic drugs: induction agents (propofol, thiopentone, ketamine and etomidate) and analgesics (morphine, fentanyl and pethidine); Physiology and Pharmacology of the Neuromuscular Junction and pharmacology of suxamethonium; Management of core anaesthetic emergencies and adult CPR; Physics: The anaesthetics machine and checking the machine; anaesthetic monitoring.

Assessment Strategies

Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title: Anaesthesiology and Trauma	
Module Code	ASM5989
NQF Level	9
Notional Hours	450
Contact hours	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	45
Prerequisite	
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aims	
This module aims to: • provide an understanding of the pathophysiology of trauma and emergency situations; • enable students to apply their knowledge of trauma and emergent care safely and efficiently; • provide an understanding of the requirements for safe patient transfer; • enable students to understand the dynamics of team working and leadership.	

Learning Outcomes/Specific Outcomes
On successful completion of this module, students will be able to: 1. discuss the pathophysiology of the conditions described in this module description critically; 2. manage the conditions described in this module professionally;

3. explain the implications of these conditions for patients in trauma and emergency situations;
4. describe and implement strategies for the safe transfer of sick patients;
5. describe and discuss the dynamics of team working and leadership and implement their learning in simulated and real clinical situations.

Module Content
The curriculum consists of the following topics: Definitions of urgency of surgery; Trauma pathophysiology and trauma anaesthesiology; Pathophysiology of haemorrhage and dehydration; Principles of pre-operative resuscitation; Signs of an adequately resuscitated patient including clinical, cardiovascular and biochemical; Massive blood transfusion; Gastric emptying; Principles of emergency anaesthesiology including advanced monitoring; Safe transfer of patients between sites; Physics of advanced monitoring; Team dynamics and leadership models

Assessment Strategies
Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title: Comorbidities and Peri-operative Care	
Module Code	ASA5989
NQF Level	9
Notional Hours	450
Contact hours	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	45
Prerequisite	
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aims	
This module aims to: • provide an understanding of the pathophysiology of comorbidities frequently encountered peri-operatively; • enable students to understand the implications of comorbidities for patients and their care; • a**cquaint** trainees with knowledge of strategies to promote wellness and lifestyle modification to prevent ill health and co-morbidities • enable students to apply their knowledge to manage these clinical situations safely and efficiently; • provide an understanding of scoring systems in Anaesthesia and their use in communicating patient morbidity to clinical colleagues.	

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:
1. describe the pathophysiology of the conditions described in the module description critically;
2. describe the implications of these condition for patients with associated comorbidities critically
3. develop and participate in managing interventions for promoting and maintaining health, preventing comorbidities as well as optimizing the patients' health condition
4. manage patients with comorbidities safely

Module Content
The module to consist of: pathophysiology, general clinical management and clinical perioperative management of the following conditions – diabetes and other core endocrine conditions, epilepsy, respiratory disease, heart disease, infectious diseases and HIV/AIDS, haematological derangements and disease, as well as neurological conditions; scoring systems and their use in patients with significant comorbidities

Assessment Strategies
Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title:	**Pathophysiology and Higher Care of Sick Patients**
Module Code	ASH5989
NQF Level	9
Notional Hours	450
Contact hours	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
NQF Credits	45
Prerequisite	
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aims	
This module aims to: • provide an understanding of the altered physiology and pharmacology of the critically ill patient with special reference to severe infections, sepsis, acute respiratory failure and trauma; • enable students to intervene to stabilise an acutely unwell patient and support patients developing multi-organ failure.	

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. explain phenomena in the altered physiology and pharmacology of patients with significant acute illness involving the respiratory, cardiovascular and renal systems and sepsis associated with acute severe infections.
2. manage patients with significant acute illnesses and / or co-existing altered physiology and pharmacology;
3. manage patient ventilation and respiratory support;
4. manage sedation for critically ill patients;
5. manage fluid management and renal support;
6. use inotropes for cardiovascular support in the critically ill.

Module Content
The curriculum will consist of the following: Respiratory System (Respiratory failure, causes and management; Principles of ventilation of the ill patient; Core topics in respiratory physiology);
Cardiovascular System (Cardiovascular collapse, causes and management; Core topics in cardiovascular physiology); Sepsis (the septic patient: definition, causes, management and physiology);
Renal System (Fluid Management; renal failure and support; principles of pharmacology and physiology); Supporting the critically ill patient (pharmacology of drugs used in long term sedation); Physics (importance of humidity and principles and methods of humidification in short- and long-term patient ventilation)

Assessment Strategies
Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

PART B: MODULE DESCRIPTOR:	
Module Title: Anaesthesiology in Pregnancy	
Module Code	ASP5989
NQF Level	9
Notional Hours	450
Contact hours	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	45
Prerequisite	
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aims	

This module aims to:

- broaden the students' knowledge of the range of possibilities of general anaesthesiology;
- develop an understanding of the differences between the pregnant and non-pregnant patient and their implications for anaesthesiology;
- introduce the basic principles of safe general and regional anaesthesia for the pregnant patient;
- develop an understanding of obstetric comorbidities and obstetric emergencies such as prolonged/obstructed labour, pre-eclampsia/eclampsia, haemorrhages, etc and their implications for anaesthesiology;
- develop an understanding into acute pain management for labouring parturients and postoperative delivery;
- further extend the students' knowledge of the fundamental science underlying anaesthesiology.

Learning Outcomes/Specific Outcomes

On successful completion of this module, the student will be able to:

1. describe the different ways of maintaining the airway in a range of patients and provide a critique to justify their choice;
2. describe the anatomy and physiology of the pregnant patient;
3. describe, and justify how anaesthetic interventions, both general anaesthesia and regional [spinal, epidural and combined spinal epidural] anaesthesia, in the pregnant patient are different from the non-pregnant patient;
4. manage obstetric and anaesthetic emergencies and CPR in the pregnant patient;
5. manage labour pains in parturient using non-pharmacological, pharmacological and various neuraxial interventions such as spinal, epidural and combined spinal epidurals;
6. provide professional care in anaesthesiology and pain management as a member of health team
7. discuss the core physical concepts important to anaesthesiology critically.

Module Content

The module consists of the following topics: Further principles of general anaesthesia, including spontaneous breathing anaesthesia and inductive choice of airway; Pre-operative assessment of the pregnant patient; anatomy and physiology of pregnancy; Rapid Sequence Induction for Caesarean Section; Principles of regional anaesthesia, including anatomy, practice, complications relating to pregnancy; Anaesthetic drugs and their pharmacology in pregnancy, including the pharmacology of drugs for gastric acid control; The Neuromuscular Junction and the use of non-depolarising muscle relaxants ; Management of CPR in pregnancy and other emergencies of pregnancy obstetric comorbidities and obstetric emergencies such as prolonged/obstructed labour, pre-eclampsia/eclampsia, haemorrhages, etc and their implications for anaesthesiology; Physics: the physics of anaesthetics gases, pressure and flow, pulse oximetry, blood pressure measurement, the ECG and gas analysis.

Assessment Strategies

Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title:	Anaesthesiology and the Child
Module Code	ASC5989
NQF Level	9
Notional Hours	450
Contact hours	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	45
Prerequisite	
Compulsory/Elective	Compulsory
Semester Offered	N/A

Module Aims

This module aims to provide an:

- understanding of the differences between the child (including neonates) and the adult and its implications for anaesthesiology;
- enable students to learn how to carry out local anaesthetic blocks and manage pain relief in children (including neonates);
- understanding of the management of emergencies in children (including neonates);
- further extension of the students' knowledge of the fundamental science underlying anaesthesiology.

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. explain the differences in physiology and pharmacology between the child (including neonates) and adult patient;
2. discuss and justify how general anaesthetic interventions in the child patient are different from the adult patient;
3. manage fluids and analgesia in children (including neonates) effectively;
4. manage anaesthetic emergencies and CPR in children (including neonates;
5. recall and apply further physical concepts important to anaesthesia with respect to children (including neonates).

Module Content

The module consists of the following topics (with a child defined as a person from birth to age 16 years): Principles of general anaesthesia in children; Pre-operative assessment of children and scoring systems; anatomy and physiology of children; Spontaneously breathing anaesthesia in children; Rapid Sequence Induction in children; Anaesthetic drugs and their pharmacology in children; Fluid management in children; Analgesia and nerve blocks in children to include necessary anatomy; Management of CPR and other emergencies in children; Physics: breathing systems and their selection and clinical use in adults and children

The student will resuscitate, anaesthetise and provide emergency care to children (including neonates) as they present in routine practice irrespective of age, but with appropriate senior support as necessary. These will be entered into the log book and represent a record demonstrating increasing competency. However, the student will not be considered proficient enough to be considered a specialist paediatric anaesthetist.

Assessment Strategies

Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title: Clinical Research Methodology	
Module Code	ASH5999
NQF Level	9
Notional hours	200
Contact hours	200 hours of integrated lectures and practicals
NQF Credits	20
Pre-requisites	None
Compulsory/Elective	Compulsory
Semester Offered	NA

Module aims to: The aim of this module is to prepare students to be able to critically appraise research papers, conduct research as an individual or member of a research team. It will also develop student skills in using a methodical approach to develop research ideas and bring them to fruition. Furthermore, it will provide students with bio-statistical skills and application of methodologies related to research in Anesthesiology.

Learning Outcomes: Upon successful completion of the module, students will be able to:

- apply the principles behind quality, useful, and robust research;
- apply appropriate research methodologies and statistical tools for data analysis;
- carry out research leading to evidence that may influence further research and future healthcare practice;
- design and conduct autonomously and independently, an audit using appropriate method which draws on relevant evidence from the medical literature;
- present research findings in a format suitable for publication.

Module Content

This module consists of the following topics: Research design; project planning, Proposal writing; problem analysis; Research questions formulation; quantitative and qualitative Bio statistical methods of data analysis in Anaesthesiology; research ethical responsibilities.

Assessment Strategies

Continuous assessment 50%, Examination 50% (1 x 3-hour paper)

Module Title:	Advanced Anaesthesiology I
Module Code	ASA5999
NQF Level	9
Notional Hours	600
Contact hours	70 hours of lectures in total + 530 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	60
(**Co-requisites**) **Prerequisite**	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A

Module Aims

This module aims to:

- introduce the trainees to the challenges of neuroanaesthesia/neuroradiology and neurocritical care;
- introduce the trainee to the challenges of cardiothoracic anaesthesia and cardiothoracic critical care;
- provide students with an understanding and practice of paediatric (including neonatal) anaesthesia and paediatric critical care.
- further extension of the students' knowledge of the fundamental science underlying advanced general and regional anaesthesiology.

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. describe and implement the various clinical demands of anaesthesia for neurosurgery, neuroradiology and neurocritical care;
2. describe and implement the various clinical demands of cardiothoracic anaesthesia and cardiothoracic critical care;
3. describe and implement the various clinical demands of paediatric (including neonatal) anaesthesia and paediatric critical care;
4. explain and apply physical/scientific concepts important to anaesthesia with respect to general and regional anaesthesia.

Module Content
The module consists of the following topics: Anatomy, physiology and pharmacology relevant to neuroanaesthesia, cardiothoracic anaesthesia and paediatric (including neonatal) anaesthesia, Anaesthesia for neurosurgery, neuroradiology and neurocritical care; Cardiothoracic anaesthesia and cardiothoracic critical care; Paediatric (including neonatal) anaesthesia and paediatric critical care, principles of advanced airway management; Anatomy and pathophysiology of the airway; Scoring systems; Managing the difficult airway, including difficult airway trolley, failed intubation drill, specific airway rescue techniques; Regional anaesthesia other than spinals - Pharmacology of local anaesthetics; Anatomy relevant to relevant regional blocks and performance of blocks including upper and lower extremity blocks, trunk blocks, fascia iliaca, hernia blocks, caudal anaesthesia, penile block, local single nerve blocks and eye blocks; introduction to epidural anaesthesia; Introduction to anaesthesia for surgical subspecialties - Burns and plastics; Ear Nose and Throat; Ophthalmology;.

The trainees will be involved in the care of these complex cases under supervision and must keep logbook to demonstrate exposure and increasing competency.

Assessment Strategies
Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title:	**Pain in Clinical Practice**
Module Code	ASP5999
NQF Level	9
Notional Hours	600
Contact hours	70 hours of lectures in total + 530 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	60
Prerequisite	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aims	
This module aims to: • provide an understanding to acute pain, its pathophysiology and management; • introduce the pathophysiology and management of chronic pain • understand symptom control in the management of pain.	

Learning Outcomes/Specific Outcomes
On successful completion of this module, students will be able to:
1. describe the pathophysiology of acute pain;
2. describe simple, safe and effective strategies for the management of acute pain;
3. outline the pathophysiology of chronic pain
4. explain the relationship between acute and chronic pain and describe basic management of chronic pain;
5. describe the side effects inherent in acute and chronic pain management and have simple basic strategies for their management.

Module Content
The module consists of the following topics: Acute Pain (Anatomy of pain pathways; Patho-physiology of acute pain; Acute pain assessment including pain scores; Principles of acute pain management including WHO ladder and multimodal analgesia; Pharmacology of specific analgesics including side effects); Chronic Pain (Pathophysiology of chronic pain; Chronic pain assessment; Principles of chronic pain management, including management in end of life and palliative case); Symptom Control including Nausea and Vomiting (Side effects of pain management techniques; Physiology of nausea and vomiting; Management of nausea and vomiting)

Assessment Strategies
Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title:	Management in Anaesthesiology Practice
Module Code	ASP5999
NQF Level	9
Notional Hours	400
Contact hours	70 hours of lectures in total + 230 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	40
Prerequisite	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A

Module Aims

This module aims to:

- inculcate the student as to their professional responsibility to ensure patient safety;
  provide the student with a structure in which to operate with respect to patient safety;
- instil in the student the need for life-long learning and the concept of continuous professional development;
- further provide the intellectual tools to enable lifelong academic learning and its application;
- provide a structure and insight to enable the student to effectively explore anaesthetic, intensive care and pain academic literature.

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. describe and apply the principles of critical incident reporting, adverse incident management and learning from errors;
2. explain how different people learn and teach and apply styles to different situations and its relevance to personal professional development;
3. carry out a critical appraisal of a topic relevant to Anaesthesiology, Intensive Care or Pain Medicine.

Module Content

The module consists of the following topics: Principles of critical incident reporting, adverse incident management and learning from errors; Critical incident reporting; Adverse incident management; Learning from errors; Critical appraisal of anaesthesiology and critical care literature, continuing professional development (CPD) and further preparation for academic writing/dissertation (Appraisal of literature; CPD and lifelong learning: learning and teaching styles; Academic writing; Making the most of library facilities and e-learning)

Assessment Strategies

Continuous assessment (60%):

Module Title:	Clinical Training Core
Module Code	ASC5999
NQF Level	9
Notional Hours	300
Contact hours	300 hours of supervised clinical work (normally over a 5-month period)
NQF Credits	30
Prerequisite	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A

Module Aim:

The aim of this module is for the student to develop extensive case load in core anaesthesia cases.

Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. manage anaesthesiology patients with confidence and expertly

Module Content

The module covers clinical exposure to core anaesthesiology cases

Assessment Strategies

Continuous assessment (100%):

Module Title:	Advanced Anaesthesiology II
Module Code	ASA5999
NQF Level	??9
Notional Hours	600
Contact hours	70 hours of lectures in total + 530 hours of supervised clinical work (normally over a 12-week period)
NQF Credits	60
(Co-requisites) Prerequisite	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A

Module Aims

This module aims to:

- further expose the trainees to the challenges of neuroanaesthesia/neuroradiology and neurocritical care;
- further expose the trainee to the challenges of cardiothoracic anaesthesia and cardiothoracic critical care;
- further expose students to the practice of paediatric (including neonatal) anaesthesia and paediatric critical care.

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. describe and implement the various clinical demands of anaesthesia for neurosurgery, neuroradiology and neurocritical care;
2. describe and implement the various clinical demands of cardiothoracic anaesthesia and cardiothoracic critical care;
3. describe and implement the various clinical demands of paediatric (including neonatal) anaesthesia and paediatric critical care.
4. recall and apply physical/scientific concepts important to anaesthesia with respect to general and regional anaesthesia.

Module Content

The module consists of the following topics: Principles of advanced airway management; Anatomy and pathophysiology of the airway; Scoring systems; Managing the difficult airway, including difficult airway trolley, failed intubation drill, specific airway rescue techniques; Regional anaesthesia other than spinals - Pharmacology of local anaesthetics; Anatomy relevant to relevant regional blocks and performance of blocks including upper and lower extremity blocks, trunk blocks, fascia iliaca, hernia blocks, caudal anaesthesia, penile block, local single nerve blocks and eye blocks; introduction to epidural anaesthesia; Introduction to anaesthesia for surgical subspecialties - Burns and plastics; Ear Nose and Throat; Ophthalmology; Anaesthesia for neurosurgery, neuroradiology and neurocritical care; Cardiothoracic anaesthesia and cardiothoracic critical care; paediatric (including neonatal) anaesthesia and paediatric critical care.

The trainees will be involved in the care of these complex cases under supervision and must keep logbook to demonstrate exposure and increasing competency. However, the student will only be considered proficient enough as a generalist-specialist anaesthetist.

Assessment Strategies

Continuous assessment (60%):
Module Examination (40%): theory paper, OSCE and semi-structured oral assessment

Module Title:	Clinical Training Elective
Module Code	ASB5999
NQF Level	9
Notional Hours	300
Contact hours	300 hours of supervised clinical work (normally over a 5-month period)
NQF Credits	30
Prerequisite	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A

Module Aim:

The aim of this module is for the student to develop extensive case load in one or more subspecialties of anaesthesiology.

Learning Outcomes/Specific Outcomes

On successful completion of this module, students will be able to:

1. manage anaesthesiology patients in one or more subspecialties of anaesthesiology with confidence and expertly

Module Content
The module covers clinical exposure to selected subspecialties of anaesthesiology as agreed between student and trainer.

Assessment Strategies
Continuous assessment (100%):

Module Title:	**MMed (Anaesthesiology) Thesis**
Module Code	AST5999
NQF Level	9
Notional Hours	1200
Contact hours	1200 hours of integrated learning
NQF Credits	120
Prerequisite	First integrated Part I examination
Compulsory/Elective	Compulsory
Semester Offered	N/A
Module Aim: The aim of this module is to demonstrate the student's understanding and ability to identify an impact research topic, formulate a well-structured proposal and conduct research elucidating significant results and conclusions with relevant remarks in the background of succinct literature review of the subject.	

Learning Outcomes/Specific Outcomes
On successful completion of this module, students will be able to:
1. carry out independent research in a relevant area
2. communicate research findings in a variety of ways

Module Content
Supervised research in a relevant area

Assessment Strategies
Continuous assessment (100%): thesis (in accordance with UNAM post-graduate regulations)

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