

# PROSPECTUS 2020



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**FACULTY OF HEALTH SCIENCES**  
*School of Medicine*

Open your mind



# SCHOOL OF MEDICINE



## NOTE

This Prospectus is only valid for 2020 as regulations and syllabi may be amended for 2020. 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 2019.

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 2020.

This Prospectus must be read in conjunction with the *General Information and Regulations Prospectus 2020*.

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## STRUCTURE AND PERSONNEL

### OFFICE OF THE DEAN

Dean & Founding Dean School of Medicine	Prof T Rennie
Associate Dean School of Medicine	Prof F Amaambo
Deputy Associate Dean SOM	Dr M Goraseb
Deputy Director - Administration and Finance	Mr A Fledersbacher
Campus Administrator	Ms D Titus
Faculty Officer	Ms F Mario
Secretary	Ms Y Shaanika
Examination Officer	Vacant
Student Records Officer	Mr M Nowaseb
Student Support Officer	Mr J Erastus
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](mailto:fmario@unam.na)

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

## SCHOOL OF MEDICINE PREAMBLE

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

The key objectives of the School of Medicine are:

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

## SCHOOL OF MEDICINE OATH

**All (Students and Faculty):**

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

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

**Faculty:**

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

**Students:**

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

**Faculty:**

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

**Students:**

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

**Faculty:**

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

**Students:**

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

**All (students and faculty members):**

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

**Due Dates for the 2020 Academic Year**

DATE	GENERAL DATES
17 January	Last day for appeals (Semester 2 & Double modules – Regular and Supplementary/Special examinations of November 2019)
7 February	Last day for application of retention of continuous assessment (CA) mark and Last day for application for exemption(s)
7 February	Last day for Late Registration ( <i>Late fee payable</i> )
7 February	Last day for approval of exemption(s)
7 February	Last day for approval of module(s) & qualification changes



12 February	Last day for recommendation of retention of continuous assessment mark and Promotion Examinations by Faculties
14 February	Last day for approval of retention of continuous assessment mark and Promotion Examination by Examinations Department
28 February	Promotion Examination
29 April	Last day for change of offering types at Regional Centres (Semester 1 modules)
3 August	Last day for Appeals (Semester 1 Modules - Regular and Supplementary/Special examinations of June 2019)
21 August	Last day to submit outstanding documentation
20 Sept	Last day to change offering types at Regional Centres (Semester 2 modules)
18 Sept	Last day to cancel enrolment
30 October	Last day to submit Theses and Dissertations for examinations
<b>DATE</b>	<b>CANCELLATION DUE DATES</b>
30 April	Last day to cancel Semester 1 modules
18 Sept	Last day to cancel Semester 2 modules
18 Sept	Last day to cancel Double modules (module that extends normally over one academic year)
<b>DATE</b>	<b>FINANCE DUE DATES</b>
2 March	Last day to cancel Semester 1 and Double modules with 100% credit
03 April	Last day to cancel Semester 1 modules with 50% credit
5 June	Last day to cancel Double modules with 50% credit
07 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 2020

### *FIRST SEMESTER:*


13 January	SoM Academic staff resumes office duties
16-18 January	Registration: Senior MBChB
20 January	Lectures commence 2 <sup>nd</sup> , 3 <sup>rd</sup> & 4 <sup>th</sup> year MBChB
20 January	Clinical rotation starts 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
23-24 January	Registration: 1 <sup>st</sup> year MBChB
27 January	Lectures commence 1 <sup>st</sup> year MBChB
21 February	Lectures block end 4 <sup>th</sup> year MBChB
21 February	Clinical rotation ends 5 <sup>th</sup> year MBChB
24 February	Clinical rotation starts 4 <sup>th</sup> & 5 <sup>th</sup> year MBChB
27 March	Clinical rotation ends 4 <sup>th</sup> , 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
27 March papers for	Examinations: Last day to submit draft examination  external moderation for all MBChB / Pharmacy/ Dentistry/PT/ OT
30 March	Clinical rotation starts 4 <sup>th</sup> , 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
24 April	Examinations: Last day to submit final print ready examination papers for all MBChB /Pharmacy/ Dentistry/PT/ OT
01 May	Clinical rotation ends 5 <sup>th</sup> year MBChB
04 May	Clinical rotation starts 5 <sup>th</sup> year MBChB
08 May	Clinical rotation ends 4 <sup>th</sup> year MBChB
11 May	Announcement of provisional CA marks: 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
15 May	Lectures end 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
15 May	Announcement of final CA marks: 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
18 May	Announcement of provisional CA marks: 1 <sup>st</sup> year MBChB
18 May	Examinations commence 4 <sup>th</sup> year MBChB
22 May	Lectures end 1 <sup>st</sup> year MBChB
22 May	Announcement of final CA marks: 1 <sup>st</sup> year MBChB
22 May	Examinations commence 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
22 May	Examinations end 4 <sup>th</sup> year MBChB
26 May	Clinical rotation starts 4 <sup>th</sup> year MBChB
28 May	Examinations commence 1 <sup>st</sup> year MBChB
05 June	Examinations end 2 <sup>nd</sup> & 3 <sup>rd</sup> MBChB
05 June	Clinical rotation ends 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
08 June	COBES starts 3 <sup>rd</sup> year MBChB
08 - 12 June	BREAK 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
12 June	Examinations end 1 <sup>st</sup> year MBChB
15 June	Clinical rotation starts 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
26 June	Clinical rotation ends 4 <sup>th</sup> year MBChB
29 June	Break 4 <sup>th</sup> year MBChB (until 10 July)
03 July	COBES ends 3 <sup>rd</sup> year MBChB


## SECOND SEMESTER


06 July	Lectures commence 1 <sup>st</sup> , 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
07-09 July	Supplementary exams 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> & 4 <sup>th</sup> year MBChB
08-09 July	Moderation
10 July	Exam Board meeting
10 July	Break 4 <sup>th</sup> year MBChB end
13 July	Clinical rotation starts 4 <sup>th</sup> year MBChB
17 July	Clinical rotation ends 5 <sup>th</sup> year MBChB
20 July	Clinical rotation starts 5 <sup>th</sup> year MBChB
07 August	Examinations: Last day to submit draft examination papers for
14 August	external moderation for 4 <sup>th</sup> year MBChB
17 August	Clinical rotation ends 4 <sup>th</sup> year MBChB
21 August	Lectures block starts 4 <sup>th</sup> year MBChB
24 August	Clinical rotation ends 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
04 September	Clinical rotation starts 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
papers for	Examinations: Last day to submit draft examination
18 September	external moderation for MBChB 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> & 6 <sup>th</sup> /All Pharmacy/ Dentistry/PT/ OT
25 September	Lectures block ends 4 <sup>th</sup> year MBChB
28 September	Clinical rotation ends 5 <sup>th</sup> year MBChB
28 September	Examinations commence 4 <sup>th</sup> year MBChB
09 October	Clinical rotation starts 5 <sup>th</sup> year MBChB
16 October	Examinations: Last day to submit final print ready examination papers for MBChB 1, 2, 3, 5 & 6 /All Pharmacy/ Dentistry/ PT/OT
19 October	Examinations end 4 <sup>th</sup> year MBChB
26 October	COBES starts 4 <sup>th</sup> year MBChB
& 3 <sup>rd</sup> year	Announcement of provisional CA marks: 1 <sup>st</sup> , 2 <sup>nd</sup> MBChB
30 October	Clinical rotation ends 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
30 October	Lectures end 1 <sup>st</sup> , 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
30 October	Announcement of final CA marks: 1 <sup>st</sup> , 2 <sup>nd</sup> & 3 <sup>rd</sup> MBChB
year	Examinations commences 1 <sup>st</sup> , 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
05 November	Examinations commence 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
09 November	COBES ends 4 <sup>th</sup> year MBChB
13 November	Electives start 4 <sup>th</sup> year MBChB
16 November	Examination ends 1 <sup>st</sup> , 2 <sup>nd</sup> & 3 <sup>rd</sup> year MBChB
19 November	Examination ends 5 <sup>th</sup> & 6 <sup>th</sup> year MBChB
20 November	Special / Supplementary exams MBChB: (all written & practical papers for all preclinical subjects))
25-27 Nov	Moderation
01-02 December	Exam board meeting
03 December	Electives end 4 <sup>th</sup> year MBChB
25 December	Clinical supplementary exams start
13-15 January 2021	

## ACADEMIC DEPARTMENTS OF SCHOOL OF MEDICINE

### DEPARTMENT OF ANATOMY

 (+264 61) 2065010  
Namibia

 (+264 61) 2065090

 Private bag 13301, Windhoek,

Head of Department: Prof J H T Smit

Associate Professor: Prof J H T Smit BMedSc University of Orange Free State; BMedSc Hons UOFS; MMedSc UOFS; PGCHET Queens University Belfast; FHEA (UK); MIAS London.

Lecturer	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, (Harvard Medical School, Boston).
Senior lecturer:	Dr Q Wessels BSc (Hons); MSc (University of Edinburgh); PhD (University of Pretoria); FHEA.
Lecturer:	Dr A Du Plessis MBChB University of Stellenbosch; DCH College of Medicine, South Africa.
Lecturer:	Mrs A M N Iikasha BSc (Hons); MSc University of Namibia.
Technologist:	Mrs D Bowman
Tecnician:	Mr T Broekman ; Mrs M Broekman

#### DEPARTMENT OF BIOCHEMISTRY AND MICROBIOLOGY

☎ (+264 61) 2065042	☎ (+264 61) 20645090	✉ Private bag 13301, Windhoek, Namibia
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Head of Department: Dr E. Nepolo

Senior Lecturer:	Dr. J A Sheehama, PhD Biology (Medical Microbiology and Medical Biochemistry) Kazan State University; Masters in Biology (Microbiology and Molecular Biology) Kazan State University
Senior Lecturer:	Dr J Misihairabgwi, PhD (Biochemistry) University of Zimbabwe; BSc (Hons) (Biochemistry); University of Zimbabwe
Senior Lecturer:	Dr E Nepolo, PhD (Biochemistry) University of Namibia, MSc (Applied Molecular Biology); University of Namibia; BSc (Molecular & Physiological Biology); University of Namibia
Senior Lecturer:	Dr M Hedimbi, BSc (Biology and Chemistry), UNAM; MSc (Applied Microbiology), UNAM
Lecturer:	Mr Haindongo EHH, BSc Microbiology & Biochemistry; Master of Science (Biology), University of Namibia
Lecturer	Mr Nghoshi S, MSc in Applied Field Epidemiology (UNAM)
Technologist	Lusia Mhuulu
Technician	Vacant

#### DEPARTMENT OF COMMUNITY MEDICINE

☎ (+264 61) 2065012	☎ (+264 61) 2065090	✉ Private bag 13301, Windhoek, Namibia
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Head of Department: Dr. F. Christians

- Lecturer: Dr. F. Christians, MBChB (UCT), M Fam.Med (UCT), MPH (Umea University, Sweden, FCFP(SA) , Dip HIV Man(SA)
- Lecturer: Dr. M Goraseb, MPH Oklahoma Univ. USA; MD Silisian Medical School, Poland
- Lecturer: Dr L N Lukolo, PhD Nursing Science (Community Health) UNAM; Masters in Nursing Science (Community Health) University of Stellenbosch SA;
- Lecturer: Ms H Zaire (Absent), MSc Epidemiology Wageningen University,USA (in progress); BSc. Animal Science UNAM

#### DEPARTMENT OF INTERNAL MEDICINE

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

- Acting HoD: Prof CJ Hunter
- Professor: Prof H Hodgson, Doctor of Medicine (MD) Oxford University
- Associate Professor: Prof CJ Hunter, Doctor of Medicine (MD) Loma Linda University School of Medicine; PhD (Physiology) Loma Linda University, United States of America
- Lecturer: Vacant
- Staff Development: Ms J Namene. BSc (Honours) University of Namibia; MSc (Forensics) India JSS University.

#### DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

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

- Head of Department: Dr L C Kimera
- Lecturer: Specialized obstetrician/Gynaecologist: MBChB Mbarara University of Science and Technology, Uganda; MMed (Obstetrics & Gynaecology) 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))

#### DEPARTMENT OF PAEDIATRICS

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

- Head of Department: Dr F Sinyinza

Senior Lecturer Dr Kiboneka A N. MBChB (M.U.K), FAAP (Fellow of the American Academy of Pediatrics (Columbia University, New York, New York, U.S.A)

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

#### DEPARTMENT OF PATHOLOGY

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

Head of Department: Dr R. J. Kandando

Lecturer: Dr RJ Kandando, HND (Manchester Polytechnic, UK), DipHE (Wolverhampton Polytechnic, UK), Postgraduate Diploma (Clinical Laboratory Sciences) (University of Leeds, UK), M.Sc (Clinical Biochemistry) (University of Leeds, UK), Ph.D (University of Surrey, UK); Registered Specialist Clinical Biochemist (Medical and Dental Council of Namibia)

Lecturer: CD Izaaks, ND (Medical Technology) Cape Technicon, South Africa; B Tech (Biomedical Technology), Cape Peninsula University of Technology, South Africa; M Tech (Cape Peninsula University of Technology, South Africa; Registered Medical Technologist (Allied Health Professions Council of Namibia)

Technologist: Ms K Niiteta, BSc (Honours) University of Namibia.

#### DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

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

Coordinator: Mr. Marius van der Merwe

Lecturer: Mr M van der Merwe, BSc (Hons) North-West University, South Africa

#### DEPARTMENT OF PHYSIOLOGY

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

Coordinator: Prof CJ Hunter

Lecturer: Ms J Nelongo, BSc (Hons) University of Namibia; BTech (Biomedical Technology), Cape Peninsula University of Technology

Technologist: Ms. Tuna Nashihanga, BSc (Honours) UNAM

## DEPARTMENT OF PSYCHIATRY AND BEHAVIOURAL SCIENCES

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

Head of Department: Dr HM Ndjaba

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: Mrs. M. Perstling (MA - Clinical Psychology) University of Namibia

Lecturer: Dr H. King

## DEPARTMENT OF RESEARCH AND INSTITUTIONAL DEVELOPMENT

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

Head of Department: Vacant

Lecturer: Vacant

## DEPARTMENT OF SURGERY

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

Head of Department: Vacant

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)

Senior Lecturer Dr C B Mbangtang (*General Surgery*). MBBS (University of Ibadan, Nigeria); DA (Postgraduate Diploma in Anaesthesia, University of Ibadan, Nigeria); MMed (Surg), University of Zimbabwe; FRCS (Edin) Royal College of Surgeons of Edinburgh, Scotland; FCS (ECSA) College of Surgeons of East, Central and Southern Africa; FICS, International College of Surgeons.

Senior Lecturer Dr Alex Van der Horst (*Orthopaedics*), MBChB (University of Cape Town), FCS Orth (SA), College of Medicine of South Africa.

Senior Lecturer Dr. Manojkummar Kamble

Senior Lecturer Dr E Fynn. MBChB (Ghana) DCH(SA), M. Med (Radiodiagnostics) FCRad(SA). Postgraduate Diploma in Management (Wales)



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)

Lecturer: Dr Dzvanga M T, Bachelor Degree in Surgery and Medicine, Postgraduate Diploma in Anaesthesia; University of Zimbabwe

### MASTER OF MEDICINE

☎ (+264 61) 2065023 Namibia	☎ (+264 61) 2065090	✉ Private bag 13301, Windhoek,
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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 findings into clinical /healthcare delivery decision making;

*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*

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

*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***

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

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

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

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

## REGULATIONS

### *Criteria for Admission*

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

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

OR

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

OR

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

OR

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

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

- 4.2. They should have successfully completed senior secondary education

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

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

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

### Essay Writing

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

### Letters of Recommendation

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

### Interviews

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

### Selection

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

### UNAM EVALUATION SCALE:

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

### DURATION OF STUDY

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

### EXEMPTIONS

UNAM will give exemptions for equivalent modules taken at other tertiary institutions but the exemptions shall not exceed 50% of the modules in the MBChB degree program. An application for exemption from (a) module (s) must be accompanied by documentary proof

issued by the examining body concerned that the student has passed the relevant module (not older 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

### 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.

## MBChB II

### SECOND YEAR TO THIRD YEAR OF MEDICINE

- 1.2.3 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.
- 1.2.4 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.
- 1.2.5 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.
- 1.2.6 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.

## MBChB III

### THIRD YEAR TO FOURTH YEAR OF MEDICINE

- 1.2.7 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.
- 1.2.8 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.
- 1.2.9 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.

## MBCbB IV

### FOURTH YEAR TO FIFTH YEAR OF MEDICINE

- 1.2.10 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.
- 1.2.11 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.
- 1.2.12 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.

## MBCbB V

### FIFTH YEAR TO SIXTH YEAR OF MEDICINE

- 1.2.13 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.
- 1.2.14 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.
- 1.2.15 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.

#### 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	Pre-requisites/ (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		
<b>YEAR 3 semester 2</b>					
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		
<b>Year 3 Field work</b>					
Research Methods and Proposal Writing	RID3780	7	8	1+2P	RID 3512
COBES II	CMM3719		16	4 weeks of integrated learning	CMM3512
<b>TOTAL CREDITS</b>			<b>196</b>		

**YEAR 4 semester 1**

Module Title	Module Code	NQF	Credits	Hours	Pre-requisites/ (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	
<b>YEAR 4 semester 2</b>					
Family Medicine III	FMM3702	7	8	1+2P	FMM3601 and (FMM3702)
Nutrition and Dietetics	CMM3702	7	8	1+2P	
Psychiatry I	PCT3702	7	8	2	ITM3612 and PCD3712
<b>Both semester 1 and 2</b>					
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
			120		
<b>Year 4 Field work</b>					
COBES III - Management	CMM3739	7	16	4 weeks of integrated learning	FMM3601 and (CMM3701)
Electives	MDC3789	7	16	6 weeks	
<b>TOTAL CREDITS</b>			<b>160</b>		

<b>YEAR 5 Full year modules</b>					
Module Title	ModuleCode	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	PCT3702, ITM3789 and PDC3789
Surgery III	SUR3880	8	40	40 hours for 10 weeks	SUR3789
Research Project	RPD3810	8	32	4 hours per week	
<b>TOTAL CREDITS</b>			<b>200</b>		

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
<b>TOTAL CREDITS</b>			<b>160</b>		

## 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:** 1<sup>st</sup> 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:** 1<sup>st</sup> 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 behavioral change among UNAM students and inculcate the primacy of moral reasoning in their social relations and their academic lives. In providing students with critical and analytical thinking the module enables students to grow and develop into well rounded citizens, capable of solving contemporary social challenges experienced in their communities and societies. The teaching of the module takes three dimensions: the intellectual, the professional and the personal dimensions. The intellectual dimension is fostered through engaging students with subject knowledge, independent learning and module assessment. The professional dimension, on the other hand, is fostered through exposing students to real life situations of case studies and practical exercises that draws attention to social issues that attract ongoing political, public and media attention and/or debate. Finally, the professional dimension is fostered through group work and online discussions.



*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:** 1<sup>st</sup> 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: 1<sup>st</sup> 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 1<sup>st</sup> on 3<sup>rd</sup> laws, mass, weight); Equilibrium (statics, equilibrium, elasticity); **Fluids** (density, specific gravity, pressure, Pascal's principle, measurement, flow, Bernoulli'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** (charge, 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 (bonding in molecules, weak bonds); **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:** 1<sup>st</sup> 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. ii) basic embryological concepts. iii) histological structure and function of the primary tissues in the body. iv) terminology and definitions in anatomy. The module includes an introduction to microscopy and methods in microscopy. Cardio-vascular Systemic Anatomy will be covered at the end of the semester with initiation to dissection hall and cadaver care.

The module consists of four entities:

(1) *Introduction to anatomy* including topics: Organismic kingdom, evolution, humans and their environment, history of anatomy, anatomical concept and terms. Introduction to all the major body systems (neurological, cardiovascular, respiratory, digestive and urogenital).

2) *Cell biology*, consisting of structure and function of cells and cell organelles and biological communication.

(3) *Embryology*, consisting of basic anatomy and physiology of reproduction, fertilization, implantation, the placenta, and development of the embryo till trilaminar stage.

(4) *Introduction to human histology* including histology of the basic tissues, namely epithelial tissue, connective tissues, muscle tissue and nervous tissue, and introduction to hematology and immunology.

### 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:** 1<sup>st</sup> 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 form 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:** 2<sup>nd</sup> 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 musculo-skeletal 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:** 1<sup>st</sup> 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:** 1<sup>st</sup> 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 signaling and communication; nucleotides and DNA organization; DNA replication, transcription and translation; mechanism of mendelian inheritance; mutations and disease; basic principles of chromosomal aberrations and cytogenetics; basic principles of bioinformatics; techniques in DNA isolation, pcr, sequencing and microarrays; DNA and protein electrophoresis; point of care diagnostics.

### **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: 2<sup>nd</sup> 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 hematopoiesis.

**Module content**

This module covers the following topics: Principles of bioenergetics; cellular redox systems, inhibitors and regulators of oxidative metabolism; carbon monoxide poisoning; mitochondrial dysfunction in fertility and disease states; hematopoiesis, heme metabolism, jaundice and porphyrias; glycolysis, gluconeogenesis and oxidative metabolism; glycemic indices of foods, pentose phosphate pathway and maintenance of rbc redox status; importance of g6pd deficiency in primaquine therapeutics and malaria; glycogen metabolism, fatty acid metabolism in the liver, impaired oxidation of fatty acids and fatty liver; eicosanoids in health and inflammation; disorders of lipoprotein metabolism and cardiovascular disease, amino acid degradation, urea cycle and inborn errors of metabolism, principles of metabolic regulation and biochemical basis of cancer; food intake and control mechanisms, definition of 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: 2<sup>nd</sup> year semester 2

**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 defense Mechanisms, (tolerance, allergy and hypersensitivity, autoimmunity, immunodeficiency, immunosuppression), tissue transplant, immune-surveillance, tumor 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)

	<b>Module Title: Medical Microbiology II</b>
<b>Code:</b>	<b>MCB 3711</b>
<b>NQF level:</b>	7
<b>Notation</b>	160
<b>Contact Hours:</b>	3 lecture hours + 4 hours of laboratory practical per week
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	3 <sup>rd</sup> 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*, *Ancylostoma* and *Necator*, *Enterobius vermicularis*, *Trichuris trichiura*, *Strongyloides*, *Taenia*, *Echinococcus*, *Hymenolepis nana*, *Bruglia*, *Loaloo*, *Onchocerca*, *Dracunculosis*, *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:** 3<sup>rd</sup> 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, Tinea, 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:** 1<sup>st</sup> 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 5 laboratory 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:** 1<sup>st</sup> 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 5 laboratory exercises).

Examination: 50 % (1 X 2 hours paper)

	<i>Module Title: Pathophysiology</i>
<b>Code:</b>	<b>PLG3611</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	3+4P hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2 <sup>nd</sup> 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 especially 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:** 2<sup>nd</sup> 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:** 2<sup>nd</sup> 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:** 3<sup>rd</sup> 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 (leukemia, polycythaemia vera, myelofibrosis, thrombocythaemia); haemostasis and thrombosis (comprehensive knowledge of function of the various components of haemostasis; diagnosis of various congenital bleeding disorders); blood transfusion (genetics and biochemistry of major blood cell antigens such as ABO, Rhesus, HLA; principles of pretransfusion testing such as basic blood grouping, procedures for compatibility testing, principles of cross match strategies, and principles of antibodies identification); specialized haematology diagnostic modalities (to acquire comprehensive knowledge of the commonly used diagnostic panels such as acute leukaemic screen, chronic screen, plasma screen, CD34 analysis, Platelet marker analysis).

#### **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:** 4<sup>th</sup> 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; radioisotope imaging, computerized tomography, magnetic resonance imaging, ultrasound, radiological, angiography, images of osteomyoarticular, respiratory, circulatory, digestive, urogenital, hemolymphopoietic, and endocrine systems; radio-therapeutics and bio-effects of radiation.

**Applied radiology and diagnostics:** cost-effective use of medical imaging, the use of plain films as an imaging primary technique for the general physician, actual working with the ultrasound in bedside care of patients, the benefits of tomography, angiography and radio-magnetic resonance. Topics in neuroscience include MRI, CT and plain films: hemorrhage, subarachnoid and subdural haemorrhage, infarct, oedema, mass and hydrocephaly; in the spine: metastatic mass, disc disease, compression; abdomen: bowel obstruction, aortic aneurysm, renal mass pancreatic mass, hepatic mass, abdominal mass; Chest: pneumonia, effusion, atelectasis, nodule, congestive heart failure, pulmonary oedema, pneumothorax; pelvis: prostate nodule, testicular mass; neck: thyroid nodule; indications of ECHO cardiograph, Doppler; bile duct ultra sound; use of ultra sound and radioisotopes in treatment

### **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:** 1<sup>st</sup> 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 behaviors play in health and illness. The goal of the module is to acquaint students with the sociological construct of health, illness and disease which takes into account the structural and social factors not necessarily relying on biological and medical explanations of health and disease. The structural discourse will analyse 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 behaviors play in health and illness.

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

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

### **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:** 2<sup>nd</sup> 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 behavioral 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:** 2<sup>nd</sup> year semesters 1 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 behavior, 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 analyzing 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:** 3<sup>rd</sup> 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 Centers: comprehensive, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations; Health centers 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 behavioral 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*

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

### **Module Aims**

The aim of this module is equip 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:** 1<sup>st</sup> 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, modeling, 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,  $\sigma$  known, Mean,  $\sigma$  estimated, General formula, Difference between means of independent groups,  $\sigma$  known, Difference between means of independent groups,  $\sigma$  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  $\mu$ ,  $\sigma$  known, Tests of  $\mu$   $\sigma$  estimated,  $\mu_1 - \mu_2$ , independent groups,  $\sigma$  estimated,  $\mu_1 - \mu_2$ , dependent means,  $\sigma$  estimated, Tests of Pearson's correlation, Differences between correlations Proportions Differences between proportions. **Chi square** :Testing differences between  $p$  and  $\pi$  ,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:** 3<sup>rd</sup> 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:** 3<sup>rd</sup> 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:** CMM3702

**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:** 4<sup>th</sup> year semester 2

### **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 centers, responsibilities include coordination of the hiring and firing of clerical staff, instituting community outreach, marketing the services of the centers 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:** 24  
**Pre-requisite:**  
**Compulsory/Electives:** Compulsory  
**Semester offered:** 4<sup>th</sup> 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*

<b>Code:</b>	<b>FMM3601</b>
<b>NQF:</b>	6
<b>Notional hours</b>	160
<b>Contact Hours:</b>	2 + 2P hours per week for 14 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	None
<b>Compulsory/Elective:</b>	Compulsory
<b>Semester offered:</b>	2 <sup>nd</sup> 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 behavior change theories, principles of disease prevention and social determinants of ill health; Communicable and Non-communicable diseases and screening for preventable conditions; Brief behavior 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 eg 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*

<b>Code:</b>	<b>FMM3701</b>
<b>NQF:</b>	7
<b>Notional hours</b>	160
<b>Contact Hours:</b>	2 + 2P hours per week for 14 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	FMM3601
<b>Compulsory/Elective:</b>	Compulsory
<b>Semester offered:</b>	3 <sup>rd</sup> 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*

<b>Code:</b>	<b>FMM3702</b>
<b>NQF:</b>	7
<b>Notional hours</b>	80
<b>Contact Hours:</b>	1 + 2P hours per week for 14 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	FMM3601 and FMM3702
<b>Compulsory/Elective:</b>	Compulsory
<b>Semester offered:</b>	4 <sup>th</sup> year semester 2

### 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 care 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:** 5<sup>th</sup> 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*

<b>Code:</b>	PMG3612
<b>NQF level:</b>	6
<b>Contact Hours:</b>	4 lecture hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2 <sup>nd</sup> 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*

<b>Code:</b>	<b>PMG3711</b>
<b>NQF level:</b>	7
<b>Contact Hours:</b>	4 lecture hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	PMG3612
<b>Compulsory:</b>	Compulsory
<b>Semester offered:</b>	3 <sup>rd</sup> 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 ( $\alpha$  and  $\beta$  adrenoceptor agonists) and adrenergic receptor blockers ( $\alpha$  and  $\beta$  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, glycyliclones 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:** 3<sup>rd</sup> 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 cytotoxic 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*

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

### Module Aims

The aim of this module is assist 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*

<b>Code:</b>	<b>ANA 3701</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 hours per week for 14 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	ATM3512, ATM3611, PMG3612
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	4 <sup>th</sup> 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 the 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:** 5<sup>th</sup> 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:** 2<sup>nd</sup> 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:** 4<sup>th</sup> 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; Lung 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, hemolymphopoietic 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:** 5<sup>th</sup> 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:** 6<sup>th</sup> 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 edema, life threatening asthma), causes of acute confusional state, causes of shock syndrome, acute abdomen, anemia and major bleeding, toxic and metabolic emergencies; common medical **condition in Namibia including:** cardiac condition (ischemic heart diseases, heart failure, hyperlipidemia, hypertension, common cardiac arrhythmias, infective endocarditis and rheumatic heart diseases);causes and management of stroke; causes and management of pneumonia; causes and management of pleural effusion; causes and management of ascites; causes and management of HIV and related conditions including administration of antiretroviral therapy; causes and management of pulmonary and extra pulmonary tuberculosis; causes and management of asthma; causes and management of COPD;

Causes and management of arthritis; causes and management of hepatitis, cirrhosis and hepatocellular carcinoma and causes and management of meningitis (viral, bacterial, fungal and tuberculosis).

### Assessment Strategies

The continuous assessment (CA): 50 %

Examination: 50 % (1 X 3 hours paper)

*Module Title: Obstetrics and Gynaecology I*

<b>Module Code:</b>	<b>OBG3712</b>
<b>NQF Level:</b>	7
<b>Notional hours:</b>	200
<b>Contact Hours:</b>	1h lecture/week for 16 weeks and a 5 week clerkship
<b>NQF Credits:</b>	20
<b>Prerequisite:</b>	ATM3611, PLG3611
<b>Compulsory/Elective:</b>	Compulsory
<b>Semester Offered:</b>	2 <sup>nd</sup> Semester of 3 <sup>rd</sup> YEAR

### Module Aims

The goal of this clerkship is make the 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 labor; use of partograph for monitoring labour; operative vaginal delivery; patho-physiology of high risk and abnormal pregnancy; obstetric operations, e.g. caesarean section; ethical issues in obstetrics, all with specific reference to practicing in Namibia; Miscellaneous medical disorders: Haematological problems in pregnancy; Renal disease, Diabetes and endocrine disease; Heart disease; hypertensive disorders; malpresentation; malposition; cephalopelvic disproportion; obstetric procedures: induction and augmentation of labour; prolonged pregnancy; preterm labour; multiple pregnancy; disorders of fetal growth and assessment of fetal well-being; obstetric emergencies: APH,PPH, cord prolapse, etc.; neonatal care for obstetricians; puerperium and lactation; analgesia and anesthesia for obstetrics; fetal monitoring during labour;

antenatal care; pre-conception counseling; Normal fetal growth; the placenta and fetal membranes; prenatal diagnosis and genetics.

#### Exams / assessment

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

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**Module Title: Obstetrics and Gynaecology II**

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<b>Module Code</b>	OBG3789
<b>NQF Level</b>	7
<b>Notional hours</b>	200
<b>Contact Hours</b>	2h lectures/week for 5 weeks followed by a 5 week clerkship
<b>NQF Credits</b>	20
<b>Prerequisite</b>	OBG3712
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	4 <sup>th</sup> 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) & dysmenorrhoea; benign and malignant conditions of vulva and vagina; benign and malignant conditions of uterus; ovarian tumors; pelvic inflammatory disease; uterine prolapse; climacteric, menopause and post-menopause; contraception; infertility & assisted reproduction; sexual education and family planning; Hysteroscopy and laparoscopy; Urinary incontinence; Pelvic floor dysfunction – utero-vaginal prolapse; endometriosis; chronic pelvic pain; polycystic ovary syndrome; amenorrhoea – 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*

<b>Module Code:</b>	<b>OBG3880</b>
<b>NQF Level:</b>	8
<b>Notional hours:</b>	400
<b>Contact Hours:</b>	10 week
<b>NQF Credits:</b>	40
<b>Prerequisite:</b>	OBG3789
<b>Compulsory/Elective:</b>	Compulsory
<b>Semester Offered:</b>	5 <sup>th</sup> 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*

<b>Module Code</b>	<b>OBG3890</b>
<b>NQF Level</b>	8
<b>Notional hours</b>	400
<b>Contact Hours</b>	10 week
<b>NQF Credits</b>	40
<b>Prerequisite</b>	OBG3880
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	6 <sup>th</sup> year

**Module Aims**

The aim of this module is 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 gynecology 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-abortion care – incomplete abortion, septic abortion, etc. (the 4 pillars of post-abortion 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** 3<sup>rd</sup> 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 nutrition. 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** 4<sup>th</sup> year

### **Module Aims**

The aim of this module is 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 mastery 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*

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

## Module Aims

The aim of this module is to continue to improve the knowledge base and to enable the student to gain mastery 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*

<b>Code</b>	<b>PDC3890</b>
<b>NQF level:</b>	<b>8</b>
<b>Notional hours:</b>	<b>200</b>
<b>Contact Hours:</b>	<b>5 weeks</b>
<b>NQF Credits:</b>	<b>20</b>
<b>Pre-requisite:</b>	<b>PDC3880</b>
<b>Compulsory/Electives:</b>	<b>Compulsory</b>
<b>Semester offered</b>	<b>6<sup>th</sup> year</b>

### Module Aims

The module aims at providing the student to gain mastery 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 mastery 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 thrombocytopenia 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:** PCT3702  
**NQF:** 8  
**Notional hours:** 2 hours  
**Contact Hours:** 5 weeks  
**Credits:** 8  
**Pre-requisite:** ITM3789I and PDC3789  
**Compulsory/Electives:** Compulsory  
**Semester offered** 4<sup>th</sup> year semester 2

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

### 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

<b>Credits:</b>	20
<b>Pre-requisite:</b>	ITM3789, PDC3789
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered</b>	5 <sup>th</sup> year

### Module Aim

The aim of this module is to students to gain mastery 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 through didactic lectures, clinical apprenticeship and shadowing of health professionals.

### Module Content

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

### Assessment strategies

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

### *Module Title: Psychiatry III*

<b>Code:</b>	<b>PCT3890</b>
<b>NQF:</b>	8
<b>Notional hours:</b>	200
<b>Contact Hours:</b>	5 weeks
<b>Credits:</b>	20
<b>Pre-requisite:</b>	PCT3880
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered</b>	6 <sup>th</sup> 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 multi-axial 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 behavior; Management of substance

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

#### 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** 3<sup>rd</sup> 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** including 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*

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

### Module aim

This module aims at equipping the student with the basic knowledge and skills for managing common or life 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 qualified medical practitioner or qualified 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, dysplasias & malformations; neuromuscular disorders; an introduction to ATLS and assessment of the injured patient; general principals of fractures & dislocations; management of wounds & soft tissue including GSW's; brachial Plexus & peripheral nerve injuries; amputation & rehabilitation; acute pyogenic bone & joint infections in children; fractures & joint injuries in children; the child's hip; deformities of legs & feet in children; limb length inequalities

**Urology:** Benign Prostatic Hypertrophy (BPH); cancer prostate; urinary tract imaging; renal trauma; ureteric trauma; bladder trauma; urethral trauma; external genital trauma; urinary tract infection (uti); urolithiasis; cancer kidney; cancer bladder; cancer testis; ed 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, toxemia and pregnancy, diabetic retinopathy; retinal detachment, types, symptoms and 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 + OSC)

*Module Title: Surgery III*

<b>Code:</b>	<b>SUR3880</b>
<b>NQF:</b>	8
<b>Notional hours:</b>	400
<b>Contact Hours:</b>	10 weeks
<b>Credits:</b>	40
<b>Pre-requisite:</b>	SUR3780
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered</b>	5 <sup>th</sup> 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 learns though carrying out technical procedures under supervision of a qualified health professional. Further the modules equips 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*

<b>Code:</b>	<b>SUR3890</b>
<b>NQF:</b>	8
<b>Notional hours:</b>	400
<b>Contact Hours:</b>	10 weeks
<b>Credits:</b>	40

**Pre-requisite:** SUR3780 and SUR3880  
**Compulsory/Electives:** Compulsory  
**Semester offered** 6<sup>th</sup> 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)

## BACHELOR OF SCIENCE OCCUPATIONAL THERAPY (18BOTY)

### DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

#### PURPOSE AND RATIONALE OF THE QUALIFICATION

Occupational therapy is concerned with restoring and promoting health and well-being while also preventing ill health through engagement in selected everyday activity.

Occupational therapy services aim at enabling individuals of all ages and throughout the lifespan who struggle to choose, plan and / or execute their daily activities, tasks or duties due to a health condition and thus fail to fulfil their life roles satisfactory. Furthermore, occupational therapy aims at providing individuals, communities and / or populations opportunities to

engage in occupations (activities) in order to build a well-functioning society. These occupations are chosen to be a dignifying, health-promoting, meaningful and purposeful and range from self-care, community survival, leisure, play, education and learning, social participation, rest and sleep, and work. Participation can be either active or vicarious. Occupational therapy focuses on health, which included physical, mental, developmental and social aspects of health.

### EXIT PROGRAMME OUTCOMES

Upon completion of the programme the graduate will be able to demonstrate the following competencies:

#### **Patient Care competencies**

##### *Occupation, person and environment (Council Competency Domain 1)*

1. Synthesise the theoretical concepts underpinning occupational therapy, specifically the occupational nature of human beings, their performance of occupations and their function in everyday activities
2. Understand the relationship between occupational performance, health and well-being
3. Apply relevant knowledge from bio-medical, psychological, sociological, technological and occupational sciences, together with theories and models of occupation and participation, which includes to understand the structure and function of the human body

#### **Assessment and Clinical reasoning**

1. Interpret referrals and obtain collateral information
2. Synthesise knowledge and skills in the assessment of components of functioning, occupational performance, analysis of occupational profiles and occupations and the environment using standardised and non-standardised assessment tools
3. Gather information from collateral, assessment, expertise in occupational, psycho-social and biomedical sciences to formulate therapy goals
4. Select, modify and apply relevant approaches based on the unique needs, characteristics, abilities, limitations, history and background of clients
5. Select, modify and apply appropriate theories, models of practice and methods to meet the occupational and health needs of individuals/populations
6. Collect, evaluate and apply a range of information and evidence to ensure that practice is up-to-date and relevant to the client

#### **Intervention**

1. Synthesise all information of the client (individual, group, community, population) and design a person-centered plan
2. Apply knowledge of grading and adapting activity, choosing, adapting and making of assistive devices and splints to achieve treatment goals
3. Monitor and evaluate treatment outcomes
4. Apply knowledge of managing a variety of groups to reach treatment goals
5. Evaluate intervention and the documentation thereof

## **Competencies for communication**

### *Professional communication*

1. Apply knowledge and skills of effective oral, written, non-verbal and electronic communication to interact with patients, family, caregivers and others involved in the delivery of healthcare services
2. Apply knowledge and skills to initiate communication in difficult situations
3. Analyse contexts to be sensitive to cultural diversity, as well as adapt behaviour and communication accordingly taking into account differences in race/ethnicity, nationality, gender /sex and disability status

## **Competencies for Accountability and professional development**

### *Management, ethical practice and promotion of occupational therapy*

1. Comply with local/regional/national and global policies and procedures, professional standards and employer's regulations impacting on service delivery of occupational therapy and understand the impact of legislation on the delivery of care
2. Demonstrate continuing lifelong learning to enhance occupational therapy and develop knowledge of occupation and occupational therapy practice.
3. Demonstrate ethical decision-making and practice in an ethical manner, respecting clients, colleagues, team members and other stakeholders taking account of professional codes of conduct for Occupational Therapists (consult the Code of Ethics and Professional Conduct for Occupational Therapists as documented by the Namibian Association of Occupational Therapists)

## **Competencies for Research**

### *Research*

1. Identify the need for research on issues related to occupation, occupational therapy and/or occupational science and formulate relevant research questions.
2. Apply knowledge and skills of searching, finding appropriate scientific literature independently, and synthesise knowledge and skills of critiquing scientific literature relevant to occupation therapy.
3. Understand, select and defend research designs and methods appropriate to human occupation considering ethical aspects.

## **Competencies for leadership and management of healthcare delivery systems and promotion of profession**

### *Promotion of the profession*

1. Evaluate situations and prioritise occupational therapy services
2. Determine resources required for these services, including human, financial, inventory, material and information technology resources.
3. Conduct a risk/benefit and cost/benefit analysis of the various service delivery methods.
4. Be aware of applicable health and safety legislation, and any relevant safety policies and procedures in the workplace, such as incident reporting, and be able to act in accordance with these.



## REGULATIONS

### 1. *Criteria for Admission*

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

1. 30 points in five subjects on the UNAM scale with a grade B or better in ordinary level English OR 32 points in five subjects on the UNAM scale with a grade C or better in ordinary level English
2. A Score of "2" or better on higher level in Mathematics and Physical Sciences (or 2 in Mathematics and 3 in Physical Science) (or 2 in Physical Science and 3 in Mathematics) or a grade B or better in ordinary level Mathematics and Physical Sciences
3. Grade B or better in ordinary level Biology/Life Science or a score of 3 or better on higher level Biology/Life Science

*(Please refer to the General Information and Regulations Prospectus for the scale used by the University to calculate the UNAM score);*

**OR**

4. Successful completion of the entire first year Science curriculum and must have passed each Chemistry, Biology, Mathematics and Physics module with a final mark of at least 55%.

**OR**

5. Successful completion of a Science degree from a recognised University with passes in Chemistry, Biology, Mathematics and Physics including at least at first year level

**OR**

6. Satisfy the following conditions for entry through the Mature Age Entry Scheme:
  - a. They should be at least 25 years old on the first day of the academic year in which admission is sought
  - b. They should have successfully completed senior secondary education
  - c. They should have proof of at least five years Occupational therapy relevant work experience (as determined by the School).
  - d. They should pass each paper of the prescribed Mature Age Entry Tests with an overall average of 55%.

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

### **DURATION OF STUDY**

The minimum duration for full-time study programme extends over a period of four (4) years. The maximum period of full-time study is six (6) years.

### **EXAMINATION REGULATIONS**

### **Assessment Criteria**

Techniques of examination include practical examinations, theoretical papers, vivas, and practical papers, file presentations, clinical tests and reports on clinical work. In the professional subjects, practical and clinical works are weighted equally with theoretical work.

All subjects are examined through Continuous Assessment and final examination:

1. Admission to examination: To qualify for examination in a module, the overall Continuous Assessment mark must be at least 45%.
2. The Continuous Assessment marks will constitute 50% of the Final mark and the Exam will be 50% of the Final mark.
3. Pass Requirements: The minimum final pass is 50% for each module with a sub-minimum of 50% in the clinical examination where applicable and sub-minimum of 45% in the theory paper.
4. To qualify for a Supplementary Examination: The minimum final mark must be at least 45% with a sub-minimum of 40% in the clinical examination where applicable.

## **ADVANCEMENT AND PROGRESSION RULES**

### **ACADEMIC ADVANCEMENT RULES**

#### ***MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE PROGRAMME***

To be re-admitted to the School for a particular year of registration, a student must have passed the minimum number of credits required as indicated below:

1. 64 credits by the end of the first year: 32 credits of these credits must be non-core
2. 144 credits by the end of the second year
3. 240 credits by the end of the third year
4. 352 credits by the end of the fourth year
5. 440 credits by the end of the fifth year

### **PROGRESSION RULES**

*In general a student advances to the following academic level of study when at least 2/3 of the modules of the curriculum for a specific year have been passed. If a student passed only*

*1/3 of the full curriculum of a specific year, he/she may not register for any modules of the following year. In all cases, prerequisites for modules have to be passed before a student can proceed to register for modules that require prerequisites.*

1. From year 1 to year 2: At least 120 credits prescribed for year 1 must be passed.
2. From year 2 to year 3: All first year modules plus at least 120 credits prescribed for year 2 must be passed.
3. From year 3 to year 4: All first, second and third year modules must be passed.

#### **MAXIMUM NUMBER OF CREDITS PER YEAR:**

*No student will be allowed to register for more than the following credits as indicated below*

*Year 1: 152 credits*

*Year 2: 168 credits*

*Year 3: 152 credits*

*Year 4: 128 credits*

#### **REQUIREMENTS FOR QUALIFICATION AWARD**

*This qualification will be awarded to candidates credited with a minimum of 560 credits, and who have met all the requirements of the Degree programme, including field/clinical placements and portfolios.*

#### **CAREER OPPORTUNITIES**

The graduates of this Bachelor of Science (Professional Honours) in Occupational Therapy may become a/an:

1. Clinician – engaging directly or indirectly in a patients’ or clients’ health care, by applying the occupational therapy process in relation to the occupational function of individuals or groups of people.
2. Occupational coach- supporting individuals, groups and communities towards meeting occupational needs and goals as part of the occupational identify discovery, retention and redefinition.
3. Manager – planning and, implementing and evaluating the occupational therapy services (including staff and other resources) and leading and motivating staff.
4. Researcher and scholar – questioning current evidence for occupational therapy and developing ways to refine and improve service, by producing effective and efficient practice, also engaging in academic and research practices.
5. Educator – instructing, leading and guiding undergraduate and postgraduate students in theory and practice, including supervision in clinical practice.
6. Collaborator – interacting and working with other health care practitioners, members of the multi-disciplinary team and community members across sectors and government departments.
7. Lobbyist, pleading for the cause of people and/or marginalised groups and/or communities by campaigning for and promoting changes in societal attitude with would facilitate their inclusion of at all levels and promote participation in meaningful and dignified occupations.

8. Advocate, promoting the interest of the profession of occupational therapy

*Occupational Therapists, working as mentioned above may work in the*

1. Public Service in any Ministry, but particularly in the following Ministries: Health and Social Services; Agriculture, Water and Forestry; Education; Environment and Tourism; Defence; Gender Equality and Child Welfare; Labour and Social Welfare; Lands and Resettlement; Mines and Energy; Safety and Security; Trade and Industry; Youth, National Service, Sport and Culture; Veterans Affairs; Office of the Prime Minister.
2. Non-Governmental Organisations (NGOs)
3. Disabled Peoples Organisations (DPOs)
4. Private Sector

*Practice settings include but are not limited to*

1. Institution-based settings (health care facilities, schools, correctional service, retirement and frail care facilities, rehabilitation facilities, houses, sheltered work, etc.)
2. Community-based,
3. Faith-based
4. Non-Governmental Organisations
5. Private Practices
6. Commercial, industrial or informal work-settings
7. Domiciliary (home-based) settings.

Prospective employers may thus include a variety of Ministries, MVA, WCA NGOs, faith-based organisations, private practice or self-employment.

**Summary Table for all Modules in the Programme**

Module code	Module name	NQF Level	Credits	Contact hours per week	(Co-requisite) / Pre-requisite
<b>Year 1 Semester 1</b>					
CLC3509	Computer Literacy	5	8	2	
CSI3580	Contemporary Social Issues	5	4	1	
LEA3519	English for Academic Purposes	5	16	4	
ATM3531	Anatomy for Allied Health Sciences	5	16	3+4P	
PLG3501	Medical Physics	5	8	2	
OTH3501	Occupational Science I	5	8	2+2P	
PLG3511	Systems Physiology I	5	16	3+4P	
	Total Credits Semester 1				76
<b>Year 1 Semester 2</b>					

<b>CSI3580</b>	Contemporary Social Issues	5	4	1	
<b>OTH3502</b>	Occupational Therapy Science I	5	8	2+2P	
<b>BCM3512</b>	General Biochemistry I	5	16	3+4P	
<b>CMM3512</b>	Sociology of Health and Disease	5	16	3+4P	
<b>ATM3552</b>	Anatomy for Occupational Therapy	5	16	3+4P	
<b>PLG3512</b>	Systems Physiology II	5	16	3+4P	
	Total credits Semester 2				76
	TOTAL CREDITS YEAR 1				152
	<b>Year 2 Semester 1</b>				
<b>OTH3680</b>	Occupational Therapy Interventions	6	12	6P	OTH3501, OTH3502
<b>OTH3690</b>	Occupational Therapy Science II	6	12	3	OTH3501, OTH3502
<b>OTH3601</b>	Occupational Science II	6	8	2	OTH3501, OTH3502
<b>PCT3600</b>	Psychology	6	8	2	
<b>OTH3611</b>	Clinical Sciences I	6	16	4+3P	ATM3531, PLG3511, ATM3552 and PLG3512
<b>PTY3681</b>	Professional Practice	6	12	3	ATM3531, PLG3511, ATM3552 and PLG3512
	Total Credits Semester 1				68
	<b>Year 2 Semester 2</b>				
<b>OTH3680</b>	Occupational Therapy Interventions	6	12	6P	OTH3501, OTH3502
<b>OTH3690</b>	Occupational Therapy Science II	6	12	3	OTH3501, OTH3502
<b>OTH3602</b>	Occupational Science III	6	8	2	OTH3501, OTH3502
<b>PCT3600</b>	Psychology	6	8	2	

<b>OTH3612</b>	Clinical Sciences II	6	16	4+3P	ATM3531, PLG3511, ATM3552 and PLG3512
<b>OTH3622</b>	Clinical Occupational Therapy I	6	8	Total hours 80	OTH3501, OTH3502
<b>LCH3682</b>	Local Language for Health Science Communication	6	4	1	
	Total credits Semester 2				68
	TOTAL CREDITS YEAR 2				136
	<b>Year 3 Semester 1</b>				
<b>OTH3710</b>	Occupational Therapy Science III	7	16	4+3P	OTH3690, OTH3611, OTH3612
<b>OTH3780</b>	Clinical Occupational Therapy II	7	20	Total hours 200	OTH3622, PTY3681, OTH3690
<b>PTY3700</b>	Research Methods	7	8	2	
<b>OTH3700</b>	Psychiatry for Occupational Therapy	7	8	2	PCT3600
<b>OTH3711</b>	Applied Occupational Therapy I	7	16	3+2T	OTH3611, OTH3612
	Total Credits Semester 1				68
	<b>Year 3 Semester 2</b>				
<b>OTH3710</b>	Occupational Therapy Science III	7	16	4+3P	OTH3690, OTH3611, OTH3612
<b>OTH3780</b>	Clinical Occupational Therapy II	7	20	Total hours 200	OTH3622, PTY3681, OTH3690
<b>OTH3712</b>	Applied Occupational Therapy II	7	16	3+2T	OTH3611, OTH3612
<b>PTY3700</b>	Research Methods	7	8	2	
<b>OTH3700</b>	Psychiatry for Occupational Therapy	7	8	2	PCT3600
	Total credits Semester 2				68
	TOTAL CREDITS YEAR 3				136
	<b>Year 4 Semester 1</b>				

<b>OTH3810</b>	Research Project	8	16	4	All 3 <sup>rd</sup> year modules passed
<b>OTH3801</b>	Applied Occupational Therapy III	8	8	4 integrated	All 3 <sup>rd</sup> year modules passed
<b>OTH3880</b>	Clinical Occupational Therapy III	8	40	Total hours 400	All 3 <sup>rd</sup> year modules passed
Total Credits Semester 1					64
<b>Year 4 Semester 2</b>					
<b>OTH3810</b>	Research Project	8	16	4	All 3 <sup>rd</sup> year modules passed
<b>OTH3802</b>	Applied Occupational Therapy IV	8	8	4 integrated	All 3 <sup>rd</sup> year modules passed
<b>OTH3880</b>	Clinical Occupational Therapy III	8	40	Total hours 400	All 3 <sup>rd</sup> year modules passed
Total credits Semester 2					64
TOTAL CREDITS YEAR 4					128
				<b>TOTAL CREDITS FOR THE PROGRAMME</b>	<b>560</b>

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**Module Title: English for Academic Purposes**

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**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:** 1<sup>st</sup> 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).

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**Module Title: Contemporary Social Issues**

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

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**Module Title: Computer Literacy**

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<b>Code:</b>	<b>CLC3409</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 lecture hours
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	none
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 <sup>st</sup> 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%:

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**Module Title: Anatomy for Allied Health Sciences**

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<b>Code:</b>	<b>ATM3531</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	160
<b>Contact hours:</b>	3 + 4p hours per week for one semester
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

*Module Aims*

This module aims to provide students with sound systemic anatomical and histological knowledge of the anatomical systems 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*

Introduction to all the major body systems; Introduction to human histology including histology of the basic tissues; Regional anatomy and topographical anatomy, organ development and histology of the 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*

Continuous Assessment mark:	50%
Examination mark:	One 2-hour theory examination paper (50%) One practical examination paper (50%)
Final mark:	50% of exam mark and 50% of CA

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**Module Title: Medical Physics**

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<b>Code:</b>	<b>PLG3501</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 hours per week for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	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 in respect with 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, Bernoulli'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 (charge, 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 (bonding 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: 50%  
Examination: 50% (1 x 3 hours paper)

### **Module Title: Occupational Sciences I**

<b>Code:</b>	<b>OTH3501</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact hours:</b>	2 hours per week for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory

Semester offered: 1

**Module Aims:**

The module aims at providing students with an introduction to the basic science, occupational science, the associated concepts and how this field of study interfaces with occupational therapy.

*Module Content:*

Defining occupational science and occupational therapy; Describe what occupational scientists and occupational therapists do (similarities and differences); History of occupational science and history of occupational therapy; Theory of Human Nature and participation in occupation; Describing human occupation and the term "natural occupation"; Analyse the concepts form (physical and sociocultural dimensions) function, and meaning of occupations; Explore human beings as occupational and social beings.

*Module assessment:*

Continuous assessment: 50%  
EXAM: 50%

**Module Title: Systemic Physiology I**

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

*Module Aims*

The systems physiology module 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 module 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 utilisation 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.

Students will familiar them 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%

Examination: 50% (1 X 3 hours paper)

**Module Title: Occupational Therapy Science I**

<b>Code:</b>	OTH3502
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact hours:</b>	2 +2P hours per week for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims:*

Our occupations harness our time and interests, and utilise our personal capacities. Our ability to participate in occupations that we have to do or want to do can be impacted on by a variety of determinants, thus placing challenges to people in doing needed occupations. Occupational therapy science is founded on research that suggests that appropriately selected occupations used in specific therapeutic ways are agents of change and improve participation in, performance in, and satisfaction in occupations and thus contributes to occupational justice and quality of life.

*Module Content:*

This module introduces students to the ICF and their understanding of human occupation by including an analytical exploration of the relationship between what people do and their health, well-being and quality of health, in the form of WHO determinants of health. By introducing Erik Erikson's stages of psychosocial development and related actions/tasks/occupations and by engaging with people of different ages in various practice learning contexts, students gain deeper appreciation of normal human development challenges, how dimensions of occupational performance in self-care and community living and survival; play; work; social interaction unfold across the lifespan and how culture context and ability relate to these. Students are exposed to interviewing techniques and skills and practice; student gain skills in obtaining a narrative from another person in the classroom; Kinesiology, ergonomics and design (synergistic and pathological moment patterns, body alignment, proportions and relationship of these and functioning and disability gap (ICF). Students are introduced to the practice of reflection and reasoning and its values for self-learning and development as a scientifically thinking therapist. In a clinical setting, student apply engaging with narrative, and thus develop an appreciation of the lived experience of having a disability, and how dimensions of occupational performance in self-care, productivity and leisure are affected by disability. Students learn how to describe their understanding of the lived experience of a person with a disability using techniques of interviewing and using narrative.

*Module assessment:*

Continuous Assessment: 70%

EXAM: Written 2 hour paper 30%

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**Module Title: General Biochemistry I**

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

*Module Aims*

This module is the first of two with a focus on cellular organisation, 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 organisation; 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): 50%

Examination: 50% (1 x 3 hours written paper + 1½ h practical examination)

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**Module Title: Sociology of Health and Disease**

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<b>Code:</b>	<b>CMM3512</b>
<b>NQF Level:</b>	5
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	3 + 4P hours per week for one semester
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	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 takes into account the structural and social factors not necessarily relying on biological and medical explanations of health and disease.

Students also gets exposure to 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 emphasises 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 module 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 module 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:	50%
Final Examination:	50%

**Module Title: Anatomy for Occupational Therapy**

<b>Code:</b>	<b>ATM3522</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	160
<b>Contact hours:</b>	3 + 4p hours per week for one semester
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims*

This module is designed to provide continued study of histological and anatomical systems with the emphasis on occupational therapy outcomes. In this semester special attention is paid to the relation of anatomy of these systems to their function and dysfunction in human movement. It has a strong focus on the mechanical properties of bone, ligaments, tendons, cartilage, neural and muscle tissue as these are the fundamental materials or structures of which the musculoskeletal system is composed. There is some revision of gross anatomy and functional musculoskeletal anatomy of the limbs and trunk as appropriate to the module. In addition to normal function it includes the mechanisms of and adaptations to injury, disease and rehabilitation. Anatomical aspects of posture and locomotion and their changes through the lifespan are also covered.

### *Assessment Strategies*

Continuous Assessment mark:	50%
Examination mark:	One 2-hour theory examination paper (50%) One practical examination paper (50%)
Final mark:	50% of exam mark and 50% of CA

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**Module Title: Systemic Physiology II**

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

### *Module Aims*

The systems physiology module 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 module 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 utilisation 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 module 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%

Examination: 50% (1 X 3 hours paper)

<b>Module Title: Occupational Therapy Interventions</b>
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<b>Code:</b>	<b>OTH3680</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	240
<b>Contact hours:</b>	6P hours per week for one semester
<b>NQF Credits:</b>	24
<b>Pre-requisite:</b>	OTH3501, OTH3502
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

*Module Aims:*

This module provides students with an experiential learning opportunity in which they start to build up a repertoire of occupations (indoor/outdoor and performing arts), which they can use in therapy.

*Module Content:*

This module will cover the following theoretical aspects of a number of indoor activities (such as cookery and nutrition, wool crafts, pottery, paper crafts, sewing, leather crafts, jewellery making, wire craft, string craft, woodwork and performing arts), as well as outdoor activities (soccer, basketball, netball, volleyball, fun ball games athletics and other outdoor games, indoor/outdoor gardening) history of, purpose of, materials needed, tools/implements/equipment needed, care, maintenance and storage of these and precautionary measures. Practical skills for all these activities need to be acquired.

*Module assessment:*

Continuous Assessment: 100%

<b>Module Title: Occupational Therapy Science II</b>
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<b>Code:</b>	<b>OTH3690</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	240
<b>Contact hours:</b>	3 hours per week for both semesters
<b>NQF Credits:</b>	24
<b>Pre-requisite:</b>	OTH3501, OTH3502
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 and 2

*Module Aims:*

Occupational therapy science is founded on research that suggests that appropriately selected occupations used in specific therapeutic ways are agents of change and improve participation in, performance in, and satisfaction in occupations and thus contributes to occupational justice and quality of life. This module focuses on models, and how these inform assessment of mobility and disability, environment and social power structures as well as physical, mental and social ability and disability and how this information translates into an occupational therapy plan.

*Module Content:*

Foundation of Occupational Therapy (philosophy of occupational therapy (Adolf Meyer/ Eleanor Clark Slagle; Medical approaches, social approaches, occupational approaches); Foundation of Occupational Therapy in Namibia. Selected frame works used in occupational therapy (WHO ICF (2002) and ICF-CY (2001), (2008), and Occupational Therapy Models (CAOT Canadian Model of Occupational Performance - Engagement (2007), and Kielhofner's Model of Human Occupation practice and models (MOHO, CMOP -E and PEO, Vona du Toit's MOCA, Occupation Based Community Development Framework (ObCD) and the models change modalities. Introduction to function (Based on ICF (2002) such as mental, sensory, pain musculoskeletal and movement related, cardiovascular, respiratory, genitourinary and reproductive functions and AOTA Occupational Therapy Practice Framework -Domains and Framework (2014);Activity analysis (with reference to above-mentioned functions, e.g. physical (muscles, joints, physical endurance etc.), mental (concentration, attention, higher cognitive functions) emotional (gratification, locus of control, number of steps, concept formation), social and community requirements (intra- and interpersonal relationships, emotional intelligence, adhering to social standards etc.). Intersectional analysis ref Kimberlé Williams Crenshaw (Intersection of class, gender, sexual orientation, race, religion socio-economic status, educational status, ability, nationality, their interactional power relations and influence on identity formation. Environment analysis (observes occupations meaningful in the environment and aligns occupations according to cultural preferences whilst deepening their understanding of the role a variety of environments (physical, social, political etc.). Kinesiology, ergonomics and design (synergistic and pathological movements patterns, body alignment, proportions, positions and relationship of how these minimise the disability gap. Activity adaptations (to increase or decrease or adapt the requirements related to occupations (activity level) across the life span). Reflect on the explicit knowledge of and implicit understanding of disability, ability and participation, integrating knowledge of the above-mentioned analyses using activities that form part of occupational therapy change modalities. Learning theories: Moya Wilson and others; Anne Cronon Mosey's seven adaptive skills, adult learning theories, action learning, participative action learning. Occupational therapy practice process; occupational therapy targets; Change theories and modalities; Learn about professional relationships with patients. Assessment (theory and assessment, types of, reason for, information gathering to choose, learn assessment at body structure (e.g. wound assessment, muscle strength, ROM) and body function (nerve function, attention, concentration level (all assessment that are used in third year practical need to be covered here – including all diagnosis and across all ages), and at activity and participation levels (activities that form part of occupational therapy change modalities. Assessment of environment, recording of data, analysis of data, theory and data analysis, strengths and challenges); Intervention goals, occupational therapy targets, change modalities and enablement and intervention (understanding an intervention plan and an intervention programme – using strengths to address challenges in execution of activities of daily living (ADL), using environment and structure to facilitate change to enable persons to achieve their aspirations and capabilities as occupational beings). Intervention principles (Handling, Structuring, Presentation, Activity requirements and grading of these treatment principles). Introduction to theoretical base of clinical work: case studies (reasoning behind case studies, models and theories in case studies, patient records and ethical considerations, documentation and legal responsibilities, format of case studies and patient file audit).

*Module assessment:*

Continuous Assessment:	50%
EXAM: 1x3 hour written paper	50%

<b>Code:</b>	<b>OTH3601</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	80
<b>Contact hours:</b>	2 hour per week for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	OTH3501, OTH3502
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

*Module Aims:*

The module aims at introducing students to analysing the relationship between engagement in occupation, occupational justice and quality of life.

*Module Content:*

Occupational risk factors (injustice, justice, marginalisation, imbalance, deprivation and alienation) and how people, the physical environment, government policies, economic factors, cultural believes etc. impact on occupational justice). Analyse occupation as means (roles, purpose and meaning), as an end (acquiring skills, earn a living, overt or covert, tangible or intangible) and as a means to an end. Relate occupational injustice to practice situations (Intersectional Analysis). Analyse themselves as occupational beings and identify which occupations require active engagement, which passive and which vicarious. Complete an occupational profile for an identified person and identify links between human occupation, health and well-being combining the all the above-mentioned analytical elements. e.g. occupational risk factors.

*Module assessment:*

Continuous Assessment: 100%

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**Module Title: Occupational Science III**

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<b>Code:</b>	<b>OTH3602</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	80
<b>Contact hours:</b>	2 hour per week for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	OTH3501, OTH3502
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims:*

The course aims at providing the student with the skills and knowledge to obtain and appraise relevant scientific information and in particular regarding occupational science and occupational therapy to apply the information in ration to occupational therapy.

*Module Content:*

Search for the philosophical and theoretical perspectives of occupation by devising information seeking strategies; using appropriate paper and electronic search tools effectively and appraise information. Exploration of the current body of knowledge relating to occupational science, including health and well-being; Explore occupation and temporality, occupational and human development, the relationship between occupational science occupational therapy and other scientific disciplines.

*Module assessment:*

Continuous Assessment: 100%

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**Module Title: Psychology**

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<b>Code:</b>	PCT3600
<b>NQF Level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	2 hours per week for both semesters
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	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 module 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 module 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 hospitalisation, 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): 50% (minimum of 3 tests and 2 assignments)

Examination: 50% (1 x 3 hours written paper)

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**Module Title: Clinical Sciences I**

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<b>Code:</b>	<b>OTH3611</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	4+3P hours per week for one semester
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	ATM3531, PLG3511, ATM3532 and PLG3512
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

*Module Aims*

This module aims at equipping students with knowledge on structural changes affecting tissues, organs and systems of the human body due to various processes and insults.

*Module Content*

This module focuses on systemic discussions of the causation and mechanisms of change involved in the various pathological lesions resulting from infection, cell injury, acute and chronic inflammation, metabolic disorders, neoplasia and accumulation; non-infective disorders topics: Definition and scope of pathology; Cell damage; Cell death; Connective tissue and damage; The inflammatory response; Chronic inflammation; Classification and general characteristics of common microbial organisms of medical importance; Body's defences and responses to infection; Healing; Radiation, trauma and temperature; Abnormalities of cell growth; Neoplasia; Circulatory disturbances oedema; Circulatory disturbances, thrombosis and embolism; Circulatory disturbances, ischaemia and infraction; Abnormalities of calcium metabolism; Abnormal pigmentation; laboratory tests in relation to microbial, endocrine, metabolic and other pathological changes.

*Module Assessment*

Continuous Assessment: 50% (minimum of 2 tests and 2 assignments and practical)  
Examination 50% (1 x 3 hours paper)

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**Module Title: Clinical Sciences II**

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<b>Code:</b>	<b>OTH3612</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	4+3P hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	ATM3531, PLG3511, ATM3532 and PLG3512
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aim*

This module which is the mainstay and foundation of clinical medical practice is envisaged to introduce the students early on to the professional and technical skills, scientific knowledge and human understanding necessary in the care of the sick, frail, their families and the

community and build up on the art of medical practice to near perfection. The module also introduces students to basic clinical procedure through didactic teaching and hands-on practice. A student is also equipped with knowledge and skills for providing emergency first aid resuscitation and support before arranging for secure and safe transfer to health facility.

#### Module Content

It emphasises on the establishment of direct, one-to-one caregiver-patient relationships the process of social communication and the performance of physical examination based on competent use of professional skills. Topics covered include infection control, universal precautions, communication skills, general, regional and systemic physical examination of patients; basic clinical skills; first aid. Geriatric Medicine: Gastrointestinal disorders, Lymphoma, Metabolic bone disease, Thyroid, adrenal and pituitary disease, Renal pathology.

#### Assessment Strategies

Continuous Assessment: 50%

Examination pass mark is 50% (1 x 3 hours paper)

### Module Title: Professional Practice

<b>Code:</b>	<b>PTY3681</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	120
<b>Contact Hours:</b>	3 hours per week for one semester
<b>NQF Credits:</b>	12
<b>Pre-requisite:</b>	ATM3531, PLG3511, ATM3532 AND PLG3512
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

#### *Module Aims*

The aim of this module is assist 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. Legal aspects of being a professional will be covered as well as the importance of and the ethical implication of documentation

#### *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-physiotherapist 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.

#### *Assessment Strategies*

Continuous assessment (50%)

End of module examination (50%): 1 x 3 hours paper

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**Module Title: Clinical Occupational Therapy I**

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<b>Code:</b>	<b>OTH3622</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	80 of integrated learning for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	OTH3501 , OTH3502
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims:*

Occupational therapy intervention aims at addressing challenges a person (or population) faces in relation to doing their everyday occupations. This module introduces students to become agents of change by consolidating and applying already acquired knowledge and skills in a service learning setting.

*Module Content:*

Patient rights (autonomy, privacy, beneficence, justice, informed consent, right to refuse treatment, participation, etc.) Gatekeeping (referrals, requests for intervention, permission to enter premises/community/institution). Conduct visits to non-clinical settings in which occupational therapy could be meaningful (prison services, old age homes, orphanages, self-help schemes, craft projects, etc. aiming at sharpening observation skills); Engage a person in a non-clinical setting in occupation and narrative (sharpen interviewing skills and skills of facilitating engagement in occupation). Formulating results (including results obtained from observations, narratives, co-lateral information and reflection).

*Module assessment:*

Continuous Assessment: 100%

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**Module Title: Local Language for Health Science Communication**

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<b>Code:</b>	<b>LCH3682</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	40
<b>Contact Hours:</b>	1 hour per week for one semester
<b>NQF Credits:</b>	4
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims*

The module is to ensure that students have adequate communications skills in one of the commonly used Namibian in addition to their home language in terms of patient interaction and practise.



*Module Content*

This module develops a students understanding regarding social norms and confessions in one other population group in Namibia; listening, verbal and non-verbal communication; medical terminology and construct of common symptoms in the relevant language.

*Assessment Strategies*

100% Continuous Assessment consisting of at least six interactive engagement of dialoging in class

<b>Module Title: Occupational Therapy Science III</b>
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<b>Code:</b>	<b>OTH3710</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	320
<b>Contact Hours:</b>	4+3P hours per week for both semesters
<b>NQF Credits:</b>	32
<b>Pre-requisite:</b>	OTH3690, OTH3611, OTH3612
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 and 2

*Module Aims:*

This module focuses on intervention techniques and how they can be utilised through participation in activities of the change modalities. By the end of this module students will be able to describe the link between human occupation, participation in occupation, health and well-being; discuss various forms of occupational risk/dysfunction, focusing on environmental determinants; discuss various means of enabling occupational performance and write occupational therapy intervention programmes (also population focus); they will understand the role of an OT and other role players within practice learning settings; use reflection and reasoning as crucial for taking control of own learning; and learn how to turn their own profession into a possible business venture.

*Module Content:*

Revision of previous years concepts and models (Reflection and reflexivity, Performance enablers and change theories, OT Targets, OT theoretical frameworks, Change modalities, Performance enablers, Intervention principles, interviewing skills, assessments). Intervention techniques and how they can be used in enabling a person's participation in life through the use of occupational therapy change modalities: Intervention Techniques; Bobath neuro-developmental treatment techniques; Muscle strengthening techniques and techniques of improving ROM, Eliciting balance reactions and retraining balance; Bandaging techniques (amputation stump forming); Stress Management techniques (Indications for relaxation training, Structure and handling principles. Frames of Reference: Behavioural and cognitive perspectives, Learning, Memory, Assessment. Group management techniques (group dynamics, principles of groups, Types of groups - aims, handling and structuring, Leadership styles, establishing a group; forming of groups – forming storming- norming-performing). Warm ups (“actions speak louder type of activities” and warm up games. Evocative techniques: Drama: Remedial drama - puppets, masks, role play, Definition, Relationship between role-play and psychodrama, Aims of role-play, Methods and approaches. Management (Logic model and application thereof for projects and occupational therapy programmes (population), including introduction to Monitoring and Evaluation (M & E); Competing Values Framework (MC Quinn and The McKinsey 7S management framework and its application to occupational therapy practice. Intervention techniques and how they can be used in enabling a person's participation in life through the use of occupational therapy change modalities: Sensory modulation techniques and Intervention strategies (Sensory processing and modulation, sensory regulation, sensory diet, sensory integration, and how all these fit into occupational therapy using change modalities. Community based rehabilitation (institution and non-institution based); Population health (advocacy to address occupational participation and the multiple determinants of health, community and population directed interventions - analysis, intervention strategies, occupation based proposals); Occupational therapy theory and intervention (approaches, philosophies, professional reasoning), critiquing Models and approaches. Professional behaviour in clinical settings (Hierarchies in wards/ ward rounds, communication channels, accountability, supervision)

*Module assessment:*

Continuous Assessment (50%)

EXAM (50%) 1x 3 hours written paper 25%

OSCE 25%

Module Title: Clinical Occupational Therapy II	
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<b>Code:</b>	OTH3780
<b>NQF level:</b>	7
<b>Notional hours:</b>	400
<b>Contact hours:</b>	Total 400 hours for both semesters
<b>NQF Credits:</b>	40
<b>Pre-requisite:</b>	OTH3622, PTY3681, OTH3690
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 and 2

*Module Aims:*

Students engagement with issues of diversity is extended to include an exploration of the role of an occupational therapist as a transformative agent, using occupation as performance enablers in non-acute clinical or community settings Clinical Occupational therapy II students start to take responsibility for client management under supervision of lecturers. The aim is to prepare students for independent and teamwork practice within the comprehensive health care system.

*Module Content:*

Preparation for service training (logbooks, attendance registers, case study outline, case study requirements, ethical behaviour, professional behaviour, work ethics). Evaluation of service training (explain assessment strategies and evaluation). Supervision of service training (explain supervisor agreement forms, importance of signing agreements, documentation of supervision). Service learning settings (introduction to settings, aims, gateways, arrangements, rules, working hours at facility). Three service training blocks at community or non-acute clinical settings, each 70 contact hours (210). Apply ALL steps of the occupational therapy practice process: Collateral /background information (Obtain background information, plan interview, occupational profile of client, use observation and narrative to determine strengths and weaknesses). Assessment (choose appropriate assessments (body function and body structure level as well as activity and participation level, either standardised or non-standardised assessment tools and compile problem list. Identify contra indications; Intervention plan (collaboratively and evidence based, formulate intervention goals, using all available gathered information, focusing on relevant occupational therapy targets. Design intervention and monitoring plan by choosing appropriate occupations at the "just right challenge", criteria to measure change, change modalities, plan for actions of therapists as therapeutic agent, plan environment and support structures and precautionary measures). Implement intervention plan and monitor change (observe, benchmark participation, satisfaction and change with set criteria and amend intervention plan as needed). Re-assessment (only if applicable). Evaluation (Reflective notes on the process, interactions, disappointments, challenges, successes, corrective measures etc.)

*Module assessment:*  
Continuous Assessment: 100%

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**Module Title: Psychiatry for Occupational Therapy**

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**Code:** OTH3700  
**NQF:** 7  
**Notional hours:** 160  
**Contact Hours:** 2 hours per week for both semesters  
**Credits:** 16  
**Pre-requisite:** PCT3600  
**Compulsory/Electives:** Compulsory  
**Semester offered** 1 and 2

*Module Aim*

This module aims at equipping the student with knowledge, skills and techniques for providing Occupational Therapy care to patients who have concomitant psychiatric illness in different age groups. Student are assisted to integrate prior learning in the areas of neuro-anatomy, neuro-physiology, short review of developmental psychology, neuropharmacology to recognise and explain the manifestation of psychiatric disorders the diagnostic process and the general principles of disease prevention, rehabilitation and be able to classify common drugs used in psychiatry. This is done through a combination of approaches of teaching and learning including didactic lectures and apprenticeship.

*Module Content:*

In this module students are introduced to the following 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, 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 50%  
Examination( 1x3 hour written paper) 50%

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**Module Title: Applied Occupational Therapy I**

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<b>Code:</b>	<b>OTH3711</b>
<b>NQF Level:</b>	7
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	3+2T hours per week for one semester
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	OTH3611, OTH3612
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

*Module Aims:*

The aim of this module is equip students with professional reasoning skills necessary to provide patient care in occupational therapy at secondary or tertiary health care level. Students learn intervention protocols for the most common physical conditions (all ages) with an emphasis on occupational therapy targets of impairment reduction, adaptation and skills acquisition - thus restorative and preventative programmes.

*Module Content:*

Students are exposed to pathology prognosis, prevalence and incidence, special examinations, medical intervention, complications, and interventions of other health professionals, of health conditions related to functions of the cardiovascular, haematological, immunological and respiratory systems, genitourinary and reproductive functions, neuro-musculo-skeletal and movement-related functions, functions of the skin and related structures, structure of the nervous system, structure of the cardiovascular, immunological and respiratory systems, structure related to genitourinary and reproductive systems, structures related to movement, skin and related structures across all ages; Students select techniques, change modalities and learn protocols to restore loss of function due to impairment and prevent secondary complications or disability, related to the above mentioned health conditions across all ages; Students evaluate occupations that contribute to restorative and preventative programmes in terms of above mentioned health conditions across all ages; Students will identify occupational therapy models (CMOP -E; MOHO, V du Toit MOCA etc.) and theories (Neuro-developmental, sensory modulation, theories of learning and knowledge transfer, theories of change, theories of motivation, theories of goal setting etc.), precautionary measures (positioning, structural support, etc.) in planning intervention programmes across all ages. Students will apply knowledge and skills in Work rehabilitation, vocational rehabilitation, and protected employment. Furthermore students will be able to design or recommended an ergonomic workstation for given case studies.

*Assessment Strategies*

Continuous assessment	50%
Examination	50%
OSCE's	25%
1x3 hour written paper	25%

<b>Code:</b>	<b>PTY3700</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	2 hours per week for both semesters
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 and 2

*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.

*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 and use of The Harvard referencing system.

*Assessment Strategies*

100% continuous assessment

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**Module Title: Applied Occupational Therapy II**

<b>Code:</b>	<b>OTH3712</b>
<b>NQF Level:</b>	7
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	3+2T hours per week for one semester
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	OTH3611, OTH3612
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims:*

The aim of this module is equip students with professional reasoning skills necessary to provide patient care in occupational therapy at secondary of tertiary health care level. The focus is

on Impairment reduction, adaptation and skills acquisition (related to effects of pathology), thus restorative and preventative programmes. Furthermore, students learn intervention protocols for the most common psychiatric conditions (all ages, sensory processing disorders included).

*Module Content:*

Students are exposed to psycho and occupational-pathology, prognosis, prevalence and incidence, special examinations, medical intervention, complications, and interventions of other health professionals of the following conditions:

Neurodevelopment disorder, schizophrenia spectrum and other psychotic disorders, bipolar and related disorders, anxiety disorder, obsessive-compulsive and related disorders, trauma- and stressor-related disorders, somatic symptom and related disorders, feeding and eating disorders, elimination disorder, sleep/wake disorders, sexual dysfunctions gender dysphoria, disruptive, impulsive control and conduct disorder (CID), substance-related and addictive disorders, neurocognitive disorders, personality disorders, medication-induced movement disorders and other adverse effects of medication; Students select techniques, change modalities and learn protocols to restore loss of function due to impairment and prevent secondary complications or disability, related to the above mentioned disorders; Students evaluate occupations that contribute to restorative and preventative programmes in terms of above mentioned disorders. Students will identify occupational therapy models (CMOP -E; MOHO, V du Toit MOCA etc.) and theories (Neuro-developmental, sensory modulation, theories of learning and knowledge transfer, theories of change, theories of motivation, theories of goal setting etc.), precautionary and safety measures (structuring the environment, choice of tools, materials, occupations, etc.) in planning intervention programmes.

*Assessment Strategies*

Continuous assessment	50%
Examination	50%
OSCE's	25%
1x3 hour written paper	25%

Year 4

Module Title: Research Project	
<b>Code:</b>	<b>OTH3810</b>
<b>NQF level:</b>	<b>8</b>
<b>Notional hours:</b>	<b>320</b>
<b>Contact Hours:</b>	<b>4 hours per week for both semesters</b>
<b>NQF Credits:</b>	<b>32</b>
<b>Pre-requisite:</b>	<b>All 3<sup>rd</sup> year modules passed</b>
<b>Compulsory/Electives:</b>	<b>Compulsory</b>
<b>Semester offered:</b>	<b>1 and 2</b>

*Module Aims:*

The aim of the module is to enable able student to develop and apply the knowledge and skills required in identifying and prioritising 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*

Research proposal is written before the fourth year commences. Ethical clearance is obtained in first quarter of first semester, 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 finalise the written report. The conference presentation rating will constitute the continuous assessment for the semester.

*Assessment strategies:*

100% Continuous Assessment

<b>Module Title: Applied Occupational Therapy III</b>	
<b>Code:</b>	<b>OTH3801</b>
<b>NQF level:</b>	<b>8</b>
<b>Notional hours:</b>	<b>80</b>
<b>Contact Hours:</b>	<b>4 hours integrated learning for one semester</b>
<b>NQF Credits:</b>	<b>8</b>
<b>Pre-requisite:</b>	<b>All 3<sup>rd</sup> year modules passed</b>
<b>Compulsory/Electives:</b>	<b>Compulsory</b>
<b>Semester offered:</b>	<b>1</b>

*Module Aims:*

The aim of this module is equip students with professional reasoning skills necessary to provide patient care in occupational therapy with community and population focus, thus promotion, primary prevention, rehabilitation programmes and response in humanitarian emergencies. Furthermore, students learn to design direct and indirect service delivery to individuals, groups and communities for the attainment of health and development objectives through occupation, aiming obtain occupational justice (all ages and all intersections).

*Module Content:*

Burden of disease (financial cost, mortality, morbidity, health indicators, quality-adjusted and disability adjusted life, of years), health statistics and their importance; Impact of communicable (HIV, STD, TB, malaria), and non-communicable disease (heart attack, stroke, cancer, diabetes, chronic respiratory diseases, musculoskeletal diseases and injuries from motor vehicle crashes, globally and on Namibia; Linkages between disease and socio-economic status and access to health services; Health and other relevant policies - international and global (health promotion, WHO documents and charters, Health literacy and health behaviour (health campaigns, health workshops, oral presentations and visual presentations). Humanitarian emergencies and disaster responses from an occupational therapy perspective. Students select techniques, change modalities and learn protocols to address burden of disease by using change modalities and occupational therapy models and



theories to design health programmes at population level. Students evaluate occupations whether they dignifying, health promoting, meaning and purposeful and that contribute to occupational justice.

*Assessment strategies:*

Continuous assessment:	50%
Examination	50%
1x3 hour written paper	25%
OSCE	25%

**Module Title: Clinical Occupational Therapy III**

<b>Code:</b>	<b>OTH3880</b>
<b>NQF level:</b>	<b>8</b>
<b>Notional hours:</b>	<b>800 hours</b>
<b>Contact hours:</b>	<b>800 hours of integrated learning for both semesters</b>
<b>NQF Credits:</b>	<b>80</b>
<b>Pre-requisite:</b>	<b>All 3<sup>rd</sup> year modules passed</b>
<b>Compulsory/Electives:</b>	<b>Compulsory</b>
<b>Semester offered:</b>	<b>1 and 2</b>

*Module Aims:*

This module will enable students to function under supervision in clinical advanced settings as first contact practitioner within the Namibian context. Opportunities will be for the students to develop competencies in professional and ethical practices in secondary and tertiary care settings.

*Module Content:*

Preparation for service training (logbooks, attendance registers, case study outline, case study requirements, ethical behaviour, professional behaviour, work ethics); Evaluation of service training (explain assessment strategies and evaluation); Supervision of service training (explain supervisor agreement forms, importance of signing agreements, documentation of supervision); Service learning settings (introduction to settings, aims, gateways, arrangements, rules, working hours at facility). Synthesize/consolidate all knowledge and skills acquired in the previous three years. Implement the occupational therapy process (choose relevant assessment tools, theoretical frameworks, intervention protocols, methods, techniques, occupations, environmental adaptations, principles, etc., evaluate progress of client and of intervention and own role, analyse shortcomings and amendments in intervention. Practice client-centred (involve patient in goal setting, cultural sensitive, intersection appropriate, personal preferences and strengths); Practice occupation-based (enable engagement active, passive and vicarious, occupational change modalities, natural occupations and therapist as therapeutic agent); Practice outcome-based (measure and document baseline data and record progress); Practice evidence-based (precise record keeping, formulate PICO questions and search for evidence, revue evidence, apply in Namibian setting).

*Module assessment:*

Continuous assessment	50%
Examination	50% 1x3 hour written paper

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**Module Title: Applied Occupational Therapy IV**

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<b>Code:</b>	OTH3802
<b>NQF level:</b>	8
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	4 hours of integrated learning for one semester
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	All 3 <sup>rd</sup> year modules passed
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims:*

This module aims to prepare student for professional practice. It also aims at broadening students perspective by solving clinical problems and organising a journal club.

*Module Content:*

Management (defined, functions, form, Quinn's competing values framework, McKinsey 7-S framework; Developing and evaluating services (Logic model, M&E of health system strengthening (WHO), health services audits; Supervision and mentoring (functions and form, type of supervision, practical tips; Organising journal club (preparing and presenting, reading and critiquing articles, attending presentations and giving constructive feedback; Solving clinical problems and sharpening professional reasoning (case presentations, case discussions, arguing stances in case management).

*Assessment strategies:*

Continuous assessment: 100%

## BACHELOR OF SCIENCE PHYSIOTHERAPY (HONOURS) 18BPTY

### DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

#### PURPOSE AND RATIONALE OF THE QUALIFICATION

Physiotherapy profession is an important role player within the National Health Service. It provides services to individuals and populations enabling them to develop, maintain and restore maximum movement and functional ability throughout their lifespan. This includes providing services in circumstances where movement and function are threatened by ageing, injury, pain, disease, disorders, other conditions or environmental factors. Functional movement is central to what it means to be healthy.

#### EXIT PROGRAMME OUTCOMES

The physiotherapist graduating from University of Namibia should embrace the principle of empathy, be person centred and culturally sensitive. He/she should be able to listen, learn and lead in a wide range of clinical settings, locally and globally with emphasis on community settings, within multi sectoral, inter-professional teams. Furthermore, he/she should demonstrate professional competence, skills, knowledge, and be a lifelong learner who practice ethically. He/she should be an effective communicator as well as role model in society.

Upon successful completion of this programme, graduates will be able to:

#### Patient care competences

1. Establish and maintain a safe working environment as well as be sensitive to the psychological and physiological needs of patients and make appropriate adjustments
2. Independently obtain clinical information from patients and other sources in a safe, logical and organised manner as part of the examination
3. Uses clinical information and evidence to formulate diagnosis or initial hypothesis which is congruent with the pathology, impairment, functional limitation or disability and prioritise selection of tests and measurements
4. Select appropriate assessment techniques and outcome goals and measures /indicators;
5. Request for diagnostic procedures and tests in a cost-effective manner and interpret results
6. Synthesise examination data and results from tests to make clinical diagnosis for physical therapy interventions and list of differential diagnosis as well as make clinical decisions/judgements
7. Find physical therapy solutions of care in collaboration with the patient, family, care giver, and others involved in the delivery of healthcare services
8. Manage independently and effectively patients through prevention, treatment or rehabilitative methods
9. Establish goals and time bound desired functional outcomes

10. Perform interventions/procedures in a safe, effective efficient, logical and coordinated manner
11. Manage pain and provide palliative care to patients and families
12. Diagnose and present clinical decisions based on logic, rationale, evidence and within context of ethical practice
13. Document all aspects of physical therapy care
14. Develop a final rehabilitation plan

#### Competences for communication

1. Communicate effectively verbally and non-verbally with patients, family, caregiver and others involved in the delivery of healthcare services
2. Initiate communication in difficult situations
3. Recognise and be sensitive to cultural diversity, adapt to behaviour and communication accordingly taking into account differences in race/ethnicity, nationality, gender/sex and disability status

#### Competences for Accountability and professional development

1. Evaluate his/her own capability and implement educational programmes in order to, at all times maintain the required level of professional competencies
2. Places patients needs above self-interests and identifies his/her personal limitations
3. Recognises and accepts responsibility for actions and reports mistakes
4. Perform evidence based health/patient care in a professional and ethical manner

#### Research and innovation competences

Perform research in the speciality of Physiotherapy and practice evidence based care

#### Competences for leadership and management of healthcare delivery systems

Apply technical procedures, concepts and principles of management, leadership and medical jurisprudence to administer health care delivery systems.

## REGULATIONS

### Criteria for Admission

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

1. 30 points in five subjects on the UNAM scale with a grade B or better in ordinary level English OR 32 points in five subjects on the UNAM scale with a grade C or better in ordinary level English
2. A Score of "2" or better on higher level in Mathematics and Physical Sciences (or 2 in Mathematics and 3 in Physical Science) (or 2 in Physical Science and 3 in Mathematics) or a grade B or better in ordinary level Mathematics and Physical Sciences
3. Grade B or better in ordinary level Biology/Life Science or a score of 3 or better on higher level Biology/Life Science

*(Please refer to the General Information and Regulations Prospectus for the scale used by the University to calculate the UNAM score);*

**OR**

4. Successful completion of the entire first year Science curriculum and must have passed each Chemistry, Biology, Mathematics and Physics module with a final mark of at least 55%.

**OR**

5. Successful completion of a Science degree from a recognised University with passes in Chemistry, Biology, Mathematics and Physics including at least at first year level

**OR**

6. Satisfy the following conditions for entry through the Mature Age Entry Scheme:
  - a. They should be at least 25 years old on the first day of the academic year in which admission is sought
  - b. They should have successfully completed senior secondary education
  - c. They should have proof of at least five years Physiotherapy relevant work experience (as determined by the School).
  - d. They should pass each paper of the prescribed Mature Age Entry Tests with an overall average of 55%.

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

#### **DURATION OF STUDY**

The minimum duration for full-time study programme extends over a period of four (4) years. The maximum period of full-time study is six (6) years.

#### **EXAMINATION REGULATIONS**

##### **Assessment Criteria**

Techniques of examination include practical examinations, theoretical papers, viva voce (oral evaluation), and practical papers, file presentations, clinical tests and reports on clinical work. In the professional subjects, practical and clinical works are weighted equally with theoretical work.

All subjects are examined through Continuous Assessment and final examination:

1. Admission to examination: To qualify for examination in a module, the overall Continuous Assessment mark must be at least 45%.
2. The Continuous Assessment marks will constitute 50% of the Final mark and the Exam will be 50% of the Final mark.
3. Pass Requirements: The minimum final pass is 50% for each module with a sub-minimum of 50% in the clinical examination where applicable and sub-minimum of 45% in the theory paper.
4. To qualify for a Supplementary Examination: The minimum final mark must be at least 45% with a sub-minimum of 40% in the clinical examination where applicable.

#### **ACADEMIC ADVANCEMENT RULES**

### MINIMUM REQUIREMENTS FOR RE-ADMISSION

To be re-admitted to the Physiotherapy program for a particular year of registration, a student must have passed the minimum number of credits required as indicated below:

1. 64 credits by the end of the first year: 32 credits of these credits must be non-core
2. 144 credits by the end of the second year
3. 240 credits by the end of the third year
4. 352 credits by the end of the fourth year
5. 440 credits by the end of the fifth year

### ADVANCEMENT AND PROGRESSION RULES

In general a student advances to the following academic level of study when at least 2/3 of the modules of the curriculum for a specific year have been passed. If a student passed only 1/3 of the full curriculum of a specific year, he/she may not register for any modules of the following year. In all cases, prerequisites for modules have to be passed before a student can proceed to register for modules that require prerequisites.

1. From year 1 to year 2: At least 120 credits prescribed for year 1 must be passed.
2. From year 2 to year 3: All first year modules plus at least 120 credits prescribed for year 2 must be passed.
3. From year 3 to year 4: All first, second and third year modules must be passed.

### MAXIMUM NUMBER OF MODULES PER YEAR:

No student will be allowed to register for more than the following credits as indicated below

1. Year 1: 152 credits
2. Year 2: 168 credits
3. Year 3: 144 credits
4. Year 4: 128 credits

### REQUIREMENTS FOR QUALIFICATION AWARD

This qualification will be awarded to candidates credited with a minimum of 528 credits and who have met all the requirements of the Degree programme, including field/clinical placements and portfolios.

### CAREER OPPORTUNITIES

The graduates of this Bachelor of Science Physiotherapy (Honours) may become: Physiotherapists and assessors for disability cases. Public and Private hospitals, Insurance companies, MVA Fund, Workmen's compensation programmes (Social Security, etc.) are potential employers. Such graduates may also work in nursing homes, industry, rehabilitation centres, local community practice, prisons, education sector, health management or pursue research.

### Summary table for all modules in the programme

#### Year 1

Module code	Module name	NQF Level	Credits	Contact hours per week	(Co-requisite) / Pre-requisite
<b>Year 1 Semester 1</b>					
CLC3509	Computer Literacy	5	8	2	
CSI3580	Contemporary Social issues	5	4	1	
LEA3519	English for Academic Purposes	5	16	4	
ATM3531	Anatomy for Allied Health Sciences I	5	16	3+4P	
PLG3501	Medical Physics	5	8	2	
BCM3501	Organic Chemistry	5	8	2+2P	
PLG3511	Systems Physiology I	5	16	3+4P	
Total Credits Semester 1					76
<b>Year 1 Semester 2</b>					
CSI3580	Contemporary Social Issues	5	4	1	
PTY3502	Physiotherapy Science I	5	8	2+2P	
BCM3512	General Biochemistry I	5	16	3+4P	
CMM3512	Sociology of Health and Disease	5	16	3+4P	
ATM3532	Anatomy for Physiotherapy II	5	16	3+4P	
PLG3512	Systems Physiology II	5	16	3+4P	
Total credits Semester 2					76
TOTAL CREDITS YEAR 1					152

## Year 2

Semester 1					
PCT3600	Psychology	6	8	2	
OTH3611	Clinical Sciences I	6	16	4+3P	ATM3531, PLG3511, ATM3532 and PLG3512
PTY3681	Professional Practice	6	12	3	
Total Credits Semester 1					68
Year 2 Semester 2					
PCT3600	Psychology	6	8	2	
OTH3612	Clinical Sciences II	6	16	4+3P	ATM3531, PLG3511, ATM3532 and PLG3512
LCH3682	Local Language for Health science communication	6	4	1	
Total credits Semester 2					68
TOTAL CREDITS YEAR 2					136

## Year 3

Semester 1					
PTY3780	Clinical Physiotherapy II	7	20	Total hours 200	PTY3602 and PTY3680
PTY3790	Applied Physiotherapy I	7	20	Total hours 200	PTY3602 and PTY3680



PTY3700	Research Methods	7	8	2	
PTY3701	Pharmacology physiotherapy	for 7	8	2	BCM3501, BCM3512, PTY3502, PTY3680
Total Credits Semester 1					56
Year 3 Semester 2					
PTY3780	Clinical Physiotherapy II	7	20	Total hours 200	PTY3602 and PTY3680
PTY3790	Applied Physiotherapy I	7	20	Total hours 200	PTY3602 and PTY3680
PTY3700	Research Methods	7	8	2	
PTY3702	Physiotherapy Practice	7	8	2	PTY3681
Total credits Semester 2					56
TOTAL CREDITS YEAR 3					112

#### Year 4

Semester 1					
PTY3810	Research Project	8	16	4	PTY3700
PTY3830	Applied Physiotherapy II	8	16	7 integrated	PTY3790
PTY3880	Clinical Physiotherapy III	8	32	Total hours 320	PTY3780
Total Credits Semester 1					64
Year 4 Semester 2					
PTY3810	Research Project	8	16	4	PTY3700
PTY3830	Applied Physiotherapy II	8	16	7 integrated	PTY3790

PTY3880	Clinical Physiotherapy III	8	32	Total hours	320	PTY3780
Total credits Semester 2						64
TOTAL CREDITS YEAR 4						128
TOTAL CREDITS FOR THE PROGRAMME						528

## YEAR 1

### 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:** 1<sup>st</sup> 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).

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**Module Title: Contemporary Social Issues**

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<b>Code:</b>	CSI3580
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	1 hour per week for 2 semesters (offered Online)
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	none
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 <sup>st</sup> 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 behavioral change among UNAM students and inculcate the primacy of moral reasoning in their social relations and their academic lives. In providing students with critical and analytical thinking the module enables students to grow and develop into well rounded citizens, capable of solving contemporary social challenges experienced in their communities and societies. The teaching of the module takes three dimensions: the intellectual, the professional and the personal dimensions. The intellectual dimension is fostered through engaging students with subject knowledge, independent learning and module assessment. The professional dimension, on the other hand, is fostered through exposing students to real life situations of case studies and practical exercises that draws attention to social issues that attract ongoing political, public and media attention and/or debate. Finally, the professional dimension is fostered through group work and online discussions.

## 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:** 1<sup>st</sup> 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: Anatomy for Allied Health Sciences I

<b>Code:</b>	<b>ATM3531</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	160
<b>Contact hours:</b>	3 + 4p hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

### *Module Aims*

This module aims to provide students with sound systemic anatomical and histological knowledge of the anatomical systems 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*

Introduction to all the major body systems; Introduction to human histology including histology of the basic tissues; Regional anatomy and topographical anatomy, organ development and histology of the 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*

Continuous Assessment mark: 50%

Examination mark: One 2-hour theory examination paper (50%)

One practical examination paper (50%)

Final mark: 50% of exam mark and 50% of class mark.

## Module Title: Medical Physics

<b>Code:</b>	<b>PLG3501</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 hours per week for 16 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	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 in respect with 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, Bernoulli'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 (charge, 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 (bonding 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). Application of related concepts of physics such as short wave, radio waves, ultrasonic waves, laser and magnetic resonance in physiotherapy practice and medicine in general.

### *Assessment Strategies*

Continuous Assessment: 50%

Examination: 50% (1 x 3 hours paper)

## Module Title: Organic Chemistry

<b>Code</b>	<b>BCM3501</b>
<b>NQF level</b>	5
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 lecture hours + 2 P per week for 16 weeks
<b>NQF Credits:</b>	8

**Pre-requisite:** None  
**Compulsory/Electives:** Compulsory  
**Semester offered:** 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): 50%

Examination: 50% Examination (1 x 3 hours written paper + 1½ h practical examination)

## Module Title: Systemic Physiology I

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

### *Module Aims*

The systems physiology module 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 module 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 utilisation 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.

Students will familiar them 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%  
Examination: 50% (1 X 3 hours paper)



## Module Title: Physiotherapy Science I

<b>Code:</b>	<b>PTY 3502</b>
<b>NQF level:</b>	5
<b>Notional hours:</b>	80
<b>Contact hours:</b>	2 + 2P per week for 16 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

### *Module Aims*

The module aims to provide students with an introduction surrounding the terminology and basic approaches used in human movement science. Students learn about the basic physiotherapeutic treatment and handling skills including general passive movement skills, massage, posture and movement analysis.

### *Module Content*

The module will provide the student with a sound knowledge of the following topics; *Kinematics: types of movement; Axis and Planes; Relative position and osteokinematic direction; Kinetics: types of forces, Critical factors and the reaction of forces; Gravity; Application of biomechanical concepts; Force systems; biomechanics of contractile tissue; Non contractile tissue; Shoulder girdle complex; Elbow joint complex; Wrist joint complex and hand (Intro); Hip joint complex; Knee joint complex; Ankle joint and foot complex and spinal column.*

### *Module assessment:*

Continuous Assessment: 50%

Examination: 50% Examination (1 x 3 hours written paper + 1½ h practical examination)

## Module Title: General Biochemistry I

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

### *Module Aims*

This module is the first of two with a focus on cellular organisation, 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 organisation; 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): 50%

Examination: 50% (1 x 3 hours written paper + 1½ h practical examination)

### **Module Title: SOCIOLOGY OF HEALTH AND DISEASE**

<b>Code:</b>	<b>CMM3512</b>
<b>NQF Level:</b>	5
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	3 lecture hours + 4P hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	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 takes into account the structural and social factors not necessarily relying on biological and medical explanations of health and disease. Students also gets exposure to 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 emphasises the role that beliefs and behaviours play in health and illness.

Furthermore the module will address the sociological definition of disease, explore major theoretical perspectives in health, behavioural science and sociology, the influence of class, gender and ethnicity on health; global and rural health problems; health promotion and community health services among others. This will enable the students to understand the social determinants of health, social construction of illness, social meanings of illness, patterns in the distribution of health and illnesses, people health seeking behaviours; interaction between patients and the health provider. The module 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 module 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: 50%  
 Final Examination: 50%

**Module Title: Anatomy for Physiotherapy II**

**Code:** ATM3532  
**NQF level:** 5  
**Notional hours:** 160  
**Contact hours:** 3 + 4p hours per week for 16 weeks  
**NQF Credits:** 16  
**Pre-requisite:** None  
**Compulsory/Electives:** Compulsory  
**Semester offered:** 2

*Module Aims*

This module is designed to provide continued study of histological and anatomical systems. In this semester special attention is paid to the relation of anatomy of these systems to their function and dysfunction in human movement. It has a strong focus on the mechanical properties of bone, ligaments, tendons, cartilage, neural and muscle tissue as these are the fundamental materials or structures of which the musculoskeletal system is composed. There is some revision of gross anatomy and functional musculoskeletal anatomy of the limbs and trunk as appropriate to the topics discussed. In addition to normal function it includes the mechanisms of and adaptations to injury, disease and rehabilitation. Anatomical aspects of posture and locomotion and their changes through the lifespan are also covered.

*Assessment Strategies*

Continuous Assessment mark:  
 Examination mark: 1 x 3 hour theory examination paper (50%)  
 1 x 1 hour practical examination paper (50%)  
 Final mark: 50% of exam mark and 50% of Class mark.

**Module Title: Systemic Physiology II**

**Code:** PLG3512  
**NQF level:** 5  
**Notional hours:** 160  
**Contact Hours:** 3 + 4P hours per week for 14 weeks

<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

#### *Module Aims*

The systems physiology module 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 module 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 utilisation 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 module 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%

Examination: 50% (1 X 3 hours paper)

## YEAR 2

### Module Title: Physiotherapy Science II

<b>Code:</b>	<b>PTY3680</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	640
<b>Contact Hours:</b>	6 + 8P hours per week for 32 weeks
<b>NQF Credits:</b>	64
<b>Pre-requisite:</b>	PTY3502
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 and 2

#### *Module Aims*

This module aims equip the students with skills of assessment and management of orthopaedics, traumatic orthopaedic conditions in adult and paediatric cases and electrotherapy. This module also aims at equipping students with skills in assessment and treatment of neuro-musculoskeletal (NMS) conditions in particular the lower quarter. Furthermore, this module will teach the students the theory and practical application of proprioceptive neuromuscular facilitation (PNF) to the assessment and treatment of the lower quarter.

#### *Module Content*

This module covers the fields of orthopaedics and neuro-musculoskeletal (NMS) physiotherapy with proprioceptive neuromuscular facilitation. Orthopaedics: This component covers the scope of physiotherapy assessment and management of orthopaedic conditions. The focus is on traumatic orthopaedic conditions of the lower quarter involves, amputations and paediatric orthopaedic conditions; use of walking aids. This will focus on the assessment and treatment of simple fractures of the limbs, paediatric orthopaedic conditions and amputations. Neuro-musculoskeletal: This component covers the physiotherapy assessment and treatment of NMS conditions. The focus is on NMS conditions of the lower quarter; functional patterns of the lower limb and trunk. Proprioceptive neuromuscular facilitation: This component covers the theory and practical application of PNF as it applies to the assessment and rehabilitation of patients. Covered to is the theory and practical demonstration of electrotherapeutic and other physical agents in electrotherapy: Low frequency currents; Medium frequency currents; High frequency currents: short wave and micro wave diathermy; Ultrasound; Electro thermotherapy: Infra red; Laser; Cryotherapy.

#### *Assessment Strategies*

The Continuous Assessment (CA): 50%

Written Examination and OSCE examination: 50% (1 X 3 hours paper plus OSCE)

**Module Title: PSYCHOLOGY**

<b>Code:</b>	<b>PCT3600</b>
<b>NQF Level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	2 lecture hours per week for two semesters
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	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 module 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 module 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 hospitalisation, 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): 50%  
Examination: 50% (1 x 3 hours written paper)

**Module Title: Clinical Sciences I**

<b>Code:</b>	<b>OTH3611</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	4+3P hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	ATM3531, PLG3511, ATM3532 and PLG3512
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

### *Module Aims*

This module aims at equipping students with knowledge on structural changes affecting tissues, organs and systems of the human body due to various processes and insults.

### *Module Content*

This module focuses on systemic discussions of the various pathological lesions resulting from cell injury, acute and chronic inflammation, metabolic disorders, neoplasia and accumulation; non-infective disorders topics: Definition and scope of pathology; Cell damage; Cell death; Connective tissue and damage; The inflammatory response; Chronic inflammation; Body's defences and responses to infection; Healing; Radiation, trauma and temperature; Abnormalities of cell growth; Neoplasia; Circulatory disturbances oedema; Circulatory disturbances, thrombosis and embolism; Circulatory disturbances, ischaemia and infraction; Abnormalities of calcium metabolism; Abnormal pigmentation; laboratory tests in relation to endocrine, metabolic and other pathological changes. Paediatrics: Management of the neonate, Cerebral palsy, Developmental disorders and mental retardation, Congenital and chromosomal abnormalities.

### *Module Assessment*

Continuous Assessment: 50%

Examination pass mark is 50% (1 x 3 hours paper)

## Module Title: Clinical Sciences II

<b>Code:</b>	<b>OTH3612</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	4+3P hours per week for 16 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	ATM3531, PLG3511, ATM3532 and PLG3512
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

### *Module Aim*

This module which is the mainstay and foundation of clinical medical practice is envisaged to introduce the students early on to the professional and technical skills, scientific knowledge and human understanding necessary in the care of the sick, frail, their families and the community and build up on the art of medical practice to near perfection. The module also introduces students to basic clinical procedure through didactic teaching and hands-on practice. A student is also equipped with knowledge and skills for providing emergency first aid resuscitation and support before arranging for secure and safe transfer to health facility.

### *Module Content*

It emphasizes on the establishment of direct, one-to-one caregiver-patient relationships the process of social communication and the performance of physical examination based on competent use of professional skills. Topics covered include infection control, universal precautions, communication skills, general, regional and systemic physical examination of patients; basic clinical skills; first aid. Geriatric Medicine: Gastrointestinal disorders, Lymphoma, Metabolic bone disease, Thyroid, adrenal and pituitary disease, Renal pathology.

### *Assessment Strategies*

Continuous Assessment: 50%  
Examination pass mark is 50% (1 x 3 hours paper)

## Module Title: Professional Practice

<b>Code:</b>	<b>PTY3681</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	120
<b>Contact Hours:</b>	3 hours per week for 16 weeks
<b>NQF Credits:</b>	12
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1

### *Module Aims*

The aim of this module is assist 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.

### *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-physiotherapist 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.

#### *Assessment Strategies*

Continuous assessment (50%):

End of module examination (50%): 1 x 3 hours paper

### **Module Title: Clinical Physiotherapy I**

<b>Code:</b>	<b>PTY3602</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	Total of 80 integrated hours
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	ATM3531, PLG3511, ATM3532 and PLG3512
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

#### *Module Aims*

This module was designed as an introduction to the Clinical Modules of 3rd and 4th year of study. Students are afforded the opportunity to interact with patients in a non-threatening environment as they do not take responsibility for patient management.

#### *Module Content*

*This introductory module will focus on both the macro level (Namibian context) and micro level (patient level). At the macro level the student will experience the structure and functioning of the Namibian Health Care System as well as the daily routine of a hospital ward. The student will gain limited knowledge of the medico legal aspects within which the physiotherapist practices. There is opportunity to conduct an interview with a patient, document findings and decide which structures should be assessed*

#### *Assessment Strategies:*

*100% Continuous Assessment consisting of logbook and portfolio*

### **Module Title: Local Language for Health Science Communication**

<b>Code:</b>	<b>LCH3682</b>
<b>NQF level:</b>	6
<b>Notional hours:</b>	40

<b>Contact Hours:</b>	1 hour per week for 16 weeks
<b>NQF Credits:</b>	4
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	2

*Module Aims*

The module is to ensure that students have adequate communications skills in one of the commonly used Namibian in addition to their home language in terms of patient interaction and practise.

*Module Content*

This module develops a students understanding regarding social norms and confessions in one other population group in Namibia; listening, verbal and non-verbal communication; medical terminology and construct of common symptoms in the relevant language.

*Assessment Strategies*

*100% Continuous Assessment*

## Year 3

### Module Title: Clinical Physiotherapy II

<b>Code:</b>	<b>PTY3780</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	400
<b>Contact hours:</b>	Total of 400 integrated hours
<b>NQF Credits:</b>	40
<b>Pre-requisite:</b>	PTY3602 and PTY3680
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	1 and 2

#### *Module Aims*

This module aims to develop the knowledge, skill and attitudes to manage patients with simple/uncompounded pathologies effectively, holistically and applicably within the framework of the 5 pillars of healthcare. During clinical physiotherapy III students start to take responsibility for patient management under supervision of lecturers. The aim is to prepare students for independent and teamwork practice within the comprehensive health care system. Third year students are expected to manage uncompounded pathologies.

#### *Module Content*

Clinical physiotherapy II builds on I. Here students will have more interaction with patients and should implement the medico legal and professional knowledge learned to practice. Students, under their lecturer supervision, will consult, evaluate and demonstrate the use of specific basic techniques to identify simple/uncompounded pathologies and then should show competency in planning the treatment in assisting patients recovery within the context of the 5 pillars of health care. Work-based learning will bring the opportunity to test and evaluate all components of the students training as to this point and also allow for appropriate necessary experience gathered.

#### *Assessment Strategies:*

The Continuous Assessment (CA): 50%

Written Examination and OSCE examination: 50% (1 X 3 hours paper plus OSCE)

## Module Title: Applied Physiotherapy I

<b>Code:</b>	<b>PTY3790</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	400
<b>Contact Hours:</b>	Total of 400 integrated hours
<b>NQF Credits:</b>	40
<b>Pre-requisite:</b>	PTY3602 and PTY3680
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	Semester 1 and 2

### *Module Aim*

The goal of this module is to provide students the opportunity to integrate and expand the knowledge, concepts and skills acquired in physiotherapy science with the pathology, social context of a patient and different levels/structures of health care. This integration is a building block in the clinical reasoning process with regard to the evaluation and management of patients. This process allows the students to evaluate, interpret and analyse a client's status and needs (physical, functional and psychological) in order to develop a physiotherapy diagnosis, prognosis and ultimately an outcome based intervention plan.

### *Module Content*

Topics: Immobilisation; Amputation; Lung conditions; evaluation and treatment of gait dysfunction in a CVA patient; discharge planning for an ambulant CVA patient (mainly physiotherapy referral and management); Hamstring Injury; Complete paraplegia and tetraplegia: evaluation (motor and sensory) of a patient with a cervical spinal cord lesion in order to determine a neurological level; the functional level (activity limitations) related to different cervical neurological levels; the physiotherapy management of a patient with a cervical SCI during the sub-acute and early rehabilitation phase; selecting and performing appropriate evaluation techniques (muscle strength, sensation, sitting balance) to determine the neurological level of an SCI lesion; the impact of different neurological levels on function (activity limitation and participation); managing complications following an SCI (medical and physiotherapy management) i.e. for the complications of postural hypotension, circulatory problems, pressure sores, respiratory problems, shortened structures/contractures, spasms, neurogenic pain, autonomic dysreflexia); early physiotherapy management of a patient with a cervical SCI Ankle ligament injury; managing the functional rehabilitation of an ankle ligament injury.

Evaluate, identify and manage pelvic fractures, coles fractures, cervical spondylosis, rotator cuff muscles, Shoulder ligament, radial nerve, septic arthritis, pulmonary surgery, coronary artery bypass surgery, burns and tennis elbow (tendon-overuse).

### *Assessment*

The Continuous Assessment (CA): 50%

Written Examination and OSCE examination: 50% (1 X 3 hours paper plus OSCE)

### Module Title: Research Methods

<b>Code:</b>	<b>PTY3700</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	160
<b>Contact Hours:</b>	2 per week for 32 weeks
<b>NQF Credits:</b>	16
<b>Pre-requisite:</b>	None
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	Semester 1 and 2

#### *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.

#### *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 and use of The Harvard referencing system.

#### *Assessment Strategies*

100% continuous assessment

### Module Title: Pharmacology for Physiotherapy

<b>Code:</b>	<b>PTY3701</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 per week for 16 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	BCM3501, BCM3512, PTY3502 and PTY3680
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	Semester 1

#### *Module Aims*

The module aims to learn students about the fundamentals of therapeutics, pharmacokinetics and pharmacodynamics of the commonly used drugs in there field as well as the mechanisms of action, adverse effects and precautions. Students will also learn about the side effects of drugs, drug interactions and the treatment of side effects to certain pathophysiological conditions relevant to physiotherapy.

### *Module Content*

This module will cover the introduction to pharmacodynamics and pharmacokinetics of various pharmacological terminology and drugs in physiotherapy. The students will learn the autonomic nervous system; adrenergic and cholinergic systems. Central nervous system: Parkinsonism; anxiolytics and hypnotics; affective disorders and antidepressants; neuroleptics; epilepsy and anti-convulsants; opioid analgesics. Selected topics and drugs: Pain and inflammation (analgesics, steroids, local anaesthetics); muscle relaxants (orphenadrine etc.); respiratory disorders (bronchodilators, mucolytics); allergy and anaphylaxis; cardiovascular drugs; chemotherapy (antibiotics, antivirals, antifungals, anti-cancer drugs); gastrointestinal tract drugs; pharmacology affecting homeostasis and thrombosis; endocrine pharmacology; reproductive pharmacology; drug abuse; central stimulants/depressants; drug interaction.

### *Assessment Strategies*

The Continuous Assessment (CA): 50%  
Written Examination: 50% (1 X 3 hours paper)

## **Module Title: Physiotherapy Practice**

<b>Code:</b>	<b>PTY3702</b>
<b>NQF level:</b>	7
<b>Notional hours:</b>	80
<b>Contact Hours:</b>	2 per week for 16 weeks
<b>NQF Credits:</b>	8
<b>Pre-requisite:</b>	PTY3681
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	Semester 2

### *Module Aims*

This module has been developed to augment the necessary knowledge and attitude in order to enable the student to safely and effectively practice physiotherapy within the context of the Namibian health setup.

### *Module Content*

Students will develop the knowledge of the physiotherapists role and skills within core areas of practice (cardio-respiratory, musculoskeletal and neurology) then to integrate this and evidence-based practice in order to understand the management for patients presenting with complex and multi-factorial clinical conditions.

Students must have a sound understanding of current government legislation: public health act, health professions act, hospitals and health facilities acts, pharmacy act, mental health act and the implication of this on their practice in the context of multidisciplinary/interdisciplinary team working and holistic care in meeting the needs of individual clients.

Theories, concepts and principles of health systems management: organisation of healthcare delivery services, management of human resources, finance and assets, information and logistics management; health care financing.

### *Assessment Strategies:*

Continuous Assessment: 50%  
Examination: 50% (1 x 2 hour paper)

## Year 4

### Module Title: Research Project

Code:	PTY3810
NQF level:	8
Notional hours:	320
Contact Hours:	4 hours per week
NQF Credits:	32
Pre-requisite:	None
Compulsory/Electives:	Compulsory
Semester offered:	Semester 1 and 2

#### *Module Aims*

The aim of the module is to enable able student to develop and apply the knowledge and skills required in identifying and prioritising 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 finalise the written report. The conference presentation rating will constitute the continuous assessment for the semester.

#### *Assessment strategies:*

100% Continuous Assessment

### Module Title: Applied Physiotherapy II

Code:	PTY3830
NQF level:	8
Notional hours:	320
Contact Hours:	7 integrated hours per week for 32 weeks
NQF Credits:	32
Pre-requisite:	PTY3790
Compulsory/Electives:	Compulsory
Semester offered:	Semester 1 and 2

### *Module Aims*

Applied physiotherapy II builds on applied physiotherapy I therefore it enables students to gain knowledge and skills necessary to accurately interpret the findings of an examination/evaluation and appropriately demonstrate proper use of manual therapy techniques, formulate a physiotherapy diagnosis/hypothesis and priorities problems; students also gain experience in selecting physiotherapy interventions as well as motivate the various approaches that can be followed in the management of patients. The module also prepares students to compile specific, measurable, realistic goals coupled with a time interval and defend practice based on current evidence (quality, highest level; best practice, appropriate for patient).

### *Module Content*

Exercise therapy; Common indications for exercise therapy; principles of evaluation procedures and acquire the competency in using proper manual therapy techniques e.g. Maitland and Kaltenborn mobilization techniques; use of exercise therapy in the clinical setting; provide a practice opportunity to revise selected exercise evaluation and treatment techniques for the upper and lower quadrants.

Neuro-developmental therapy; Limitation in the musculoskeletal/system/kinesiological issues of the young baby and child with abnormal movement patterns; the role of the developmental sequence when choosing facilitating techniques; the role of the family in the treatment of a baby/child with neuro-developmental disability; facilitation and adaptation of the following techniques for children with cerebral palsy (hemiplegia, spastic diplegia and spastic quadriplegia); as well as children with low tone (e.g. Down Syndrome).

Traumatic conditions; orthopaedics and burns: The role of physiotherapy in the management of patients with fractures; causes of fractures; medical management of fractures; mobilisation regimes according to type of fixation of a fracture; scientific requirements for x-ray discussion; precautions and contra indications with fractures; adaptation of patient management according to different methods of fixation. Understand and manage burns as applicable to physiotherapy in general.

Woman/child health and chronic medical conditions as well as neurosurgical, congenital and cardiopulmonary surgery conditions.

### *Assessment:*

Continuous Assessment: 50%

Examination: 50% (1 x 3 hour paper)



## Module Title: Clinical Physiotherapy III

<b>Code:</b>	<b>PTY3880</b>
<b>NQF level:</b>	8
<b>Notional hours:</b>	640
<b>Contact Hours:</b>	Total of 640 integrated hours
<b>NQF Credits:</b>	64
<b>Pre-requisite:</b>	PTY3780
<b>Compulsory/Electives:</b>	Compulsory
<b>Semester offered:</b>	Semester 1 and 2

### *Module Aims*

This module will enable students to function independently as first contact practitioner within the Namibian context. Opportunities for the students to develop competencies in professional and ethical practices in primary, secondary and tertiary care settings.

### *Module Content:*

*Role of a physiotherapy as an independent professional and as a member of a wider health team; clinical reasoning model; Application of the WHO International Classification of Functioning; framework; Examination of human movement; biopsychosocial approach to healthcare and evidence based practice; historical and contemporary professional issues; exercise science and therapy; physical activity and health; sports medicine and injury; management of complex medical problems: burns and plastic medicine, cardio-respiratory disease and critical care as well as rehabilitation; palliative care; neuro-rehabilitation and combined approach to spinal rehabilitation; physiotherapeutic management of women's health through the lifespan and child birth in particular; personal and professional development; managing own learning and reflective learning, use of online resources.*

### *Assessment Strategies:*

Continuous Assessment 50%  
Clinical practical examination 50%: 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 ( $\geq 75$ ) 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
<b>PART 1</b>					

ASB5989	<i>Basic Concepts and Practice of Anaesthesiology</i>	9	45	450	
ASM5989	<i>Anaesthesiology and Trauma</i>	9	45	450	
ASA5989	Comorbidities and Peri-operative Care	9	45	450	
ASH5989	Pathophysiology and Higher Care of Sick Patients	9	45	450	
ASP5989	<i>Anaesthesiology in Pregnancy</i>	9	45	450	
ASC5989	<i>Anaesthesiology and the Child</i>	9	45	450	
ASH5999	Clinical Research Methodology	9	20	200	ASH5999
<b>TOTAL PART 1</b>			<b>290</b>		
<b>PART 2</b>					
UAE 5819	<i>Academic Writing for Postgraduate Students.</i>	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	
<b>TOTAL PART 2</b>			<b>380</b>		
<b>TOTAL</b>			<b>694</b>		

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

### 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

<b>Module Title: Anaesthesiology and Trauma</b>	
<b>Module Code</b>	ASM5989
<b>NQF Level</b>	9
<b>Notional Hours</b>	450
<b>Contact hours</b>	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	45
<b>Prerequisite</b>	
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	N/A
<b>Module Aims</b>	
This module aims to: <ul style="list-style-type: none"> <li>• provide an understanding of the pathophysiology of trauma and emergency situations;</li> <li>• enable students to apply their knowledge of trauma and emergent care safely and efficiently;</li> <li>• provide an understanding of the requirements for safe patient transfer;</li> <li>• enable students to understand the dynamics of team working and leadership.</li> </ul>	

#### **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

<b>Module Title: Comorbidities and Peri-operative Care</b>	
<b>Module Code</b>	ASA5989
<b>NQF Level</b>	9
<b>Notional Hours</b>	450
<b>Contact hours</b>	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	45
<b>Prerequisite</b>	
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	N/A
<b>Module Aims</b>	
<p>This module aims to:</p> <ul style="list-style-type: none"> <li>• provide an understanding of the pathophysiology of comorbidities frequently encountered peri-operatively;</li> <li>• enable students to understand the implications of comorbidities for patients and their care;</li> <li>• acquaint trainees with knowledge of strategies to promote wellness and lifestyle modification to prevent ill health and co-morbidities</li> <li>• enable students to apply their knowledge to manage these clinical situations safely and efficiently;</li> <li>• provide an understanding of scoring systems in Anaesthesia and their use in communicating patient morbidity to clinical colleagues.</li> </ul>	

<b>Learning Outcomes/Specific Outcomes</b>
<p>On successful completion of this module, students will be able to:</p> <ol style="list-style-type: none"> <li>1. describe the pathophysiology of the conditions described in the module description critically;</li> <li>2. describe the implications of these condition for patients with associated comorbidities critically</li> <li>3. develop and participate in managing interventions for promoting and maintaining health, preventing comorbidities as well as optimizing the patients' health condition</li> <li>4. manage patients with comorbidities safely</li> </ol>

### 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



<b>Module Title:</b>	<b>Pathophysiology and Higher Care of Sick Patients</b>
<b>Module Code</b>	ASH5989
<b>NQF Level</b>	9
<b>Notional Hours</b>	450
<b>Contact hours</b>	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	45
<b>Prerequisite</b>	
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	N/A
<b>Module Aims</b>	
<p>This module aims to:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• enable students to intervene to stabilise an acutely unwell patient and support patients developing multi-organ failure.</li> </ul>	

<b>Learning Outcomes/Specific Outcomes</b>
<p>On successful completion of this module, students will be able to:</p> <ol style="list-style-type: none"> <li>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.</li> <li>2. manage patients with significant acute illnesses and / or co-existing altered physiology and pharmacology;</li> <li>3. manage patient ventilation and respiratory support;</li> <li>4. manage sedation for critically ill patients;</li> <li>5. manage fluid management and renal support;</li> <li>6. use inotropes for cardiovascular support in the critically ill.</li> </ol>

### 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

<b>PART B: MODULE DESCRIPTOR:</b>	
<b>Module Title: Anaesthesiology in Pregnancy</b>	
<b>Module Code</b>	ASP5989
<b>NQF Level</b>	9
<b>Notional Hours</b>	450
<b>Contact hours</b>	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	45
<b>Prerequisite</b>	
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	N/A
<b>Module Aims</b>	
This module aims to: <ul style="list-style-type: none"> <li>• broaden the students' knowledge of the range of possibilities of general anaesthesiology;</li> <li>• develop an understanding of the differences between the pregnant and non-pregnant patient and their implications for anaesthesiology;</li> <li>• provide an introduction to the basic principles of safe general and regional anaesthesia for the pregnant patient;</li> <li>• develop an understanding of obstetric comorbidities and obstetric emergencies such as prolonged/obstructed labour, pre-eclampsia/eclampsia, haemorrhages, etc and their implications for anaesthesiology;</li> <li>• develop an understanding into acute pain management for labouring parturients and postoperative delivery;</li> <li>• further extend the students' knowledge of the fundamental science underlying anaesthesiology.</li> </ul>	

<p><b>Learning Outcomes/Specific Outcomes</b></p> <p>On successful completion of this module, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. describe the different ways of maintaining the airway in a range of patients and provide a critique to justify their choice;</li> <li>2. describe the anatomy and physiology of the pregnant patient;</li> <li>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;</li> <li>4. manage obstetric and anaesthetic emergencies and CPR in the pregnant patient;</li> <li>5. manage labour pains in parturients using non-pharmacological, pharmacological and various neuraxial interventions such as spinal, epidural and combined spinal epidurals;</li> <li>6. provide professional care in anaesthesiology and pain management as a member of health team</li> <li>7. discuss the core physical concepts important to anaesthesiology critically.</li> </ol>
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### 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%):

<b>Module Title:</b>	<b>Anaesthesiology and the Child</b>
<b>Module Code</b>	ASC5989
<b>NQF Level</b>	9
<b>Notional Hours</b>	450
<b>Contact hours</b>	70 hours of lectures in total + 380 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	45
<b>Prerequisite</b>	
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	N/A
<b>Module Aims</b>	
This module aims to provide an: <ul style="list-style-type: none"><li>• understanding of the differences between the child (including neonates) and the adult and its implications for anaesthesiology;</li><li>• enable students to learn how to carry out local anaesthetic blocks and manage pain relief in children (including neonates);</li><li>• understanding of the management of emergencies in children (including neonates);</li><li>• further extension of the students' knowledge of the fundamental science underlying anaesthesiology.</li></ul>	

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. 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

<b>Module Title : Clinical Research Methodology</b>	
<b>Module Code</b>	ASH5999
<b>NQF Level</b>	9
<b>Notional hours</b>	200
<b>Contact hours</b>	200 hours of integrated lectures and practicals
<b>NQF Credits</b>	20
<b>Pre-requisites</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	NA
<b>Module aims to:</b> 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.	
<b>Learning Outcomes:</b> Upon successful completion of the module, students will be able to: <ul style="list-style-type: none"> <li>• apply the principles behind quality, useful, and robust research;</li> <li>• apply appropriate research methodologies and statistical tools for data analysis;</li> <li>• carry out research leading to evidence that may influence further research and future healthcare practice;</li> <li>• design and conduct autonomously and independently, an audit using appropriate method which draws on relevant evidence from the medical literature;</li> <li>• present research findings in a format suitable for publication.</li> </ul>	

### 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 Anesthesiology; research ethical responsibilities.

### Assessment Strategies

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

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

#### **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

<b>Module Title:</b>	<b>Pain in Clinical Practice</b>
<b>Module Code</b>	ASP5999
<b>NQF Level</b>	9
<b>Notional Hours</b>	600
<b>Contact hours</b>	70 hours of lectures in total + 530 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	60
<b>Prerequisite</b>	First integrated Part I examination
<b>Compulsory/Elective</b>	<i>Compulsory</i>
<b>Semester Offered</b>	<i>N/A</i>
<b>Module Aims</b>	
This module aims to: <ul style="list-style-type: none"> <li>• provide an understanding to acute pain, its pathophysiology and management;</li> <li>• provide an introduction to the pathophysiology and management of chronic pain</li> <li>• understand symptom control in the management of pain.</li> </ul>	

#### **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; Pathophysiology 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

<b>Module Title:</b>	<b>Management in Anaesthesiology Practice</b>
<b>Module Code</b>	ASP5999
<b>NQF Level</b>	9
<b>Notional Hours</b>	400
<b>Contact hours</b>	70 hours of lectures in total + 230 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	40
<b>Prerequisite</b>	First integrated Part I examination
<b>Compulsory/Elective</b>	<i>Compulsory</i>
<b>Semester Offered</b>	<i>N/A</i>
<b>Module Aims</b>	
<p>This module aims to:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• instil in the student the need for life-long learning and the concept of continuous professional development;</li> <li>• further provide the intellectual tools to enable lifelong academic learning and its application;</li> <li>• provide a structure and insight to enable the student to effectively explore anaesthetic, intensive care and pain academic literature.</li> </ul>	

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

<b>Module Title:</b>	Clinical Training Core
<b>Module Code</b>	ASC5999
<b>NQF Level</b>	9
<b>Notional Hours</b>	300
<b>Contact hours</b>	300 hours of supervised clinical work (normally over a 5 month period)
<b>NQF Credits</b>	30
<b>Prerequisite</b>	First integrated Part I examination
<b>Compulsory/Elective</b>	<i>Compulsory</i>
<b>Semester Offered</b>	<i>N/A</i>
<b>Module Aim:</b> The aim of this module is for the student to develop extensive case load in core anaesthesia cases.	
<b>Learning Outcomes/Specific Outcomes</b> 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%):

<b>Module Title:</b>	<b>Advanced Anaesthesiology II</b>
<b>Module Code</b>	ASA5999
<b>NQF Level</b>	??9
<b>Notional Hours</b>	600
<b>Contact hours</b>	70 hours of lectures in total + 530 hours of supervised clinical work (normally over a 12 week period)
<b>NQF Credits</b>	60
<b>(Co-requisites) Prerequisite</b>	First integrated Part I examination
<b>Compulsory/Elective</b>	<i>Compulsory</i>
<b>Semester Offered</b>	<i>N/A</i>
<b>Module Aims</b> This module aims to: <ul style="list-style-type: none"> <li>• further expose the trainees to the challenges of neuroanaesthesia/neuroradiology and neurocritical care;</li> <li>• further expose the trainee to the challenges of cardiothoracic anaesthesia and cardiothoracic critical care;</li> <li>• further expose students to the practice of paediatric (including neonatal) anaesthesia and paediatric critical care.</li> </ul>	

<b>Learning Outcomes/Specific Outcomes</b> On successful completion of this module, students will be able to: <ol style="list-style-type: none"> <li>1. describe and implement the various clinical demands of anaesthesia for neurosurgery, neuroradiology and neurocritical care;</li> <li>2. describe and implement the various clinical demands of cardiothoracic anaesthesia and cardiothoracic critical care;</li> <li>3. describe and implement the various clinical demands of paediatric (including neonatal) anaesthesia and paediatric critical care.</li> </ol>
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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

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

<b>Module Title:</b>	<b>MMed (Anaesthesiology) Thesis</b>
<b>Module Code</b>	AST5999
<b>NQF Level</b>	9
<b>Notional Hours</b>	1200
<b>Contact hours</b>	<i>1200 hours of integrated learning</i>
<b>NQF Credits</b>	<i>120</i>
<b>Prerequisite</b>	First integrated Part I examination
<b>Compulsory/Elective</b>	<i>Compulsory</i>
<b>Semester Offered</b>	<i>N/A</i>
<b>Module Aim:</b> 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)

