DUT
DURBAN UNIVERSITY OF TECHNOLOGY

FACULTY OF HEALTH SCIENCES

2016 HANDBOOK
MEDICAL ORTHOTICS & PROSTHETICS

HANDBOOK FOR 2016

FACULTY OF HEALTH SCIENCES

DEPARTMENT of

MEDICAL ORTHOTICS AND PROSTHETICS

BHSc. Medical Orthotics and Prosthetics

What is a University of Technology?

A university of technology is characterized by being research informed rather than research driven where the focus is on strategic and applied research that can be translated into professional practice. Furthermore, research output is commercialized thus providing a source of income for the institution. Learning programmes, in which the emphasis on technological capability is as important as cognitive skills, are developed around graduate profiles as defined by industry and the professions.

NOTE TO ALL REGISTERED STUDENTS

Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the institution and, if permitted, will be in accordance with the rules applicable at that time.

IMPORTANT NOTICES

The rules in this departmental handbook must be read in conjunction with the General Rules (G Rules) contained in the DUT General Handbook for Students as well as the relevant subject Study Guides.

Your attention is specifically drawn to Rule G1 (8), and to the process of dealing with students issues.

FACULTY of HEALTH SCIENCES

FACULTY VISION, MISSION, GOALS & VALUES

(November 2012 for 2013-2017)

Vision

Our vision is to be a leading Faculty in transformative and innovative education for health professionals, guided by National imperatives and a strong commitment to socially responsive education. We will strive for excellence in professional and teaching scholarship, as well as in the development of National and global linkages in education and in the research and development of health.

Mission Statement

With a values-driven student-centered ethos, the Faculty is committed to developing quality health professionals that are practice-oriented, receptive and responsive to the healthcare needs of the people of South Africa and of Africa as a whole. This will be achieved by providing the highest standards of learning, teaching, and research and community engagement, underpinned by a commitment to creating space for students and staff to succeed.

Goals

The Faculty aims to:

1. Respond to the National human resource and industry needs within the health sector.
2. Ensure the offering of entrepreneurial and leadership skills as a core component of all programmes within the Faculty of Health Sciences.
3. Continue to develop community-based projects to foster social responsibility through collaborative projects amongst programmes.
4. Enhance established quality management frameworks to support teaching and learning.
5. Develop applied research responsive to community and industry needs.
6. Develop mechanisms for the dissemination and application of research outcomes to inform teaching and learning, assessment, community engagement and further research.
7. Improve research participation and output through increased post-graduate student enrolment, publications, and the establishment of research groups.
8. Enable the generation of third-stream income through research and innovation (patents / artifacts) in order to supplement existing sources of income for the next five years.
9. Attract and retain diverse quality staff, while promoting the advancement of individual potential.
10. Nationally position the DUT Faculty of Health Sciences.

Values

- The Faculty is guided by the following core values:
- Transparency, openness, honesty, and shared governance.
- Professional and personal respect for others.
- Educational relevance, equity and transformation (curriculum, access and success).
- Loyalty, accountability, dignity and trust.

DEPARTMENTAL MISSION & GOALS

Vision:

A progressive Department in Southern Africa that advances education, research and service provision in the orthotics and prosthetics health sector through innovative programme delivery. As a newly implemented course, the Department of Orthotics and Prosthetics aims to fulfill the demands of this specialised profession by training its students to high standards, comparable to institutions of the same nature across the world.

Mission:

To provide high quality training to students who will ultimately serve the orthotics and prosthetics needs of Southern Africa.

To promote first-class teaching, learning, research, and community engagement in order to be a training service provider of choice for students, whilst maintaining the reputation of the DUT as a model of knowledge empowerment;

To produce a well-rounded and competent graduate who will be a productive citizen fully able to integrate into society, and who will function efficiently and effectively in a dynamic global environment.

Departmental Goals:

- To strategically position the department in the Higher Education sector.
- To advance education and research in orthotics and prosthetics.
- To enrich teaching and learning in orthotics and prosthetics through mechanisms designed for continuous improvement.
- To continually advance scholarship and expertise of all stakeholders.
- To partner with, and engage in, community advancement initiatives.
- To adopt an ethos of excellence in Higher Education.

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1. DEPARTMENTAL & FACULTY CONTACT DETAILS

All departmental enquiries to:

Secretary:	Ms Nosipho Thabethe
Tel No :	(031) 373 6723
Email:	oandp@dut.ac.za / nosiphot@dut.ac.za
Location of Department:	Wentworth Hospital / Room AB-0305, Block B, ML Sultan Campus, DUT

All Faculty enquiries to:

Faculty officer:	Mr Vikesh Singh
Tel No:	(031) 373 2701
Fax No:	(031) 373 2407
Email:	vikeshs@dut.ac.za
Location:	Health Faculty Office, Gate 8, Steve Biko Road, Mansfield Site Area, Ritson Campus
Executive Dean:	Prof T Puckree
Executive Dean's Secretary:	Mrs Bilkish Khan
Tel No:	(031) 373 2704
Fax No:	(031) 373 2620
Email:	bilkishk@dut.ac.za
Location:	Executive Dean's Office, Gate 8, Steve Biko Road, Mansfield Site Area, Ritson Campus

2. STAFFING Name and Qualification

Head of Department:	Mr D Askew: BTech: Med Orth & Prosth (TUT)
Lecturer:	Mr M Calitz : NHD: Med Orth & Prosth (TUT)
	Mr B Nothling : NHD:Med Orth & Prosth (TUT)
	Mr T Dawule : BSc Med Orth & Prosth (TATCOT)
Secretary:	Ms N Thabethe : BTech: Business Administration

3. DEPARTMENTAL INFORMATION & RULES

3.1 Programmes offered by the department

The department offers only one programme namely:
Medical Orthotics and Prosthetics

3.2 Qualifications offered by the department

Only one qualification is offered in this department. Upon successful completion, the learning programme will lead to the award of the following qualification.

Qualification	Qual Code	SAQA NLRD Number	Important dates
BHSc. (Medical Orthotics and Prosthetics)	BHMOP3	91786	First offered July 2013

3.3 Departmental Information

The establishment of the Department of Medical Orthotics and Prosthetics was approved by the Senate of the Durban University of Technology (DUT) in 2012, in preparation for the introduction of the BHSc: Medical Orthotics and Prosthetics in 2013. Development of this qualification was requested by the Department of Health in KwaZulu Natal, and classes will be offered at both DUT campuses and at Wentworth Hospital.

The following information must be read in conjunction with the programme rules.

3.3.1 Academic Integrity

Attention is drawn to the General Rules pertaining to academic integrity G13(1)(o). These will be enforced wherever necessary to safeguard the worthiness of our qualifications, and the integrity of the Faculty of Health Sciences at the DUT.

3.3.2 Code of Conduct for Students/Confidentiality

In addition to the DUT General Rules pertaining to Student Conduct SR3(3), a professional code of conduct pertaining to behaviour, appearance, personal hygiene, and dress shall apply to all students registered with the Faculty of Health Sciences, at all times.

Due to the nature of this course and the clinical environment that is encountered on a daily basis, strict patient confidentiality and respect needs to be adhered to at all times. Please consider the patient as well as the family of the patient.

Use common sense and empathy in your approach, so that an understanding of trust and care is fostered and nurtured between you and your patient (See Rule 4.3.8).

3.3.3 Uniforms

Students must adhere to instructions regarding specific uniforms required during practical's and clinic sessions. Because of public interaction in the clinical environment, it is important to maintain a high standard of dress code and behavior (See Rule 4.3.8).

3.3.4 Attendance

Students are encouraged to achieve 100% attendance for all planned academic activities, as these are designed to provide optimal support for the required competency. Where absence is unavoidable, the student must timeously advise the department of the reason. Only exceptional reasons will be accepted for absence from guest lectures, industry or field trips. Poor attendance records may lead to penalties. Where absence impacts on assessment, rule 4.3.3.2 below will be applied.

3.3.5 Health and Safety

Students must adhere to all Health and Safety regulations both at DUT and in Work Integrated Learning (WIL) placements. Failure to do so will be treated as a breach of discipline. Extreme care and caution need to be observed, as working in the laboratories could present itself with potentially hazardous situations where injury can occur. Please respect these rules, for your own safety and protection.

The Department of MOP's additional requirements for laboratory or clinics includes the use of safety equipment required for laboratory or clinical work, as well as infection control (latex gloves, safety glasses and ear plugs), when required.

3.3.6 Work Integrated Studies

Work integrated learning (WIL) will be undertaken for approximately six (6) months to fulfill the required hours in the 4th year of study (Clinical practice 4 A and B) at Wentworth Hospital. Satellite clinics located within the Kwa-Zulu Natal Department of Health facilities/hospitals may also be used. Should the need arise, then alternative suitable sites of WIL will be sourced within South Africa. Additional placement for Advanced Clinical

Practice will be by choice of the student at approved national or international centers.

3.3.7 Service Modules

Students need to make themselves familiar with the guides and specific rules that may apply to serviced modules, and with the departments running these modules.

3.3.8 Registration with the Professional Board

As a Student: Within two weeks of registration with the Department of MOP students are required to register as Student Orthotists and Prosthetists with the HPCSA, as determined in the regulations set out in the HEALTH PROFESSIONS ACT, ACT No. 56 of 1974, as amended by Act No. 29 of 2007, and on the recommendation of the Health Professions Council of South Africa as well as the Professional Board for Occupational Therapy, Medical Orthotics and Prosthetics and Arts, by submission of Form 53 as well as the relevant fee.

As a Graduate: On successful completion of the qualification and required internship, a graduate who has satisfied the requirements of the Professional Board for Occupational Therapy, Medical Orthotics and Prosthetics and Arts Therapy, may register as a qualified Medical Orthotist and Prosthetist with the HPCSA. Further registration with the Board of Healthcare Funders of SA [BHF] is permitted after the graduate has received his/her HPCSA registration.

3.3.9 Student Appeals

Rule G1 (8) of the DUT General Handbook applies.

4. BACHELOR OF HEALTH SCIENCES IN MEDICAL ORTHOTICS & PROSTHETICS (BHMOP3)

4.1 Programme Information

The purpose of this qualification is to develop a graduate competent in the knowledge, attitudes, insight and skills required for the orthotic and prosthetic professions. The qualifying graduate will be able to competently apply and integrate theoretical principles, evidence-based techniques, practical experience, clinical procedures, and appropriate skills. The programme of study will produce a well-rounded graduate who will be capable of practicing as a clinician, developing and managing a clinic or a laboratory, or providing services as a private practitioner. The graduating student will be a team player capable of working in multidisciplinary teams, with the ability to constructively advance the profession.

4.2 Programme Structure for the Bachelor of Health Sciences in Medical Orthotics & Prosthetics

Code	Subject/Module	Year of study	Assessment type (CA/E)	SAQA	Pre-Requisite Subjects	Co-requisite Subjects
Year 1						
PSIC101	Physics	1	CA	12		
CSTN101	Cornerstone	1	CA	12		
MTMS101	Mathematics	1	CA	8		
MTSC101	Materials Science	1	CA	12		
BIMC101	Biomechanics 1	1	CA	16		
ANMY101	Anatomy 1	1	CA	20		
POPR101	Principles of Orthotics and Prosthetics	1	Ca	28		
CLCP101	Clinical Practice	1	CA	24		
Year 2						
CGRC101	Computer and graphical communication	2	CA	12		
ETRN101	Electronics	2	CA	8	BIMC101&PSIC101	
ANMY201	Anatomy 2	2	CA	12	ANMY101	
CHRI101	Community Health Care and Research-Intro	2	CA	12		
PYSL101	Physiology	2	CA	16		
BIMC201	Biomechanics 2	2	CA	12	BIMC101&PSIC101	
POPR201	Principles of Orthotics and Prosthetics 2	2	CA	28	POPR101,BIMC101, CLCP101	
CLCP201	Clinical Practice 2	2	CA	32	CLCP101, BIMC101 &POPR101	
EMDL101	Ethics and Medical Law	2	CA	8		
Year 3						
CHRN101	Community Healthcare and Research-Intermediate	3	CA	12	CHRI101	
CLCS101	Clinical Studies 1	3	CA	16	PYSL101,ANMY101 &201	
PYCL101	Psychology	3	CA	8		
PHCY101	Pharmacology	3	CA	12	PYSL101,ANMY101 &201	
BIMC301	Biomechanics 3	3	CA	12	BIMC101&201,POPR101&201	
POPR301	Principles of Orthotics and Prosthetics 3	3	CA	32	POPR101&201,BIMC201,CLCP201	
CLCP301	Clinical Practice 3	3	CA	24	POPR201,BIMC201,CLCP201	
Year 4						
CLCS201	Clinical Studies 2	4	CA	24	CLCS101	
CLPO401	Clinical Practice (Orthotics)	4	CA	32	CLCP301,POPR301	
CLPP401	Clinical Practice (Prosthetics)	4	CA	32	CLCP301,POPR301	
CLBM101	Clinical And Business Management	4	CA	16		
CHRA101	Community Healthcare and research-Advanced	4	CA	12	CHRI101,CHRN101	
ACLP401	Advanced clinical practice	4	CA	8		

4.3 Programme Rules

In addition to the rules in the General Handbook, the following programme rules apply:

4.3.1 Minimum Admission Requirements

In addition to Rule G7, the following requirements must be met:
National Senior Certificate (NSC) with endorsement for degree entry, with the following subjects:

Subject	NSC Rating
English	3
Life Sciences	4
Physical Sciences	4
Mathematics	4
Two additional 20 credit subjects, only one of which may be an additional language.	4

Or

Senior Certificate with matriculation exemption with the following subjects at the stated ratings:

Compulsory Subjects	HG	SG
English	E	C
Biology	D	B
Physical Sciences	D	B
Mathematics	D	B

(Approved: Senate 29/08/2012)

Admission requirements based upon Work Experience, Age and Maturity, and RPL

The DUT general rules G7 (3) and G7 (8), respectively, will apply.

Admission of International students

The DUT's Admissions Policy for International Students, and General Rules G4 and G7 (5), will apply. *(Approved: Senate 29/08/2012)*

4.3.2 Selection Process

In accordance with Rule G5, acceptance into the programme is limited to 30 places. As more qualifying applications are received than can be accommodated, the following selection process will determine placement in the programme:

- All applicants must apply through the Central Applications Office (CAO).
- Initial shortlisting for selection is based on the applicant's academic performance in Grade 12 (Grade 11, or Grade 12 trial marks, will be used for current matriculants). i) Applicants must have:

a) Normal eye sight. Spectacles/contact lenses that provide 20/20 vision are considered acceptable.

b) Completed at least 8 hours of voluntary service in a Prosthetic and Orthotic environment, for which a report must be submitted prior to being invited to the interview process. (Available from DUT-Dept.of Med.O&P-form RB1OP.) ii) Applicants who meet the above criteria:

c) Will be invited to manual dexterity testing and for an interview.

d) Ranked on points earned according to the table below:

Assessment	**Weighting**
Results of the Senior Certificate or National Senior Certificate	35%
Dexterity Score	40%
Interview Score	25%

e) The 30 top-ranked applicants will be selected for access into the programme.

(Approved: Senate 29/08/2012)

4.3.3 Pass Requirements

4.3.3.1 Assessment and Moderation

Students are encouraged to work steadily through the period of registration in order to achieve the highest results possible.

- Assessment details are listed under each module at the back of this handbook.
- Moderation follows the DUT requirements.
- Assessment includes both formative and summative assessment.
- A variety of assessment methods are used which include, but are not limited to, written tests, oral tests, OSCE testing, practical and clinical examinations, group work and assignments.
- Where applicable, the year mark component for those modules where a final examination is written is 40% of the final result.
- Where applicable, the final examination may comprise of theory or practical elements, or both theory and practical elements, and will constitute 60% of the final mark.
- Further to DUT rules G14 and G15, the final mark for examined modules is determined as follows: Final mark (100%) = 40% year mark + 60% final examination mark.
- For modules that do not have a final examination, the results are determined through a weighted combination of assessments, as described in the study guide. There are no supplementary examinations for these modules. The course mark then constitutes 100% of the final mark.

(Approved: Senate 29/08/2012)

4.3.3.2 Special Tests and Condonement

No missed assessments will be condoned.

- If a student misses an assessment for reasons of illness, a special assessment may be granted if the student provides a valid medical certificate specifying the nature and duration of the illness, and a declaration that for health reasons it was impossible for the student to sit for the assessment. This certificate must be submitted to the Head of Programme no later than five (5) working days after the "fit for duty" date on the medical certificate.
- If a student misses an assessment for reasons other than illness, a special assessment may be granted if the student provides a valid declaration that for unavoidable reasons it was impossible for the student to sit for the assessment. This certificate must be submitted to the Head of Programme no later than two (2) working days after the date of the missed assessment.
- Any student who misses an assessment and who does not qualify for a special assessment, and any student who qualifies for a special assessment but who fails to write it, shall be awarded a zero mark for the missed assessment.

4.3.4 Re-registration rules

Rule G16 of the General Handbook for students applies.

(Approved: Senate 29/08/2012)

4.3.5 Exclusion Rules

In addition to Rule G17, the following programme rule applies:

A first-year student who fails three or more modules, each with less than 40%, is not permitted to re-register in the Department of Medical Orthotics and Prosthetics. De-registration from any subject is subject to the provisions of rule G6(2).

(Approved: Senate 29/08/2012)

4.3.6. Interruption of studies

In accordance with Rule G23 B(2) and (3), the minimum duration for this NQF level 8 programme will be four (4) years of registered study, and the maximum duration will be six (6) years of registered study, including any periods of WIL. Should a student interrupt their studies by more than three (3) years, the student will need to apply to the department for permission to reregister and will need to prove currency of appropriate knowledge prior to being given permission to continue with registration.

(Approved: Senate 29/08/2012)

4.3.7 Registration with the Health Professions Council of South Africa (HPCSA) and the Professional Board.

As a student, registration with the HPCSA is compulsory. This will be done via the MOP programme. *(Approved: Senate 29/08/2012)*

4.3.8 Code of Conduct for Students

In addition to the General rules pertaining to Student Conduct SR(3), a professional code of conduct pertaining to behaviour, appearance, personal hygiene and dress shall at all times apply to all students registered with the Faculty of Health Sciences.

- Students registered in the programme will be required to adhere to the dress code as determined by the Head of the Programme, with regard to specific uniforms required during practical's and clinic sessions. The uniform required is a white clinic coat as supplied or recommended by DUT, to be worn separately or over normal attire. Formal trousers or denim jeans, black or charcoal in colour, and the use of safety boots and aprons, are required in the laboratory.
- Students are not allowed to access the general Wentworth Hospital facilities, unless for bona fide medical reasons. In those cases where access is required, supervised access may be granted.
- Students must adhere to all Health and Safety regulations, both at DUT's Wentworth Hospital teaching facility, at the DUT main campus, and in clinical placements. Failure to do so will be treated as a breach of discipline.
- Immunisation against Hepatitis B is compulsory. Immunisation will be facilitated through the MOP programme.
- Students must be in possession of a valid first-aid certificate in order for the qualification to be issued. This will be facilitated through the MOP programme. Students missing the specified course will be required to earn their own certificate at their own cost.

5. MODULE CONTENT

NB: Students are to read this section in conjunction with the relevant study guide. Detailed assessment plans will be found in the Study Guides.

The year one / level one subjects are afforded in the first and / or second semester.

Module name & code	Learning areas/ content	Assessment Plan
Year 1		
PHYSICS (PSIC101)	Terminology and units, Vector and scalar quantities, Linear/angular motion and motion of a solid body, Resolution of forces and movements in two dimensions, Equations of equilibrium, Free	72 contact hours/ 120 notional hours Lectures 48hrs Tutorials 18hrs Independent study 48hrs Assessment 6hrs Assessment Plan —There is no final examination for this module. See Study

	body diagrams, Calculations of centre of gravity and mass, Newton's Laws of Motion, Work, power and energy, Strength of materials: stress, strain and Hooke's Law.	Guide for details.
Cornerstone(CSTN101)	Serviced by the institution	48 contact hours/120 notional hours
MATHEMATICS (MTMS101)	Elementary mathematics: simple algebraic manipulation, indices, logarithms, solution of equations, trigonometric functions, standard trigonometric identities, solution of simple trigonometric equations; Functions: polynomial, rational, exponential, logarithmic; Differentiation: simple techniques, use in optimisation and curve sketching; Integration: simple techniques, evaluation of areas, use of approximation procedures; Differential equations: first order equations, uses in biological modelling; Mastery and usage of resources such as mathematical table, formulae and calculators.	48 contact hours/ 80 notional hours Lectures 32hrs Tutorials 8hrs Independent study 36hrs Assessment 4hrs **Assessment Plan** —See Study Guide for details.
MATERIALS SCIENCE (MTSC101)	Steel and its alloys, Non-ferrous metals and their alloys; Plastics: thermoforming, thermosetting; Composites, polyurethanes/E.V.A., Silicones, Wood, Leather, Plaster of Paris, Adhesives.	72 contact hours/ 120 notional hours Lectures 48hrs Assignments 15hrs Independent study 48hrs Assessment 14hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
BIOMECHANICS I (BIMC101) -	The anatomical planes and reference points of the body; Ranges of movement (lower/upper limbs and spine), normal gait (introduction to kinematics, kinematics and EMG studies), introduction to amputee and pathological gait, Kinematic analysis of limbs; Introduction to relevant biological tissues and their mechanical properties; Prosthetic and orthotic measurement techniques; Anatomical joint types, their functions and interactions; Muscle physiology and biomechanics in relation to joint	96 contact hours/ 160 notional hours Lectures 32hrs Practicals 24hrs Tutorials 16hrs Case studies 16hrs Independent study 64hrs Assessment 8hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.

	functions; The interaction of anatomical joints and prosthetic/orthotic joints; Normal human locomotion and the gait cycle; Kinetic and kinematic analysis and the calculation of external and internal force actions; Biomechanics of the lower limb, General socket biomechanics/biomechanical principles of cast rectification, Transtibial socket biomechanics and alignment biomechanics, Transfemoral socket biomechanics and alignment biomechanics; Lower limb prosthetic components and their application; Foot biomechanics —analysis of joint forces (normal, pathological, effects of footwear).	
ANATOMY I (ANMY101)	**Module content** Introduction and Definition of anatomy; Anatomical position, Anatomical terminology and terms of reference, Anatomical planes and movements; Integumentary system; Introduction to Systems: Skeletal; Muscular (muscle tissue, architecture of muscle); Articular; Cardiovascular and Nervous. Back, Upper limbs and Lower limbs	120 contact hours/ 200notional hours Theory 20hrs Practicals 60hrs Self study 120hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
PRINCIPLES OF ORTHOTICS AND PROSTHETICS I (POPR101)	Transtibial Prosthetics: Transtibial Prosthetic Types, Post-operative fitting, Management of lower extremity, CAD CAM Technology, Plaster and Casting Techniques, Transtibial prosthetic componentry and manufacturing devices; Footwear and Foot Orthotics: The Orthopaedic Shoe, Footwear and Adaptations; Foot Orthotics: Introduction to foot orthotics, Innersoles, UCBL, Day Splints/ Night Splints, Extensions, Pads, bars and domes, Diabetics and Wound healing, Chronic and Acute conditions, Prefabricated,	168 contact hours/ 280 notional hours Lectures 56hrs Practicals 42hrs Tutorials 28hrs Case studies 28hrs Independent study 112hrs Assessment 14hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.

	System innersoles by numbers, Combination devices, CAD CAM Technology, Plaster and Casting Techniques, Footwear and foot orthotics componentry and manufacturing devices; Ankle-Foot-Orthotics- Introduction to ankle foot orthotics, Functional goals of below the knee orthoses, Orthotic, Orthopaedic And Anatomical Terminology, Clinical Procedures, The Orthotics and Prosthetics Laboratory, Fractures, Traction, Clinical Evaluation and Examination.	
CLINICAL PRACTICE II (CLCP201)	Transtibial Prosthetics; Footwear and Foot Orthotics; Foot Orthotics; Ankle-Foot-Orthoses	192 contact hours/ 320 notional hours Clinical practice 288hrs Team consultation 16hrs Report writing 16hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
Year 2		
COMPUTER AND GRAPHICAL COMMUNICATION (CGRC101)	Computer aided design software applications and Multimedia; Techniques of computer-aided patient measurement and device design and manufacture allowing computerised solution to a task; Isometric sketching and three-dimensional visualisation, First and third angle projection, Auxiliary views and sections, Use of drawing standards, Simple assembly drawings; Application of machining tolerances; Applications in orthopaedic technology.	72 contact hours/ 120 notional hours Lectures 6hrs Practical (computer) laboratory 42hrs Independent study 66hrs Assessment 6hrs **Assessment Plan** – See Study Guide for details.
ELECTRONICS (ETRN101)	Basic concepts, DC circuits, Inductance and capacitance, AC circuits, Transformers, Power supplies, Amplifiers, Feedback, Sampled data, Interference rejection techniques, Measurements, Myoelectrodes, Safety.	72 contact hours/ 120 notional hours Lectures 36hrs Tutorials 12hrs Independent study 66hrs Assessment 6hrs **Assessment Plan** – See Study Guide for details.
ANATOMY II (ANMY201)	**SECTION A: NECK –** Surface Anatomy, superficial neck muscles, triangles of the neck, deep structures of the neck, root of the neck, cervical viscera, thyroid gland,	120 contact hours/ 200 notional hours Theory 20hrs Practical 60hrs Self study 120hrs **Assessment Plan** – There is no final examination for this module. See Study

	parathyroid glands, facial planes, pharynx, larynx. **SECTION B: HEAD –** Osteology, the Face - muscles, neurovascular structures, lymphatic drainage, the Scalp, cranial fossae and foramina (self-study), the Orbit, parotid and Temporal regions, temporomandibular joint, oral region (self-study), salivary glands, nose and paranasal sinuses, ear (self-study). **SECTION C: NEUROANATOMY –** Embryology, cerebral topography, brainstem and spinal cord, cerebellum, thalamus, epithalamus and hypothalamus, reticular formation, visual, olfactory and limbic systems, cranial nerves, blood supply of the brain.	Guide for details.
Community Healthcare And Research-Introduction(CHRI101)	Reference to the study guide for a detailed background of this area of research is required.	48 contact hours/120 notional hours Lectures 4 Group work 20 Practicum 20 Independent study 10 Presentation 4 **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
PHYSIOLOGY (PYSL101)	Anatomy and physiology are defined, the relationships between anatomy and physiology are explained, cells and tissues, integumentary system, muscular system, skeletal system, nervous system, special senses, endocrine system, cardiovascular system, immunity and the lymphatic system respiratory system, digestive system, urinary system, reproductive system.	96 contact hours/ 160 notional hours Lectures 16hrs Practicals 32hrs Tutorials 16hrs Case studies 16hrs Independent study 80hrs **Assessment Plan** – There is no final examination for this module. See Study Guide for details.

BIOMECHANICS II (BIMC201)	Biomechanics of the upper limb; Joint Force Analysis; Human Movement Analysis; Lower Limb Prosthetics; Lower Limb Orthotics	72 contact hours/ 120 notional hours Lectures 24hrs Practicals 18hrs Tutorials 12hrs Case studies 12hrs Independent study 48hrs Assessment 6hrs **Assessment Plan** – There is no final examination for this module. See Study Guide for details.
PRINCIPLES OF ORTHOTICS AND PROSTHETICS II(POPR201)	Ankle Foot Orthotics and Knee Orthotics; Knee Ankle Foot Orthotics and Upper Limb Orthotics; Ankle Disarticulation and partial foot prosthesis; Knee Disarticulation Prosthetics; Transfemoral Prosthetics; Upper Limb Prosthetics	168 contact hours/ 280 notional hours Lectures 56hrs Practicals 42hrs Tutorials 28hrs Case studies 28hrs Independent study 112hrs Assessment 14hrs **Assessment Plan** – There is no final examination for this module. See Study Guide for details.
CLINICAL PRACTICE II (CLCP201)	Ankle Foot Orthotics; Knee Orthotic; Knee Ankle Foot Orthotics; Upper Limb Orthotics; Ankle Disarticulation and partial foot prosthesis; Transfemoral Prosthetics; Upper Limb Prosthetics	192 contact hours/ 320 notional hours Clinical practice 288hrs Team Consultations 16hrs Report writing 16hrs **Assessment Plan** – There is no final examination for this module. See Study Guide for details.
ETHICS AND MEDICAL LAW (EMDL101)	Professional ethics, International ethics principles, HPCSA and national requirements, Scope of practice, Multidisciplinary and interdisciplinary interactions, Legal aspects of medical care, Applications in authentic settings.	48 contact hours/ 80 notional hours Lectures 28hrs Case studies 4hrs Assignments 8hrs Independent study 36hrs Assessment 4hrs **Assessment Plan** – See Study Guide for details.
Year 3		
Community Healthcare and research-Intermediate(CHRN101)	Reference to the study guide for a detailed background of this area of research is required.	48 contact hours/120 notional hours Lectures 4 Group work 20 Practicum 20 Independent study 10 Presentation 4 **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
CLINICAL STUDIES I (CLCS101)	Inflammation, repair and healing, Inflammatory diseases, degenerative diseases, post traumatic conditions, metabolic disorders, circulatory disorders;	80 contact hours/ 160 notional hours Lectures 64hrs Student presentations incl. cases studies 16hrs Self-learning 80hrs

	Amputations; Post-traumatic osteoporosis; Aseptic bone necrosis; Paralysis resulting from nerve lesions; Diseases of the pelvis and hip; Diseases of the knee; Diseases of the foot; Diseases of the shoulder, elbow and hand; Limb deformities; Skin disorders and wound repair	Assessment Plan —There is no final examination for this module. See Study Guide for details.
PSYCHOLOGY (PYCL101)	The reflective journal; Understanding a helping relationship; Understanding human development throughout the life cycle; Basic principles of social constructionism and externalising conversations to a helping relationship; Understanding the effect of primary and secondary trauma; Understanding the effect of loss on intra and interpersonal level; Understand personal relationships with substances; Personal understanding of HIV/AIDS; Patient psychology: psychology of loss and psychology of disability.	48 contact hours/ 80 notional hours Lectures 28hrs Assignments 16hrs Independent study 32hrs Assessment 4hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
PHARMACOLOGY (PHCY101)	Basic pharmacology; Pharmacodynamics; Pharmacokinetics; Central nervous system; Autonomic and peripheral (somatic) nervous system; Non-steroidal anti-inflammatory drugs; Vaccines; Cardiovascular system; Haemopoietic system; Respiratory system; Gastro-intestinal tract; Endocrinology; Vitamins and minerals; Anti-neoplastic drugs and immune suppressors; Wound care; Dermatology; Poisoning and emergencies; HIV/AIDS; Anti-histamines	72 contact hours/ 120 notional hours Lectures 42hrs Tutorials 12hrs Assignments 12hrs Independent study 48hrs Assessment 6hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
BIOMECHANICS III (BIMC301)	Tissue Mechanics; Spinal Biomechanics; Upper Limb Biomechanics; Cranial Biomechanics; Control Systems	72 contact hours/ 120 notional hours Lectures 24hrs Practicals 18hrs Tutorials 2hrs Case studies 12hrs Independent study 48hrs Assessment 6hrs **Assessment Plan** —There is no final examination for this module. See Study

		Guide for details.
PRINCIPLES OF ORTHOTICS AND PROSTHETICS III (POPR301)	Knee Ankle Foot Orthotics (KAFO); Hip Knee Ankle Foot Orthotics (HKAFO); Hip Orthotics (HO); Spinal Orthotics; Hernias and Trusses; Vascular Compression Therapy; Cranial Orthotics; Hip Disarticulation Prosthetics; Upper Limb Prosthetics; Breast Prosthesis	192 contact hours/ 320 notional hours Lectures 64hrs Practicals 48hrs Tutorials 32hrs Case studies 32hrs Independent study 128hrs Assessment 16hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
CLINICAL PRACTICE III (CLCP301)	Knee Ankle Foot Orthotics (KAFO); Hip Knee Ankle Foot Orthotics (HKAFO); Hip Orthotics (HO); Spinal Orthotics; Hernias and Trusses; Vascular Compression Therapy; Cranial Orthotics; Hip Disarticulation Prosthetics; Upper Limb Prosthetics; Breast Prosthesis	144 contact hours/ 240 notional hours Clinical practice 204hrs Group work 24hrs Report writing 12hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
Year 4		
Community Healthcare and research-Advanced(CHRA101)	Reference to the study guide for a detailed background of this area of research is required.	48 contact hours/120 notional hours Lectures 4 Group work 20 Practicum 20 Independent study 10 Presentation 4 **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
CLINICAL STUDIES II (CLCS201)	Nervous system disorders and diseases (child and adult)(CNS and PNS) including Polio, Cerebral palsy, paraplegia and quadriplegia, ataxia, Parkinson's disease. Spinal and thoracic deformities, scoliosis, kyphosis; Diseases of the spine; Circulatory disorders; Metabolic disorders; Tumors; Degenerative diseases; Burns; Fractures	120 contact hours/ 240 notional hours Lectures 96hrs Student seminars incl. case studies 24hrs Self study 120hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
CLINICAL PRACTICE IVA (ORTHOTICS) (CLPO401)	Prescription, fitting and check-out activities within the clinic team; General laboratory practice: use of hand tools, machine tools and materials, component production; Patient examinations, assessment., design, fitting, prescription, education &	192 contact hours/ 320 notional hours Clinical practice 144hrs Special case discussions 32hrs Consultations and report writing 16hrs Self study 128hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.

	evaluation; Measuring and casting, cast rectification, fabrication, fitting, aligning & finishing devices; Case history/record keeping; Patient information, medical history, and record keeping.	
CLINICAL PRACTICE IVB (PROSTHETICS) (CLPP401)	Assessment, design, prescription, fitting, evaluation, education and check-out activities within the clinic team; General laboratory practice: use of hand tools, machine tools and materials, component production; Patient examinations and prescription; Measuring and casting, cast rectification, fabrication, fitting, aligning and finishing of devices; Case history/record keeping for patient information, medical history, current prosthesis, prosthetic delivery.	192 contact hours/ 320 notional hours Clinical practice 144hrs Special case discussions 32hrs Consultations and report writing 16hrs Self study 128hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
CLINIC, LABORATORY AND BUSINESS MANAGEMENT (CLBM101)	Materials acquisition, handling and stock control; Workforce management; Production cost calculations; Budgeting, invoicing, receipting and accounting; Clinic management, appointment systems, record keeping; Property management, care and maintenance; Environmental/ecological considerations; Entrepreneurship Theory; Business Plan development; Marketing; Operations Management; Human Resources; Presentation Skills	80 contact hours/ 160 notional hours Self study 64hrs Group work 24hrs Lectures 64hrs Assessment 8hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details.
ADVANCED CLINICAL PRACTICE (ACLP401)	Clinical practice in a facility of the student's choice outside the designated centers used for training; This could include private practices/training centers nationally or internationally, as arranged by the student in consultation with the clinical coordinator/HOD.	2 contact hours/ 80 notional hours Independent 64hrs Reflective Integrated assignment 16hrs **Assessment Plan** —There is no final examination for this module. See Study Guide for details. Includes a report of completed hours spent at a suitable facility, as supplied by the Department of O & P.