

# BACHELOR OF HEALTH SCIENCE IN CLINICAL TECHNOLOGY

(Qualification type: Professional Bachelor's Degree)

BHSci (Clinical Technology) - NQF Level 8 (496 credits)

Qualification code: BPCL20

SAQA ID: 111828, CHE NUMBER: H/H16/E148CAN

Campus where offered: Arcadia Campus

## REMARKS

a. *Admission requirement(s) and selection criteria:*

The number of selected students is dependent on the approval and availability of clinical student posts at the participating and HPCSA-accredited training facilities. Please take note that all completed applications received within the published due dates will be ranked. After consideration of the Departmental Student Enrolment Plan, only the top ranking applicants will be selected. Once a programme is full, a waiting list will be in place to provide an opportunity for applicants to fill places of those who did not register on time. Applicants will be informed of their status per official letter from the Office of the Registrar, alternatively, they can check their application status on the TUT website, [www.tut.ac.za](http://www.tut.ac.za).

• **APPLICANTS WHO OBTAINED A NATIONAL DIPLOMA AT NQF LEVEL 6:**

Applicants who completed a relevant national diploma (at NQF Level 6) and who graduated and proceeded to work in industry can apply. Applicants should follow an articulation process in which exemption will be granted for 50% of the credits of the completed (and conferred) national diploma. Detailed information on the process to follow is available at the relevant academic department.

• **APPLICANTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:**

**Admission requirement(s):**

A Senior Certificate with a matriculation endorsement or equivalent qualification, with a D symbol at Higher Grade, or C symbol at Standard Grade for: English, Mathematics, Physical Science and Biology.

**Selection criteria:**

To be considered for this qualification, candidates must have an Admission Point Score (APS) of at least **24**.

• **APPLICANTS WHO OBTAINED A NATIONAL SENIOR CERTIFICATE IN OR AFTER 2008:**

**Admission requirement(s):**

A National Senior Certificate or an equivalent qualification, with a bachelor's degree endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language), 4 for Mathematics or Technical Mathematics, 4 for Physical Sciences or Technical Sciences and 4 for Life Sciences.

**Selection criteria:**

To be considered for this qualification, candidates must have an Admission Point Score (APS) of at least **24** (excluding Life Orientation).



- b. *Assessment procedure(s):*  
**For 2022:** Candidates will be selected based on their relevant APS scores.  
**As from 2023:** Applicants will be invited for a TUT Potential Assessment Test and depending on the results will be invited for an interview. Structured panel interviews are conducted by the full-time academic staff in the department of the Clinical Technology programme, as well as appointed qualified clinical technology part-time staff from industry to further streamline admission to the programme. The APS will contribute 40%, the TUT Potential Assessment will contribute 20% and the interview will contribute 40% of the final score.
- c. *Recognition of Prior Learning (RPL), equivalence and status:*  
 See Chapter 30 of Students' Rules and Regulations.
- d. *Intake for the qualification:*  
 January only.
- e. *Presentation:*  
 Day classes.
- f. *Minimum duration:*  
 Four years.
- g. *Exclusion and readmission:*  
 See Chapter 2 of Students' Rules and Regulations.
- h. *Other requirements:*  
 Vaccination against Hepatitis B is compulsory.
- i. *Practicals:*  
 100% attendance is compulsory for all practical classes. Students must pass the practical component of a subject to obtain admission to sit for the examination.
- j. *Personal protective equipment:*  
 Specific safety wear is compulsory in the practical laboratories.
- k. *Registration as a student clinical technologist:*
- Registration with the Health Professions Council of South Africa (HPCSA) as a student clinical technologist is compulsory.
  - International students will be allowed to register at the HPCSA only as student clinical technologist; and for the duration of the relevant qualification. However, they will not be able to register with the HPCSA as a clinical technologist.
- l. *Professional registration as a clinical technologist:*  
 Registration as a qualified clinical technologist takes place four years after registration as a student clinical technologist, provided that the candidate completes the four academic years successfully.
- m. *Clinical training (third and fourth year):*  
 The Head of the Department reserves the right to train students in some of the seven categories after consultation with industry. Students will receive guidance in their second year on the available options for the following year. Clinical training must be completed at an accredited unit. During the training period, the student is subject to the jurisdiction of this unit. The duration of the clinical training is two years.

## CURRICULUM

### FIRST YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
11P105X	Communication for Academic Purposes	(5)	(10)	



CLP105P	Clinical Professional Practice I	(5)	(12)
CPL105X	Computer Literacy	(5)	(10)
FLF125P	Foundation Life Skills (block mode)	(5)	(2)
HAN105P	Human Anatomy I	(5)	(18)
HPY105P	Human Physiology I	(5)	(18)
MAS105X	Mathematics and Statistics I	(5)	(12)

### FIRST SEMESTER

CHS115P	Chemistry for Health Sciences I	(5)	(12)
PHS115P	Physics for Health Sciences I	(5)	(12)
RPL115P	Research Principles I	(5)	(6)

### SECOND SEMESTER

MBH115P	Medical Law, Bio-Ethics and Human Rights I	(5)	(9)
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TOTAL CREDITS FOR THE FIRST YEAR: **121**

## SECOND YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
BAP206P	Biomedical Apparatus II	(6)	(18)	Human Anatomy I Human Physiology I
CLC206P	Clinical Science Practice II	(6)	(12)	Clinical Professional Practice I Human Anatomy I Human Physiology I
CLP206P	Clinical Professional Practice II	(6)	(12)	Clinical Professional Practice I
HAN206P	Human Anatomy II	(6)	(18)	Human Anatomy I
HPY206P	Human Physiology II	(6)	(18)	Human Physiology I
PMY206P	Pharmacology II	(6)	(18)	Chemistry for Health Sciences I Human Anatomy I Human Physiology I
PTS206P	Pathophysiology II	(6)	(18)	Human Anatomy I Human Physiology I

### FIRST SEMESTER

MBH216P	Medical Law, Bio-Ethics and Human Rights II	(6)	(9)	Medical Law, Bio-Ethics and Human Rights I
RPL216P	Research Principles II	(6)	(6)	Research Principles I

TOTAL CREDITS FOR THE SECOND YEAR: **129**

## THIRD YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
CLP307P	Clinical Professional Practice III	(7)	(12)	Clinical Professional Practice II Medical Law, Bio-Ethics and Human Rights II
HAM307P	Health Care Administration and Management I	(7)	(12)	
MBH317P	Medical Law, Bio-Ethics and Human Rights III (first-semester module)	(7)	(9)	Medical Law, Bio-Ethics and Human Rights II
RPL307P	Research Principles III	(7)	(6)	Research Principles II



**One of the following modules:**

*The prerequisite modules for all modules are: Human Anatomy II, Human Physiology II and Pathophysiology II.*

CCA307P	Anatomy and Physiology III in: Critical Care	(7)	(18)
CYA307P	Anatomy and Physiology III in: Cardiology	(7)	(18)
NEA307P	Anatomy and Physiology III in: Nephrology	(7)	(18)
NRA307P	Anatomy and Physiology III in: Neurophysiology	(7)	(18)
PLA307P	Anatomy and Physiology III in: Pulmonology	(7)	(18)
RDA307P	Anatomy and Physiology III in: Reproductive Biology	(7)	(18)
VAA307P	Anatomy and Physiology III in: Cardiovascular Perfusion	(7)	(18)

**One of the following modules:**

*The prerequisite modules for all modules are: Human Anatomy II, Human Physiology II and Pathophysiology II.*

CCB307P	Biomedical Apparatus III in: Critical Care	(7)	(24)
CYB307P	Biomedical Apparatus III in: Cardiology	(7)	(24)
NEB307P	Biomedical Apparatus III in: Nephrology	(7)	(24)
NRB307P	Biomedical Apparatus III in: Neurophysiology	(7)	(24)
PLB307P	Biomedical Apparatus III in: Pulmonology	(7)	(24)
RDB307P	Biomedical Apparatus III in: Reproductive Biology	(7)	(24)
VAB307P	Biomedical Apparatus III in: Cardiovascular Perfusion	(7)	(24)

**One of the following modules:**

*The prerequisite modules for all modules are: Biomedical Apparatus II, Clinical Professional Practice II, Clinical Science Practice II, Human Anatomy II, Human Physiology II and Pathophysiology II.*

CCE307P	Clinical Science Practice III in: Critical Care	(7)	(18)
CYE307P	Clinical Science Practice III in: Cardiology	(7)	(18)
NEE307P	Clinical Science Practice III in: Nephrology	(7)	(18)
NRE307P	Clinical Science Practice III in: Neurophysiology	(7)	(18)
PLE307P	Clinical Science Practice III in: Pulmonology	(7)	(18)
RBE307P	Clinical Science Practice III in: Reproductive Biology	(7)	(18)
VAE307P	Clinical Science Practice III in: Cardiovascular Perfusion	(7)	(18)

**One of the following modules:**

*The prerequisite modules for all modules are: Human Anatomy II, Human Physiology II and Pathophysiology II.*

CCP307P	Pathophysiology III in: Critical Care	(7)	(18)
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CYP307P	Pathophysiology III in: Cardiology	(7)	(18)
NEP307P	Pathophysiology III in: Nephrology	(7)	(18)
NRP307P	Pathophysiology III in: Neurophysiology	(7)	(18)
PLP307P	Pathophysiology III in: Pulmonology	(7)	(18)
RBP307P	Pathophysiology III in: Reproductive Biology	(7)	(18)
VAP307P	Pathophysiology III in: Cardiovascular Perfusion	(7)	(18)

**plus one of the following modules:**

CCH317P	Pharmacology III in: Critical Care	(7)	(6)	Pharmacology II
CYH317P	Pharmacology III in: Cardiology	(7)	(6)	Pharmacology II
NEH317P	Pharmacology III in: Nephrology	(7)	(6)	Pharmacology II
NRH317P	Pharmacology III in: Neurophysiology	(7)	(6)	Pharmacology II
PLH317P	Pharmacology III in: Pulmonology	(7)	(6)	Pharmacology II
RBH317P	Pharmacology III in: Reproductive Biology	(7)	(6)	Pharmacology II
VAH317P	Pharmacology III in: Cardiovascular Perfusion	(7)	(6)	Pharmacology II

TOTAL CREDITS FOR THE THIRD YEAR: **123**

#### FOURTH YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
CDG408P	Clinical Education and Mentoring I	(8)	(12)	Clinical Professional Practice III Clinical Science Practice III ( <i>at least one of the electives</i> )
CLP408P	Clinical Professional Practice IV	(8)	(12)	Clinical Professional Practice III
HAM408P	Health Care Administration and Management II	(8)	(12)	Health Care Administration and Management I
MBH418P	Medical Law, Bio-Ethics and Human Rights IV (first-semester module)	(8)	(9)	Medical Law, Bio-Ethics and Human Rights III
PTS418P	Pathophysiology IV (first-semester module)	(8)	(12)	Anatomy and Physiology III ( <i>at least one of the electives</i> ) Pathophysiology III ( <i>at least one of the electives</i> )
RPL408P	Research Principles IV and Project	(8)	(30)	Research Principles III

**plus one of the following modules:**

CCB408P	Biomedical Apparatus IV in: Critical Care	(8)	(12)	Biomedical Apparatus III in: Critical Care
CYB408P	Biomedical Apparatus IV in: Cardiology	(8)	(12)	Biomedical Apparatus III in: Cardiology
NEB408P	Biomedical Apparatus IV in: Nephrology	(8)	(12)	Biomedical Apparatus III in: Nephrology
NRB408P	Biomedical Apparatus IV in: Neurophysiology	(8)	(12)	Biomedical Apparatus III in: Neurophysiology
PLB408P	Biomedical Apparatus IV in: Pulmonology	(8)	(12)	Biomedical Apparatus III in: Pulmonology
RDB408P	Biomedical Apparatus IV in: Reproductive Biology	(8)	(12)	Biomedical Apparatus III in: Reproductive Biology



VAB408P	Biomedical Apparatus IV in: Cardiovascular Perfusion	(8)	(12)	Biomedical Apparatus III in: Cardiovascular Perfusion
<b>plus one of the following modules:</b>				
CCE408P	Clinical Science Practice IV in: Critical Care	(8)	(24)	Clinical Science Practice III in: Critical Care
CYE408P	Clinical Science Practice IV in: Cardiology	(8)	(24)	Clinical Science Practice III in: Cardiology
NEE408P	Clinical Science Practice IV in: Nephrology	(8)	(24)	Clinical Science Practice III in: Nephrology
NRE408P	Clinical Science Practice IV in: Neurophysiology	(8)	(24)	Clinical Science Practice III in: Neurophysiology
PLE408P	Clinical Science Practice IV in: Pulmonology	(8)	(24)	Clinical Science Practice III in: Pulmonology
RBE408P	Clinical Science Practice IV in: Reproductive Biology	(8)	(24)	Clinical Science Practice III in: Reproductive Biology
VAE408P	Clinical Science Practice IV in: Cardiovascular Perfusion	(8)	(24)	Clinical Science Practice III in: Cardiovascular Perfusion
TOTAL CREDITS FOR THE THIRD YEAR:			<b>123</b>	
TOTAL CREDITS FOR THE QUALIFICATION:			<b>496</b>	

## MODULE INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular module. At time of publication, the syllabus content was defined as follows:

### A

#### **ANATOMY AND PHYSIOLOGY III IN: CARDIOLOGY (CYA307P) 1 X 3-HOUR PAPER** *(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Anatomy and Physiology in Cardiology and covers; embryology of the cardiovascular system, anatomy of the cardiovascular system, and physiology of the cardiovascular system. (Total notional time: 180 hours)

#### **ANATOMY AND PHYSIOLOGY III IN: CARDIOVASCULAR PERFUSION (VAA307P) 1 X 3-HOUR PAPER** *(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Anatomy and Physiology in Cardiovascular Perfusion and covers; embryology of the cardiovascular system, anatomy of the cardiovascular system, and physiology of the cardiovascular system. (Total notional time: 180 hours)

#### **ANATOMY AND PHYSIOLOGY III IN: CRITICAL CARE (CCA307P) 1 X 3-HOUR PAPER** *(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Anatomy and Physiology in Critical Care and covers the following systems; respiratory, cardiovascular, nervous, renal, and gastrointestinal. (Total notional time: 180 hours)

#### **ANATOMY AND PHYSIOLOGY III IN: NEPHROLOGY (NEA307P) 1 X 3-HOUR PAPER** *(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Anatomy and Physiology in Nephrology and covers; embryology of the renal system, anatomy of the renal system, and physiology of the renal system. (Total notional time: 180 hours)



**ANATOMY AND PHYSIOLOGY III IN: NEUROPHYSIOLOGY (NRA307P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Anatomy and Physiology in Neurophysiology and covers; embryology of the nervous system, anatomy of the nervous system, and physiology of the nervous system. (Total notional time: 180 hours)

**ANATOMY AND PHYSIOLOGY III IN: PULMONOLOGY (PLA307P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Anatomy and Physiology in Pulmonology and covers; embryology of the respiratory system, anatomy of the respiratory system, and physiology of the respiratory system. (Total notional time: 180 hours)

**ANATOMY AND PHYSIOLOGY III IN: REPRODUCTIVE BIOLOGY (RDA307P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Anatomy and Physiology in Reproductive Biology and covers; embryology of the reproductive system, anatomy of the reproductive system, physiology of the reproductive system, reproductive endocrinology, and reproductive genetics. (Total notional time: 180 hours)

**B**

**BIOMEDICAL APPARATUS II (BAP206P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student with detailed knowledge of Biomedical Apparatus and covers the following apparatus; infusion devices, pressure transducers, electrode's, sterilisation, phlebotomy, patient transport, basic category apparatus. (Total notional time: 180 hours)

**BIOMEDICAL APPARATUS III IN: CARDIOLOGY (CYB307P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Biomedical Apparatus in Cardiology and covers; electrocardiography, pacemakers, echocardiography, cardiac catheterisation, intra-aortic balloon pump, and cardiac defibrillators. (Total notional time: 240 hours)

**BIOMEDICAL APPARATUS IV IN: CARDIOLOGY (CYB408P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate integrated knowledge and engagement in the Cardiology speciality at the forefront of Clinical Technology and covers; advanced cardiac arrhythmia, cardiac electrophysiology studies, high-powered pacing devices, cardiac resynchronisation therapy, advanced echocardiography modalities and applications, and haemodynamic monitoring and assessment in left and right heart cardiac catheterisation diagnostic and intervention studies. (Total notional time: 120 hours)

**BIOMEDICAL APPARATUS III IN: CARDIOVASCULAR PERFUSION (VAB307P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Biomedical Apparatus in Cardiovascular Perfusion and covers; blood pumps, warming and cooling devices, thermometers and flow meters, venous drainage and assist devices, blood and gas filters, cardiotomy reservoirs, haemodynamic monitoring equipment, circulatory and pulmonary support devices, intra-aortic balloon pump, ablation and maze procedures. (Total notional time: 240 hours)

**BIOMEDICAL APPARATUS IV IN: CARDIOVASCULAR PERFUSION (VAB408P) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate integrated knowledge and engagement in the Cardiovascular Perfusion area at the forefront of Clinical Technology and covers; haemodilution and flow mechanics of extra-corporeal devices, troubleshooting during cardiopulmonary bypass, organ transplantation and selected organ/limb perfusion, and advanced Perfusion Techniques. (Total notional time: 120 hours)

**BIOMEDICAL APPARATUS III IN: CRITICAL CARE (CCB307P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate integrated knowledge and engagement in the Critical Care speciality at the forefront of Clinical Technology and covers; advanced ventilation, advanced haemodynamic monitoring, theatre procedures, paediatric ventilation, paediatric monitoring, and vascular ultrasonography. (Total notional time: 240 hours)

**BIOMEDICAL APPARATUS IV IN: CRITICAL CARE (CCB408P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate integrated knowledge and engagement in the Critical Care speciality at the forefront of Clinical Technology and covers; advanced ventilation, advanced haemodynamic monitoring, theatre procedures, paediatric ventilation, paediatric monitoring, and vascular ultrasonography. (Total notional time: 120 hours)

**BIOMEDICAL APPARATUS III IN: NEPHROLOGY (NEB307P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Biomedical Apparatus in Nephrology and covers; history of dialysis, water treatment, and haemodialysis and peritoneal dialysis. (Total notional time: 240 hours)

**BIOMEDICAL APPARATUS IV IN: NEPHROLOGY (NEB408P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate integrated knowledge and engagement in the Nephrology speciality at the forefront of Clinical Technology and covers; acute haemodialysis therapy, continuous renal replacement therapies, apheresis therapies, and haemoperfusion. (Total notional time: 120 hours)

**BIOMEDICAL APPARATUS III IN: NEUROPHYSIOLOGY (NRB307P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Biomedical Apparatus in Neurophysiology and covers; clinical electroencephalography, normal, abnormal, and epileptiform EEG, activation techniques, nerve conduction studies, somatosensory evoked potentials, brainstem auditory evoked potentials, visual evoked potentials. (Total notional time: 240 hours)

**BIOMEDICAL APPARATUS IV IN: NEUROPHYSIOLOGY (NRB408P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate integrated knowledge and engagement in the Neurophysiology speciality at the forefront of Clinical Technology and covers; quantitative electroencephalography, normal neonatal and paediatric EEG, abnormal neonatal and paediatric EEG, polysomnography, sleep disorders, uncommon and advanced nerve conduction studies, paediatric nerve conduction studies, transcranial doppler, and basic concepts of Intraoperative neuromonitoring. (Total notional time: 120 hours)

**BIOMEDICAL APPARATUS III IN: PULMONOLOGY (PLB307P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Biomedical Apparatus in Pulmonology and covers; infection control techniques, spirometer, lung volumes and gas distribution, diffusion apparatus, blood gas analysis, and provocation studies. (Total notional time: 240 hours)

**BIOMEDICAL APPARATUS IV IN: PULMONOLOGY (PLB408P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate integrated knowledge and engagement in the Pulmonology area at the forefront of Clinical Technology and covers; bronchoscopy, cardiopulmonary exercise testing, respiratory muscle function testing, ventilation and ventilatory Control, sleep studies, and procurement of apparatuses. (Total notional time: 120 hours)

**BIOMEDICAL APPARATUS III IN: REPRODUCTIVE BIOLOGY (RDB307P) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to integrate knowledge of Biomedical Apparatus in Reproductive Biology and covers; external quality control, andrology, setting up of a spermatology laboratory, cryopreservation, assisted reproductive technology, computer-aided sperm analysis, handling semen with pathogens or blood-borne viruses, oocyte retrieval, risk management. (Total notional time: 240 hours)



**BIOMEDICAL APPARATUS IV IN: REPRODUCTIVE BIOLOGY (RDB408P)****1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Biomedical Apparatus in Reproductive Biology and covers; insemination methods and fertilisation, intra cytoplasmic sperm injection, cryopreservation of oocytes, zygotes, embryos and blastocysts, frozen thawed embryo transfers, assisted reproductive technology outcomes, third party reproduction (sperm, oocytes, embryos, blastocysts), and laboratory management. (Total notional time: 120 hours)

**C****CHEMISTRY FOR HEALTH SCIENCES I (CHS115P)****1 X 3-HOUR PAPER****(Module custodian: Department of Chemistry)**

The student will be able to apply his/her knowledge of atomic theory, nomenclature, stoichiometry, chemical equilibrium, organic chemistry and gases and liquids to basic chemistry related problems. Upon completion, the student will be able to discuss fundamental concepts in chemistry and do related calculations. (Total tuition time: not available). (Total notional time: 120 hours)

**CLINICAL EDUCATION AND MENTORING I (CDG408P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

The student will acquire in-depth knowledge of aspects relating to clinical teaching, learning, assessment, and mentoring of clinical technologists in training. The module will cover knowledge of Work Integrated Learning, Strategies of teaching and learning, Clinical assessment practices, Reflection-in and -on learning experiences, as well as the successful mentoring of students during clinical training. (Total notional time: 120 hours)

**CLINICAL PROFESSIONAL PRACTICE I (CLP105P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

The student will be able to demonstrate the ability to take account of and act in accordance with prescribed health and medical organisations as well as the professional ethics codes of conduct, values and practices. Through this module, students will obtain the ability to communicate information reliably, accurately and coherently as well as the ability to account for their actions. Finally, the student should understand the relationship of the anatomical and physiological systems during emergency medical care. (Total notional time: 120 hours)

**CLINICAL PROFESSIONAL PRACTICE II (CLP206P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

The student will be able to demonstrate an understanding of the ethical implications of decisions and actions as well as the complexity of ethical dilemmas. Through this module, a student will obtain the ability to present and communicate complex medical information reliably. Finally, the student should understand the relationships between organ systems during emergency medical care. (Total notional time: 120 hours)

**CLINICAL PROFESSIONAL PRACTICE III (CLP307P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

The student will be able to demonstrate the ability to take decisions and act ethically and professionally in a familiar healthcare environment. Through this module, a student will obtain the ability to communicate ideas and opinions in well-formed oral and written arguments and facilitate collaborative learning. Finally, the student should recognise that problem-solving does not occur in isolation, and manage clinical procedures in dynamic emergency medical care environments. (Total notional time: 120 hours)

**CLINICAL PROFESSIONAL PRACTICE IV (CLP408P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

The student will be able to demonstrate the ability to identify and address ethical and legal issues based on critical reflection in an unfamiliar healthcare environment. Through this module, a student will obtain the ability to communicate accurate academic and professional information and knowledge as well as design and implement appropriate teaching strategies. Finally, the student should recognise that problem-solving does not occur in isolation, and manage emergency procedures in dynamic medical care environments. (Total notional time: 120 hours)



**CLINICAL SCIENCE PRACTICE II (CLC206P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate the ability to evaluate, select and apply appropriate standard procedures and covers the following Competency Based Assessments; non-invasive oximetry and non-invasive blood pressure measurement, basic resting electrocardiogram, activated clotting time measurement, blood gas sampling, anthropometric measurements, respiratory rate measurements, temperature measurement, radial and tibial pulse measurement, non-provocative nebulizers, oxygen therapy masks, setting of pressure transducers, ventilators and infusion devices, automated external defibrillator, spirometry measurements, and phlebotomy. (Total notional time: 120 hours)

**CLINICAL SCIENCE PRACTICE III IN: CARDIOLOGY (CYE307P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in cardiology and covers the following Competency Based Assessments; defibrillation and cardioversion, resting and exercise stress ECG, intra-aortic balloon pump, temporary and permanent pacemakers, adult sonography, and adult cardiac catheterisation. (Total notional time: 180 hours)

**CLINICAL SCIENCE PRACTICE IV IN: CARDIOLOGY (CYE408P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of the complexities and uncertainties of selecting and applying standard procedures in Cardiology to unfamiliar problems and covers the following Competency Based Assessments; electrocardiography, high powered pacemakers, paediatric sonography, adult intervention cardiac catheterisation, paediatric cardiac catheterisation. (Total notional time: 240 hours)

**CLINICAL SCIENCE PRACTICE III IN: CARDIOVASCULAR PERFUSION (VAE307P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in Cardiovascular Perfusion and covers the following Competency Based Assessments; cell saving, cardiopulmonary bypass circuit setup and de-air, cardioplegia, suckers and venting of the heart, intra-aortic balloon pump, adult cardiopulmonary bypass, extra-corporeal membrane oxygenation, maze and ablation setup, and nitric oxide dosing setup and management. (Total notional time: 180 hours)

**CLINICAL SCIENCE PRACTICE IV IN: CARDIOVASCULAR PERFUSION (VAE408P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of the complexities and uncertainties of selecting and applying standard procedures in Cardiovascular Perfusion to unfamiliar problems and covers the following Competency Based Assessments; advanced intra-aortic balloon pump, complex adult cardiopulmonary bypass, paediatric cardiopulmonary bypass, neonatal cardiopulmonary bypass, cardiopulmonary bypass during deep hypothermic circulatory arrest, and extra corporeal membrane oxygenation. (Total notional time: 240 hours)

**CLINICAL SCIENCE PRACTICE III IN: CRITICAL CARE (CCE307P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in Critical Care and covers the following Competency Based Assessments; blood gas analysis; haemodynamic monitoring, ventilation, cell saving, anaesthesia, and emergency procedures. (Total notional time: 180 hours)

**CLINICAL SCIENCE PRACTICE IV IN: CRITICAL CARE (CCE408P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of the complexities and uncertainties of selecting and applying standard procedures in Critical Care to unfamiliar problems and covers the following Competency Based Assessments; acute dialysis, advanced ventilation, advanced haemodynamic monitoring, paediatric ventilation, thromboelastometry, and vascular ultrasonography. (Total notional time: 240 hours)



**CLINICAL SCIENCE PRACTICE III IN: NEPHROLOGY (NEE307P) CONTINUOUS ASSESSMENT**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in Nephrology and covers the following Competency Based Assessments; patient preparation, water treatment, pre-dialysis assessment and anticoagulation therapy, blood sampling techniques, peritoneal dialysis documentation, renal dialysis design. (Total notional time: 180 hours)

**CLINICAL SCIENCE PRACTICE IV IN: NEPHROLOGY (NEE408P) CONTINUOUS ASSESSMENT**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of the complexities and uncertainties of selecting and applying standard procedures in Nephrology to unfamiliar problems and covers the following Competency Based Assessments; acute haemodialysis treatment, peritoneal dialysis treatment, continuous renal therapies, plasmapheresis, kidney transplant, and advanced renal dialysis design. (Total notional time: 240 hours)

**CLINICAL SCIENCE PRACTICE III IN: CONTINUOUS ASSESSMENT**

**NEUROPHYSIOLOGY (NRE307P)**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in Neurophysiology and covers the following Competency Based Assessments; electroencephalography, nerve conduction studies, somatosensory evoked potentials, auditory brainstem responses, visual evoked potentials, artefact atlas. (Total notional time: 180 hours)

**CLINICAL SCIENCE PRACTICE IV IN: CONTINUOUS ASSESSMENT**

**NEUROPHYSIOLOGY (NRE408P)**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of the complexities and uncertainties of selecting and applying standard procedures in (Category) to unfamiliar problems and covers the following Competency Based Assessments; paediatric and neonatal electroencephalography, advanced nerve conduction studies, somatosensory evoked potentials, advanced auditory brainstem responses, advanced visual evoked potentials, and polysomnography. (Total notional time: 240 hours)

**CLINICAL SCIENCE PRACTICE III IN: PULMONOLOGY (PLE307P) CONTINUOUS ASSESSMENT**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in Pulmonology and covers the following Competency Based Assessments; infection control, prevention and safety, spirometry, lung volumes and gas distribution, diffusion, blood gas analysis, and provocation studies. (Total notional time: 180 hours)

**CLINICAL SCIENCE PRACTICE IV IN: PULMONOLOGY (PLE408P) CONTINUOUS ASSESSMENT**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of the complexities and uncertainties of selecting and applying standard procedures in Pulmonology to unfamiliar problems and covers the following Competency Based Assessments; bronchoscopy; cardiopulmonary exercise testing, respiratory muscle function testing, ventilation and ventilatory control, and sleep studies. (Total notional time: 240 hours)

**CLINICAL SCIENCE PRACTICE III IN: REPRODUCTIVE CONTINUOUS ASSESSMENT**

**BIOLOGY (RBE307P)**

**(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate an understanding of a range of standard procedures in Reproductive Biology and covers the following Competency Based Assessments, semen/sperm processing and analysis, therapeutic processing, computer-aided sperm analysis, media preparation, oocyte retrieval, in vitro fertilisation inseminations and denudation, cryopreservation of sperm, alternative sperm tests, and quality control. (Total notional time: 180 hours)



## **CLINICAL SCIENCE PRACTICE IV IN: REPRODUCTIVE BIOLOGY (RBE408P)**

**CONTINUOUS ASSESSMENT**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate an understanding of a range of standard procedures in Reproductive Biology and covers the following Competency Based Assessments; patient interaction sessions, sperm retrieval procedures, intracytoplasmic sperm injection, embryo evaluations, embryo transfer, cryopreservation management, trophoctoderm biopsy and genetic testing, time-lapse imaging, and assisted hatching. (Total notional time: 240 hours)

## **COMMUNICATION FOR ACADEMIC PURPOSES (11P105X)**

**1 X 3-HOUR PAPER**

*(Module custodian: Office of the Executive Dean)*

A workable knowledge of English is an essential skill for any graduate who is required to conduct themselves successfully in a professional working environment. This module will equip students with the competencies required to compose a selection of written texts related to communicating both internally and externally within a professional environment. In addition, the module includes strategies that are essential for the effective communication in various situations, including small groups to avoid unproductive conflict, a multicultural context, etc. (Total notional time: 100 hours)

## **COMPUTER LITERACY (CPL105X)**

**CONTINUOUS ASSESSMENT**

*(Module custodian: End User Computing Unit)*

This module provides students with foundational knowledge in computing fundamentals, essential digital skills in key applications based on MS Office Suite and network basics (i.e. MS Outlook and Internet). Online exams are mapped with End-User Computing: SAQA 49077 (61591) Core Element as well as Internet and Computing Core Certification (IC3). (Total notional time: 100 hours)

## **F**

### **FOUNDATION LIFE SKILLS (FLF125P)**

**CONTINUOUS ASSESSMENT**

*(Module custodian: Directorate of Student Development and Support)*

Personal, socio-emotional and academic skills development for students in higher education. This module includes 1. Intra- and interpersonal skills (e.g. emotional intelligence, relationships, and conflict management); 2. General study skills (e.g. time management, goal setting, learning styles); 3. Health and wellness (e.g. HIV/AIDS, GBV issues, substance abuse); 4. Student life and adjustment (e.g. identity development, adjusting to a higher education environment); and 5. Financial management. (Total notional time: 20 hours)

## **H**

### **HEALTH CARE ADMINISTRATION AND MANAGEMENT I (HAM307P)**

**CONTINUOUS ASSESSMENT**

*(Module custodian: Department of Management and Entrepreneurship)*

The student will be able to demonstrate integrated knowledge and the application of strategic management processes, different management models, importance and utilization of human resources within a health care environment. This module prepares the student to enter the medical profession. (Total notional time: 120 hours)

### **HEALTH CARE ADMINISTRATION AND MANAGEMENT II (HAM408P)**

**CONTINUOUS ASSESSMENT**

*(Module custodian: Department of Management and Entrepreneurship)*

This module provides the student with the theoretical underpinnings of the field of health care administration management and to provide guidance on governing and managing within a business. Furthermore, this module will assist in developing the skills necessary to make administrative and management decisions and to manage the myriad of managerial dilemmas that is faced by managers. (Total notional time: 120 hours)

### **HUMAN ANATOMY I (HAN105P)**

**1 X 3-HOUR PAPER**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to enter the medical profession. The student will be able to understand and apply his/her knowledge of cellular components, tissue and organ systems to and overall perspective of a healthy human necessary in the medical community. Upon completion, the student will be able to understand important cellular concepts, identify all bones, muscles, nerves and have a sound basis of each organ system. Students will also have mastered the practical skills to be confident in all human body structures and location. (Total notional time: 180 hours)

**HUMAN ANATOMY II (HAN206P)****1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module builds on prior knowledge of human anatomy and physiology. Upon completion, the student will be able to apply his/her knowledge of cellular components, tissue and organ systems to and overall perspective of a healthy human necessary in the medical community. Upon completion, the student will be able to understand important cellular concepts, identify all bones, muscles, nerves and have a sound basis of each organ system which includes the embryological development of each system. Students will also have mastered the practical skills to be confident in identifying all human body structures and location. (Total notional time: 180 hours)

**HUMAN PHYSIOLOGY I (HPY105P)****1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

The student will be able to apply his/her knowledge of the organisation of the human body, principles of support and movement, control systems of the human body such as the skeletal-, cardiac-, endocrine-, and nervous system, maintenance of the human body, and continuity in theoretical and practical contexts contributing to the body of knowledge necessary in the medical community. Upon completion, the student will be able to identify, explain and apply concepts and processes related to physiology, their control and regulation such as homeostasis, nutrition, movement and reproduction and distinguish between mechanical, biochemical and physical functions in a living system and how each system integrates with other systems in the human body. Students will also have the practical skills to be confident in all human body functions and their roles. (Total notional time: 180 hours)

**HUMAN PHYSIOLOGY II (HPY206P)****1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

The student should demonstrate detailed knowledge of the human body's cellular and chemical organisation, the principles of support and movement, the control and maintenance of the human body through the various organ systems, pathophysiology of organ systems and continuity contributing to their understanding of the physiology of a healthy human body. Upon completion, the student will be able to identify, explain and apply concepts and principles of organisation of the human body, control-, maintenance-, and pathophysiology of organ systems, sensory organs and continuity to the extent that they are able to successfully undertake various discipline specific modules related to human physiology. Students will also have the practical skills to be confident in all human body functions and their roles and apply this knowledge in a clinical setting. (Total notional time: 180 hours)

**M****MATHEMATICS AND STATISTICS I (MAS105X)****1 X 3-HOUR PAPER****(Module custodian: Department of Mathematics and Statistics)**

Numerical computations, mensuration, equations, functions, descriptive statistics, linear regression and curve fitting. (Total notional time: 120 hours)

**MEDICAL LAW, BIO-ETHICS AND HUMAN RIGHTS I (MBH115P)****CONTINUOUS ASSESSMENT****MEDICAL LAW, BIO-ETHICS AND HUMAN RIGHTS II (MBH216P)****CONTINUOUS ASSESSMENT****MEDICAL LAW, BIO-ETHICS AND HUMAN RIGHTS III (MBH317P)****CONTINUOUS ASSESSMENT****MEDICAL LAW, BIO-ETHICS AND HUMAN RIGHTS IV (MBH418P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares students to acquire knowledge that achieves deep learning and fundamental understanding of medical law, bioethics and human rights. The student will be able to apply his/her knowledge of medical law, bioethics and human rights to clinical professional practice in a healthcare context. The module will present the following main learning areas: 1. Medical law, specifically legal principles and business law; and 2. Bioethics and human rights, specifically the morality and ethics, moral theories, integrity, human rights and bioethics principles, required for a Clinical Technologist to function independently in the healthcare fraternity and to demonstrate the ability to work in medical and business practice contexts from a framework of medical law, bioethics and human rights. The module will further serves to build upon initial requirements of medical law and bioethics concepts progressing to a deep understanding of the fundamental principles about bioethics, integrity and moral reasoning in the health care and health research environment. (Total notional time: 90 hours)



**PATHOPHYSIOLOGY II (PTS206P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to obtain detailed knowledge, apply problem-solving skills, as well as to produce and communicate information in the field of pathophysiology. The student will be able to apply his/her knowledge of Anatomy and Physiology to the disordered anatomical and physiological processes associated with disease or injury. The module includes: Introduction and Basic Concepts of Disease Process, Defence / Protective Mechanisms, and Pathophysiology of Body Systems. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: CARDIOLOGY (CYP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Cardiology and covers; congenital heart disease, diseases of the pericardium, ischaemic heart disease, valvular heart disease, heart failure, and cardiac arrhythmias. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: CARDIOVASCULAR PERFUSION (VAP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Cardiovascular Perfusion and covers; congenital heart disease, diseases of the pericardium, ischaemic heart disease, valvular heart disease, heart failure, and cardiac arrhythmias. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: CRITICAL CARE (CCP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Critical Care and covers the following systemic diseases; respiratory, cardiovascular, nervous, renal, and gastrointestinal, as well as multi-system disorders. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: NEPHROLOGY (NEP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Nephrology and covers; acid-base, fluid, and electrolyte disorders, acute and chronic kidney disorders, glomerular diseases, systemic disorders and the kidney, and hereditary kidney disease. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: NEUROPHYSIOLOGY (NRP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Neurophysiology and covers; epileptic seizures, disorders of consciousness, electroencephalographic pathologies, cranial nerve pathologies, spinal cord pathologies, and muscular pathologies. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: PULMONOLOGY (PLP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Pulmonology and covers; obstructive airway diseases, restrictive airway diseases, vascular diseases, environmental, neoplastic, and infectious diseases, respiratory failure, intrapulmonary shunting. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY III IN: REPRODUCTIVE BIOLOGY (RBP307P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to integrate knowledge of Pathophysiology in Reproductive Biology and covers; infectious disease, infectious sampling, sperm DNA damage and genetics, male congenital abnormalities. (Total notional time: 180 hours)

**PATHOPHYSIOLOGY IV (PTS418P) 1 X 3-HOUR PAPER****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to apply his/her specialised knowledge of Anatomy, Physiology, and Pathophysiology to the disordered anatomical and physiological processes associated with disease or injury in special populations (paediatrics, adolescent, aged, immobile) as well as specialised pathologies in the field of specialisation. This module will prepare the student to integrated knowledge and prepare them for engagement in the field of specialisation at the forefront of Clinical Technology. (Total notional time: 120 hours)



**PHARMACOLOGY II (PMY206P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of pharmacology, common organ system conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology is in line with national clinical needs and biomedical professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate the pharmacology as a speciality on postgraduate level. (Total notional time: 180 hours)

**PHARMACOLOGY III IN: CARDIOLOGY (CYH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of pharmacology in cardiology, common cardiovascular conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology in cardiology is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate cardiology as a speciality. (Total notional time: 60 hours)

**PHARMACOLOGY III IN: CARDIOVASCULAR PERFUSION (VAH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an integrated knowledge and understanding of facts and principles related to the pharmacology in Cardiovascular Perfusion. The module content entails common cardiovascular conditions and their management. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of human anatomy, human physiology, pathophysiology and pharmacology in this field of study. Relevance of pharmacology in cardiovascular perfusion is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate cardiovascular perfusion as a speciality. (Total notional time: 60 hours)

**PHARMACOLOGY III IN: CRITICAL CARE (CCH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of pharmacology in critical care, common critical care conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology in critical care is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate critical care as a speciality. (Total notional time: 60 hours)

**PHARMACOLOGY III IN: NEPHROLOGY (NEH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of pharmacology in nephrology, common nephrology conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology in nephrology is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate nephrology as a speciality. (Total notional time: 60 hours)

**PHARMACOLOGY III IN: NEUROPHYSIOLOGY (NRH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of pharmacology in Neurophysiology, common Neurophysiology conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology in Neurophysiology is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate Neurophysiology as a speciality. (Total notional time: 60 hours)



**PHARMACOLOGY III IN: PULMONOLOGY (PLH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of pharmacology in pulmonology, common pulmonology conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology in pulmonology is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate pulmonology as a specialty. (Total notional time: 60 hours)

**PHARMACOLOGY III IN: REPRODUCTIVE BIOLOGY (RBH317P)****1 X 3-HOUR PAPER****(Module custodian: Department of Pharmaceutical Sciences)**

This module which prepares the student to acquire an informed understanding of the basic principles of pharmacology in Reproductive Biology, common Reproductive Biology conditions and their treatment. The student will be able to demonstrate the ability to select and apply the correct pharmacological agents for the appropriate disease profile. Through this module, students will obtain the ability to integrate aspects of anatomy, physiology, pathophysiology and pharmacology in their field of study. Relevance of pharmacology in Reproductive Biology is in line with national clinical needs and health professional policies and procedures, and suitable resources need to be critically evaluated and used to facilitate Reproductive Biology as a specialty. (Total notional time: 60 hours)

**PHYSICS FOR HEALTH SCIENCES I (PHS115P)****1 X 3-HOUR PAPER****(Module custodian: Department of Physics)**

This module is aimed at enhancing student knowledge in fundamental concepts in mechanics, mechanical properties of fluids, thermal properties of matter, general and geometrical properties of waves, static electricity and electric circuits and their applications thereof. (Total notional time: 120 hours)

**R****RESEARCH PRINCIPLES I (RPL115P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to acquire an informed understanding of the basic principles of research and academic writing to include definitions, characteristics, as well as the concepts of scholarly writing, scholarly literature, the methodologies and designs. The student will be able to demonstrate the ability to select and apply the correct academic writing principles, citation methods, and procedures in order to avoid any form of plagiarism. Through this module, students will obtain the ability to integrate aspects of research principles and methodology in their field of study. Relevance of research is in line with national needs and biomedical ethical policies and procedures, and suitable resources need to be critically evaluated and used to facilitate the research project on postgraduate level. (Total notional time: 60 hours)

**RESEARCH PRINCIPLES II (RPL216P)****CONTINUOUS ASSESSMENT****(Module custodian: Department of Biomedical Sciences)**

This module prepares the student to demonstrate detailed understanding and knowledge of the main areas of research principles and the ability to apply concepts, principles and theories related to the framework of a research proposal, the different research methodologies and designs, as well as data collection principles, analysis, reliability, validity, rigour, trustworthiness, budget and funding. Through this module, the student will demonstrate understanding of the research problem and objectives within the context of a particular research methodology, as well as the ability to evaluate, select and apply the optimal sampling procedures, data collection principles relevant to a research methodology and design. Knowledge and the ability to analyse, synthesise, and evaluate information from different sources of scholarly academic information, including definitions, criteria, purposes, questionnaire designs, data collection principles and methods for the application during the research process will be obtained in preparation to the next level of research principles and procedures to follow. (Total notional time: 60 hours)





**RESEARCH PRINCIPLES III (RPL307P)****CONTINUOUS ASSESSMENT**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate integrated knowledge of the central and crucial areas of research principles and methodologies including the ability to apply concepts, principles and theories necessary for the compilation of a research proposal in the context of an academic and/or health science related environment. Through this module, students will gain understanding of the roles and responsibilities pertaining to the research supervisor and the researcher. Students will learn to differentiate between research methods and their suitability and ability to resolve specific research enquiries, act ethically and professionally with dignity and integrity, as well as to manage the processing of gathered data through advanced bio-statistical methods. (Total notional time: 60 hours)

**RESEARCH PRINCIPLES IV AND PROJECT (RPL408P)****CONTINUOUS ASSESSMENT**

*(Module custodian: Department of Biomedical Sciences)*

This module prepares the student to demonstrate knowledge of and engagement in the advanced aspects of research principles and techniques at the forefront related to a particular medical field of study or specialisation. Students should further be able to demonstrate understanding of the analysis and interpretation of research results, the structure and composition of a research report, as well as publications and presentations. Students will gain knowledge in the use of specialised skills to identify, analyse and address abstract problems related to a research project in a field of study or specialisation, as well as to incorporate body of knowledge and methods during the problem-solving process. On completion of this module, students should show their ability to present and communicate scientific research results to a range of audiences in the format of a research article for a given journal, poster design, as well as in the form of a verbal and visual research presentation. (Total notional time: 300 hours)

