



SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY

School of Pharmacy

Calendar 2019

Medium of Instruction

The medium of instruction at the Sefako Makgatho Health Sciences University is English.

Validity

This Calendar is valid for the year 2019. The University reserves the right to amend any rule or provision in this Calendar at any time without prior notice. No responsibility is accepted for possible inaccuracies.

University Semesters: 2019

FIRST SEMESTER	3 January 2019	28 June 2019
SECOND SEMESTER	15 July 2019	15 December 2019
AUTUMN Recess (for students)	15 April 2019	18 April 2019 (inclusive)
WINTER Recess (for students)	1 July 2019	12 July (inclusive)
SUMMER Recess (Students Vacation)	17 December 2019	6 January 2020

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MESSAGE FROM THE DEAN

The School of Pharmacy is one of the five Schools of Sefako Makgatho Health Sciences University (SMU). However, although it is newest at SMU as of 2017, it has a proud history of offering pharmacy education dating back to 1983 when it was established as a School within Faculty of Medicine in what was then MEDUNSA. Due to the political climate at the time and the subsequent rationalisation of the schools of pharmacy nationally, the undergraduate Bachelor of Pharmacy (BPharm) degree was not implemented. Emphasis was thus placed on postgraduate education in the form of the MSc (Med) and PhD degrees.

The BPharm degree education was then offered in 1998 in partnership with Tshwane University of Technology. In 2005, University of Limpopo (UL) was established as a merger of MEDUNSA and University of the North. The new academic structure of UL came into effect in 2006, and as result, the School of Pharmacy became the Department of Pharmacy within the School of Health Care Sciences under Faculty of Health Sciences.

The School of Pharmacy has developed four departments which are Clinical Pharmacy, Pharmaceutical Sciences, Pharmacy Practice, and Public Health Pharmacy and Management. The School offers BPharm degree and other undergraduate programmes for basic and post-basic pharmacist assistants. It also offers dispensing course and several continuing professional development courses. Postgraduate programmes are also offered and these include Master of Pharmacy in the disciplines of clinical pharmacy, pharmaceutical sciences encompassing also radiopharmacy, public health pharmacy and management. The Photobiology Laboratory is also housed in the School and attracts several national and international studies from pharmaceutical/cosmetic industry.

The future of pharmacy lies in the hands of our students, and the impact that they will have on the patients and the public. Therefore, through our excellent academic programmes both at undergraduate and postgraduate level , the training that the students get equip them with necessary knowledge, skills and attitudes to serve the healthcare needs of our socitey.



.....
PROFESSOR PH DEMANA

DEAN

SCHOOL VISION

To be the benchmark for innovative and sustainable pharmacy-related programmes for teaching, research and services for all.

Mission

The Mission of the School of Pharmacy is to:

1. Provide high quality pharmacy education, research and services.
2. Provide evidence-based, practice and science-directed pharmacy learning programmes
3. Provide non-degree programmes for pharmacists, pharmacist's assistants and other health care professionals
4. Maintain a high level of professional activity in statutory and other organisations in the pharmacy and health care fields
5. Utilise and contribute to the resources, facilities, personnel and expertise of institutions, organisations, government and statutory bodies both nationally and internationally
6. Provide specialised facilities and services to industry and other organisations.
7. Produce a cadre of pharmacy professionals with the transformative leadership capacity to identify, analyse and address the health needs of the individual, the family, the community and the population.
8. Create and utilise an organizational culture that supports innovation and harnesses the power of new technologies to address the primary and other health care needs of the community.

Values

The values that will guide students, faculty and administrative staff are:

- Accountability - take responsibility for your own actions and their outcomes
- Diligence - careful and persistent work or effort
- Integrity - being honest and having strong moral principles
- Commitment - being dedicated to a cause and activity
- Humility - to be humble, having a modest or low view of one's importance
- Respect - due regard for feelings, wishes, rights of others
- Empathy – experience of understanding another person's condition from their perspective
- Relevance - meaningful or purposeful in current society or culture

FIELDS OF STUDY (DEPARTMENTS)

The Degree and Diploma Programmes offered in the School of Pharmacy are listed on page 9.

CAREERS

Career opportunities exist in public health, research establishments, hospitals, laboratories, industry, private practice, colleges and universities. Further details are available from the specific disciplines and programmes.

SCHOOL COMMITTEES

School Board of Pharmacy Committee

School Executive Committee

School Postgraduate Committee

School Examination Commission

School Appeals Committee

School Research Committee

Selection Committee

Curriculum / Academic Planning Committee

Quality Assurance Committee

PERSONNEL

OFFICE OF THE DEAN

Dean
 Senior Lecturer (Student support)

 Principal Administrative Officer
 School officer (Acting)
 Secretary
 Administrative Officer
 Administrative Assistant

Tel: 012 521 5866
 Demana, PH: Ph.D. (Otago)
 Mabope, LA: M. Biochem, MSc (Med) (Pharmacology)
 (UL)
 Vacant
 Williamson, N: BSc (UNISA)
 Masango, S: National Diploma (UJ)
 Vacant
 Vacant

CLINICAL PHARMACY

Professor
 Senior Lecturer (part-time) – DoHET CTG
 Lecturer
 Lecturer
 Professor
 Senior Lecturer (part-time) – DoHET CTG
 Senior Lecturer (part-time) – DoHET CTG
 Lecturer (part-time)
 Lecturer (part-time)
 Lecturer (part-time)
 Secretary (Acting)
 Administrative Assistant

Tel: 012 521 3286
 **Schellack, N: PhD (UL)
 Annor, AS: MSc(Med) Pharmacy (UL)
 Bronkhorst, E: MSc(Med) Pharmacy (UL)
 Engler, D: MSc(Med) Pharmacy (UL)
 Gous, AGS. PharmD (University of Tennessee)
 Grootboom, W: MSc(Med) Pharmacy (UL)
 Kruger, D: MSc(Med) Pharmacy (UL)
 Labuschagne, Q: MPharm (UL)
 Malan, L: MSc(Med) Pharmacy (UL)
 Skosana, P: MPharm (SMU)
 Moeletsi, C.
 Vacant

PHARMACEUTICAL SCIENCES

Senior Lecturer
 Lecturer
 Senior Lecturer (Pharmaceutics)
 Senior Lecturer (Pharmaceutical Chemistry)
 Senior Lecturer (part-time) (Industrial
 Pharmacy)
 Lecturer (part-time) (Radiopharmacy)
 Lecturer (Pharmaceutical Chemistry)
 Professor (part-time) (Radiopharmacy)
 Senior Lecturer (Pharmaceutics)
 Secretary (Acting)
 Administrative Assistant

Tel: 012 521 4212
 **Mothibe, ME: PhD (SMU)
 Abraham, V: MPharm (SMU)
 Adeleke, OA: PhD (Wits)
 Basse, EK: DTech (TUT)
 Keele, MG: PhD (Wits)

 Lundie, M: MSc(Med) Pharmacy
 Milne, M. PhD (NWU)
 Summers, B: PhD (MEDUNSA)
 Thom, L: MSc(Pharmaceutics)(NWU)
 Mahlangu, J.
 Vacant

PHARMACY PRACTICE

Lecturer (Pharmacy Practice)
 Lecturer (Pharmacy Practice)
 Secretary (Acting)
 Administrative Assistant

Tel: 012 521 4997
 **Loock, E. MPharm (NWU)
 Vacant
 Fratter, C
 Vacant

**PUBLIC HEALTH PHARMACY AND
MANAGEMENT**

Tel: 012 521 3699

Associate Professor

**Meyer, JC: PhD (MEDUNSA)

Senior Lecturer

Bezuidenhout, S: PhD (MEDUNSA)

Senior Lecturer

Matlala, MD: PhD (UL)

Senior Lecturer (part-time)

Sibanda, M: MSc(Med) Pharm (UL) MBS (Regent
Business School), MPharm (UKZN)

Emeritus Professor (part-time)

Summers, RS: PhD (Bradford)

Senior Lecturer (part-time) – DoHET CTG

Van der Merwe, CJL: Dip Pharm (South African
Pharmacy Board)

Secretary (Acting)

Krugel, J.

Administrative Assistant

Vacant

NOTE: ** Indicates Acting / Acting Head of Department

DEGREE PROGRAMMES

*ID	QUALIFICATION	ABBREVIATION	QUAL CODE	PAGE
	Bachelor of Pharmacy	BPharm	BPRA01	11
	Higher Certificate in Vaccinology	HCert (Vaccinology)		22
	Postgraduate Diploma in Hospital Pharmacy Management	PG Dip HPM	100	17
	Master of Pharmacy	MPharm	MPRA01	18
	Doctor of Philosophy in Pharmacy	PhD in Pharmacy	100	19

RULES FOR BACHELOR'S DEGREES

SOP B 1 B PHARM PROGRAMME (BPRA01)

SOP 1.1 SELECTION CRITERIA

SOP 1.1.1 National Senior Certificate Applicants

National Senior Certificate (NSC) applicants require the following minimum Admission Point Score (APS)

The APS for the candidate will be calculated by using the APS grade in Table 2. The candidates will be ranked according their APS.

Table 1 Minimum APS score

Subject	Grade
Life Sciences	5
Mathematics	5
Physical Sciences	5
English	5
Life Orientation	4
Two additional subjects: preferably Accounting & Economics	4 (each)
Total points required (minimum)	32

Table 2. APS points per percentage

APS %	APS Points
90 – 100%	8
80 – 89%	7
70 – 79%	6
60 – 69%	5
50 – 59%	4

SOP B1.1.2 Applicants who left school prior to 2008 (prior to National Senior Certificate)

- (i) Candidates who are in possession of a Matriculation Certificate of the Matriculation Board OR Certificate of Exemption from the Matriculation Examination granted by the Matriculation Board/HESA (Higher Education South Africa) with University Exemption must have passed Mathematics and at least two of the following subjects in higher grade (with a minimum symbol D) at matric level: English, Biology, Physiology or Physical Science.
- (ii) Candidates with Mathematics in the standard grade level who have achieved an A or B rating may be considered.

Table 3

Symbol	Higher Grade (HG)	Standard Grade (SG)	%
A	8	6	80% +
B	7	5	70-79
C	6		60-69
D	5		50-59

SOP B 1.1.3 Non-South African should obtain the following:

- (I) A-Levels in the following subjects: mathematics, physical science, biology and English
- (II) A Matriculation exemption certificate from the South African Matriculation Board/ Universities South Africa (USAf) .

SOP B 1.1.4 Mature Age applicants

Applicants without university exemption who have completed appropriate training within the requirements of the National Qualifications Framework will be considered (e.g. formally trained pharmacists assistants, pharmacy technicians) provided that they are in possession of a matriculation certificate with the following subjects: Mathematics, Life Sciences, Physical Sciences and English with a minimum APS level of 4 per subject

SOP B 1.1.5 Graduates

- (i) Graduates with Health Sciences/BSc degrees will be considered only for enrolment into First Year.
- (ii) Marks obtained during the degree will be scored according to the table below.

Table 4

Percentage obtained	POINTS
≥75	24
70-74	16
65-69	12
60-64	8
55-59	4
≤54	0

- Points are allocated according to the above table to all courses. The points will be summed and divided by the number of courses.
- Candidates with a total of 12 points qualify for selection process. Applicants who meet the minimum academic requirements will be invited to the School of Pharmacy to participate in an interview session.
- Selection is on a competitive basis and a student's average should be 60% in the final year.

- The time to complete the degree is also taken into account. A three or four year Health Sciences/BSc completed in the minimum time: two additional credits (+2)
- Honours Degree: one additional credit if achieved in minimum time (+1).
- Master's Degree: one additional credit if achieved in minimum time (+1)

SOP B 1.1.6 Transfers from SMU and/or other universities

- Applicants with incomplete Health Sciences/BSc degrees will be considered only for enrollment into First Year.
- Selection is on a competitive basis and a student's average mark should be 65% and above.
- Each application will be considered by the Selection Committee and ranked based on their academic outcomes

SOP B 1.1.7 Selection Process

Successful applicants will be admitted into first year level

The BPharm Selection Committee will screen all candidates who comply with the selection requirements and provide a list for interview. After the interview, a list of conditional acceptances will be developed, as well as a reserve list, for replacement of non-acceptances.

The candidates will be informed of the outcome of the selection process by the Office of the Registrar.

SOP B 1.2 Registration with the South African Pharmacy Council

SOP B 1.2.1

A student admitted to the first year of study must register with the South African Pharmacy Council (SAPC) before 31 March of the relevant year.

SOP B 1.2.2

The SAPC requires the following documents and fee before registration can be effected:

- (I) Birth Certificate.
- (II) NSC/ Matriculation/Matriculation Exemption Certificate. If the above certificate does not indicate a pass in Mathematics a further certificate to the effect that an examination in Mathematics of a standard at least equivalent to that of the standard grade in the Matriculation Examination has been passed, is required.
- (III) Certificate of having commenced professional study for the degree.
- (IV) Registration fee as determined by the SAPC.

SOP B1.2.3 Internship

After qualification, graduates must undertake a one-year period of internship, during which they must satisfactorily complete a pre-registration examination for entry-level pharmacists. They are then required to complete one year in the public sector as a community service pharmacist, before proceeding to full registration as a pharmacist.

Note: These rules must comply with the proposed regulations of the SA Pharmacy Council as promulgated in terms of the Pharmacy Act, as amended.

SOP B 1.3 Curriculum

- (i) The BPharm programme will be presented in semester module format.
- (ii) The BPharm curriculum will be updated continuously to reflect statutory requirements.

BPharm I		
Semester 1		
Module 1	Introduction to Pharmacy	MPIT011
Module 2	From atoms to medicines	MATO011
Semester 2		
Module 3	Biopharmaceutics, pharmacokinetics and pharmacodynamics	MPHR012
Module 4	Microorganisms, man and medicines	MPMM012
Module 5	Nutrition and gastroenterology	MPMB021
Year Course	English for Health Sciences	MEHS010
BPharm II		
Semester 1		
Module 1	Principles and practice of pharmaceutical manufacturing	MPMC022
Module 2	Industrial pharmacy practice	MPMA022
Module 3	Industrial pharmacy practice-based learning	MPMB022
Semester 2		
Module 4	Cardiovascular pharmacy	MPMA021
Module 5	Respiratory system, ear and eye	MPMC021
Module 6	Primary health care practice-based learning	MPPH012
BPharm III		
Semester 1		
Module 1	Sterile pharmaceutical products	MPMC031
Module 2	Community pharmacy practice	MPMA031
Module 3	Community pharmacy practice-based learning	MPMA032
Semester 2		
Module 4	Endocrine and reproductive pharmacy	MPMB032
Module 5	Musculo-skeletal, skin conditions and pain management	MPMC032
Module 6	Modern technologies in health care MPMB031	
BPharm IV		
Semester 1		
Module 1	Neurological and psychiatric pharmacy	MPMB041
Module 2	Hospital pharmacy practice	MPMA041

Module 3	Specialised pharmacy	MPMC041
Semester 2		
Module 4	First aid	MPMA042
Module 5	Hospital-based pharmaceutical care	MPMB042
Module 6	Advanced research methodology and project	MPMR040
Module 7	Hospital pharmacy practice-based learning	MPMC042

SOP B 1.4 Completion of requirements for promotion

No student shall be permitted to register for any course in the following year of study unless s/he has passed all required courses of the previous year. Permission to do so may be granted in exceptional cases by Senate on the recommendation of a School Board

SOP B 1.5 Moderation

All summative assessments will be moderated according to the General Rules

Internal moderation – 10% of all examination scripts, all examination scripts of students who failed, all examination scripts of students who obtain 74%

SOP B 1.6 Admission to the final assessment

Only students meeting all the BPharm set requirements will be admitted to the summative assessment.

In order to adhere to Rule G14.1.2 all students must sign the attendance register for each learning activity and may not sign on any other student's behalf.

SOP B 1.7 Late submission of assessments

No late submissions of assessments will be accepted. The student is required to submit to the Year Coordinator via the Module Coordinator concerned, a medical certificate/ proof of the unavoidable circumstance, within 48 hours of the date of the assessment which could not be attended or completed.

SOP B. 1.8 Study time for module tests

No learning activity to be scheduled on the day prior to module tests.

SOP B 1.9 Supplementary assessment

- (i) BPharm IV (final year) students who fail more than one module, following reassessments must repeat the year.

SOP B 1.10 Exemption

Only students repeating a year are eligible for exemption from a module. A student may be granted exemption from a module if s/he has passed the appropriate end-of-module examination.

SOP B1.11 Confidentiality

Due to the privileged nature of information about patients/clients and their care plans, students will be expected to refrain from sharing this information except in the professional context of communications with staff, faculty, or colleague students in the course. In any descriptions of patient status in journals or written reports, patient initials should be used instead of the patient's full name. Non-observance of confidentiality requirements is a serious matter and will result in disciplinary action.

In addition to the University requirements, students should take note of any statutory guidelines as outlined by the relevant Professional bodies.

POSTGRADUATE DIPLOMA PROGRAMMES

SOP Dip 1 PG DIP in HOSPITAL PHARMACY MANAGEMENT (100)

SOP Dip 1.1 PURPOSE OF QUALIFICATION

The primary purpose of the qualification is to provide qualifying learners with comprehensive management skills to manage a hospital pharmacy effectively.

SOP Dip 1.2 ASSUMPTION OF LEARNING ALREADY IN PLACE

- (i) Applicants for this qualification should be competent in operating as registered pharmacists within all sections of a hospital pharmacy.
- (ii) This qualification recognises, through the submission of portfolios of evidence, the formal/non-formal/informal prior knowledge which learners who register for the programme bring to the learning situation.

SOP Dip 1.3 ADMISSION REQUIREMENTS

Applicants for admission must hold a bachelor's degree in pharmacy from a recognised university or an equivalent qualification.

SOP Dip 1.4 DURATION

A minimum of one year of part-time study

SOP Dip 1.5 CURRICULUM

The curriculum consists of five modules

PHMP601	The management process
PHHM601	Human resource management
PHFM601	Financial management
PHMM601	Medicines' management
PHRE601	Research project

SOP Dip 1.6 ASSESSMENT

- (i) Continuous assessment through work-related group and individual projects.
- (ii) Continuous and summative assessment is integrated mainly through work-related assignments.

Total course credits = 120 credits

MASTER'S DEGREE PROGRAMMES

SOP M1 MASTER OF PHARMACY (MPHARM)

SOP M1.1 Introduction

The MPharm programme is either offered as a Full-time programme or as a Part-time programme. Both options are offered as either

- (i) Research only requiring a full dissertation
- (ii) Modular-based programme requiring the completion of coursework and a minor-dissertation

SOP M1.2 Options offered

The MPharm programme offers the following options

- (i) Clinical Pharmacy
- (ii) Pharmaceutical Sciences
- (iii) Public Health Pharmacy and Management
- (iv) Radiopharmacy

SOP M1.3 Admission

An applicant must meet the university's entry requirements. Thereafter, the applicant is subject to a selection process, specific for entry into the MPharm programme. Due to the nature of the programme and assessment methods, admission to the MPharm programme is at first year level only.

SOP M 1.4 Selection requirements

- (i) Candidates must be in possession of a BPharm Degree OR Equivalent.
- (ii) At least 60% obtained as an average final mark for the relevant module(s) or course(s) which meet(s) the prerequisite(s) for access to the master's programme of learning
- (iii) Candidates who hold a qualification obtained outside South Africa must submit the Evaluation of Foreign Qualification certificate from the South African Qualifications Authority (SAQA).
- (iv) Candidates must be registered as a pharmacist with the South African Pharmacy Council (SAPC) or equivalent if working in a foreign country

SOP M 1.5 Selection procedures

- (i) Phase 1: Preliminary selection takes place from July - September. Places are limited and admission is subject to selection procedures. This is a paper-based process where each application form and supporting documentation is critically analysed and a mark is given based on the following components
 - (a) Academic achievements: At least 60% obtained as an average final mark for the relevant module(s) or course(s) which meet(s) the prerequisite(s) for access to the master's programme of learning

- (b) Experience within the field of study
 - (c) Motivation and recommendations for request to study
- (ii) Phase 2: Takes place from September - October. Candidate will be invited to a selection process which consists of two components. The aim is to select applicants with potential to complete the MPharm degree. The components are as follows:
- (a) Interview component (Motivation, knowledge, experience, future goals)
 - (b) Skills writing component (Interpretation of a scientific publication, which includes writing skills, grammar and computer literacy)
- (iii) Phase 3: Final selection The MPharm Selection Committee will screen all applicants who underwent the Phase 2 selection process. Two lists will be compiled: Accepted and Regret. Applicants on both lists are informed about the outcome of the selection process.

SOP M 1.5 Curriculum

The curriculum consists of

- Core Modules
- Elective Modules and
- MPharm Research Project

Coursework and minor dissertation programme

Code	Course Title
MPMB090	Mini-Dissertation
MPMC090	Pharmacy Modular Component Exam

Research programme

Code	Course Title
MPMA090	Dissertation

DOCTORAL DEGREE PROGRAMMES

The General Rules for postgraduate students apply.

Applicants must be in possession of an appropriate master's degree in Pharmacy or have received status from Senate according to the rules such Admission.

SOP D1 PhD DEGREE PROGRAMME

SOPD 1.1 ADMISSION REQUIREMENTS

Unless otherwise indicated, the General Rules for postgraduate students apply.

A candidate for the degree of PhD shall execute during not less than two academic years advanced research under the guidance of a supervisor appointed by Senate. The student shall in the first year, enrol for and pass the courses:

REME801 Research Methodology, and

PROD801 Protocol Development, unless he/she can provide proof of having passed these courses within the previous five years.

The research may take place in the University or in an institution deemed by the Senate to be part of the University for this purpose.

SOPD 1.2 SELECTION AND ADMISSION REQUIREMENTS

1.2.1 Selection

For practical reasons only a limited number of applicants can be admitted to the degree programme. Students are therefore selected on merit by a Selection Committee and notified accordingly.

Students who have been refused re-registration in a School of Pharmacy at any other University shall not be admitted to this Pharmacy School

1.2.2 Admission requirements

Students with a suitable MSc or equivalent degree in Pharmacy may be accepted for full-time study in the fields of interest of staff members and are required to complete a thesis.

SOPD 1.3 EXAMINATION OF THE THESIS

A candidate for the degree of PhD shall execute during not less than two academic years of research work. The research may take place in the University or in an institution deemed by the Senate to be part of the University for this purpose.

A thesis on a research project approved in advance by the University Ethics Committee on recommendation of the Head of the Department and prepared under the direction of a supervisor appointed by Senate.

For each admitted PhD student Senate shall appoint a supervisor who shall have at least the same qualification, failing which a co-supervisor with the required qualification shall be appointed.

The General rules for doctoral degrees apply to the examination of the thesis.

SOP D2 DPHARM DEGREE PROGRAMME

SOP D2.1 Introduction

The DPharm programme is either offered as a Full-time programme or as a Part-time programme.

SOP D2.2 Options offered

The DPharm programme offers the following options

- i. Clinical Pharmacy
- ii. Industrial Pharmacy
- iii. Public Health Pharmacy and Management
- iv. Radiopharmacy

SOP D2.3 Selection

To be admitted, the applicant must meet the university's entry requirements. Thereafter, the applicant is subject to a selection process, specific for entry into the DPharm programme

- Candidates must be in possession of a Master's degree or equivalent
- Before a candidate is accepted for doctoral study, the programme coordinator concerned must be convinced that the candidate has sufficient knowledge of the field of study to be able to fulfil the requirements for the degree
- Candidates who hold a qualification obtained outside South Africa must submit the Evaluation of Foreign Qualification certificate from the South African Qualifications Authority (SAQA).
- Candidates must be registered as a pharmacist with the South African Pharmacy Council (SAPC) or equivalent if working in a foreign country with adequate experience working as a pharmacist in the chosen area of field of study

HIGHER CERTIFICATE PROGRAMMES

SOP HIGHER CERTIFICATE in VACCINOLOGY

SOP HCCert 1.1 PURPOSE OF QUALIFICATION

The HCCert (Vaccinology) is designed to equip healthcare workers (HCWs) with the theoretical knowledge and practical expertise necessary for running an up-to-date clinic offering infant / childhood vaccination services. The HCCert (Vaccinology) introduces students to key concepts in vaccinology, and at the end of the programme students will be knowledgeable about vaccine-preventable diseases, vaccines, vaccination and immunisation, and will be able to apply this knowledge in the practice of vaccine delivery and administration within the framework of the Expanded Programme on Immunisation of South Africa (EPI-SA).

SOP HCCert 1.2 ASSUMPTION OF LEARNING ALREADY IN PLACE

- (i) As the curricula for professional nurses, doctors and pharmacists are supposed to cover vaccination and immunisation to a certain extent, all participants should have some basic theoretical knowledge.
- (ii) All participants should have been exposed to the delivery of vaccination services, since the programme is tailored specifically for in-service professional HCWs working in the field of vaccination.
- (iii) This programme adheres to SMU's Recognition of Prior Learning (RPL) policy, which is aligned with the NQF RPL Policy. It is important to note that the entry requirements for the HCCert (Vaccinology) have been set at the lowest qualification that permits South African HCWs to administer vaccinations. This is because the programme has been specifically designed to improve the vaccination practices of in-service HCWs who are responsible for the delivery of vaccination services, while all other vaccinology qualifications globally are at post-graduate level.

SOP HCert 1.3 SELECTION AND ADMISSION REQUIREMENTS

SOP HCert 1.3.1 Selection

- (i) For practical reasons only a limited number of applicants can be admitted to the HCert (Vaccinology) programme. Students are therefore selected on merit by a Selection Committee and notified accordingly.
- (ii) Written motivation, according to a structured template provided by the School, explaining why they should be accepted for this programme.
- (iii) Note that high marks for academic performance is NOT a pre-requisite.
- (iv) The HCert (Vaccinology) is offered as an online programme. Access to a computer and the internet is essential.

SOP HCert 1.3.2 Admission requirements

- (i) A three year qualification in a relevant health science (i.e. in which training in vaccinating is included) from a tertiary institution and are registered with the relevant statutory professional body.

Note: Although this is an entry-level (NQF 5) qualification, it is specifically tailored for in-service professional HCWs who are currently working within the field of vaccination, or who are planning to work within this field in the near future. These HCWs must therefore be qualified as nurses, doctors, or pharmacists. Thus, applicants with a matric or NQF 4 qualification can NOT be accepted.

SOP HCert 1.4 DURATION

A minimum of one year and a maximum of two years of full-time online study.

SOP HCert 1.5 CURRICULUM

The curriculum consists of eleven modules, which are offered online.

Module	Module name	Credits	Learning components
INIM101	Introduction to human infectious disease immunology	4	Introduction to the human immune response against infectious diseases. This module consists of the basic knowledge of how the human immune system works when it is exposed to natural infection, as this is the basis for how the immune system responds to vaccines.
INVA101	Introduction to vaccinology	4	Basic information about the principles of vaccinology, covering how vaccinology uses human host defense mechanisms to prevent infectious diseases. This includes the immuno-prophylactic process that mimics the natural immune response, and the different types of vaccines that have been developed to accomplish this.
VACM101	Introduction to vaccine manufacturing and distribution	4	Basic information about vaccine manufacturing processes and distribution, including why vaccines are not manufactured in the same way as pharmaceuticals; basic production steps; testing during production; release of vaccine lots; and distribution.
EPIS101	Introduction to the Expanded Programme on Immunisation of South Africa (EPI-SA)	4	Introduction to the Expanded Programme on Immunisation of South Africa (EPI-SA). This module constitutes the basic information about the origins, successes in terms of global and national goals, and current targets of EPI-SA, including the strategies being used to reach these targets.
VPDS101	Introduction to the epidemiology of vaccine-preventable diseases and the corresponding vaccines used within the EPI	32	Basic information about the epidemiology (causative organism, transmission, population at risk, symptoms, outcomes and occurrence) of the VPDs; the vaccines used to prevent each disease, including form and presentation, how the vaccine works, safety of vaccine, effectiveness, schedule, target age group and administration.
SCHE101	EPI vaccination schedules and strategies in South Africa	12	Introduction to EPI schedules and strategies in South Africa. This module is composed of the basic information on the different EPI vaccination schedules used in both the private and public sectors; the different vaccination strategies used in South Africa, including routine vaccination, vaccination of pregnant women, HIV-infected infants, preterm infants, infants born to mothers on TB treatment, trauma victims, healthcare workers, catch-up vaccinations, Reach Every Child (in every Community) Strategy and mass immunisation campaigns.
ICCM101	Introduction to cold chain management	12	Introduction to cold chain management. This module provides the basic information on the key issues in cold chain management, including using the correct refrigerator for vaccines, packing it correctly, packing of cold boxes for transporting vaccines, doing the shake test, monitoring temperatures, using refrigerator tags, reading and being guided by vaccine vial monitors, and following the multi-dose open-vial policy of EPI-SA.

Module	Module name	Credits	Learning components
ISAV101	Introduction to the safe administration of vaccines	12	Introduction to the safe administration of vaccines. This module provides the basic information on the key issues related to the safe administration of vaccines, including using the correct injection equipment, avoiding needle-stick injuries and infections, positioning children correctly for injections, and the safe disposal of injection equipment
AEFI101	Introduction to adverse events following immunisation	12	Introduction to adverse events following immunisation. This module provides the basic information on the key issues regarding adverse events following immunisation (AEFIs), including prevention, management, reporting, investigation and communication.
ACSM101	Introduction to advocacy, communication and social mobilisation to increase vaccination uptake	12	Introduction to advocacy, communication and social mobilisation to increase vaccination uptake. This module provides the basic information on all the key issues around advocacy, communication and social mobilisation to increase vaccination uptake.
MOEV101	Monitoring and evaluation of EPI-SA	12	Introduction to the monitoring and evaluation of EPI-SA. This module provides the basic information on the monitoring and evaluation of vaccination services, vaccination coverage and the management of data.

SOP HCert 1.6 ASSESSMENT

Total course credits = 120 credits (NQF Level 5)

1.6.1. Formative assessment

- (i) Formative assessment is used throughout the programme as a teaching tool, and students are allowed to repeat all the case study formative assessments as many times as they need to in order to master each module.

1.6.2 Summative assessment

- (i) Once students have successfully mastered all modules, they will be assessed as Exceptionally Competent, Highly Competent, Competent or Not Yet Competent based on a summative assessment by programme faculty, of the final Portfolio of Vaccinology Theory and Practice submitted at the end of the programme, and moderated by external examiners.

- (ii) Students are provided with an assessment rubric at the beginning of the programme to enable self-assessment while compiling the portfolio, and programme faculty use the same assessment rubric for the evaluation of the portfolio.

SOP HCert 1.6.3 Moderation

- (i) Summative assessment of all the modules will be achieved through examining each student's Portfolio of Vaccinology Theory and Practice, after which the assessments will be moderated internally and externally.
- (ii) Internal moderators from SMU, and external moderators from local and international universities, are listed in the study guides for each module. The moderation processes comply with all aspects of SMU rule G19.

1.6.4 Assessment criteria and exit level outcomes

Exit level outcomes: Candidates will be able to ...	Associated Assessment Criteria:
... understand human host defense mechanisms against infectious diseases.	<p>Candidates will be assessed on their ability to explain why humans need to defend themselves against infectious diseases, and this includes (a) explaining the contribution of infectious diseases to human morbidity (sickness) and mortality (death), with an emphasis on developing countries; and (b) outlining the characteristics of bacteria and viruses that allow these organisms to cause disease in humans.</p> <p>Second, candidates will be assessed on their ability to explain how the human immune system works, and this includes (a) explaining the differences between non-specific and specific (adaptive) immunity; (b) defining the two arms of adaptive immunity; and (c) outlining how the two arms of adaptive immunity work.</p>
... understand & describe the basics of vaccinology.	<p>Candidates will be assessed on their ability to outline how vaccinology mimics human host defense mechanisms to prevent infectious diseases, and this includes (a) explaining what a vaccine contains; (b) outlining how vaccines work; and (c) describing what makes an ideal vaccine.</p> <p>Second, candidates will be assessed on their ability to describe the different types of vaccines, and this includes (a) differentiating between live and killed / inactivated vaccines; (b) differentiating between whole cell and subunit / fractional vaccines; and (c) describing the different nomenclatures of vaccines.</p>

Exit level outcomes: Candidates will be able to ...	Associated Assessment Criteria:
... understand and describe how the different vaccines are manufactured and distributed.	<p>First, candidates will be assessed on their ability to explain how vaccines are manufactured, and this includes (a) differentiating between vaccines and pharmaceuticals in terms of manufacturing; (b) listing the basic steps in vaccine manufacturing; (c) listing the tests conducted during production; and (d) listing the different authorities responsible for releasing vaccine lots.</p> <p>Second, candidates will be assessed on their ability to explain how vaccines are distributed, and this includes (a) explaining at what stage vaccines can be distributed; (b) explaining why and under what conditions vaccines are distributed; (c) listing the packing requirements for the distribution of vaccines; (d) explaining the requirements for the conditions under which vaccines should be transported; and (e) explaining the importance of following standard operating procedures in the distribution of vaccines.</p>
... understand and describe the origins, successes and current targets of EPI-SA.	<p>First, candidates will be assessed on their ability to explain the origins of EPI and EPI-SA, and this includes (a) explaining why and when the World Health Organization launched the EPI; (b) listing the vaccines.</p> <p>Second, candidates will be assessed on their ability to explain the successes of EPI-SA, and this includes (a) describing how EPI-SA is addressing global health priorities including the Sustainable Development Goals, the Global Polio Eradication Initiative, the Decade of Vaccines and the Global Vaccine Action Plan; listing the diseases that have been eradicated or eliminated, including the years when these were eradicated / eliminated; and (c) listing the vaccines that have been successfully integrated into the EPI-SA from 1995 to 2014.</p> <p>Third, candidates will be assessed on their ability to discuss the current targets of the EPI-SA, and this includes (a) listing the current targets of the EPI-SA; and (b) explaining the strategies being followed to meet these targets.</p>
... understand and describe the epidemiology of the VPDs prevented by EPI-SA, and explain all aspects of the vaccines used to prevent them.	<p>First, candidates will be assessed on their ability to discuss the epidemiology of infectious diseases prevented by EPI-SA. This includes (a) naming the causative organisms of all VPDs targeted by EPI-SA; (b) outlining how the causative organisms are transmitted; (c) describing the population at risk for each VPD; (d) listing the symptoms of each VPD; (e) listing the outcomes of each VPD; and (f) explaining where morbidity and mortality from VPDs occur (global, sub-Saharan Africa and South Africa).</p> <p>Second, candidates will be assessed on their ability to list and describe the different vaccines used within EPI-SA. This includes (a) describing the form and presentation of each vaccine; (b) explaining how each vaccine works; (c) describing the safety profile of each vaccine; (d) describing the effectiveness of each vaccine; (d) listing the schedule/s for each vaccine; (d) naming the target age group for each vaccine; and (e) describing how each vaccine is administered.</p>

Exit level outcomes: Candidates will be able to ...	Associated Assessment Criteria:
<p>... recall the vaccination schedules (private and public sectors); explain the different vaccination strategies within EPI-SA; and apply the above schedules and strategies in practice.</p>	<p>First, candidates will be assessed on their ability to recall the vaccination schedules and different vaccination strategies within EPI-SA. This includes (a) listing the EPI-SA vaccine schedule including all the vaccines given at the specific ages; and (b) listing the vaccine schedules used in the private sector of South Africa, including all the vaccines given at the specific ages.</p> <p>Second, candidates will be assessed on their ability to explain the different vaccination strategies within EPI-SA. This includes (a) explaining the basis for using the WHO's accelerated routine vaccination strategy in South Africa; (b) listing the vaccines that must be given to pregnant women, and when they should be given; (c) listing the vaccines that must not be given to pregnant women; (d) explaining the strategy for vaccinating HIV-positive babies; (e) explaining the strategy for vaccinating pre-term infants; (f) explaining the strategy for vaccinating infants born to mothers on TB treatment; (g) naming the vaccines that must be given to trauma victims; (h) listing the vaccines that healthcare workers should receive; (i) describing the catch-up vaccination strategy for babies who have missed vaccines; (j) explaining the Reach Every Child (in every Community) Strategy; and (k) explaining the strategy of mass immunisation campaigns.</p> <p>Third, candidates will be assessed on their ability to apply the above schedules and strategies in practice. This includes (a) selecting the correct vaccines for 10 hypothetical babies relevant for their age, HIV-status, whether or not their mothers are on TB treatment, and taking into account if catch-up vaccination is needed; (b) selecting the correct vaccines for 10 hypothetical pregnant women relevant for their immunisation history and stage of pregnancy; and (c) as a healthcare worker, having proof of vaccination with all relevant vaccines.</p>
<p>Be able to list and describe all the key issues of cold chain management and apply cold chain management in your vaccinology practice.</p>	<p>First, candidates will be assessed on ability to list and describe all the key issues of cold chain management. This includes (a) describing the requirements for the ideal refrigerator for storing vaccines; (b) explaining how to pack a vaccine refrigerator correctly; (c) describing the process of preparing and packing cold boxes for transporting vaccines; (d) describing how to do the shake test; (e) listing the steps for monitoring temperatures; (f) listing the procedures to follow when cleaning a vaccine refrigerator; (g) explaining how to use refrigerator tags; (h) describing how to read a vaccine vial monitor, and what steps to take based on the readings; (i) recalling the multi-dose open-vial policy of EPI-SA; and (j) explaining the importance of following written standard operating procedures in cold chain management.</p> <p>Second, candidates will be assessed on their ability to apply cold chain management in practice. This includes (a) demonstrating how to pack a vaccine refrigerator correctly; (b) demonstrating the process of preparing and packing cold boxes for transport of vaccines; (c) demonstrating the shake test; (d) demonstrating</p>

Exit level outcomes: Candidates will be able to ...	Associated Assessment Criteria:
	how to use a refrigerator tag; (e) demonstrating how to clean a vaccine refrigerator; (f) reading at least five vaccine vial monitors, and stating the correct steps based on the readings; and (g) checking all conditions to demonstrate adherence to the multi-dose open-vial policy of EPI-SA for all relevant vaccines.
Be able to list and describe all the key issues around the safe administration of vaccines, and practice safe vaccination procedures.	<p>First, candidates will be assessed on their ability to list and describe all the key issues around the safe administration of vaccines. This includes (a) describing the correct injection equipment; (b) explaining how to avoid needle-stick injuries and infections; (c) describing how to position children correctly for injections; and (d) outlining the steps for safe disposal of injection equipment.</p> <p>Second, candidates will be assessed on their ability to practice safe vaccination procedures. This includes (a) using the correct injection equipment for at least 10 simulated vaccinations; (b) avoiding needle-stick injuries while performing these simulated vaccinations; (c) position dummy babies correctly when administering these simulated vaccinations; and (d) safely dispose of injection equipment after these simulated vaccinations.</p>
Be able to explain all the key issues regarding AEFIs and apply AEFI-related procedures in practice.	<p>First, candidates will be assessed on their ability to explain all the key issues regarding AEFIs. This includes (a) explaining how to prevent AEFIs; (b) discussing the management of AEFIs; (c) describing the reporting of AEFIs; (d) explaining how AEFIs are investigated; and (e) outline AEFI communication.</p> <p>Second, candidates will be assessed on their ability to apply AEFI-related procedures in practice. This includes (a) demonstrating management of 10 hypothetical AEFIs; (b) identifying the correct AEFI forms that must be used and completing these forms, providing the event description for each hypothetical AEFI; and (c) simulate the reporting of these AEFIs.</p>
Be able to describe all the key issues around advocacy, communication and social mobilisation to increase vaccination uptake; and advocate / communicate effectively about vaccination in order to mobilise the community towards increased vaccination coverage.	<p>Candidates will be assessed on their ability to describe all the key issues around advocacy, communication and social mobilisation to increase vaccination uptake. This includes (a) explaining the meaning of advocacy and who advocacy is directed at; (b) discussing the meaning of communication, who is included in communication, and when communication is successful; (c) listing the essential information that must be given to caregivers when communicating about vaccination; (d) explaining the meaning of social mobilisation; (e) explaining why advocacy, communication and social mobilisation are needed; (f) discussing how to build trust; (g) listing the different types of explanations and when they should be used; and (h) discussing how to counter anti-vaccination myths.</p> <p>Second, candidates will be assessed on their ability to advocate / communicate effectively about vaccination in order to mobilise the community towards increased vaccination coverage. This includes (a) communicating essential vaccination information to 10 hypothetical caregivers who have no questions about</p>

Exit level outcomes: Candidates will be able to ...	Associated Assessment Criteria:
	vaccinating their babies; and (b) giving relevant explanations to 10 hypothetical caregivers who have asked questions about vaccination.
Be able to describe how immunisation programmes are monitored and evaluated; and monitor and evaluate vaccination services, vaccination coverage and data management.	Candidates will be assessed on their ability to describe how immunisation programmes are monitored and evaluated, inclusive of (a) explaining the importance of immunisation data; (b) listing the main EPI indicators used for monitoring EPI performance; (c) describing the use of basic data collection tools; and (d) explaining the processes for data collection. Second, candidates will be assessed on their ability to monitor and evaluate vaccination services, vaccination coverage and data management inclusive of (a) using the relevant data collection tools while collecting data from a hypothetical clinic; (b) processing the data correctly; and (c) reporting on the main EPI indicators.

SOP HCert 1.7 RECOGNITION OF PRIOR LEARNING (RPL)

- (i) Vaccination experience will furthermore be recognised as prior learning amongst HCWs admitted into the programme.
- (ii) Modules 6 to 11 all have practical assignments which are based on vaccination practices. Students who are already competent in vaccination practices and can produce evidence of this competence, will be able to submit this evidence and thus be exempt from completing these assignments. Their supervisor / manager / employer will be required to complete and sign a certificate of practice for each specific task, and these certificates will form part of the Portfolio of Vaccinology Theory and Practice. Thus full credits for these practical assignments will be allocated to these students.
- (iii) Students would not have accumulated credits for the online parts of the Modules, since these Modules are unique to the HCert (Vaccinology), and have been designed to keep vaccinators up-to-date with the very latest developments within the field of vaccinology.

SYLLUBUSES FOR PROGRAMMES OFFERED IN THE SCHOOL

BPHARM DEGREE PROGRAMME

Advanced Research Methodology and Project (BPharm IV)

MPMR040	Advanced Research Methodology and Project		Credits:20
Lectures per week	Practicals per week	Tutorials per week	
1	4	1	
Content:	The theory and practice of research including a structured project in an area of pharmacy. The module is presented in three parts. Part 1: Research methodology theory and protocol development Part 2: Experimental phase and data collection. Part 3: Completion and submission of research report.		
Learning Outcomes:	Students should be able to describe and discuss <ul style="list-style-type: none"> • The research process • Different research method • Different data collection, analysis and presentation techniques • Validity and reliability of research • Different reference systems Students should be able to write a research proposal, collect, collate and analyze the data and present and discuss the findings		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Define research • Describe the stages in the research process • Compare the categories / types of research • Briefly describe the different approaches to research • Critically compare the different types of research methods • Discuss possible data collection techniques used in the different research methods • Discuss the analysis of the results from qualitative and quantitative research • Discuss the basic statistical methods used in analysis of quantitative data • Describe different ways to display data in the research report • Explain the importance of validity and reliability of data from different research method • State the purpose of a research proposal • Explain what information is needed as part of the content of a research proposal • Discuss the nature and scope of ethical issues in research • Demonstrate the ability to use citation systems for entries in the bibliography and references in the text • Explain the factors to be taken into consideration when writing a research report • Describe the components of a generic research report • Write a research proposal report on your research project • To conduct a research project 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Oral	Research report
	Duration	30 min	NA
	% contribution to Summative Assessment Mark	30	70
	Sub minimum	40%	40%

Biopharmaceutics, pharmacokinetics and pharmacodynamics (BPharm I)

MPHR012	Biopharmaceutics, pharmacokinetics and pharmacodynamics		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	An introduction to biopharmaceutics - processes prior to drug administration; pharmacokinetics - processes including drug absorption, distribution, metabolism and		

	excretion (with emphasis on the kidney); and pharmacodynamics - drug action; therapeutic drug monitoring.		
Learning Outcomes:	Students need to understand and apply the following: <ul style="list-style-type: none"> • Overview of health care interventions – a pharmacist’s perspective • The biopharmaceutical, pharmacokinetic and pharmacodynamic phases of drug therapy • Pharmaceutical factors that influence the release of a drug from its dosage form • The pharmacokinetic characteristics of drugs • The relevance of pharmacokinetics to drug therapy • Factors that influence the pharmacokinetic processes 		
Assessment Criteria:	Students will be assessed on their knowledge and applications of the following aspects: <ul style="list-style-type: none"> • Importance of preventive, symptomatic and curative measures for maintaining good health • Differentiation between the three phases: biopharmaceutical phase, pharmacokinetic phase and the pharmacodynamic phase. • Importance of disintegration, deaggregation and dissolution on drug absorption, biological/elimination half-life. • The drug delivery process (LADMER), drug absorption and the factors that influence this process, bioavailability, drug metabolism, anatomy and physiology of the kidney and its role in drug excretion 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	50	50
	Sub minimum	40%	40%

Cardiovascular Pharmacy (BPharm II)

MPMA021	Cardiovascular Pharmacy		Credits:20
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	An overview of the anatomy and physiology, and nervous system control, of the cardiovascular and renal systems. The pathophysiology of the major disorders affecting the cardiovascular and renal systems. The pharmacology of the therapeutic agents used to treat these disorders, including antimicrobials.		
Learning Outcomes:	<ul style="list-style-type: none"> • Students need to know and understand the anatomy and physiology of the cardiovascular system and the kidney • Students need to discuss the pharmacology of the different medicines used in cardiology 		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Describe the anatomy, physiology and relevant nervous system control of the cardiovascular system (CVS) • Describe the anatomy and physiology of the blood • Outline the pathophysiology of selected conditions of the blood as listed in the STG/EDLs at primary and secondary health care levels • Explain the preventative, non-pharmacological and pharmacological management of selected conditions • Discuss the role of the pharmacist in the prevention and treatment of relevant blood conditions • Outline the pathophysiology of selected conditions of the CVS, blood, kidneys as listed in the STG/EDLs at primary and secondary health care levels 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	50	50

	Sub minimum	40%	40%
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Community Pharmacy Practice (BPharm III)

MPMA031	Community Pharmacy Practice		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	This module includes administration, management skills and the philosophy of pharmaceutical care. Counselling, provision of advice and drug therapy management and their effects on the patient. Immune status, importance of prevention and nutrition and their effects on the family. Epidemiology, health education and drug information and their effects on the community. The following aspects of dispensing: legal, communication with the patient and other health care professionals, patient profiles, preparation of the prescription and record keeping. The role of the pharmacist as tutor.		
Learning Outcomes:	Students should be able to describe and discuss: <ul style="list-style-type: none"> • The role of the pharmacist in community health • Diagnostic and screening tests • Family planning • Baby care • Pharmacist initiated therapy (PIT) • Conditions that qualify for PIT • Overview of business management • Financial and marketing management • Stock management • Personnel management • Business Administration • Good Pharmacy Practice (GPP) • Dispensing Process • Code of Ethics • Legislation 		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Describe the role of the pharmacist in the promotion of health and prevention of disease in the community • Explain the health educational role of the pharmacist • List the diagnostic tests that fall within the scope of community pharmacy practice • Describe the role of the pharmacist in family planning • Identify aspects of baby care that fall within the scope of community pharmacy practice • Define the place and role of the pharmacist in baby care • Give an overview of the concept of pharmacist initiated therapy (PIT) • Discuss the consultation with patients as part of the PIT process • Describe the clinical assessment and referral of patients • Discuss less serious, self-limiting conditions that can be treated by pharmacists by using non-prescription medication • List the main areas of business management relevant to community pharmacy • Describe the chief business management functions • Discuss the role of the pharmacist as a sales and marketing manager of a community pharmacy • Describe the role of national health schemes, medical aid schemes and medical insurance policies in South Africa • Describe the principles of a good stock control system • Discuss the stock management process (from ordering to dispensing and record keeping) • List the required personnel in a community pharmacy • Discuss the functions of the pharmacist as a personnel manager • Give a brief overview of relevant aspects in the SA laws applicable to the community pharmacist • Describe the requirements for good pharmacy practice and give possible ways to satisfy them • Outline the requirements for dispensing as required by law • Explain the disciplinary powers of the SAPC as described in Act 53 of 1974 • Discuss the code of ethics of the pharmacy profession • Identify the applicable legislation/acts for the practice of community pharmacy 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark		

Minimum final mark: 50%			
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	60	40
	Sub minimum	40%	40%

Community Pharmacy Practice Based Learning (BPharm III)

MPMA032	Community Pharmacy Practice Based Learning		Credits:20
Lectures per week	Practicals per week	Tutorials per week	
1	4	1	
Content:	Practical experience in aspects of the dispensing process, pharmacist initiated care, communication with the patient and other health care workers, specialist areas of community pharmacy, legal and ethical requirements, important aspects of management		
Learning Outcomes:	Students should be able to apply the following in a community pharmacy: <ul style="list-style-type: none"> • Diagnostic and screening tests • Family planning • Baby care • Pharmacist initiated therapy (PIT) • Conditions that qualify for PIT • Overview of business management • Financial and marketing management • Stock management • Personnel management • Business Administration • Good Pharmacy Practice (GPP) • Dispensing Process • Code of Ethics • Legislation 		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Discuss the dispensing process with reference to each step in this process • Describe the requirements for good pharmacy practice and give possible ways to satisfy them • Outline the requirements for dispensing as required by law • Explain the disciplinary powers of the SAPC as described in Act 53 of 1974 • Give an overview of the concept of pharmacist initiated therapy (PIT) • Discuss the consultation with patients as part of the PIT process • Describe the clinical assessment and referral of patients • Discuss less serious, self-limiting conditions that can be treated by pharmacists by using non-prescription medicines • Describe the role of the pharmacist in the promotion of health and prevention of disease in the community • Explain the health educational role of the pharmacist • List the diagnostic tests that fall within the scope of community pharmacy practice • Describe the role of the pharmacist in family planning • Identify aspects of baby care that fall within the scope of community pharmacy practice • Define the place and role of the pharmacist in baby care • List relevant aspects of veterinary medicines in community pharmacy practice • Discuss the code of ethics of the pharmacy profession • Identify the applicable legislation/acts for the practice of community pharmacy • Highlight the important areas in this legislation that specifically focus on the practising of the profession in the community pharmacy • List the main areas of business management relevant to community pharmacy • Describe the chief business management functions • Discuss the role of the pharmacist as a sales and marketing manager of a community pharmacy • Describe the role of national health schemes, medical aid schemes and medical insurance policies in South Africa • Describe the principles of a good stock control system 		

	<ul style="list-style-type: none"> • Discuss the stock management process • List the required personnel in a community pharmacy • Discuss the functions of the pharmacist as a personnel manager • Give a brief overview of relevant aspects in the SA laws applicable to the community pharmacist 															
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Theory / Practical	Portfolio of evidence	Oral														
Duration	NA	30 min														
% contribution to Summative Assessment Mark	70	30														
Sub minimum	40%	40%														

Endocrinology and reproduction (BPharm III)

MPMB032	Endocrinology and reproduction		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	Anatomy and physiology of the endocrine and reproductive system. A study of the pathophysiology of major disorders affecting the endocrine system, together with pharmacological and non-pharmacological treatment of such conditions. The basic female and male reproduction functions, diseases and conditions that are under hormonal control, including pregnancy, growth development, birth, genetics, lactation and ageing. Pharmacological and non-pharmacological management of the reproductive system diseases and conditions.		
Learning Outcomes:	Students should be able to describe and discuss the following in their role in pharmacotherapy: <ul style="list-style-type: none"> • Endocrine system • Hypothalamus • Pituitary gland • Adrenal gland • Reproductive system • Thyroid gland • Parathyroid gland • Pancreas 		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Differentiate between the neurotransmitter and hormonal systems • Define endocrinology • Describe the glands and organs of the endocrine system • Identify the link mechanisms and the chemical signals among them • Define a hormone and differentiate among the three classes of hormones • Explain hormone regulation • Describe the anatomy of the hypothalamus • Identify and discuss the functions of the hormones secreted and released by the hypothalamus • Discuss the disorders of secretion and release of the hormones, the effects and the management of the disorders • List the uses of these hormones in other conditions • Describe the formulation and use of the appropriate dosage forms • Describe the role of the pharmacist in ensuring appropriate patient care • Describe the anatomy of the pituitary gland • Identify and discuss hormones secreted by the pituitary gland • Discuss disorders of secretion and release of these hormones and their management • Describe the anatomy of the adrenal gland • Discuss the biosynthesis, release, storage, regulation and actions of hormones released by the adrenal gland • List the disorders of the adrenal gland and discuss briefly their pharmacological and non-pharmacological management • Describe pharmacotherapy with mineralocorticoids and glucocorticoids in other disorders • Describe the formulation and use of the appropriate dosage forms 		

	<ul style="list-style-type: none"> Describe the role of the pharmacists in ensuring appropriate patient care Describe the anatomy of the female and male reproductive systems Discuss the endocrine regulation of the reproductive system Describe sexual development and decline from embryo to old age Describe ovulation, spermatogenesis, fertilization, pregnancy, foetal development, parturition, and lactation Describe methods of fertility control and abortion Discuss the common disorders and conditions of the male and female reproductive systems and their management Discuss the use of sex hormones in the management of other conditions Discuss the formulation and use of the appropriate dosage forms Describe the anatomy and physiology of the thyroid gland Outline the pathophysiology of disorders of the thyroid gland Explain the non-pharmacological and pharmacological management of the disorders List the uses of thyroid hormones in other conditions Describe the formulation and use of the appropriate dosage forms Describe the role of the pharmacist in ensuring appropriate patient care Describe the anatomy and physiology of the parathyroid gland Outline the pathophysiology of disorders of the parathyroid gland Outline the pathophysiology of disorders of the parathyroid gland Explain the non-pharmacological and pharmacological management of the disorders identified above List the uses of parathyroid hormone in other conditions Describe the formulation and use of the appropriate dosage forms Describe the role of the pharmacist in ensuring appropriate patient care Describe the anatomy of the pancreas Identify and discuss secretions of the pancreas Discuss disorders of the pancreas and its secretions Describe the formulation and use of appropriate dosage forms Describe the role of the pharmacist in ensuring appropriate patient care 																				
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>																				
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Duration	3 hrs	30 min	2 hrs																		
% contribution to Summative Assessment Mark	60	20	20																		
Sub minimum	40%	40%	40%																		

English for Health Science (BPharm I)	MEHS010
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MEHS010	English for Health Sciences	Credits:12
Lectures per week	Practicals per week	Tutorials per week
3		2
Content:	<p>Academic Language Skills:</p> <p>Reading Skills: text organization (structure), how grammar carries meaning, vocabulary development, the importance of purposeful reading, reading and interpreting graphic information, reading and using different types of sources, critical reading.</p> <p>Academic reading</p> <p>Writing skills: understanding the writing process, effective writing strategies at sentence, paragraph and essay levels, writing and assessment, referencing techniques, journaling techniques (for practical and clinical).</p> <p>Oral presentation of written and research work.</p>	
Learning Outcomes:	<ol style="list-style-type: none"> Develop reading skills including visual literacy to read with understanding a wide range of print and non-print texts to enable acquisition and understanding of new information relevant to the needs and demands of society, to participate in community-based learning and service and research; and for personal development (life skills). Develop writing skills for English communication of acquired learning, effective response to assessment, across the curriculum as well as for healthcare practice, community engagement and research. 	

	<ol style="list-style-type: none"> 3. Develop computer skills around commonly used computer software programmes including PowerPoint, MS Word, Excell, the use of tables and graphs, E-mail as well as Blackboard - FHS online learning platform. The content should integrate the module outcomes. 4. Develop Information literacy skills to be able to use a variety of technological and information resources (e.g., library skills, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge, and to conduct research to establish evidence-based practice and to role model the specific module topics as well as to promote health and well-being of the reference population. 5. Apply a holistic approach to life skills promoting health and wellbeing, developing an awareness of their own stage of development as an adolescent studying at university, as well as an awareness of the overall social and community outcomes of their learning programmes. This will include approaches to solving contemporary social and healthcare issues such as HIV, rape, abortion, family planning and patient safety 6. Apply academic study skills to achieve learning outcomes including creating individual action plans (online student portfolio of evidence) for their study; engaging students in their own learning; developing self-regulated learners; strengthening faculty/student relationships; promoting student retention and success.
<p>Assessment Criteria:</p>	<p>Demonstrate the effective application of a wide range of reading strategies including visual literacy to comprehend, interpret, evaluate, and appreciate print and non-print texts relevant to health sciences and health and well-being literacy including</p> <ul style="list-style-type: none"> - text organization - grammar - vocabulary development - reading faster with improved understanding - interpreting graphic information - using key words for accessing information on the internet - critical and interactive reading to extract explicitly stated ideas, to understand implied ideas, guess meanings of unfamiliar words and vary language use with synonyms and antonyms <p>Given the learning programme and the current best practices in healthcare practice and research, demonstrate proficiency and confidence to apply:</p> <ul style="list-style-type: none"> - the English language structure - language conventions (e.g., spelling and punctuation) - media techniques - figurative language - genre to create, critique, and discuss print and non-print texts relevant to the health sciences learning programmes and healthcare practice and research context <p>Exhibit an understanding of the technology that underpins today's life and workplace infrastructure taking many forms such as text, images, mobile, video, computer simulations, multi-media, Internet etc. to find, translate, integrate and communicate knowledge to different audiences (e.g. co-professional workers or patients/family)</p> <p>Demonstrate the effective use of information literacy which deals with using library efficiently for study and reference purposes encompassing:</p> <ul style="list-style-type: none"> - authoring - information finding and organization - research process - plagiarism and referencing - information analysis and synthesis - assessment and evaluation <p>Show adequate English proficiency and confidence in discussing lifestyle issues and ways of achieving a healthy lifestyle including approaches to solving contemporary social and healthcare issues such as HIV, rape, abortion, family planning and patient safety</p> <p>Display adequate academic study skills that raise student awareness of significant factors that influence learning outcomes and engage students to develop a skill and habit for:</p> <ul style="list-style-type: none"> - creating individual action plans for their study - engaging in their own learning - developing themselves as lifelong self-regulated learners - strengthening faculty/student relationships

- promoting student retention and success		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%	
Summative Assessment:	Paper 1	
	Theory/ Practical	Theory
	Duration	3hours
	Sub minimum	100%
	% Contribution to summative assessment mark	40%

First Aid (BPharm IV)

MPMA042	First Aid		Credits:4
Lectures per week	Practicals per week	Tutorials per week	
4	4	1	
Content:	General principles of first aid, basic life support and cardiopulmonary resuscitation (CPR), as well as the first aid management of asphyxia and respiratory arrest, bleeding and wound care, burns, shock, poisonings and musculoskeletal injuries.		
Learning Outcomes:	Students should be able to assess and manage emergencies at the scene of an accident or injury in order to preserve life and prevent complications		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Outline the objectives and legal implications of first aid • Carry out a quick assessment of the emergency situation • Determine priorities of treatment in an emergency situation • Perform primary and secondary assessment on the casualties. • Carry out ongoing casualty assessment at the scene of accident. • Maintain a patent airway and adequate ventilation. • Perform artificial ventilation and cardiopulmonary resuscitation safely and effectively. • Control bleeding and prevent infection of the wounds. • Bandage wounds to prevent further complications. • Prevent and treat for shock. • Immobilize fractures including those of the cervical spine and back. • Immobilize dislocations, sprains and strains. • Carry out health education on prevention of poisoning. • Assess and place an unconscious casualty in a recovery position. • Assess and treat various types and levels of burns. • Document all observations and interventions. • Dispose of the casualty to the relevant institution for further care and observation. 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:	Paper 1	Paper 2	
	Theory / Practical	Theory	Practical
	Duration	2 hrs	2 hrs
	% contribution to Summative Assessment Mark	50	50
	Sub minimum	40%	40%

From Atoms to Medicines (BPharm I)

MATO011	From Atoms to Medicines		Credits:32
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	Drug entities of synthetic, organic/inorganic nature: structure, reactivity, bonding, acid-base characteristics, configuration and conformation, periodic table, redox reactions, salt formation, pH, pKa, limit tests, physical phases. Analytical methods. An overview of the design and development of pharmaceutical products. Research and development of drug delivery systems; chemistry of medicinal compounds – introductory organic chemistry, the reactions that drug compounds undergo, physical and chemical properties of drugs and how these affect		

	formulation; isolation / synthesis of active ingredients; pre-formulation; formulation; basic principles underlying the development of drug delivery systems; the various drug delivery systems; stability aspects; an introduction to pre-clinical and clinical trials; compounding of medicines.		
Learning Outcomes:	<p>Students will be able to describe the following:</p> <p>The acid base characteristics, chemical bonds and compounds, physical and chemical properties of different molecules and medicinal compounds in relation to structure relation activities</p> <p>The chemical properties of medicinal compounds that influence the development and formulation of medicine delivery system dosage forms</p> <p>The different analytical methods in organic and inorganic chemistry</p>		
Assessment Criteria:	<p>Students will be assessed on understanding and applying the following:</p> <ul style="list-style-type: none"> • Electrolytes, acids and bases, pH, conjugate acids and bases, medicines as acids and bases • Salts, salts of medicinal compounds • The periodic table and its application, describe the structure of the atom • Explain periodic law, electron configurations, atomic orbitals, state and describe the laws of definite and multiple proportions, state and describe the law of conservation of mass. • Be able to write and use chemical formulae and equations <p>Students will be assessed on describing and discussing the following:</p> <ul style="list-style-type: none"> • Ions and ionic compounds in foods, medicines and the home • Monoatomic ions and the octet rule • Electron sharing and Molecular Compounds • Lewis structures and the octet rule • Shapes of molecules • The VSEPR theory and the VSEPR model • Valence bond theory and hybridization • Molecular Orbital theory • Polar and non-polar molecules • Difference between organic and inorganic compounds. • Name of various classes of organic compounds. • Most common reactions and isomerism of Organic compounds. <p>Students will be assessed on describing and discussing:</p> <ul style="list-style-type: none"> • Various dosage forms, pre-formulation studies and formulation of various dosage forms and design • Formulation of active ingredients into pharmaceutical dosage form • How solubility and acidic/ basic character of a drug affect the partitioning across membranes separating compartments of body fluids of different pH values (pH partitioning) • Hydrophilic-Lipophilic Balance of medicinal compounds, how it can be altered, the formulation implications and effect of HLB of a compound on fate after administration to a patient • Redox reactions, list examples in the body and in vitro. • Balance and write equations for redox reactions in vitro and in vivo. • Properties and states of matter, the concept 'property' in the context of matter states of matter and the kinetic theory <p>Students will be assessed on demonstrating knowledge and application of the following:</p> <ul style="list-style-type: none"> • Solutions, colloids, and mixtures, calculate concentration and density, examine colligative properties, including freezing point depression, boiling point elevation, and osmotic pressure. <p>Students will be assessed on describing and discussing:</p> <ul style="list-style-type: none"> • Mole concept, atomic formula, formula and molecular masses, balanced chemical equations and stoichiometry, reactions in solution, molar concentration • characteristics of gasses, liquids, solids, surface and interfacial phenomena, heat and molecular kinetic energy 		
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical

	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	50%	50%
	Sub minimum	40%	40%

Hospital Pharmacy Practice (BPharm IV)

MPMA041	Hospital Pharmacy Practice			Credits:20
Lectures per week	Practicals per week	Tutorials per week		
Content:	Major managerial principles in hospital and institutional pharmacy e.g. logistics, financial management, human resources, quality assurance and Standard Operating Procedures, clinical governance. Pharmacoeconomics in drug selection. Rational drug use in a hospital including Pharmacy and Therapeutics Committees, drug use evaluation, antibiotic stewardship, infection control and pharmacovigilance. Disposal of pharmaceutical waste.			
Learning Outcomes:	To be able to use managerial tools to quality manage a pharmacy including human resources, financials , logistics, selection, procurement, storage, distribution disposal of pharmaceutical products through workshops and tutorials			
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> Identify differences between business plans for a community and hospital pharmacy Explain the importance of good management and logistics in hospital pharmacy Discuss the elements of good management and logistics in hospital pharmacy Describe briefly the critical qualities of an effective manager Describe modern management methods Explain the importance of QA systems in hospital pharmacy Define an "accrediting body" and list some accrediting bodies (ISO, SABS, etc) Describe the structure of a quality system Discuss the updating of a quality manual Describe auditing of healthcare facilities Discuss financial management systems in public and private hospitals Describe methods for quantifying drug requirements and setting drug budgets Define rational drug use within the hospital environment Describe how PTC, DUEs, antibiotic policies, infection control and pharmacovigilance are used to improve DU in the hospital Explain the importance of the proper handling of pharmaceutical waste Discuss the role of the pharmacist in pharmaceutical waste disposal Describe the elements of an effective human resource strategy Describe the relevant legislation which affects HR employment policies Describe the steps in recruitment of new staff List the components of the performance management cycle Describe basic disciplinary procedures Describe the importance of training in providing and improving job performance Describe the role of pharmacoeconomic analysis in drug selection Perform a pharmacoeconomics analysis 			
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%			
Summative Assessment:	Summative Assessment Paper:		Paper 1	Paper 2
		Theory / Practical	Theory	Practical
		Duration	3 hrs	3 hrs
		% contribution to Summative Assessment Mark	70	30
		Sub minimum	40%	40%

Hospital Pharmacy Practice-Based Learning (BPharm IV)

MPMC042	Hospital Pharmacy Practice-Based Learning	Credits:20
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Lectures per week	Practicals per week	Tutorials per week	
Content:	Philosophy of pharmaceutical care, health systems, managing drug supply, administration and management. Treatment plans.		
Learning Outcomes:	<p>Students should be able to discuss the following:</p> <ul style="list-style-type: none"> • Pharmaceuticals management cycle • Code-of-conduct • Legislation in hospital pharmacy • Organisation structure within hospital pharmacy management • ICD10 codes • Management systems • Quality assurance in hospital pharmacy and institutional pharmacy • Rational Drug Use • Financial Management • Human Resource Management • Ward Pharmacy Services • Drug and Toxicology Information Services • Small and Large Volume Parenterals • Nutritional Support • Surgical Devices: 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Discuss the organizational structure within hospital pharmacy management • Discuss the code of professional conduct, to guide ethical behaviour in the hospital • Investigate the principles and practice of drug supply management in hospital pharmacy • Explain the importance of good management and logistics in hospital pharmacy • Discuss the elements of good management and the logistics in hospital pharmacy • Describe briefly the function of good management information system in effective hospital pharmacy management • Describe the use of the computer as a management tool in hospital pharmacy • Explain the importance of QA systems in hospital management • Describe the structure of the quality system in the pharmacy • Describe specific strategies used to improved drug use in the hospital pharmacy • Discuss financial management systems in public and private hospital pharmacies • Describe methods for quantifying drug requirements and setting drug budgets • Describe the elements of an effective human resource strategy • Describe the relevant legislation which affects HR employment policies • Describe basic disciplinary procedures • Describe the importance of training in providing and improving job performance • Identify the components of the drug supply management cycle • Discuss the dispensing process with reference to each step in this process • Outline the requirements for dispensing as required by law • Describe the requirements for good pharmacy practice and describe possible ways to satisfy them • Explain the disciplinary powers of SAPC as described in Act 53 in 1974 • Describe ward pharmacy services in the hospital • Identify the role of the pharmacist in the provision of this service • Identify antidotes to common poisons • Describe the methods of preparation and administration of small and large volume parenterals • Describe the procedure and products for nutritional support in the hospital • Identify common surgical devices and ostomy products and describe their use • List the functional units responsible for manufacturing and compounding and their activities • Outline the purpose for and the use of ICD10 codes within the hospital pharmacy setting • Compile a portfolio on the learning experience at the hospital • Do an oral presentation of the portfolio using a slide show 		
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40% Final 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%</p>		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Portfolio of evidence	Oral
	Duration		30 min
	% contribution to Summative	60	40

	Assessment Mark		
	Sub minimum	40%	40%

Hospital-based Pharmaceutical Care (BPharm IV)

MPMB042	Hospital-based Pharmaceutical Care			Credits:28
Lectures per week	Practicals per week	Tutorials per week		
1	4	1		
Content:	The principles and practice of pharmaceutical care in the hospital setting. The module covers the compilation of a patient database, identification of his/her drug-related needs, construction of a drug-related problem list and the development, implementation and evaluation of a pharmaceutical care plan.			
Learning Outcomes:	Students should be able to compile of a patient database, identification of his/her drug-related needs, construction of a drug-related problem list and development, implement and evaluate a pharmaceutical care plan.			
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> Identify structural elements and activities performed in the hospital environment Define and describe the terms pharmaceutical practice, pharmaceutical services and pharmaceutical care Discuss drug therapy problems Describe the pharmaceutical care process Identify the main steps, elements and monitoring which comprise pharmaceutical care Discuss the scope of practice of the pharmacists in pharmaceutical care Provide "Pharmaceutical Care" to all patients within a unit/ward at an approved Hospital by attending ward rounds and participating in related patient care activities 			
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%			
Summative Assessment:		Paper 1	Paper 2	Paper 3
	Theory / Practical	Theory	Oral	Practical
	Duration	3 hrs	30 min	30 min
	% contribution to Summative Assessment Mark	50	30	20
	Sub minimum	40%	40%	40%

Industrial Pharmacy Practice (BPharm II)

MPMA022	Industrial Pharmacy Practice			Credits:20
Lectures per week	Practicals per week	Tutorials per week		
4	1	4		
Content:	An overview of pharmaceutical manufacturing facility and organizational layout. Planning for production. The manufacturing facility. The principles and practice of quality assurance, including Good Manufacturing Practices and quality control.			
Learning Outcomes:	Students should be able to describe and discuss <ul style="list-style-type: none"> Overview of Industrial Pharmacy Practice The formulation, registration and stability testing of new products The planning of the production process The facilities, materials and resources for manufacturing new products Quality assurance in pharmaceutical manufacturing 			
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> Discuss the registration of a new product formulation Identify the functional units, departments and their activities Illustrate the interrelationship between functional units, departments and their activities Identify and describe the components comprising the selection and procurement cycle Discuss the quality control and quality assurance processes and legal stipulations involved in the procurement of pharmaceutical raw materials and components Describe and discuss the unit processes and equipment used in the production of the listed dosage forms List the various pharmaceutical packaging materials and discuss their advantages and 			

	disadvantages Discuss the packaging process and describe the packaging and labeling methods Discuss the quality control and quality assurance processes involved in packaging and labeling and highlight the role of the pharmacist		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	70	30
	Sub minimum	40%	40%

Industrial Pharmacy Practice-Based Learning (BPharm II)

MPMB022	Industrial Pharmacy Practice-Based Learning		Credits:20
Lectures per week	Practicals per week	Tutorials per week	
1	4	1	
Content:	Practical experience in aspects of the medicines regulatory process, production of pharmaceuticals, pharmaceutical research and development, implementing good manufacturing procedures, quality assurance, personnel and business management as well as the marketing and advertising of pharmaceuticals.		
Learning Outcomes:	Students should be able to describe and discuss Research and Development Regulatory affairs Quality Control Quality Assurance Sales and Marketing		
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> Identify the functional units, departments and their activities Illustrate the interrelationship between functional units, depts and their activities Describe and discuss the unit processes and equipment used in the production of the listed dosage forms Explain relevant physical, chemical and pharmaceutical principles and apply to selected examples of the listed dosage forms Explain quality control procedures, relate them to their applications in the pharmaceutical manufacturing process and carry out selected examples in respect of the listed dosage forms Identify and describe the components comprising the selection and procurement cycle Discuss the quality control and quality assurance processes and legal stipulations involved in the procurement of pharmaceutical raw materials and components List the various pharmaceutical packaging materials and discuss their advantages and disadvantages Discuss the packaging process and describe the packaging and labeling methods Discuss the quality control and quality assurance processes involved in packaging and labeling and highlight the role of the pharmacist 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Portfolio of evidence	Oral
	Duration		30 min
	% contribution to Summative Assessment Mark	70	30
	Sub minimum	40%	40%

Introduction to Pharmacy (BPharm I)

MPIT011	Introduction to Pharmacy	Credits:20
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Lectures per week	Practicals per week	Tutorials per week		
4	1	4		
Content:	Orientation in the educational institutions, administration, student bodies, general organisation and layout of campus. A broad overview of the course presentation and learning strategy, language, social, communication and academic skills. Overview of the nature of the profession and the ethics and professionalism involved. Site visits to the various sectors of pharmacy practice National Drug Policy, selection, procurement, distribution, including the cold chain. Applicable legislation. Drug information. Rational drug use. Essential Drug Lists and treatment protocols. Drug pricing. Ethics, Good Pharmacy Practice. Interaction with other health professionals.			
Learning Outcomes:	To demonstrate the mastering of basic life skills To demonstrate understand the ethos of the Pharmacy Profession To describe the role of the pharmacist in the pharmaceuticals management cycle To describe the ethical, legal and organizational framework for the pharmaceuticals To describe the role of the National Drug Policy in the achievement of equitable and effective pharmaceuticals management			
Assessment Criteria:	Demonstrate the mastering of basic life skills Demonstrate understand the ethos of the Pharmacy Profession Describe the role of the pharmacist in the pharmaceuticals management cycle Describe the ethical, legal and organizational framework for the pharmaceuticals Describe the role of the National Drug Policy in the achievement of equitable and effective pharmaceuticals management			
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%			
Summative Assessment:		Paper 1	Paper 2	Paper 3
	Theory / Practical	Theory	Oral	Practical
	Duration	3 hrs	30 min	3 hrs
	% contribution to Summative Assessment Mark	50	20	30
	Sub minimum	40%	40%	40%

Microorganisms, Man and Medicines (BPharm I)

MPMM012	Microorganisms, Man and Medicines		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	A study of the medically important microorganisms, including bacteria, viruses, fungi, protozoa, helminths and arthropods. Biological and microbiological aspects of structure, growth, diagnosis, virulence, pathogenesis, sensitivity/resistance and transmission. An introduction to the body's defences against infection, including the lymphatic system, cells of the immune system and inflammatory and hyper-sensitivity reactions. Antimicrobial agents used in infections.		
Learning Outcomes:	Students should be able to: <ul style="list-style-type: none"> Discuss the immune system and the reaction to infections Name and classify the most common microorganisms involved in infectious diseases Discuss signs, symptoms and causes of common infections Discuss the treatment options for common infections including HIV Discuss the role of the pharmacist in treating these infections 		
Assessment Criteria:	Students will be assessed on understanding and applying the following: <ul style="list-style-type: none"> The immune system and the body's reaction to infections and inflammation Name and classify the most common microorganisms involved in infectious diseases signs, symptoms and causes of common infections Treatment options for common infections including HIV The role of the pharmacist in treating these infections 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative		Paper 1	Paper 2

Assessment:	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	80	20
	Sub minimum	40%	40%

Modern Technologies in Health Care (BPharm III)

MPMB031	Modern Technologies in Health Care		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	Principles of molecular biology, the principles, methods and products of biotechnology such as fermentation, recombinant DNA technology, gene therapy and immunological assays as applied to the diagnosis, prevention and treatment of inherited and acquired diseases. Theory and practice of new drug delivery systems. The immune system response and host defense mechanisms, with particular reference to diseases that can be prevented through immunisation. The principles and production of vaccines, antisera, immunoglobulins and the principles of hybridisation technology.		
Learning Outcomes:	<p>Students should be able to describe and discuss:</p> <ul style="list-style-type: none"> • Biotechnology • Immunisation – EPI Programme • Basic concepts : Generic material • Protein chemistry • Physio-chemical stability of proteins in pharmaceuticals. Pharmacokinetics in proteins • Laboratory techniques applied to proteins • Isolation and purification • Fermentation • Recombinant DNA technology • Probe hybridization • Polymerase Chain Reaction technology • Gene therapy • Biotechnological techniques • Latest technology in Biological Products 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Define biotechnology. Explain the relationship of biotechnology to related scientific disciplines • Briefly summarise the development and growth of biotechnology • Discuss the role of biotechnology in pharmacy • Define terms required to understand the topic Discuss the components of the nucleic acids and explain how these are linked to form the primary structure of the nucleic acids • Discuss the stability of the phosphodiesterase linkage in the nucleic acids • Describe the double helical secondary structure of DNA • Summarise the historical growth of knowledge concerning the chemical nature of DNA and RNA • Discuss plasmids • Discuss phages • Explain the terms: codon, exon, intron, gene, genome, genetic code, genotype, phenotype, chromatin, chromosome, • Describe and explain the process of DNA (or viral RNA) replication • Discuss the process of transcription • Discuss the process of translation (protein synthesis).Briefly discuss the post translational processing of proteins following release from the ribosome. Briefly discuss the chemistry of proteins • Briefly discuss the chemistry of proteins • Discuss glycoproteins and the importance of their sugar moieties • Briefly discuss the physico-chemical stability of proteins and correct handling and storage of proteins. Briefly discuss the pharmacokinetic properties of proteins. Briefly discuss the general adverse effects and immunogenicity of proteins • Discuss protein isolation and purification • Demonstrate selected practical skills in the isolation and purification of proteins • Discuss protein analysis and concentration determination • Define fermentation 		

	<ul style="list-style-type: none"> • Explain the basics of submerged culture fermentation • Explain the basics of solid state fermentation • Discuss the basic requirements for and conditions influencing cell growth and reproduction during the fermentation process • Discuss rDNA technology • Discuss probe hybridization • Discuss Polymerase Chain Reaction technology • Discuss the basic principles of gene therapy • Briefly describe the different approaches to gene therapy • Describe the use of different vectors for gene therapy • Point out the possible role of gene therapy in the treatment of genetic diseases, cancer, AIDS and CF • Discuss the use of biotechnological tests for the prediction of ovulation dates Discuss the use of biotechnology in testing glucose levels in body fluids • Discuss the role of the pharmacist in the prevention and treatment of relevant blood conditions 															
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>															
Summative Assessment:	<table border="1"> <thead> <tr> <th></th> <th>Paper 1</th> <th>Paper 2</th> </tr> </thead> <tbody> <tr> <td>Theory / Practical</td> <td>Theory</td> <td>Practical</td> </tr> <tr> <td>Duration</td> <td>3 hrs</td> <td>3 hrs</td> </tr> <tr> <td>% contribution to Summative Assessment Mark</td> <td>60</td> <td>40</td> </tr> <tr> <td>Sub minimum</td> <td>40%</td> <td>40%</td> </tr> </tbody> </table>		Paper 1	Paper 2	Theory / Practical	Theory	Practical	Duration	3 hrs	3 hrs	% contribution to Summative Assessment Mark	60	40	Sub minimum	40%	40%
	Paper 1	Paper 2														
Theory / Practical	Theory	Practical														
Duration	3 hrs	3 hrs														
% contribution to Summative Assessment Mark	60	40														
Sub minimum	40%	40%														

Neuromuscular and skeletal systems, skin, inflammation and pain management (BPharm III)

MPMC032	Neuromuscular and skeletal systems, skin, inflammation and pain management		Credits:20
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	An integrated study of the anatomy, physiology, pathophysiology and pharmacotherapy of the neuromuscular system, skeletal system and skin. The emphasis will be on the pharmacology of therapeutic agents used to treat disorders of these systems, including pain and inflammation. Non-pharmacological management of conditions, including wounds and dressings. Formulation and use of appropriate dosage forms for topical and systemic use.		
Learning Outcomes:	<p>Students should be able to describe and discuss:</p> <ul style="list-style-type: none"> • Anatomy and physiology of skeletal muscular and skin • Pathophysiology of conditions of the neuromuscular and skeletal systems and the skin • Pharmacological and non-pharmacological management of conditions of the neuromuscular and skeletal systems and the skin • Transdermal topical formulation • Pain management • Drug absorption through the skin 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Summarise the anatomy and physiology of the neuromuscular and skeletal systems and the skin • Describe the anatomy and physiology of the skin • Define and categorize pain • Describe the physiology of pain • Explain prevention of neuromuscular and skeletal system pathology. • Identify important pathological conditions that affect the neuromuscular and skeletal systems • Identify important pathological conditions that affect the neuromuscular and skeletal systems • Discuss common skin disorders and their management • Briefly outline / classify different skin conditions under the categories: <ul style="list-style-type: none"> • 1: Routine care and prevention, wounds and healing, ageing and degenerative conditions, pigmentation and its problems, systemic, hormonal and drug-induced problems • 2: Allergies and irritations 		

	<ul style="list-style-type: none"> • 3: Infections and infestations. • Pharmacological and non-pharmacological management of conditions • Outline the non-pharmacological treatment of pathological conditions of the neuromuscular and skeletal systems. • Outline the pharmacological treatment of pathological conditions of the neuromuscular and skeletal systems • Identify drugs that are used to produce skeletal muscular relaxation. • Discuss the formulation of vehicles for dermatological dosage forms • Discuss pain management • Discuss the chemistry of opioid analgesics • Discuss the misuse of analgesics and the management of opioid drug addiction • Review the legal aspects regarding the handling of S2, S3, S5 and S7 drugs • Discuss drug absorption through the skin 																				
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>																				
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Theory / Practical	Theory	Oral	Practical																		
Duration	3 hrs	30 min	3 hrs																		
% contribution to Summative Assessment Mark	60	20	20																		
Sub minimum	40%	40%	40%																		

Neurological and Psychiatric Pharmacy (BPharm IV)

MPMB041	Neurological and Psychiatric Pharmacy		Credits:28
Lectures per week	Practicals per week	Tutorials per week	
Content:	<p>An integrated study of the basic anatomy and physiology of the brain and nervous system. The module includes the pathophysiology of the major disorders affecting the central nervous system with the emphasis being on the pharmacology of appropriate therapeutic agents. Causes, effects and management of substance abuse. Anaesthesia, anaesthetic agents and pain management.</p>		
Learning Outcomes:	<p>Students should be able to describe and discuss:</p> <ul style="list-style-type: none"> • Anatomy and physiology of the central nervous system (CNS) • Causes and treatment of migraines • The role and function of neurotransmitters • The pathophysiology of • The pharmacotherapy of neurological and psychiatric disorders • Formulation of controlled release products • Drug and alcohol abuse • The use of anaesthetic agents 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Describe the development and anatomy of CNS • Describe the physiology of CNS • Give an overview of the following CNS conditions and their management • Developmental disorders • Mood disorders • Anxiety disorders • Psychotic disorders • Personality states • Seizure disorders • Headaches and migraine • Infections of the CNS • Neurodegenerative disorders • Discuss the different classes and dosage forms of the drugs used in psychopharmacology according to their mechanism of action • List the different types of dosage forms used in psychiatric pharmacy and discuss their formulation aspects • Describe the formulation and use of appropriate dosage forms, including sustained released (SR) and parenteral formulations 		

	<ul style="list-style-type: none"> • Define the term and concepts related to substance abuse • Identify (by common and generic name) and classify substances of abuse • Identify factors that can lead to substance abuse and dependence • Describe the effects the different substances have on the body • Describe other risks from drug abuse • Outline non-pharmacological treatment of substance abuse • Describe pharmacological treatment of substance abuse • Discuss the role of the pharmacist in substance abuse • Define anaesthesia and outline its goals • Describe general anaesthesia • Describe regional anaesthesia • Discuss the drugs used as anaesthetic adjuncts • Describe post-operative pain and its management • Discuss the formulation and dosage form design of anaesthetic drugs • Describe non-pharmacological and supportive adjuncts / apparatus for anaesthesia and pain relief 															
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>															
Summative Assessment:	<table border="1"> <thead> <tr> <th></th> <th>Paper 1</th> <th>Paper 2</th> </tr> </thead> <tbody> <tr> <td>Theory / Practical</td> <td>Theory</td> <td>Practical</td> </tr> <tr> <td>Duration</td> <td>3 hrs</td> <td>3 hrs</td> </tr> <tr> <td>% contribution to Summative Assessment Mark</td> <td>60</td> <td>40</td> </tr> <tr> <td>Sub minimum</td> <td>40%</td> <td>40%</td> </tr> </tbody> </table>		Paper 1	Paper 2	Theory / Practical	Theory	Practical	Duration	3 hrs	3 hrs	% contribution to Summative Assessment Mark	60	40	Sub minimum	40%	40%
	Paper 1	Paper 2														
Theory / Practical	Theory	Practical														
Duration	3 hrs	3 hrs														
% contribution to Summative Assessment Mark	60	40														
Sub minimum	40%	40%														

Nutrition and Gastroenterology (BPharm I)

MPMB021	Nutrition and gastroenterology		Credits:20
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	<p>An anatomical and physiological overview of the liver and gastrointestinal tract (GIT) and their innervation, with particular emphasis on the absorption and metabolism of nutrients and drugs. The functioning of autonomic nervous system. Water, electrolyte and acid-base balance in the body. Major problems of nutrition and metabolic/chronic disorders for which nutrition plays a pivotal role, including diabetes, obesity, eating disorders, malabsorption, alcohol abuse and pancreatitis. The identification of the presence of risk factors for malnutrition. The chemistry, pharmaceuticals and pharmacology of drugs, affecting the gastrointestinal tract and drugs used to treat common GIT problems.</p>		
Learning Outcomes:	<p>Students should be able to describe and discuss the following</p> <ul style="list-style-type: none"> • Anatomy of GIT • Physiology of GIT • H₂O and electrolyte balance • Nutrition Process • Health System • Eating, Ages and Malnutrition • Drug Nutrient interactions • Gastroenterology • Clinical Nutrition 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Describe the anatomy and physiology of the digestive system and accessory organs • Outline the neural regulation of GI functions with emphasis on relevant cranial nerves, brain centres and organs innervated by autonomic nervous system (ANS) • Outline the ANS physiology with emphasis on neural pathways and receptors • Discuss the ANS pharmacology with emphasis on receptors and classes of drugs used to stimulate or inhibit the GI autonomic functions • Outline the endocrine, paracrine and neurocrine regulation of GI functions • Review the biochemistry of water, electrolytes, acids and bases. • Outline the concept homeostasis and list the components of physiological control. • Outline the physiological regulation of water balance, electrolyte balance and acid-base balance. • List the causes, signs and symptoms, prevention, dietary and pharmacological 		

	<p>management of water, electrolyte and acid-base balance disorders.</p> <ul style="list-style-type: none"> • Explain the classification, basic biochemistry, physiological functions, dietary sources, digestion and metabolism of macronutrients. • Describe the health effects of over and under-consumption of macronutrients. Identify the health supplements of the macronutrients and state their indications, advantages, disadvantages and interactions. • Discuss the major vitamins and minerals and population groups at risk of under- or over-consumption of them. • Discuss the regulation and formulation of nutritional supplements • Describe the health effects of over and under consumption of macronutrients • Identify the health supplements of the macronutrients and state their indications, advantages, disadvantages and interactions • Outline the pathophysiology of selected conditions of the GI tract as listed in the STG/EDL's at primary and secondary health care level (constipation, diarrhoeal diseases, nausea and vomiting, GORD ulcers) • Explain the preventative, non-pharmacological and pharmacological management of the above GI disorders • Describe the principles and processes of Clinical Nutrition 															
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%</p>															
Summative Assessment:	<table border="1"> <thead> <tr> <th></th> <th>Paper 1</th> <th>Paper 2</th> </tr> </thead> <tbody> <tr> <td>Theory / Practical</td> <td>Theory</td> <td>Practical</td> </tr> <tr> <td>Duration</td> <td>3 hrs</td> <td>2 hrs</td> </tr> <tr> <td>% contribution to Summative Assessment Mark</td> <td>60</td> <td>40</td> </tr> <tr> <td>Sub minimum</td> <td>40%</td> <td>40%</td> </tr> </tbody> </table>		Paper 1	Paper 2	Theory / Practical	Theory	Practical	Duration	3 hrs	2 hrs	% contribution to Summative Assessment Mark	60	40	Sub minimum	40%	40%
	Paper 1	Paper 2														
Theory / Practical	Theory	Practical														
Duration	3 hrs	2 hrs														
% contribution to Summative Assessment Mark	60	40														
Sub minimum	40%	40%														

Primary Health Care Practice-Based Learning (BPharm II)

MPPH012	Primary Health Care Practice-Based Learning		Credits:16
Lectures per week	Practicals per week	Tutorials per week	
1	4	1	
Content:	<p>The basic principles of research methodology and use of research instruments. The application of those principles and instruments in an indicator study of pharmaceutical and related services at Primary Health Care level. Health care service delivery, drug supply management and rational drug use at Primary Health Care level. Professional communication. The compilation and presentation of individual and group reports.</p>		
Learning Outcomes:	<p>Students should be able to describe and discuss the following</p> <ul style="list-style-type: none"> • Health Systems in South Africa • Primary Health Care • Drug Supply Management and Rational Drug Use <p>Students should be able to communicate effectively with health care providers Students should be able to write a report and present their project</p>		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Describe the background on Health Services in South Africa • Describe the management of Primary Health Care Systems • Describe Good Pharmaceutical Practice and medicine availability at PHC level • Identify the various health care workers and their functions within the multi-disciplinary team • Indicate in a given situation, which vital signs should be assessed and how often this should be done • Interpret the values of temperature, pulse, blood pressure and respiration • identification, investigation and correction of a drug use problem through research • Describe indicator studies • Explain the Drug Supply Management Cycle at Primary Health Care level • Discuss Rational Drug Use (RDU) • Explain the importance and methods of effective professional communication • Describe the importance of writing concise, objective and accurate research reports • Describe and carry out the stages of writing a research report • Demonstrate the ability to present a research report orally 		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40%		

Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%			
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Portfolio of evidence	Oral
	Duration		30 min
	% contribution to Summative Assessment Mark	60	40
	Sub minimum	40%	40%

Principles and Practice of Pharmaceutical Manufacturing (BPharm II)

MPMC022	Principles and Practice of pharmaceutical manufacturing		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	An overview of the manufacturing of pharmaceuticals. Physical, chemical and pharmaceutical principles in the formulation, production, packaging and labelling of pharmaceutical products.		
Learning Outcomes:	<p>Students should be able to describe and discuss</p> <ul style="list-style-type: none"> • Overview of manufacturing of pharmaceuticals • Physio-chemical and pharmaceutical principles and production • Manufacturing of different dosage forms • Manufacturing processes • Selection, procurement and quality control of raw materials • Packaging and labeling of pharmaceutical products 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <p>Demonstrate knowledge and application of the chemistry, biosynthetic and isolation of a selected group of medicinal plants and animals constituents which are pharmacologically active and are used in the manufacture of or as lead compounds in the production of medicines and cosmetics.</p> <p>Identify and describe the components comprising the selection and procurement cycle</p> <p>Discuss the quality control and quality assurance processes and legal stipulations involved in the procurement of pharmaceutical raw materials and components</p> <p>Describe and discuss the unit processes and equipment used in the production of the listed dosage forms</p> <p>Explain relevant physical, chemical and pharmaceutical principles and apply to selected examples of the listed dosage form</p> <p>List the various pharmaceutical packaging materials and discuss their advantages and disadvantages</p> <p>Discuss the packaging process and describe the packaging and labeling methods</p> <p>Discuss the quality control and quality assurance processes involved in packaging and labeling and highlight the role of the pharmacist</p>		
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	60	40
	Sub minimum	40%	40%

Respiratory System, Ear and Eye (BPharm II)

MPMC021	Respiratory System, Ear and Eye		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	The structure and functioning of the respiratory system, ear and eye. The role of the nervous system in controlling the functioning of the respiratory system, ear and eye. Important		

	disorders of the respiratory system, ear and eye and their prevention, non-pharmacological and pharmacological management. Therapeutic drug monitoring and pharmaceutical calculations. Formulation of medication used in the respiratory system, ear and eye.		
Learning Outcomes:	<p>Students should be able to describe and discuss</p> <ul style="list-style-type: none"> • The anatomy of the respiratory system, both the upper and lower parts • The anatomy of the ear and the relationships between the ear, noses and throat (ENT) • The basic principles of optics and physiology of vision • Pathophysiology and conditions • Applicable antimicrobials • Formulation of aerosols –Pulmonary & Nasal Drug Administrations • Procedures and Diagnosis 		
Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Describe the anatomy of the respiratory system, both the upper and lower parts • Describe the anatomy of the ear and the relationships between the ear, notes and throat (ENT) • Describe and explain diagrammatically the anatomy of the eye • Discuss the physiology of the upper and lower parts of the respiratory system • Define respiration • Explain the physiology of the different aspects of respiration including the nervous control • Describe the common tests used to evaluation respiratory function • Describe the physiology of hearing and equilibrium including the nervous control • Explain the basic principles of optics and describe the physiology of vision • Discuss the causes, epidemiology, pathogenesis, signs and symptoms and diagnosis of common disorders affecting the respiratory tract • Drugs used in the management of no-infectious diseases of the lower respiratory tract: asthma, COPDs (Chronic Obstructive Pulmonary Diseases) and cystic fibrosis • Prophylactic measures, Describe the prevention of disorders of the respiratory tract • Discuss the pathophysiology of common disorders affecting the eye, conditions and drugs that produce visual pathology • Discuss the management of respiratory tract diseases. • Discuss the safety, efficacy and quality of the drug classes used in the management of these diseases • Minor conditions and symptoms usually treated symptomatically: allergic conditions, rhinitis, sore throat, common cold, influenza, cough • Review the concept of TDM and apply concepts in respiratory medicines • Summarise the prevention and treatment of occupationally-induced and drug-induced respiratory conditions. • Discuss drugs which cause respiratory depression • Describe the chemical properties of drugs used in the management of respiratory diseases • Describe the chemical properties of drugs used in the management of respiratory diseases • Describe the pharmacological and non-pharmacological management of disorders of the ear • Drug and disease-related hearing disorders • Describe the pharmacological and non-pharmacological treatment of disorders of the eye • Discuss drugs used therapeutically • Drugs used in infectious conditions: sinusitis, tonsillitis, pharyngitis, diphtheria, epiglottitis, laryngitis/croup, bronchitis, whooping cough, pneumonia, tuberculosis • Infections and other conditions affecting the ear and balance • Explain the formulation of topical and inhaled medications from the respiratory tract • Aerosols and nebulisers • Nose drops and sprays • Describe the formulation and proper use of topical medications for the ear • Describe the formulation and proper use of topical medications for the eye • Describe the common diagnostic tests used to evaluate auditory functions • List surgical procedures to improve vision and describe diagnostic and peri-operative use of ophthalmic drugs • Describe the common diagnostic tests used to evaluate visual function • Explain the principles, care and use of corrective lenses, glasses, hard and soft contact lenses 		
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%</p>		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical

	Duration	3 hrs	3 hrs
	% contribution to Summative Assessment Mark	50	50
	Sub minimum	40%	40%

Specialised Pharmacy (BPharm IV)

MPMC041	Specialized Pharmacy			Credits:8
Lectures per week	Practicals per week	Tutorials per week		
4	1	4		
Content:	Oncology and treatment strategies for neoplasms. Pharmacology of chemotherapeutic agents and preparation of cytotoxic drugs. Surgical devices, ostomy products and stoma care. Clinical nutrition, including parenteral and enteral feeding. Contrast media, radioisotopes and radiopharmaceuticals. Drug and toxicology information services. The role of the consultant pharmacist.			
Learning Outcomes:	Students should be able to describe and discuss: <ul style="list-style-type: none"> • Treatment options and strategies in oncology • The use of contrast media and radiopharmaceuticals • The use of small volume parenterals • The use of large volume parenterals • Drug and Toxicology Information Services (DTIS) • Surgical devices and ostomy products • Antiretroviral therapy 			
Assessment Criteria:	Students will be assessed on their ability to: <ul style="list-style-type: none"> • Review the normal cell cycle of growth and division • List the causes of abnormal cell division and the characteristics of neoplastic cells • Classify the common types of neoplasms • Identify the most common types of cancer and list appropriate treatment modalities • Identify the classes of chemotherapeutic agents, the major drugs in each class, and the mechanisms of action use, safety aspects and limitation to use • Discuss the role of the pharmacist in the prevention and management of oncologic diseases • Discuss supportive care of oncology patients • Discuss the handling of cytotoxic drugs • Discuss radio opaque and radioactive materials • List the types of radionuclides • Briefly describe the decay of radionuclides • List the main components of radionuclide generators • Describe briefly the principles of the design of radio-pharmaceuticals • Describe briefly the quality control of radiopharmaceuticals • List the diagnostic uses of radiopharmaceuticals • List the therapeutic uses of radiopharmaceuticals • Describe the proper disposal of radiopharmaceutical waste • Describe the competition, indications for and use of common large and small volume parenterals • Describe the methods of preparation and administration of small and large volume parenterals • Drug and Toxicology Information Services (DTIS) • Describe the requirements for the process of Drug and Toxicology Information Service (DTIS) provision • Identify the role of the pharmacist in the provision of this service • Discuss the principles of management of toxicology using examples to illustrate • Identify common surgical devices and ostomy products and describe their use 			
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%			
Summative Assessment:		Paper 1	Paper 2	
	Theory / Practical	Theory	Practical	
	Duration	3 hrs	2 hrs	
	% contribution to Summative Assessment Mark	60	40	

	Sub minimum	40%	40%
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Sterile Pharmaceutical Products (BPharm III)

MPMC031	Sterile Pharmaceutical Products		Credits:16
Lectures per week	Practicals per week	Tutorials per week	
4	1	4	
Content:	An overview of the manufacturing of sterile pharmaceutical products. Principles and practice of sterilisation. The control of contamination. The manufacture of sterile pharmaceutical products. The principles and practice of quality assurance, including Good Manufacturing Practices and quality control, as applied to sterile pharmaceutical products.		
Learning Outcomes:	Students should be able to describe and discuss: <ul style="list-style-type: none"> • The sterility concept • Principles and practice of sterilization • Validation and monitoring of sterilization processes • Aseptic technique • Microbial contamination • Other forms of contamination • Preservative use of pharmaceuticals and related products • Disinfectants and antiseptics • Development of sterile products • Injections and infusions • Non-injectable sterile fluids • Ophthalmic preparations • Sterile pharmaceutical devices, products, instruments and equipment 		

Assessment Criteria:	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> • Define sterility as an important pharmaceutical concept. • Discuss the concept of sterility in practice and how this differs from theoretical sterility. • Explain the importance of maintaining sterility of selected pharmaceutical products and medical devices. • Explain the kinetics of microbial inactivation during the sterilisation process and the factors that may influence them • Critically discuss the different sterilisation methods that can be used during the manufacture of sterile pharmaceutical products in terms of: operation principles, mechanism of action, • Discuss the methods that can be used for routine monitoring of the quality of the sterilisation processes (quality assurance). • Describe the procedures/tests to prove that pharmaceutical products claimed to be sterile comply with the official standards and requirements for sterile products. • Describe the test for effectiveness of media in the presence and absence of the preparation being examined. • Interpret sterility testing results as specified by the BP (1988). • Discuss the conditions, principles and operating procedures for the aseptic processing of pharmaceutical products. • Describe the basic rules for effective aseptic processing. • Explain the design, operation and monitoring of clean rooms for the production of pharmaceutical products. • Classify clean rooms according to the particulate quality of the environmental air. • Demonstrate the ability to apply aseptic technique in the preparation of selected products • Explain the occurrence of microbial contamination in pharmaceutical preparations (sterile and non-sterile dosage forms). • Summarise the factors that influence the growth of microorganisms (microbial spoilage) in pharmaceutical products and the potential consequences of this type of contamination. • Describe the contamination of pharmaceutical preparations (sterile and non-sterile dosage forms) with particles during the manufacturing process as well as during handling of the product. • Explain the test to detect pyrogenic contamination of pharmaceutical products. • Briefly describe how pyrogens can be removed from products. • Discuss the use of preservative systems/substances in pharmaceutical products and the factors that can influence the efficacy of the preservative system. • Define disinfection and all related terms. • Discuss the application and uses of the various types of disinfectants and antiseptics. • Describe the methods for testing the effectiveness of disinfectants and the factors that can play a role in their effectiveness. • Discuss the special excipients and additives needed in the formulation of sterile parenteral products. • Explain the freeze-drying process. • Give a brief overview of the requirements for the different categories of sterile products and packaging materials (containers) for parenteral products. • Describe the principles of osmosis, osmolality, isotonic solutions and iso-osmotic solutions. • Carry out the necessary calculations for the preparation of isotonic solutions for intravenous administration to patients as well as millimoles and milliequivalents. • Give a brief overview of the properties, requirements and uses of the different categories of injections. • Briefly discuss sterile fluids for uses other than injection of drugs. • State the reasons for the preparation of sterile ophthalmic preparations. • Give a brief overview of the special precautions and requirements applicable to ophthalmic preparations. • Identify sterile devices, products and equipment (other than dosage forms) and the methods used to sterilise them 		
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%</p>		
Summative Assessment:		Paper 1	Paper 2
	Theory / Practical	Theory	Practical
	Duration	3 hrs	3 hrs
	% contribution to Summative	60	40

	Assessment Mark		
	Sub minimum	40%	40%

POSTGRADUATE DIPLOMA IN HOSPITAL PHARMACY MANAGEMENT PROGRAMME

Financial Management

PHFM601	Financial Management		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
3	1	1	
Content:	How the government's' financial system works. Overview of accounting and financial accounting. Recording and reporting financial transactions. Legal, policy framework of financial management within public institutions. Tender Board Act. Statutory requirements for financial reporting. Financial concerns and constraints at each level. Financial controls: Preparation of financial statements, Analysis of financial statements, Auditing, Budgeting, Costing-methods and determination. Creating financial awareness in own pharmacy – to cover costs per unit rather than overview of pharmacy's expenses. Application of information systems in financial management. Cost control		
Learning Outcomes:	To analyse the financial system in the public sector To utilise the different financial analytical systems applicable to pharmacy management		
Assessment Criteria:	Students can utilise the financial system in the public sector and the different financial analytical systems applicable to pharmacy, for the purpose of cost-effective hospital pharmacy management		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:	Theory / Practical	Theory	
	Duration	3	
	% contribution to Summative Assessment Mark	100	
	Sub minimum	40	

Human Resource Management

PHHM601	Human Resource Management			Credits:24
Lectures per week	Practicals per week	Tutorials per week		
3	2	1		
Content:	Human resource planning: Human resource system/role of personnel in the organisation, personnel policy and strategy. Personnel management and organisation: Employee resourcing. Training and development. Performance management. Industrial Relations. Remuneration.			
Learning Outcomes:	To design a well-planned human resource strategy applicable to hospital pharmacy management To develop skills for effective personnel management in a hospital pharmacy			
Assessment Criteria:	Students can develop a well-planned human resource strategy for the hospital pharmacy and manage personnel effectively through sound human resource practices.			
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%			
Summative Assessment:		Paper 1	Paper 2	
	Theory / Practical	Theory		Practical
	Duration	3		1
	% contribution to Summative Assessment Mark	80		20
	Sub minimum	40		40

Medicines Management

PHMM601	Medicines Management		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
4	0	2	
Content:	Pharmacy and Therapeutics Committee (PTC): Terms of reference, Role of the PTC in research, Objectives, Functions, Membership, Helpful processes, Involving the community, Feedback and follow up, Stay abreast with drug-related affairs (paper, events etc.), Drug policies and drug politics, Focus on drug and therapeutics-related aspects Rational and irrational drug use: Promote rational drug use, Monitoring drug use patterns, identify cost drives: ABC analysis, parent analysis, Trends, EDL compliance, DSM, Dispensing. Pharmacoeconomics: Cost justification of pharmaceutical purchases. Clinical and cost issues, Direct, indirect and hidden costs. Reports. Production control Application of HIS		
Learning Outcomes:	To investigate the medicines management cycle in terms of effective, safe, suitable and available medicines To analyse the different policies pertaining to medicines management To implement and maintain a hospital Pharmacy and Therapeutics Committee		
Assessment Criteria:	Students can manage the supply and use of medicines so that medicines are effective, safe, suitable and available Students can evaluate and utilise the different policies pertaining to medicines management Students can implement and maintain a Pharmacy and Therapeutics Committee in the hospital		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:	Theory / Practical	Theory	
	Duration	3	
	% contribution to Summative Assessment Mark	100	
	Sub minimum	40	

Research Project

PHRE601	Research Project		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
2	0	0	
Content:	Introduction and practical aspects of research process		
Learning Outcomes:	To demonstrate an understanding of the research process To develop a research protocol To analyse and interpret data To present and discuss data in the form of a research report		
Assessment Criteria:	Students can write a research protocol for submission to an ethics committee Students can analyse, interpret and present data in a written research report		
Mark Structure:	Minimum continuous assessment mark for examination admission: 40% Final Mark: 60% continuous assessment mark + 40% summative assessment mark Minimum final mark: 50%		
Summative Assessment:	Theory / Practical	Theory	
	Duration	3	
	% contribution to Summative Assessment Mark	100	
	Sub minimum	40	

The Management Process

PHMP601	The Management Process		Credits:24
Lectures per week	Practicals per week	Tutorials per week	
3	2		

Content:	<p>Management in a hospital pharmacy: Why study management?, Management in different settings, Challenges in managing a hospital pharmacy, Managerial and organisational performance.</p> <p>Types of managers and management styles: Management skills.</p> <p>Management process. Planning, Organizing, Leading, Control.</p>	
Learning Outcomes:	<p>To recognise your own management style and bring in line with the management styles of others</p> <p>To utilise the management processes (planning, organizing, leading, control) applicable to hospital pharmacy</p>	
Assessment Criteria:	<p>Students can perform sound management processes, styles and skills in managing a hospital pharmacy</p>	
Mark Structure:	<p>Minimum continuous assessment mark for examination admission: 40%</p> <p>Final Mark: 60% continuous assessment mark + 40% summative assessment mark</p> <p>Minimum final mark: 50%</p>	
Summative Assessment:		Paper 1
	Theory / Practical	Theory
	Duration	3
	% contribution to Summative Assessment Mark	100
	Sub minimum	40