



North-West University

School of Pharmacy

Short Courses: Introductory Guide



Innovation through diversity™



1. INTRODUCTION

The School of Pharmacy at the North-West University, Potchefstroom campus has various certificate/short courses on offer. The courses are presented for the purposes of continued professional development (CPD) by distance learning. We aim to bring affordable and quality higher education within the reach of every Pharmacist and other Health Practitioners who qualifies for admission.

Health Practitioners get the opportunity to enrich and to extend their qualifications while still working. We offer you the opportunity to be the manager of your own learning process wherever you are.

2. OBJECTIVE

These certificate courses provide post-graduate Pharmacists and Health Practitioners the opportunity to expand their knowledge and become highly specialised in their field of work.

3. PRESENTATION OF THE COURSES

The short courses are presented as distance learning and consist mostly of module work (theoretical component).

The delivery of this course takes place with the assistance of the eFundi, an electronic platform for communication with students of the North West University. As a pre-requisite students are expected to be able to have sufficient computer skills to be able to make use of this medium.

Academic and Administration information (such as subject content, discussion forums, important dates, additional resources and supplementary instruction) for many of the programmes and courses provided at the NWU are available on eFundi.

If assistance is required students may enrol for a short course in *Basic Computer Literacy* to assist you in attaining these skills.

4. METHOD OF COMMUNICATION AND INTERNET ACCESS

The primary method of communication during your studies will be through the Universities educational platform, eFundi.

It is therefore of the utmost importance that each student must have constant, reliable Internet access.

The distance learning short courses were approved as English medium courses and thus the language of interactive study guides and group discussions through the internet are in English.

Communication with the Helpdesk can be in either English or Afrikaans and assignments and examinations can be presented in either English or Afrikaans.

How to contact us? Mrs. Strydom supports students regarding general enquiries as well as referrals to relevant academic personnel and other administrative personnel.

Contact details (Corrie Strydom): Tel: 018-299 2260

E-mail: Corrie.Strydom@nwu.ac.za

Postal address	Physical Address
North-West University Potchefstroom Campus School of Pharmacy Private Bag X6001 Potchefstroom 2520	North-West University Potchefstroom Campus School of Pharmacy Hoffman street Building G 16 Room 108 Potchefstroom 2520

5. ADMISSION REQUIREMENTS

5.1 DURATION (minimum and maximum)

- The maximum duration of a short course is one semester (unless otherwise stated).
- Student's studies are terminated if the maximum duration of study is exceeded.

5.2 ADMISSION REQUIREMENTS (also refer to p 4 & 5)

- B.Pharm degree or any other qualification deemed as equivalent (unless otherwise indicated)
- Registered Pharmacist at the South African Pharmacy Council (SAPC) (if applicable)
- Experience in the appropriate field is strongly recommended, although it is not a prerequisite (unless otherwise indicated)
- For admission to the Pharmacology short courses a B.Pharm degree, an MBChB (medical practitioners), a BChD (dentist) or any other qualification that the School of Pharmacy regards as equivalent is acceptable.

Please note that all rules are subject to the general rules of the University. (Refer to: www.nwu.ac.za)

6. APPLICATION

► Registration deadlines:

First semester: 30 November

Second semester: 31 May

Code	Short Course description	Semester	Admission Requirements
Pharmacy Short Courses			
FPHA611	Introduction to Pharmacoeconomics	1	B.Pharm
FPHA612	Managed Pharmaceutical Care	1	B.Pharm
FPHA613	Disease Management and Drug Utilisation Review	1	B.Pharm
FPHA621	Pharmacotherapy 1	2	B.Pharm
FPHA622	Pharmacotherapy 2	2	B.Pharm
FPHA623	Pharmacoepidemiology	2	B.Pharm
FPHA624	Legislation and Quality Control	2	B.Pharm
FPHA625	Medicines Supply Systems	2	B.Pharm
F25 100 1	Quality Assurance in the Pharmaceutical Manufacturing Industry	1 or 2	B.Pharm or Grade 12 (with 1 year working experience in Industry)
F26 100 1	Tablet Manufacturing	1 or 2	B.Pharm or Grade 12 (with 1 year working experience in Industry)
F27 100 1	Capsule Manufacturing	1 or 2	B.Pharm or Grade 12 (with 1 year working experience in Industry)
F28 100 1	Introduction to principles and practice of clinical laboratory data interpretation	1 or 2	Certificate / Diploma / Degree in Health Sciences

Pharmacotherapy Courses (PCDT)			
FPHA621	Pharmacotherapy 1	2	B.Pharm
FPHA622	Pharmacotherapy 2	2	B.Pharm
AAAA717	Applied Pharmacotherapy	1 or 2	B.Pharm & Registered Pharmacist at SAPC

If you are interested in the Pharmacotherapy courses please contact the Mrs Corrie Strydom for additional information and for the “Registration form for attendance of Pharmacotherapy short courses”.

Code	Short Course description	Semester	Admission Requirements
Pharmacology Short Courses			
FKLT631	<i>Principles of Pharmacokinetics</i>	1	<i>B.Pharm or MBChB or BChD</i>
FKLT632	<i>Principles of Pharmacodynamics</i>	2	<i>B.Pharm or MBChB or BChD</i>
FKLT633	<i>Drugs for Pain, Inflammation, Fever & Airways Diseases</i>	1	<i>B.Pharm or MBChB or BChD</i>
FKLT641	<i>Drugs and the Peripheral Nervous System</i>	1	<i>B.Pharm or MBChB or BChD</i>
FKLT642	<i>Chemotherapy of Infections and Infestations</i>	1	<i>B.Pharm or MBChB or BChD</i>
FKLT651	<i>Drugs and the Central Nervous System</i>	2	<i>B.Pharm or MBChB or BChD</i>
FKLT652	<i>Hormones, Hormonoids and Hormone Antagonists</i>	2	<i>B.Pharm or MBChB or BChD</i>
FKLT661	<i>Drugs and the Renal and Cardiovascular System</i>	1	<i>B.Pharm or MBChB or BChD</i>
FKLT662	<i>Drugs for GIT and Skin Disorders</i>	2	<i>B.Pharm or MBChB or BChD</i>
FKLT663	<i>Vitamins, Haematopoetics and Immunopharmacology</i>	2	<i>B.Pharm or MBChB or BChD</i>
FKLT664	<i>Advanced Pharmacological Principles</i>	2	<i>B.Pharm or MBChB or BChD</i>

7. LEARNING STRUCTURE

The following section pays attention to the study process and demonstrates clearly what is expected from the student

7.1 COURSE OUTCOMES

Code	Course Description	Course Outcomes
FPHA611	Introduction to Pharmacoeconomics	Demonstration of appropriate pharmacoeconomic analytical methods in specific situations. Planning and implementing of pharmacoeconomic research studies. Compiling pharmacoeconomic reports and critically evaluating published pharmacoeconomic studies. Identifying international trends and applications of pharmacoeconomic principles. Illustration of cost concepts and application and uses of pharmacoeconomic.
FPHA612	Managed Pharmaceutical Care	Familiarity with the theoretical and practical aspects of managed pharmaceutical care with regard to the application of the patient care process and the establishment and management of the professional pharmaceutical care practice in the South African context.
FPHA613	Disease Management and Drug Utilisation Review	To implement certain medicine information systems pertaining to Disease Management as an aid in decision making to improve quality and economical aspects in medicine usage. The course endeavours to promote insight in the following information systems: Drug utilization review, pharmacoeconomics, evidence-based medicine, pharmaco-epidemiology and the principles of Disease Management.
FPHA621	Pharmacotherapy 1	To supply knowledge and skills in primary screening and monitoring services, as well as background in the management of acute minor ailments of the neurological system, the eyes, the oral cavity, the ear, nose and throat in pharmacy. The course includes firstly primary screening and monitoring services in the pharmacy, secondly an introduction to basic pharmacotherapy and the necessary skills to communicate a comprehensive patient history. It thirdly includes theoretical guidelines for the basic physical examination of a patient on primary care level.
FPHA622	Pharmacotherapy 2	To supply further knowledge and skills in the management of acute minor ailments as well as insight into the care of patients with chronic diseases. The course endeavours to supply knowledge and skills on the rational treatment and the referral of patients to secondary care level. It aims at the implementation of the principles of pharmacotherapy in a holistic pharmaceutical plan. The material covers the etiology, symptoms and signs, and treatment of a range of disorders including: Neurological disorders, ophthalmologic disorders, the oral cavity, ear nose and throat disorders, upper and lower respiratory tract disorders, cardiovascular disorders, diabetes, musculo-skeletal disorders, skin infections, urine tract infections and sexually transmitted diseases.

FPHA623	Pharmacoepidemiology	<p>To implement and use certain principles, concepts and epidemiologic fundamentals in day-to-day pharmacy practice.</p> <p>The learner should have insight in:</p> <ul style="list-style-type: none"> • Fundamental Pharmacoepidemiology • Epidemiological concepts • Observational study designs in epidemiology • Experimental study designs • Data identification and analysis • Concepts of risk and risk assessment • Screening and diagnostic testing • Post-marketing surveillance drug utilisation studies and pharmacoconomics • Pharmacoepidemiology in pharmacy practice
FPHA624	Legislation and Quality Control	Familiarity with the different Acts applicable to the Pharmacy profession such as the Pharmacy Act (No 53 of 1974) and the Medicine and related substance control Act (No 101 of 1965).
FPHA625	Medicines Supply Systems	Familiarity with the management of medicine distribution in the public health care system in South Africa with special emphasis to the pharmacist's responsibilities in the medicine distribution cycle, policy guidelines, medicine selection procurement and distribution.
F25 100 1	Quality Assurance in the Pharmaceutical Manufacturing Industry	<p>On completion of this course you should be able to:</p> <ul style="list-style-type: none"> • Demonstrate knowledge and an understanding of the Quality Assurance concept in the pharmaceutical industry and be able to apply this knowledge to evaluate, improve and/or implement quality systems in the following fields: <ul style="list-style-type: none"> • Documentation • Organisation and Personnel • Premises and Equipment • Complaints and Product Recalls • Change Control • Product Quality Review (PQR) • Self-Inspections • Demonstrate knowledge and skills of Good Manufacturing Practices (GMP) and apply these skills to ensure that the storage and release of materials; qualification and validation of utilities, equipment and processes; and production of pharmaceutical products are performed in a compliant manner. • Understand and apply the requirements for sampling, analytical testing and stability testing and be able to critically evaluate and review the processes followed in these fields and be able to identify and

		<p>rectify non-conformities in these fields.</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the basic principles and concept of quality risk management (QRM). Identify quality problems in the pharmaceutical manufacturing industry and through using the appropriate QRM tool be able to analyse and assess the problem and propose and implement the necessary corrective and preventative actions.
F26 100 1	Tablet Manufacturing	<p>On completion of this course you should be able to:</p> <ul style="list-style-type: none"> • Demonstrate knowledge and an understanding of the characteristics of a good tablet as well as the acceptance criteria and tests which are applicable to tablets and tablet manufacturing. • Demonstrate knowledge and an understanding of the characteristics of active pharmaceutical ingredients and excipients. • Understand and discuss the various types of excipients and the role of the excipients in solid oral dosage from formulations as well as API-excipient incompatibilities. • Demonstrate knowledge and an understanding of the various tablet manufacturing process steps and the equipment used in the manufacturing process. • Identify tablet manufacturing problems and will be able to apply this knowledge to perform trouble shooting and problem solving.
F27 100 1	Capsule Manufacturing	<p>On completion of this course you should be able to:</p> <ul style="list-style-type: none"> • Demonstrate knowledge and an understanding of the characteristics of a good capsule as well as the acceptance criteria and tests which are applicable to capsules and capsule manufacturing. • Demonstrate knowledge and an understanding of the capsule manufacturing processes. • Understand and discuss the various types of excipients and the role of the excipients in capsule formulations. • Demonstrate knowledge and an understanding of the various capsule stability related issues as well as how to design a stability program for a capsule formulation. • Identify capsule manufacturing problems and will be able to apply this knowledge to perform trouble shooting and problem solving.

F28 100 1	Introduction to principles and practice of clinical laboratory data interpretation	<p>On completion of this course you should be able to:</p> <ul style="list-style-type: none"> • Demonstrate a broad understanding of the components that form a clinical laboratory result and the clinical application of these tests, with special reference to certain highlighted areas (e.g., diabetes mellitus, hyperlipidemia, electrolyte imbalances, liver function tests, full blood count, and iron disorders). • Identify different tests and/or methods required for a specific patient or case study • Convey the interpretation of clinical test/laboratory result to manage and monitor a patient • Give reasonable opinions on specific clinical laboratory tests and point out the possible merits and weaknesses of comparable tests • Point out the frequency of testing needed for the different clinical laboratory tests and methods for a given patient or scenario.
FKLT631	Principles of Pharmacokinetics	<p>On completion of this course you should be able to:</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the basic pharmacokinetic principles and the ability do some calculations. • Know the factors influencing the absorption, distribution, metabolism and excretion of drugs. • participate in all discussions • demonstrate an ability to apply sound ethical principles in all endeavours.
FKLT632	Principles of Pharmacodynamics	<p>On completion of this course you should be able to:</p> <ul style="list-style-type: none"> • Apply pharmacodynamic principles to assess the impact of drugs on a patient • Assess drug actions from pharmacodynamic parameters • Assess beforehand whether or not a certain combination of drugs is desirable • Interpret and evaluate in vitro and in vivo experimental findings • Apply the principles of linear drug-receptor interactions to the complicated non-linear drug-receptor interactions • Show a thorough knowledge of the various drug-receptor interactions of agonists and antagonists • Participate in partner and group discussions
FKLT633	Drugs for Pain, Inflammation, Fever & Airways Diseases	<p>In the treatment of disorders (e.g. pain and inflammation, obstructive pulmonary and other respiratory disorders) in which autacoids are predominantly involved, you should be able to:</p> <p>Portray a full classification of the drugs in this regard,</p> <ul style="list-style-type: none"> • Demonstrate awareness of all effects in the application of these drugs, • Reflect a thorough knowledge and understanding of the pharmacological mechanisms of action and pharmacokinetics of these drugs,

		<ul style="list-style-type: none"> • Explain drug interactions together with indications and contra-indications of specific drug treatment, • Analyse and evaluate treatment scenarios and propose rational alternatives, • Show a patient-oriented approach in advising patients on effective drug use, • Demonstrate the ability to retrieve the latest information on drugs for treating these disorders, • Participate in peer and group discussions, • Apply social and ethical codes in drug selection and administration
FKLT641	Drugs and the Peripheral Nervous System	<p>On completion of this division you should be able to:</p> <ul style="list-style-type: none"> • Portray a full classification of drugs acting in the peripheral nervous system, • Be aware of the therapeutic applications of these drugs, Reflect a thorough knowledge of the pharmacological mechanisms of action and pharmacokinetics of these drugs, • Explain drug interactions together with selected indications and contra-indications of drug treatment, • Reveal the ability to retrieve the latest information on drugs for treating the appropriate disease states, • Participate in group discussions and • Demonstrate the application of a social and ethical code in drug selection
FKLT642	Chemotherapy of Infections and Infestations	<p>In the treatment of various infectious disease states with anti-microbial drugs, you should be able to:</p> <ul style="list-style-type: none"> • Portray a full classification of drug prototypes used in the treatment of infectious diseases. • Select an appropriate treatment. • Demonstrate satisfactory knowledge of the clinically important pharmacological mechanisms and pharmacokinetics of antimicrobial drugs. • Explain clinically important indications, contra-indications and drug interactions. • Analyse and evaluate treatment scenarios, and to propose responsible alternatives to obvious cases of misuse of drugs. • Illustrate an ability to solve case studies. • Demonstrate a patient-directed approach and an ability to advise patients regarding effective anti-infective drug use in view of the global increase in microbial drug resistance. • Reveal an understanding of the need to remain informed about infection control and treatment in an ever changing microbiological environment. • Participate in group discussions • Apply a social and ethical code in drug selection

FKLT651	Drugs and the Central Nervous System	<p>In the treatment of disorders of the central nervous system with drugs affecting central neurotransmission and receptor function you should be able to:</p> <ul style="list-style-type: none"> • Be able to portray a full classification of the drugs in this regard, • Be aware of all effects in the application of these drugs, • Reflect a thorough knowledge of the pharmacological mechanisms of action and pharmacokinetics of these drugs, • Explain drug interactions together with indications and contra-indications of specific drug treatment, • Analyse and evaluate treatment scenarios and propose rational alternatives, • Show a patient-directed (oriented) approach in advising patients of the effective drug use, • Demonstrate the ability to retrieve the latest information on drugs for treating various central nervous system disorders, • Participate in discussions, • Apply social and ethical codes in drug selection and administration.
FKLT652	Hormones, Hormonoids and Hormone Antagonists	<p>After successful completion of this course you should be able to make responsible choices of hormones or hormone-active drugs based on pharmacological and ethically sound principles (from a Christian perspective), in the best interest of the patient. To this end, all available resources (such as www, journals, etc.) should be investigated and applied in all communications. Therefore group participation is employed with considerable emphasis placed on understanding drug reactions and application. This implies that you should be able to:</p> <ul style="list-style-type: none"> • Portray a full classification of releasing factors, trophic hormones and peripheral hormones, and indicate their sites of release and action, respectively; • Name appropriate examples of drugs that act through modulation of hormonal action, be it as an agonist or antagonist; • Name and explain the physiological actions of the various hormones, and be able to discuss the therapeutic effects and clinically important side-effects/toxicity of hormone-active drugs (distinguish between direct and indirect effects); • Discuss the mechanisms whereby the various classes of hormones exert their physiological effects, and to discuss the pharmacological effects (see bullet 2) of the hormone-active drugs that act on these particular endocrine systems (distinguish receptor mechanism, cellular mechanism, neural mechanism, hemodynamic mechanism, systematic mechanism, etc.); • Name and also motivate the indications and contra-indications of the hormone-active drugs from the pharmacodynamic and -kinetic parameters of these drugs or drug groups under discussion; • Name and motivate the clinically important drug-drug interaction(s) from the pharmacodynamics and -kinetics of the specific hormone-active drug(s) or drug group(s) under discussion;

		<ul style="list-style-type: none"> • Scientifically analyse and evaluate given treatment scenarios for a specific patient (case studies) and propose possible alternatives; • Discuss and motivate the relevant points of patient advice with regard to using hormone-active drugs; • Demonstrate a patient-directed approach with regard to the appropriate pharmacotherapy; • Retrieve and evaluate the latest information on this subject independently and when directed to, by means of information technology, including CD-ROM and the Internet • Communicate with colleagues individually, and in groups regarding the topics under discussion; • Discuss the social-ethical implications of the specific hormone-active drug treatment regimes
FKLT661	Drugs and the Renal and Cardiovascular System	<p>In the treatment of various cardiovascular disease states with drugs that affect renal and cardiovascular functioning you should be able to:</p> <ul style="list-style-type: none"> • Portray a full classification of the drugs in this regard, • Be aware of all effects in the application of these drugs, • Reflect a thorough knowledge of the pharmacological mechanisms of action and pharmacokinetics of these drugs, • Explain drug interactions together with indications and contra-indications of drug treatment, • Analyse and evaluate treatment scenarios and propose rational (responsible) alternatives, • Reveal a patient-directed approach in advising patients of the effective use of drugs, • Reveal the ability to retrieve the latest information on drugs for treating various cardiovascular disease states, • Participate in group discussions, • Apply the social and ethical code in drug selection.
FKLT662	Drugs for GIT and Skin Disorders	<p>In the treatment of various indicated disease states with drugs for GIT and skin disorders you should be able to:</p> <ul style="list-style-type: none"> • Portray a full classification of the drugs in this regard, • Be aware of all effects in the application of these drugs, • Reflect a thorough knowledge of the pharmacological mechanisms of action and pharmacokinetics of these drugs, • Explain drug interactions together with indications and contra-indications of drug treatment, • Analyse and evaluate treatment scenarios and propose rational (responsible) alternatives, • Reveal a patient-directed approach in advising patients of the effective use of drugs, • Reveal the ability to retrieve the latest information on drugs for treating various disease states, • Participate in group discussions, • Apply the social and ethical code in drug selection.

FKLT663	Vitamins, Haematopoetics and Immunopharmacology	<p>To enable the prescribing medical practitioner and persons from related disciplines to exercise accountable selections of drugs, founded on pharmacological and ethical principles, in the best interest of the patient". In this context the objective of the short course is to:</p> <ul style="list-style-type: none"> • Be able to portray a full classification of the drugs in this regard, • Be aware of all effects in the application of these drugs, • Reflect a thorough knowledge of the pharmacological mechanisms of action and pharmacokinetics of these drugs, • Be able to explain drug interactions together with indications and contra-indications of drug treatment, • Be able to analyse and evaluate treatment scenarios and propose rational (responsible) alternatives, • Reveal a patient-directed approach in advising patients on the effective use of drugs, • Reveal the ability to retrieve the latest information on drugs for treating various cardiovascular disease states, • Be able to participate in group discussions, • Be able to apply the social and ethical code in drug selection.
FKLT664	Advanced Pharmacological Principles	<p>In the drug treatment of cancer, the various indicated disease states that result from vitamin and mineral deficiencies, disorders pertaining to the blood forming organs, and disorders of the neuro-immune system, you should be able to:</p> <ul style="list-style-type: none"> • Portray a classification of the full range of drugs featuring in the module • Reflect a thorough knowledge of the relevant underlying pharmacological concepts including pharmacological action mechanisms, effects, and pharmacokinetics • Explain clinically important drug interactions together with indications and contra-indications of drug treatment, • Analyse and evaluate treatment scenarios and propose rational (responsible) alternatives, • Reveal a patient-directed approach in advising patients on the effective use of the drugs, • Reveal the ability to retrieve the latest information on drugs for treating the various disease states, • Participate in group discussions, • Apply the social and ethical code in drug selection.

7.2 STUDY MATERIAL

A study guide integrated with required study material is available for each short course.

The Interactive Study Guide

The most important tool in the study process is the comprehensive interactive study guide. An integrated study guide will be used and sometimes additional textbooks will also be required.

7.3 ASSESSMENT

- ✓ Assessment is performed by means of compulsory work assignments as well as a single written paper or the equivalent oral evaluation (unless otherwise indicated).
- ✓ The short course mark is calculated from the mark achieved in the examination and, where applicable, from the participation mark (work assignments etc.).
- ✓ Examinations will be written at the **examination centre you registered** for.
- ✓ The Pharmacology short course examinations will be written electronically from your home or office computer (with Internet access).

8. CHANNELS OF COMMUNICATION

Administrative enquiries:

Contact: Mrs. Corrie Strydom
Tel: 018 299 2260
E-mail: Corrie.Strydom@nwu.ac.za

Programme leader:

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The particulars of the course lecturers and the arrangements for communication on the specific course will be furnished together with the course material.