

Bachelor of Pharmacy Programme

The Bachelor of Pharmacy (B.Pharm.) degree is awarded on satisfactory completion of at least three years of full-time study. To be considered for registration by the Pharmacy and Poisons Board as practising pharmacist in Hong Kong, the student must complete a further year of pre-registration training as required by the Board.

Course List

<i>Code</i>	<i>Course Title</i>	<i>Unit</i>
First Year of Attendance		
PHA 1000	Introduction to Pharmacy	3
PHA 1110	Fundamentals of Organic Chemistry	2
PHA 1211, 1212	Dosage Form Science I, II	2 each
PHA 1311, 1312	Basic Dispensing Techniques I, II	3, 2
PHA 1421, 1422	Biochemistry/Biotechnology I, II	1, 3
PHA 1431, 1432	Anatomy/Physiology/Pathophysiology I, II	3 each
PHA 1440	Microbiology	1
Second Year of Attendance		
PHA 2110	Medicinal Chemistry	3
PHA 2130	Pharmaceutical Analysis	3
PHA 2210	Dosage Form Science III	3
PHA 2220	Biopharmaceutics and Pharmacokinetics	2
PHA 2310	Pharmacy Practice I	3
PHA 2320	Pharmacy Law	2
PHA 2411, 2412	Pharmacology and Therapeutics I, II	3 each
PHA 2510	Pharmacognosy I	3
PHA 2710	Pharmaceutical Research Methods and Techniques	2
Third Year of Attendance		
PHA 3310	Pharmacy Practice II	3
PHA 3411, 3412	Pharmacology and Therapeutics III, IV	3 each
PHA 3510	Pharmacognosy II	3
PHA 3611, 3612	Clinical Clerkship/Project I, II	3, 9

Course Description

PHA 1000

Introduction to Pharmacy

3 U; 3 Lect.; 1st term

Introduces the entering pharmacy students to the profession of pharmacy; reviews the history of pharmacy including both western and Chinese medicine; introduces basic communication skills and clinical assessment skills and emphasizes the importance of communication with other healthcare professionals; introduces various pharmacy practice environments such as hospital pharmacy, industry, academic research and community pharmacy; explores the scope of pharmacy and examines the roles of pharmacists in our current healthcare system; introduces the concept of clinical pharmacy and pharmaceutical care.

PHA 1110

Fundamentals of Organic Chemistry

2 U; 1 Lect. 0.5 Tut. 1.5 Prac.; 2nd term

Provides an understanding of the processes involved in organic chemical reactions and the importance of stereochemistry in drug action and drug development. Examines the physico-chemical properties of chemicals and pharmaceutical agents based on consideration of their functional groups. The theory and pharmaceutical applications of volumetric, gravimetric, ultraviolet, visible and infra-red spectroscopy and thin layer chromatography systems will also be discussed.

PHA 1211, 1212

Dosage Form Science I, II

2 U each; 1 Lect. 0.5 Tut. 1.5 Prac.; 1st, 2nd term

Examines the physico-chemical principles relevant to drug formulation and manufacturing; the properties of pharmaceutical materials (crystalline or amorphous substances) and their characterization; rheology; reaction kinetics in relation to drug decomposition and accelerated stability tests. Emphasis will be on the formulation of solution, emulsion and suspension dosage forms. Relevant topics in solution chemistry and surface chemistry will be covered.

PHA 1311, 1312

Basic Dispensing Techniques I, II

3 U; 2 Lect. 0.5 Tut., 2 Prac.; 1st term

2 U; 1 Lect. 0.5 Tut., 2 Prac.; 2nd term

Provides an introduction to dispensing techniques; professional ethics in dispensing; the prescription and drug dosages; preparation of simple solutions, powders, suspension, ointments, creams, pastes and suppositories; labelling and packaging; product information sources. Sterilisation processes in the manufacturing of pharmaceuticals and the related techniques including aseptic dispensing will also be introduced.

PHA 1421, 1422

Biochemistry/Biotechnology I, II

1 U; 1 Lect.; 1st term

3 U; 2 Lect. 2 Prac.; 2nd term

Introduces students to the structure and function of chemical constituents of living systems; physico-chemical properties of buffer systems, amino acids, proteins, carbohydrates, lipids, nucleic acids, hormones and vitamins; study of membranes; enzymes and reaction kinetics; the major metabolic pathways; molecular biology and the regulation of gene expression. Modern biotechnological principles. Application of biotechnology to discover novel drugs and to design new therapeutic approaches. Case studies will be included to introduce the importance of pharmacogenetics.

PHA 1431, 1432

Anatomy/Physiology/Pathophysiology I, II

3 U each; 3 Lect. 0.25 Prac.; 1st, 2nd term

Provides a system-based review of the structure and function, normal as well as abnormal, of cells, organs and systems. Emphases will be placed on those structures/functions that affect drug actions, and those that are affected by common drugs.

PHA 1440

Microbiology

1 U; 1 Lect. 0.5 Tut.; 2nd term

Provides students with an introduction to fundamental microbiology and infectious diseases. Attention is focused on the clinical aspects of the main bacterial, fungal, viral and parasitic infections, basic modern biotechnology principles, application of biotechnology to discover novel drugs and therapeutic approaches. Case studies will be included to introduce the importance of pharmacogenetics.

PHA 2110

Medicinal Chemistry

3 U; 2 Lect. 0.5 Tut. 2 Prac.; 1st term

Introduces the principles of drug design and the development of new therapeutic agents from prototype compounds derived either from natural sources, or which are semi-synthetic or wholly synthetic. Structure-activity relationships (SAR) and quantitative SAR in drug design/development will be discussed in detail. Special topics will include pro-drugs, enzyme inhibitors and drug metabolism.

PHA 2130

Pharmaceutical Analysis

3 U; 2 Lect. 0.5 Tut. 2 Prac.; 2nd term

Examines the theory and application of a) analytical methods such as volumetry, gravimetry and immunochemistry; b) spectroscopic/spectrometric techniques such as atomic emission (AE) and atomic absorption (AA), infrared (IR), ultraviolet (UV), fluorimetry, mass and proton nuclear magnetic resonance (NMR); and c) separation methods such as paper chromatography, thin layer chromatography (TLC), high performance liquid chromatography (HPLC) and gas chromatographic (GC) for the analysis and structure elucidation of drugs.

PHA 2210

Dosage Form Science III

3 U; 1 Lect. 0.5 Tut. 2 Prac.; 1st term

Examines the formulation of medicines and how this influences bioavailability. Particular topics include powder technology, tablet and capsule manufacturing; sustained and controlled-release preparations; target drug delivery, other advanced drug delivery systems and basic concept of good manufacturing practice (GMP).

PHA 2220

Biopharmaceutics and Pharmacokinetics

2 U; 2 Lect. 2 Prac.; 2nd term

Provides a review of drug absorption, distribution, metabolism and excretion (ADME) in the human body. Factors which influence ADME such as physical/chemical properties of drugs, route of drug administration, pathophysiology organ function and genetic variation will also be discussed. The main emphasis of the course is on the mathematical description of the events which transpire following drug administration and how these may affect drug therapy.

PHA 2310

Pharmacy Practice I

3 U; 2 Lect. 0.5 Tut. 2 Prac.; 2nd term

Introduces the concept of drug use control; the role of the pharmacist in different dispensing and practice environments; interpretation and evaluation of different prescription types; observation of legal requirements in dispensing, record keeping and storage of drugs; patient counselling techniques; provision of drug information to health professionals; consideration of contemporary issues such as medication compliance and drug misadventures, including adverse drug events and medication errors.

PHA 2320

Pharmacy Law

2 U; 2 Lect. 1 Tut.; 1st term

Provides students with a working knowledge of laws and regulations affecting pharmacy practice in Hong Kong.

PHA 2411, 2412

PHA 3411, 3412

Pharmacology and Therapeutics I, II

Pharmacology and Therapeutics III, IV

3 U each; 2 Lect. 0.5 Tut. 0.5 Pract.; 2nd Year 1st, 2nd term

3 U each; 2 Lect. 1 Tut.; 3rd Year 1st, 2nd term

Provides students with an understanding of the principles of drug action including pharmacodynamics and pharmacokinetics. The pharmacotherapy of disorders associated with various organ systems are discussed in a modular system over four terms. In each module, the general pathology together with the clinical features, diagnostic and monitoring parameters of the therapy are to be introduced. The course will provide the students an understanding of mechanisms of action, pharmacological effects, clinical indications and relevant side effects of the most important drugs used. The modules of diseases/drugs covered include central nervous system, cardiovascular system, respiratory system, gastrointestinal system, immunological system, endocrine system, chemotherapy and others. Discuss Pharmacoeconomic analysis and its role in pharmacotherapy.

PHA 2510

Pharmacognosy I

3 U; 2 Lect. 0.5 Tut. 2 Prac.; 2nd term

Introduces students to the use of plants in pharmacy and medicine; plant taxonomy; botanical and chemical aspects of plant drugs; quality control of crude drugs; sources, chemistry and uses of some chemical substances from plants including alkaloids, glycosides, terpenoids, carbohydrates, fixed and volatile oils.

PHA 2710

Pharmaceutical Research Methods and Techniques

2 U; 2 Lect. 2 Prac.; 1st term

Provides students with an understanding of the principles and methods of pharmaceutical research in pharmaceutical sciences and pharmacy practice. The use of qualitative and quantitative research methods; research design; statistical analysis of different types of data; application of computer software for data analysis and application to research and practice will be included.

PHA 3310

Pharmacy Practice II

3 U; 2 Lect. 0.5 Tut. 2 Prac.; 1st term

Examines the professional and social interactions between pharmacists, doctors, patients and the general public; consideration of ethical principles and theories in relation to pharmacy practice; application of the pharmaceutical care process in the identification and resolution of drug related problems; differential recognition and prescribing of over-the-counter (OTC) products for common minor ailments; health promotion; patient education on contraceptives, smoking cessation, nutritional and home testing products; examination of the role of the pharmacist in combating drug abuse.

PHA 3510

Pharmacognosy II

3 U; 2 Lect. 0.5 Tut. 2 Prac.; 1st term

Introduces students to the discovery of new drugs from natural sources; particularly antidiabetic, anticancer, antibacterial, antiviral and antiprotozoal agents. The different types of alternative medicine including herbal medicine, traditional Chinese medicine, homoeopathy and aromatherapy. Crude drugs of current commercial interest such as St. John's Wort.

PHA 3611, 3612
 Clinical Clerkship/Project I, II
 3, 9 U; 3, 9 Prac.; 1st, 2nd term

This course consists of two components, namely pharmacy clerkship experience, and an assigned project based on either research or literature review in pharmaceutical sciences or pharmacy practice. A minimum of three weeks of clerkship is required for all students. Beyond that, the students have the choice of additional clerkship experience or research project according to individual student's preference.

The required clerkship is in the hospital, community and industrial settings. During clinical and community clerkships, the emphasis is on selected patient-focused pharmacy practice. Activities include ward rounding, communication with other healthcare professionals, provision of drug information to patients and other health care providers, participation in the choice, dosing and monitoring of drugs for individual patients to optimize efficacy, safety and cost-effectiveness. The research project can be in any disciplines in pharmaceutical sciences, e.g., medicinal chemistry, physical pharmacy, pharmacokinetics, pharmacology, pharmacognosy/pharmaceutical analysis, or pharmacy practice.

Study Scheme

1. Major Programme

Students are required to take and pass 64(63) units of required courses (including 12 units of Clinical Clerkship/Project I and II) and take 12(13) units of Major Elective/Prerequisite courses in which 5 units must be passed for graduation. In total, a minimum of 69(68) units of courses must be passed before graduation.

First Year of Attendance

PHA 1000, 1110, 1211, 1212, 1311, 1312, 1421[®], 1422[®], 1431[®], 1432[®], 1440

Second Year of Attendance

PHA 2110, 2130, 2210, 2220, 2310, 2320, 2411, 2412, 2510, 2710[®]

Third Year of Attendance

PHA 3310, 3411, 3412, 3510, 3611, 3612

[®] Major Elective/Prerequisite courses.

() Applicable to students admitted in 2001-02.

2. Faculty Language Requirement

English

Pharmacy Majors who have obtained Grade "E" in "Use of English" of HKALE* (AS Level) are required to complete one of the following courses in their first year of attendance.

ELT 1107 English Improvement Strategies for Listening and Speaking

ELT 1108 English Improvement Strategies for Reading and Writing

Chinese

Pharmacy Majors who have obtained Grade "E" in "Chinese Language and Culture" of HKALE* (AS Level) are required to complete CHI 1410 Chinese for Faculty of Medicine in their first year of attendance.

* Only applicable to students admitted on the strength of HKALE results. The HKALE results to be deemed necessary for the Faculty language requirement must be obtained in that particular sitting of HKALE which the University has used to assess the admission qualification of the student concerned.