REGULATIONS FOR THE DEGREE OF BACHELOR OF PHARMACY (BPharm)

(See also General Regulations)

BP1 Admission to the Degree

To be eligible for admission to the degree of Bachelor of Pharmacy, candidates shall

(a) comply with General Regulations;
(b) comply with the Regulations for First Degree Curricula; and
(c) satisfy all the requirements of the curriculum in accordance with the regulations that follow and the syllabuses of the degree.

BP2 Length of Study

The curriculum shall normally require six semesters of full-time study, spreading over three academic years.

BP3 Completion of Curriculum

To complete the curriculum, candidates shall

(a) satisfy the requirements prescribed in UG3 of the Regulations for First Degree Curricula; and
(b) complete satisfactorily not less than 180 credit-units of courses, in the manner specified in these regulations and the syllabuses.

BP4 Selection of Courses

(a) Candidates shall normally take not less than 24 and not more than 36 credits of courses in each semester, unless otherwise permitted or required by the Board of the Faculty.
(b) Candidates shall have to satisfactorily complete the prerequisite courses in order to enroll in succeeding courses, unless with exemption granted by the Board of the Faculty.
(c) Candidates shall select their courses in accordance with these regulations and the guidelines specified in the syllabuses.

BP5 Assessment and Grades

(a) Candidates shall be assessed for each of the courses which they have registered for, and assessment may be conducted in any one or any combination of the following manners: written examinations or tests, continuous assessment, laboratory work, project reports, or in any other manner as specified in the syllabuses.
(b) Grades shall be awarded in accordance with UG5 of the Regulations for the First Degree Curricula.
(c) Written examinations shall normally be held at the end of each semester unless otherwise specified in the syllabuses.

(d) Candidates who fail in any core course may be required by the Board of the Faculty to repeat the same course in a subsequent semester, and/or to be re-assessed at a time and in a manner specified by the Board. The grades for all attempts made by a candidate will be recorded in his/her transcript.

(e) Candidates shall not be permitted to repeat a course for which they have received a grade D or above for upgrading purposes.

BP6 Discontinuation

A candidate will normally be recommended for discontinuation of his/her studies if

(a) his/her semester GPA is unsatisfactory (<1.0) for any academic year or

(b) he/she has failed in a core or pharmacy elective course three times; or

(c) he/she passed less than 30 credits of courses for any academic year.

BP7 Absence from Examination

Candidates who are unable to be present at any examination of course because of illness or other special circumstances may apply for permission to present themselves for examination at some other time. Any such application shall be made in writing within two weeks of the first day of the candidates' absence from any examination.

BP8 Advanced Standing

(a) Advanced standing may be granted to candidates who have successfully completed a similar course at other universities or comparable institutions. The amount of advanced credits to be granted shall be determined by the Board of the Faculty, in accordance with the following principles:

(i) a minimum of two years of study at this University shall be required before the candidate is considered for the award of the degree; and

(ii) a minimum of 120 credits shall be gained in this University.

(b) Advanced credits granted to a candidate shall not be included in the calculation of his/her cumulative GPA.

BP9 Degree Classification

The degree of Bachelor of Pharmacy shall be awarded in five divisions:

First Class Honours
Second Class Honours Division One
Second Class Honours Division Two
Third Class Honours
Pass

SYLLABUSES FOR THE DEGREE OF BACHELOR OF PHARMACY

	Course	Credit	Semester
Year 1			
	Anatomy	6	1
	Biochemistry	6	1
	English for Pharmacy	3	1

Organic Chemistry	6	1
Pharmacy Practice I	6	1
Physiology and Pathophysiology I	6	2
Pharmaceutical Chemistry I	6	2
Clinical Pharmacy I	6	2
Pharmaceutics I	6	2
Pharmacology I	6	2
Broadening Course[1]	6	1 or 2
Information Technology[2]	0	1 or 2

Year 2

Clinical Biochemistry and Immunology	6	1
Pharmaceutics II	6	1
Pharmacology II	6	1
Physiology & Pathophysiology II	6	1
Clinical Microbiology	6	2
Clinical Pharmacy II	6	2
Pharmaceutical Chemistry II	6	2
Pharmacy Practice II	6	2
Complementary and Alternative Medicine	6	2
Chinese Language for BPharm students	3	1 or 2

Year 3

Clinical Pharmacy III	6	1
Pharmacology and Therapeutics	6	1
Toxicology and Drug Abuse	6	1
Disease Control and Pharmacoepidemiology	6	1
Pharmacy Practice III	6	2
Pharmaceutical Chemistry III	6	2
Pharmaceutics III	6	2
Clinical Pharmacy in Critical Care	6	2
Mini-Project	6	1 & 2
Any 2 Electives:		
Biopharmaceutical Discovery and Development	3	1 or 2
Cosmetic Science	3	1 or 2
Medical Genetics	3	1 or 2
Advanced Pharmacology	3	1 or 2
Herbal Medicines	3	1 or 2
Pharmacoeconomics and Healthcare Financing	3	1 or 2

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[1] Candidates are required to successfully complete the broadening courses in the first year of study, as indicated below:

(a) EITHER (i) a 3-unit course or a 6-unit IT-integrated course in Humanities and Social Sciences Studies; OR (ii) a 3-unit course or a 6-unit IT-integrated course in Science and Technology Studies; AND

(b) a 3-unit course or a 6-unit IT-integrated course in Culture and Value Studies.

Students may take common core curriculum courses to satisfy the UG3 requirements.

[2] Candidates are required to successfully complete either one of the following:

(a) a 6-unit IT-integrated course in Humanities and Social Sciences Studies, Science and Technology Studies, or Culture and Value Studies, under footnote (1)(a) or (b) above; OR

(b) obtain a pass in an information technology proficiency test; OR

(c) a 3-unit course in information technology.

Core Courses

Year 1

Anatomy (6 credits)

The course provides an understanding of the organization and functions of human body in relation to clinical practice. Introduction to human anatomy, cell structure, tissues, embryonic differentiation, epithelia, skeletal and articular structures, gastrointestinal system, cardiovascular system, respiratory system, urogenital system, nervous system, endocrine system. Assessment will be in the forms of continuous assessment and written examinations/tests.

Biochemistry (6 credits)

This course gives an understanding of the chemical and molecular aspects of biological processes, including the chemistry of biomolecules, enzymology, bioenergy, biochemical control mechanisms and molecular genetics. Introduction to cell biochemistry, cells replication, cell death, biochemistry of diseases, effects of drug therapy on metabolic biochemistry and cellular functions, biotechnology and its application in the development of biopharmaceuticals. Assessment will be in the forms of continuous assessment and written examinations/tests.

Organic Chemistry (6 credits)

This course provides essential information on the structures and their relation to the reactivity of organic molecules. Chemical nomenclature, molecular and chemical structure, chemical bonding, stereochemistry, acidity and basicity, electrophilic and nucleophilic reaction mechanisms, functional group chemistry. Assessment will be in the forms of continuous assessment and written examinations/tests.

Pharmacy Practice I (6 credits)

This course is designed to introduce the foundational concepts of pharmacy practice and the roles of pharmacists in healthcare system. The course also introduces the concept of good dispensing practice and provides dispensing practice of simple mixtures, liquid and solid dosage forms. Development of pharmacy, concept of pharmaceutical care, roles of pharmacists, legal aspects of dispensing prescriptions, basic dispensing technique. Assessment will be in the forms of continuous assessment and written examinations/tests.

Physiology & Pathophysiology I (6 credits)

This course aims to explain the normal functioning of human body and abnormal changes in disease states. Functional significance of cells, organs and systems; homeostasis, membranes, excitable tissues, body fluids, cardiovascular system, autonomic nervous system, renal system, gastrointestinal system, endocrine system. Assessment will be in the forms of continuous assessment including PBL tutorial performance, and written examinations/tests.

Pharmaceutical Chemistry I (6 credits)

This course provides an understanding on the thermodynamic interactions between atomic particles, simple and macro-molecules, which are important in drug formulation and compounding of medicines. Physical properties of gases, liquids and solids, basic science of thermodynamics, solubility, surface chemistry, rheology. Assessment will be in the forms of continuous assessment and written examinations/tests.

Clinical Pharmacy I (6 credits)

This clinically orientated course enables students to have an early exposure to clinical pharmacy through the mode of case-based, bed-side and PBL learning; as well as patient-care projects and site visits. Pharmacist's roles in patient care, pharmacy services in institutions; in-patient and out-patient dispensing system, patient counseling, compliance clinics, clinical/drug information. Assessment will be in the forms of continuous assessment including PBL tutorial performance and reports, and written examinations/tests.

Pharmaceutics I (6 credits)

This course provides an understanding of the physico-chemical properties, design, formulation, manufacture and evaluation of solid dosage forms of pharmaceuticals. Introduction to various dosage forms, routes of administration, solid dosage forms, powder technology, physical and chemical stability, formulation, control of drug release. Assessment will be in the forms of continuous assessment and written examinations/tests.

Pharmacology I (6 credits)

This course provides the necessary information on the interaction of drugs with different body systems, and the pharmacological basis in drug therapy. General principles in pharmacology, drug design and development, pharmacokinetics and pharmacodynamics, drug acting on autonomic nervous system, endocrine system, gastrointestinal system, renal system and cardiovascular system. Assessment will be in the forms of continuous assessment and written examinations/tests.

English for Pharmacy (3 credits)

This course aims to improve communication skill and understanding of the origins and formation of medical terms. It helps to develop and use strategies for dealing with the pronunciation of medical words, including the use of phonetic symbols, and to consolidate the pronunciation of essential medical terms. PBL discussion skills, oral presentation skills, medical terminology, pronunciation of medical terms and stress patterns. Assessment will be in the forms of continuous assessment including oral presentation, participation and performance in seminar discussion, and written examinations/tests.

Broadening Courses (6 credits)

Year 2

Pharmaceutical Chemistry II (6 credits)

The course covers theories and practicals on the structural determination of pharmaceuticals using various qualitative or quantitative analytical equipments. Ultraviolet/visible and infra-red spectrophotometry, nuclear magnetic resonance, mass spectrometry, chromatography, atomic absorption, extraction and separation methods, RT-PCR, Western blotting, ELISA, amino acid sequencing, pharmacopoeial standard, quality assurance. Assessment will be in the forms of continuous assessment and written examinations/tests.

Physiology and Pathophysiology II (6 credits)

This course provides information on the normal functioning of various body systems and the presentations in disease states. Physiology and pathophysiology of central nervous system, musculoskeletal system, haematology and immune systems, respiratory system, urogenital system and reproductive system; metabolic rate, body temperature regulation. Assessment will be in the forms of continuous assessment including PBL tutorial performance, and written examinations/tests.
Prerequisite: Physiology and Pathophysiology I

Clinical Biochemistry and Immunology (6 credits)

This course provides information on the changes in blood enzyme levels and biological indicators during disease conditions and the use of these parameters in clinical diagnosis. This course also provides an overview of human immune system. Pathophysiology leading to abnormal biochemical values, clinical manifestations, cancer markers, blood test, liver function test, kidney function test, transplantation immunology, pathology and pharmacotherapeutic intervention of immune diseases, vaccination. Assessment will be in the forms of continuous assessment including PBL tutorial performance, and written examinations/tests.
Prerequisite: Biochemistry

Clinical Microbiology (6 credits)

This course provides a brief introduction to microbiology, focusing on the clinical aspects of bacterial, fungal, viral and parasitic infections. Important pathogenic microorganisms, mechanisms of infection, use of antimicrobial agents, mechanisms of antimicrobial drug resistance, pharmaceutical aspects of microbiology, sterilization, aseptic techniques applicable to pharmacy practice, clean room design. Assessment will be in the forms of continuous assessment and written examinations/tests.

Pharmacology II (6 credits)

This course provides information on the mechanisms of drug used in the treatment of various disease conditions. Drugs acting on the central nervous system, musculoskeletal system, immune system, haematology system, respiratory system and reproductive system. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmacology I

Clinical Pharmacy II (6 credits)

This clinically orientated course examines pathological changes in different organ systems, and their clinical managements. Case-based, bed-side and PBL studies of clinical conditions and treatments of diseases in autonomic and central nervous system, gastrointestinal system, respiratory system, renal system, cardiovascular system, musculoskeletal system, haematology system, immune system, endocrine system, urogenital system and reproductive system. Assessment will be in the forms of continuous assessment including PBL tutorial performance, and written examinations/tests.
Prerequisite: Clinical Pharmacy I

Pharmaceutics II (6 credits)

This course provides an understanding of the formulation science and manufacture of liquid and special dosage forms of pharmaceuticals. Formulation of liquid dosage forms, liquid-in-liquid systems, emulsification; solid-liquid dispersions, foams, aerosols, protein and peptide drugs, rectal products, transdermal drug delivery system, target-directed drugs and novel drug delivery technology. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmaceutics I

Pharmacy Practice II (6 credits)

This course spells out various laws and codes of practice in the regulation of pharmaceuticals and the pharmacy practice in Hong Kong. The course also trains students in the principles and procedures of sterilization and aseptic techniques. Pharmacy and Poisons Ordinances and Regulations, Antibiotics Ordinance, Dangerous Drugs Ordinance, Undesirable Medical Advertisements Ordinance, Chinese Medicine Ordinance, aseptic technique in the preparation of eye drops, injections, infusions, total parenteral nutrition, cytotoxic drug reconstitution. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmacy Practice I

Complementary and Alternative Medicines (6 credits)

This course broadens the horizon of students in the field of, and provides them with background knowledge of, herbal, complementary and alternative medicines. Sources, processing, efficacy and clinical usage of herbal medicines, nutraceuticals, vitamins and minerals, acupuncture, homeopathy and aromatherapy. Assessment will be in the forms of continuous assessment and written examinations/tests.

Chinese Language for BPharm students (3 credits)

The course introduces students to the formal use of Chinese in practical writing and techniques in communication. Chinese characters, introduction to Chinese language, Chinese medical and drug/chemical terminology, practical Chinese writing, Chinese for special purposes, presentation and communication techniques. Assessment will be in the forms of continuous assessment including oral presentation, participation and performance in seminar discussion, and written examinations/tests.

Year 3

Clinical Pharmacy III (6 credits)

This course discusses the role of clinical pharmacists in pharmaceutical care, and enables students to acquire and apply knowledge in patient care and to develop the skills needed to promote the effective use of medicines in hospitals and in primary care. Factors that influence treatment and delivery of pharmaceutical care, communication and problem-solving skills, sources of clinical information, monitoring and assessing drug therapy, pharmaceutical care and management of diseases, concept of pharmacoeconomics and healthcare financing. Assessment will be in the forms of continuous assessment including PBL tutorial performance and reports, and written examinations/tests.
Prerequisite: Clinical Pharmacy II

Pharmacology and Therapeutics (6 credits)

This course presents information on the use of drugs in the extreme of age, as well as drugs for local application. Neonatal, pediatric and geriatric pharmacology; ear, eye and nose medications; drugs used in dermatology, chemotherapy, radiopharmaceuticals, critical care, women's health, nutrition. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmacology II

Toxicology and Drug Abuse (6 credits)

This course provides students with an understanding of the toxicological problems encountered in clinical practice, drug development and medical research. Introduction to the biotransformation and toxicity of drugs, carcinogenicity, drug addiction and withdrawal syndrome; physiological, pharmacological and sociological consequences of drug abuse; treatment regimens of drug abuse. Assessment will be in the forms of continuous assessment and written examinations/tests.

Disease Control and Pharmacoepidemiology (6 credits)

The course introduces the concept of epidemiology and its application in diseases control. This course also enables students to understand issues surrounding the risks and benefits of drug use in humans, including the cause, manifestations and consequences of adverse drug effects, the manner in which these are detected and monitored. Medical surveillance and outbreaks of infectious disease, risk assessment, epidemiologic perspective for health care management, epidemiology and public policy, preventive care in primary care management with regard to chronic diseases. Assessment will be in the forms of continuous assessment including PBL tutorial performance and reports, and written examinations/tests.

Pharmacy Practice III (6 credits)

The course discusses the pharmacist's role in the assessment of minor medical problems, health screening and patient education. The course emphasizes on building up the communication skills, marketing skills, managerial skills and business sense of students in the pharmacy practice. This course also introduces the principles, design and statistical analytic methods used in research and clinical trials. Response to symptoms, communication skills, social pharmacy, entrepreneurship, experimental design and interpretation in survey and clinical trials. Assessment will be in the forms of continuous assessment including tutorial performance and reports, and written examinations/tests.
Prerequisite: Pharmacy Practice II

Pharmaceutical Chemistry III (6 credits)

This course introduces how physico-chemical property of drugs is related to the interactions of drugs with their targets. Chemistry and biochemistry in relation to the development and design of drugs, structure-activity relationship, molecular modeling, drug metabolism, bioactivation and inactivation. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmaceutical Chemistry I and II

Pharmaceutics III (6 credits)

This course provides students with an understanding of quality assurance in pharmaceutical industry. Applied pharmacokinetics, bioavailability, bioequivalency, quality control of pharmaceutical products, design of pharmaceutical plant, optimization of pharmaceutical processes, workflow in pharmaceutical industry, Good Manufacturing Practice, regulatory affairs. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmaceutics II

Clinical Pharmacy in Critical Care (6 credits)

This clinically orientated course provides students with the chance in understanding the daily running of A & E/ICU and the classes of drug most commonly used in these departments. The roles of pharmacist within these health care teams are elaborated. Drugs and facilities commonly used in A & E and ICU; drug interactions, medication incidences, complications in drug use. Assessment will be in the forms of continuous assessment including PBL tutorial performance and reports, and written examinations/tests.
Prerequisite: Clinical Pharmacy II

Mini-Project (6 credits)

Students will be expected to complete a project under the supervision of staff in the Faculty. The area of project may include pharmaceutics, pharmacy practice, clinical pharmacy, pharmacology, and other areas of interest between supervisors and students. Assessment is wholly by coursework in the form of a project report.

Elective Courses

Biopharmaceutical Discovery and Development (3 credits)

The course trains students in the theory and practical skills needed for both discovery and commercial development of biopharmaceuticals. Existing, novel and potential therapeutic targets; structure-based drug discovery, development of high-throughput screening assay, impact of structural proteomics on drug discovery and development, application of bioinformatics. Assessment will be in the forms of continuous assessment and written examinations/tests.

Cosmetic Science (3 credits)

This course provides scientific information on the formulation of different cosmetic preparations, and examines their uses, principles of action, safety and efficacy. Anatomy and physiology of skin, hair and nails; formulation of cosmetic products, physico-chemical tests of raw materials and finished products, quality control, safety and stability of finished products, assessment of efficacy. Assessment will be in the forms of continuous assessment including PBL tutorial performance and reports, and written examinations/tests.

Medical Genetics (3 credits)

This course introduces the concepts in pharmacogenomics and pharmacogenetics such that these skills can be applied in therapy optimization. Human genetics and genomics, gene polymorphism affecting drug response, pharmacogenetics, pharmacoproteomics, genetic diseases, genetic engineering, gene therapy. Assessment will be in the forms of continuous assessment and written examinations/tests.

Advanced Pharmacology (3 credits)

This advanced course in pharmacology focuses on the study of drug interactions, receptor polymorphisms. More in-depth discussions on the mechanisms of drug action in molecular level are conducted. Drug/herb/food/micronutrient interactions, receptor cloning, receptor regulation, gene

transcription, technologies for study of drug:protein and protein:protein interactions, receptor polymorphisms, molecular pharmacology and novel drug delivery technologies. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Pharmacology I and II

Herbal Medicines (3 credits)

This course further investigates the scientific basis in the use of herbal medicines and the opportunity in combined use of Chinese herbal medicines with western medicines. Pharmacology of herbal medicines, herbal medicines for the treatment of cancer, diabetes, dermatological problems, hypertension, hyperlipidemia, hepatitis, depression, infertility, menstrual disorders and respiratory diseases; principles of forming a prescription, dosage forms, methods of decoction and administration. Assessment will be in the forms of continuous assessment and written examinations/tests.
Prerequisite: Complementary and Alternative Medicines

Pharmacoeconomics and Healthcare Financing (3 credits)

The course is designed to develop the knowledge and skills necessary for evaluation of the economic, clinical and humanistic outcomes of medical treatment. Application of pharmacoeconomics in optimal healthcare resource allocation, appropriateness and quality of pharmaceutical care, respective roles of healthcare professionals in patient care, decision making in pharmaceutical care practice sites, public policies, influence of healthcare-related organizations. Assessment will be in the forms of continuous assessment including PBL tutorial performance and reports, and written examinations/tests.