

Macao Polytechnic Institute
School of Health Sciences and Sports
Bachelor of Science in Biomedical Studies
(Pharmacy Technology)

Module Outline

Academic Year 2021 / 2022 **Semester** 1 & 2

Learning Module	Internship I & II		Class Code	BSIP4101 BSIP4102
Pre-requisite(s)	BSPA2102-Pharmaceutical Analysis, BSPT2101-Pharmaceutics, BSPL3101-Pharmacy Laws, BSPP3101-Pharmacy Practice II, BSPP3102-Pharmacy Practice III, BSCP3101-Clinical Pharmacy I, BSCP3102-Clinical Pharmacy II.			
Medium of Instruction	Chinese / English		Credit	5 + 5
Lecture Hours	0 hrs 0 hrs	Lab/Practice Hours	500 hrs 500 hrs	Total Hours 500 hrs 500 hrs
Instructor	Kenny Kuok		E-mail	cfkuok@ipm.edu.mo
Office	Room M708, Meng Tak Building, Main Campus		Telephone	85993437

Description

This section of the learning module is comprised of Internship I and Internship II. Students will acquire practical knowledge and hands-on experience in different areas of pharmacy practice. The total number of hours in Internship I (BSIP 4101) and Internship II (BSIP 4102) is 1000 hours in total. Internship I (500 hours) and Internship II (500 hours) will fulfill half of the requirements specified in the following 1000 hours rotation, including hospital pharmacy (384 hours), health center pharmacy (192 hours), community pharmacy (192 hours), pharmaceutical affair department of government (128 hours), pharmaceutical and health products industries (96 hours), and pharmaceutical analysis department (32 hours). Students are trained under instruction of internship supervisors.

Learning Outcomes

The aim of the internship training is to enhance students' confidence, personal relationships and technical skills. At last, the main target is to enable students to work efficiently and safely in pharmacy professionals and apply necessary measures for safe practice.

Content

The internship training covers the following areas: hospital pharmacy, community pharmacy, pharmaceuticals, and laws and regulations in pharmacy industries. Students are assigned to various departments such as: hospital pharmacies, community pharmacies, pharmaceutical industries and Drugs regulatory department.

Students are assigned to various departments such as the pharmacies in hospitals (government and private), public health centers and laboratories in government institutes and private companies. Students are trained under instruction internship tutors from the training institutes.

1. Hospital Pharmacy

Duration: 384 hours

1.1 Inpatient department

- 1.1.1 Working flow of inpatient department.
- 1.1.2 Screening of prescriptions: Common medical abbreviations, dose confirmation, pharmaceutical calculation, labeling requirements, etc.
- 1.1.3 Get familiar with common drugs used in the hospital setting (e.g., generic names, brand names, storage environment).
- 1.1.4 Get familiar with pharmacy reference books and searching methods of medical information.
- 1.1.5 Collection of new drug information.
- 1.1.6 Characteristics of Floor stock system.
- 1.1.7 Distribution & electronic Unit Dose dispensing system.
- 1.1.8 Characteristics of Top-Up system.
- 1.1.9 Procurement and stock management.
- 1.1.10 Methods for the prevention of dispensing errors.
- 1.1.11 Dispensing of cytotoxic drugs.
- 1.1.12 Dispensing of controlled substances.
- 1.1.13 Procurement, storage and distribution of vaccines.
- 1.1.14 Work flow of drug distribution for health Centers.
- 1.1.15 Therapeutics Drug monitoring.

1.2 Outpatient department

- 1.2.1 Work flow of outpatient department.
- 1.2.2 Screening of prescriptions: Common medical abbreviations, pharmaceutical calculation, labeling requirements.
- 1.2.3 Procedures & precautions of drug dispensing to patients.

- 1.2.4 Drug repackaging and labeling requirements.
- 1.2.5 Patient counseling service.
- 1.2.6 Methods for the prevention of dispensing errors.
- 1.2.7 Electronic outpatient dispensing system.
- 1.2.8 Drug sample dispensing.
- 1.3 Extemporaneous preparation room
 - 1.3.1 Work flow of reparation.
 - 1.3.2 Use of the equipments & instruments in pharmaceutical production and inspection.
 - 1.3.3 Requirements on the sterility of the extemporaneous preparations.
 - 1.3.4 Procedures on the preparation of different dosage forms.
 - 1.3.5 Pharmaceutical calculation.
 - 1.3.6 Preparation of disinfectants.

2. Pharmacy of Public Health Center

Duration: 192 hours

- 2.1 Dispensing service in a Health Center
 - 2.1.1 Introduction to pharmacy practice settings in Macao, mission of dispensing service, work flow of a dispensary, code of ethics and confidentiality.
- 2.2 Drug names
 - 2.2.1 Drug names terminology, brand names, generic names, identification of commonly used medicines.
- 2.3 Understanding of prescription
 - 2.3.1 Common medical abbreviations, labeling requirements, pharmaceutical calculation.
- 2.4 Dispensing Practices
 - 2.4.1 Dispensary design and equipment, storage environment, dispensing procedure, basic compounding techniques, re-packaging, procurement, inventory control, documentation, quality assurance, medication incident, preventive measures.
- 2.5 Patient instruction
 - 2.5.1 Verbal instructions to patients on general use of Drug products, specific drug classes, patient compliance and follow up.
- 2.6 Drug information
 - 2.6.1 Basic references, introduction to searching for drug information.

3. Community Pharmacy

Duration: 192 hours

- 3.1 Pharmacy technician responsibilities, current knowledge of Pharmacy rules and professional attitude.
- 3.2 Understanding of outpatient prescription.
- 3.3 Dispensing Practices.
- 3.4 Medicine label.
- 3.5 Patient instruction.
- 3.6 Dispensing errors prevention.

- 3.7 Basic pharmacy operation mode.
- 3.8 Sale skills in community pharmacy.

4. Department of Pharmaceutical Affairs, Department of Health Duration: 128 hours

4.1 Division of Inspection and Licensing

- 4.1.1 Introductions of the procedures to issue a license to pharmaceutical premises (Pharmacy, “Drogaria”, Chinese Pharmacy, “FIRMA”), and arrangements for observational on-site technical visits as part of the licensing procedures.
- 4.1.2 Introductions of the procedures to issue a license to pharmaceutical professionals.
- 4.1.3 Introductions and arrangements of observational on-site inspections to importing medicines to Macao.
- 4.1.4 Introductions of the contents and procedures to inspect pharmaceutical premises (Pharmacy, “Drogaria”, Chinese Pharmacy, “FIRMA”), and arrangements of observational on-site inspections to those pharmaceutical premises.
- 4.1.5 Introductions to the laws regarding pharmaceutical activities.
- 4.1.6 Common infringement case studies regarding pharmaceutical activity and non-pharmaceutical activity premises.
- 4.1.7 Introductions to the basic concepts of medicines manufacturing.
- 4.1.8 Introductions to the technical requirements to the medicine manufacturers, and arrangements of observational on-site inspections to those manufacturers.
- 4.1.9 Introductions to the basic concepts and main contents of Good Manufacturing Practice (GMP).

4.2 Division of Pharmacovigilance and Pharmacoeconomics

- 4.2.1 Overview of drug regulation and administration.
- 4.2.2 Introductions of drug registration.
- 4.2.3 Introductions of drug evaluation.
- 4.2.4 Introductions of drug forensic classification.
- 4.2.5 Introductions of anatomical therapeutic chemical (ATC) classification.
- 4.2.6 Regulation of Chinese medicines and traditional medicines.
- 4.2.7 Drug quality monitoring.
- 4.2.8 Adverse drug reaction monitoring.
- 4.2.9 Regulation of drug advertising.
- 4.2.10 Introductions of convention on narcotic drugs and psychotropic substances under international control.
- 4.2.11 Administration of narcotic drugs and psychotropic substances under local control.

5. Pharmaceutical and Health Products Industries Duration: 72 hours

- 5.1 Pharmaceutical production procedures.
- 5.2 Understand the operations in industrial pharmacy and pharmaceutical business.

- 5.3 Deal with pharmaceutical equipments and apparatus used in the pharmaceutical production.
- 5.4 Know the production techniques and the quality control of the different pharmaceutical preparations in the industry.
- 5.5 Understand the details and meanings of Good Manufacturing Practice and Good Distribution Practice in real practice.

6. Public Health Laboratory

Duration: 32 hours

- 6.1 General laboratory education.
- 6.2 Sample reception, collection and treatment.
- 6.3 Drugs analysis.
- 6.4 Pharmacopeia and analysis standards.

Teaching Method

Clinical tutors generally introduce working areas, procedure, management, safety and rules of departments to students.

Background knowledge education:

Clinical tutors will illustrate the principle of related techniques or instruments. On the other hand, they also provide related information or references.

Operational education:

In order to make students can carry out their task independently. Clinical tutors will arrange students carry out the dispensing or pharmacy practice processes by themselves and correct their mistakes.

Attendance

Student must full fill over 90% attendance requirement.

Assessment

By the end of each section, students will be graded according to the assessment form (see attachment) by clinical tutors. They will be graded with their: attendance, manner, Tidiness, expression, operation skills and reports. Their marks have to be confirmed by the school teacher.

Operation skills assessment:

The tutors will provide specimens to students, ask the students to carry out dispensing processes. The assessment will make according to correctness, safety, and technical skills.

Written report assessment: (Mention principle of tests or instruments)

Tidiness (according to the format provided)

Contents and title agreement

Correctness of contents,

Sufficiency and adequacy,

Report structure,

Sentence fluency,

Expression,

Reference sufficiency,

Discussion and Conclusion

The final mark of the subject is obtained:

1. Time averaging of all assessment forms from the training sites within the semester. This will be 90% of the total.
2. School supervisor will give 10% according to the student behaviors (Attendance 2.5%, Assignment submission 2.5% or other behavior 5.0%).

Note: There will be no re-sit examination for this subject

Teaching Material(s)

Reference(s)

- Chinese Pharmacopeia
- British Pharmacopeia
- US Pharmacopeia
- Related textbooks to pharmaceutical sciences



澳門理工學院 Macao Polytechnic Institute

健康科學及體育高等學校

School of Health Sciences and Sports

生物醫學技術理學士課程

Bachelor of Science in Biomedical Technology

藥劑技術 Pharmacy Technology

實習評核表 Internship Assessment Form

實習部門(Department) : _____

學生姓名(Student name) : _____

	項目	比例	評分	備註
1	出席率及守時 Attendance	10%		
2	儀表及整潔 Appearance & tidy	10%		
3	工作態度及人際關係 Attitude	10%		
4	服從性 Obedience	15%		
5	表達能力 Expression	5%		
6	操作技巧 Operation Skills	25%		
7	考試、報告或演示 Report or Exam	25%		
總分 Total		100%		
評語 Comment				

*若有需要時 6, 7 項可合併計算 (Item 6 and 7 can be combined if necessary)

*若給予「不予通過」，請於評語內說明原因 (Please explain the reasons at comment if giving a "Failed" grade)

導師(Instructor): _____ 日期(Date): _____