澳門理工大學
Universidade Politécnica de Macau
Macao Polytechnic University

FACULTY OF HEALTH SCIENCES AND SPORTS

BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY (PHARMACY TECHNOLOGY)

LEARNING MODULE OUTLINE

Academic Year	2024/2025	Semester	1
Module Code	BSCP3101		
Learning Module	Clinical Pharmacy I (臨床藥學 I)		
Pre-requisite(s)	BSPY2101, BSPY2102		
Medium of Instruction	English / Chinese		
Credits	4	Contact Hours	60
Instructor	Lao Cheng Kin, Chatmann	Email	cklao@mpu.edu.mo
Office	Room M730, 7/F, Meng Tak Building	Office Phone	8599-3473

MODULE DESCRIPTION

This 60-hour module is the first in a series of modules that train students in pharmacotherapy. The module systematically introduces students to the clinical applications of drugs on various disorders. The content covers the pathophysiology, clinical features, diagnostic criteria and monitoring parameters of common diseases. Emphasis will be placed on elucidating the mechanisms of action, pharmacological effects, clinical indications, pharmacokinetic profiles, potential interactions and relevant adverse effects of the drugs used for the corresponding diseases.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

On completion of this learning module, students will be able to:

M1.	Discuss the common risk factors and pathophysiology of the presented diseases.
M2.	Identify patient factors that may influence drug selection for treating a given disease state.
M3.	Recommend appropriate drug regimens for a specific disease state.
M4.	Discuss potential drug interactions, adverse drug reactions, pharmacogenetic testing and adherence issues associated with certain drug therapies.
M5.	Describe the monitoring parameters and the key counselling points of certain drug therapies.

These ILOs aims to enable students to attain the following Programme Intended Learning Outcomes (PILOs):

PILOs	M1	M2	M3	M4	M5
P1. To demonstrate understanding of a range of subjects, fields, principles and approaches relevant to pharmacy technology	✓	✓	✓	✓	✓
P2. To demonstrate understanding of theories, analytical approaches and practices that underpin pharmacy operations and management	✓	✓	✓	✓	✓
P3. To demonstrate understanding of major trends and issues related to pharmacy technology			✓	✓	✓
P4. To apply professional knowledge and skills to analyse, interpret and solve problems, challenges and risks in pharmacy practice		✓	✓	✓	✓
P5. To critically appraise and interpret scientific and clinical literature and apply evidence-based practice			✓	✓	✓
P6. To acquire and apply research skills in pharmacy technology					
P7. To demonstrate effective communication and teamwork skills					✓
P8. To maintain professional and ethical standards in pharmacy practice and research		✓	✓	✓	✓

MODULE SCHEDULE, COVERAGE AND STUDY LOAD

Week	Content Coverage	Contact Hours
1	- Introduction to clinical pharmacy (3 hours) - Thrombosis: Focus on venous thromboembolism (VTE) (3 hours)	6
2	- Thrombosis: Focus on venous thromboembolism (VTE) (cont.) (3 hours) - Dyslipidemia (3 hours)	6
3	- Dyslipidemia (cont.) (2 hours) - Hypertension (2 hours)	4
4	- Hypertension (cont.) (2 hours)	2
5	- Hypertension (cont.) (Hypertensive crisis – active learning) (1 hour) - Diabetes mellitus (3 hours)	4
6	- Diabetes mellitus (cont.) (2 hours) - Coronary artery diseases – Part 1 (2 hours)	4
7	- **Case study session I (3 hours)** - Coronary artery diseases – Part 2 (1 hour)	4
8	- Coronary artery diseases – Part 2 (cont.) (3 hours) - Osteoporosis (1 hour)	4
9	- **Midterm test (2 hours)** - Osteoporosis (cont.) (2 hours)	4
10	- Osteoarthritis (3 hours) - Rheumatoid arthritis (1 hour)	4
11	- Rheumatoid arthritis (cont.) (2 hours) - Asthma (2 hours)	4
12	- Asthma (cont.) (2.5 hours) - Chronic obstructive pulmonary disease (active learning) (0.5 hour) - **Case study session II (1 hour)**	4
13	- **Group presentation (4 hours)**	4
14	- **Group presentation (4 hours)**	4
15	**- Final exam (2 hours)**	2

Remark: The dates and time of community service will be confirmed and announced in class.

TEACHING AND LEARNING ACTIVITIES

In this learning module, students will work towards attaining the ILOs through the following teaching and learning activities:

Teaching and Learning Activities	M1	M2	M3	M4	M5
T1. Interactive lectures	✓	✓	✓	✓	✓
T2. Case studies	✓	✓	✓	✓	✓
T3. Group discussion and presentations	✓	✓	✓	✓	✓
T4. Active learning and supplementary reading	✓	✓	✓	✓	✓
T5. Community service (To be confirmed)	✓	✓	✓	✓	✓

ATTENDANCE

Attendance requirements are governed by the Academic Regulations Governing Bachelor's Degree Programmes of the Macao Polytechnic University. Students who do not meet the attendance requirements for the learning module shall be awarded an 'F' grade.

ASSESSMENT

In this learning module, students are required to complete the following assessment activities:

Assessment Activities	Weighting (%)	ILOs to be Assessed
A1. Case study sessions (Note: No make-up sessions will be arranged.)	6	M1-M5
A2. Group presentation +/- community services (Note: Attendance at community service(s) and the related training is mandatory. Absence from community service(s) or the related training will result in zero point in this assessment activity (A2).)	19	M1-M5
A3. Midterm test	35	M1-M5
A4. Final exam (comprehensive)	40	M1-M5

This learning module is graded on a 100 point scale, with 100 being the highest possible score and 50 being the passing score.

Any students scoring less than 35% of the total mark in the final examination will be given an "F" grade for the module even if the overall grade is 50% or higher.

The assessment will be conducted following the University's Assessment Strategy (see www.mpu.edu.mo/teaching_learning/en/assessment_strategy.php). Passing this learning module indicates that students will have attained the ILOs of this learning module and thus acquired its credits.

MARKING SCHEME

Assessment Activities	Assessment Criteria	Mark Ranges				
		88-100	73-87	58-72	50-57	<50
A1. Case study sessions (Total: two case study sessions)	-Demonstrate the understanding of the subjects and analytical skills covered in class and supplementary reading, and show active learning attitudes. -Actively participate in the class discussion of the cases.	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels
A2. Group presentation +/- community service(s)	-Demonstrate comprehensive understanding of the topic(s). -Organize the presentation materials in a professional manner and communicate the information effectively with the target audience. -Demonstrate good teamwork. -Participate in the community service(s) on time and in a professional manner. -The detailed criteria for assessment will be announced in class.	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels
A3. Midterm test	-Demonstrate the ability to identify, discuss and apply appropriate concepts, analytical skills and other techniques related to the topics.	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels
A4. Final exam (comprehensive)	-Demonstrate the ability to identify, discuss and apply appropriate concepts, analytical skills and other techniques related to the topics.	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels

REQUIRED READINGS

- DiPiro JT, Yee GC, Haines ST, et al. *Dipiro's Pharmacotherapy: a pathophysiologic approach.* 12th ed. New York: McGraw-Hill Medical; 2023. (Available at the *AccessPharmacy* database in the MPU Library website.)

REFERENCES

- Zeind CS, Carvalho MG, Cheng JW, et al. *Applied therapeutics: the clinical use of drugs.* 12th ed. Philadelphia: Lippincott Williams & Wilkins; 2023.
- Lexicomp. *Adult drug information handbook: a clinically relevant resource for all healthcare professionals.* 32nd ed. Lexi-Comp, Inc.; 2024.
- Joint Formulary Committee. *British National Formulary 87*. Pharmaceutical Press; 2024.
- Gilbert DN, Chambers HF, Saag MS, et al. *The Sanford guide to antimicrobial therapy 2024.* Sperryville: Antimicrobial Therapy; 2024.
- Research articles and guidelines.

STUDENT FEEDBACK

At the end of every semester, students are invited to provide feedback on the learning module and the teaching arrangement through questionnaires. Your feedback is valuable for instructors to enhance the module and its delivery for future students. The instructor and programme coordinators will consider all feedback and respond with actions formally in the annual programme review.

ACADEMIC INTEGRITY

The Macao Polytechnic University requires students to have full commitment to academic integrity when engaging in research and academic activities. Violations of academic integrity, which include but are not limited to plagiarism, collusion, fabrication or falsification, repeated use of assignments and cheating in examinations, are considered as serious academic offenses and may lead to disciplinary actions. Students should read the relevant regulations and guidelines in the Student Handbook which is distributed upon the admission into the University, a copy of which can also be found at www.mpu.edu.mo/student_handbook/.

TIMETABLE

Session	Date	Time	Topic
1	27/08/2024	10:00-13:00	Introduction to clinical pharmacy
2	28/08/2024	10:00-13:00	Thrombosis I
3	03/09/2024	10:00-13:00	Thrombosis II
4	04/09/2024	10:00-13:00	Dyslipidemia I
5	10/09/2024	11:00-13:00	Dyslipidemia II
6	11/09/2024	11:00-13:00	Hypertension I
7	17/09/2024	11:00-13:00	Hypertension II
8	24/09/2024	11:00-13:00	Hypertension III (hypertensive crisis – active learning) Diabetes mellitus I
9	25/09/2024	11:00-13:00	Diabetes mellitus II
10	08/10/2024	11:00-13:00	Diabetes mellitus III
11	09/10/2024	11:00-13:00	Coronary artery diseases – Part 1
12	**15/10/2024**	**11:00-13:00**	**Case study session I – Part 1**
13	**16/10/2024**	**11:00-13:00**	**Case study session I – Part 2** Coronary artery diseases – Part 2 (I)
14	22/10/2024	11:00-13:00	Coronary artery diseases – Part 2 (II)
15	23/10/2024	11:00-13:00	Coronary artery diseases – Part 2 (III) Osteoporosis I
16	**29/10/2024**	**11:00-13:00**	**Midterm test**
17	30/10/2024	11:00-13:00	Osteoporosis II
18	05/11/2024	11:00-13:00	Osteoarthritis I
19	06/11/2024	11:00-13:00	Osteoarthritis II Rheumatoid arthritis I
20	12/11/2024	11:00-13:00	Rheumatoid arthritis II
21	13/11/2024	11:00-13:00	Asthma I
22	19/11/2024	11:00-13:00	Asthma II
23	**20/11/2024**	**11:00-13:00**	Asthma III Chronic obstructive pulmonary disease (active learning) **Case study session II**
24	**26/11/2024**	**11:00-13:00**	**Group presentation**
25	**27/11/2024**	**11:00-13:00**	**Group presentation**
26	**03/12/2024**	**11:00-13:00**	**Group presentation**
27	**04/12/2024**	**11:00-13:00**	**Group presentation**
28	**16/12/2024**	**14:30-16:30**	**Final exam**

Remark: The dates and time of community service will be confirmed and announced in class.