



FACULTY OF HEALTH SCIENCES AND SPORTS
BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY (PHARMACY TECHNOLOGY)
LEARNING MODULE OUTLINE

Academic Year	2023/2024	Semester	2
Module Code	BSCP3102		
Learning Module	Clinical Pharmacy II (臨床藥學 II)		
Pre-requisite(s)	BSPY2101, BSPY2102		
Medium of Instruction	English / Chinese		
Credits	4	Contact Hours	60
Instructor	Lao Cheng Kin, Chatmann Cremilda Lai	Email	Chatmann: cklao@mpu.edu.mo Cremilda: t1748@mpu.edu.mo
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MODULE DESCRIPTION

This 60-hour module is the second in a series of modules that train students in clinical pharmacy. The module systematically introduces clinical applications of drugs on various disorders. The pathophysiology, clinical features, diagnostic and monitoring parameters of common diseases will be focused. Emphasis will also be placed on the mechanisms of action, pharmacological effects, clinical indications, pharmacokinetics, 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

CREMILDA'S PART:

	Content Coverage	Contact Hours
1	Gastrointestinal disorders (5 hours)	5
2	Viral hepatitis (3 hours)	3
3	Urinary tract infections (2 hours)	2
4	Respiratory tract infections (4 hours)	4
5	Fungal infections (2 hours)	2
6	Cancer treatment, chemotherapy and supportive care (2 hours)	2
7	Anxiety disorders and sleep-wake disorders (4 hours)	4
8	Case study I (3 hours)	3
9	Midterm test (2 hours) - Comprehensive	2
10	Group presentation +/- community service (8 hours)	8

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



CHATMANN'S PART:

	Content Coverage	Contact Hours
1	Overview of antibiotic use (5 hours)	5
2	Depression (4.5 hours) Alzheimer disease (active learning assignment)	4.5
3	Schizophrenia (5 hours)	5
4	Bipolar disorder (2.5 hours);	2.5
5	HIV infection (4 hours)	4
6	Case study II (2 hours)	2
7	Final exam (2 hours) – Comprehensive	2

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 (<u>Note</u> : No make-up sessions will be arranged.)	6	M1-M5
A2. Group presentation +/- community services (<u>Note</u> : 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	-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.	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels



	-Participate in the community service(s) on time and in a professional manner. -The detailed criteria for assessment will be announced in class.					
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.; 2023.
- Joint Formulary Committee. *British National Formulary 86*. Pharmaceutical Press; 2023.
- Gilbert DN, Chambers HF, Saag MS, et al. *The Sanford guide to antimicrobial therapy 2023*. Sperryville: Antimicrobial Therapy; 2023.
- 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.



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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/.