

MASTER'S DEGREE TRAINING PROGRAM

Application-Oriented Program

Major: *Master's Degree Program in Pharmacology and Clinical Pharmacy*

Code: 8720205

*(Issued together with Decision No. /QĐ-ĐHNCT dated of
The Rector of Nam Can Tho University)*

1. GENERAL INFORMATION

1.1. Name of educational institution: Nam Can Tho University

1.2. Name of the diploma:

- **Vietnamese:** Thạc sĩ Dược lý và Dược lâm sàng

- **English:** The degree of master of Pharmacology and Clinical Pharmacy

1.3. Name of the program:

- **Vietnamese:** Chương trình đào tạo trình độ thạc sĩ ngành Dược lý và Dược lâm sàng
(định hướng ứng dụng)

- **English:** Master's Program of Pharmacology and Clinical Pharmacy (Application orientation)

1.4. Training program code: 8720205

1.5. Standard training time: 02 years

1.6. Training method: Credit

1.7. Training organization form: Direct.

1.8. Time to design or adjust training program : December 2023

1.9. Management unit: Faculty of Pharmacy – Nam Can Tho University

2. INPUT STANDARDS

2.1. Suitable majors without additional knowledge: Pharmacist

2.2. Suitable majors for additional knowledge

Students holding a Bachelor's degree in Pharmaceutical Chemistry or a Doctor of Medicine (General Practitioner)

2.3. General requirements:

- Graduated or eligible for graduation from a university program (or an equivalent or higher qualification) in a relevant field. For candidates graduating from other disciplines who are required to undertake additional coursework, they must have an official decision recognizing the completion of such supplementary knowledge..

- Possess a foreign language proficiency level of B1 (Level 3/6) according to the Vietnamese 6-level Foreign Language Proficiency Framework, or hold a certificate or diploma equivalent to Level 3/6 as regulated by the Ministry of Education and Training. Candidates who do not meet the foreign language entry requirement must register for the foreign language proficiency test as prescribed..

- Foreign applicants who wish to enroll in master's degree programs taught in Vietnamese must have a Vietnamese language proficiency of Level 4 or higher according to the Vietnamese Language Proficiency Framework for Foreigners, or must have graduated from a university program (or an equivalent or higher qualification) taught in Vietnamese. They must also meet the requirements for a second foreign language as prescribed by the training institution (if applicable).

3. TRAINING OBJECTIVES

3.1. General objectives

Enhance professional knowledge and career-related skills; demonstrate the ability to work independently and creatively; apply research findings, identify and organize the implementation of tasks within professional activities; effectively utilize specialized knowledge in performing specific tasks in accordance with the actual conditions of agencies, organizations, or units; be capable of acquiring additional foundational and research methodology knowledge as required by higher-level academic programs, or having published scientific articles in the relevant field, and be eligible to pursue doctoral training programs.

3.2. Specific objectives

The Master's program in Pharmacology and Clinical Pharmacy aims to achieve the following specific objectives:

M1: Apply fundamental and specialized knowledge to develop a detailed outline for scientific research projects.

M2: Accurately perform laboratory techniques in experimental pharmacology as well as in preclinical and clinical settings.

M3: Be proficient in drug information retrieval, scientific research databases, and writing scientific reports.

4. OUTPUT STANDARDS

4.1. About knowledge

Graduates of the Master's program in Pharmacology and Clinical Pharmacy (application-oriented) are expected to achieve the following learning outcomes:

PO1: Possess in-depth and comprehensive practical knowledge of fundamental principles and theories in the field of pharmacology and clinical pharmacy.

PO2: Master the knowledge necessary for innovation and interdisciplinary application—such as anatomy, physiology, and scientific research—to address issues related to drug use, prescribing, and drug information in practice, especially in the context of ongoing reforms and international integration.

PO3: Demonstrate critical thinking and specialized research methodologies in the study and teaching of pharmacology and clinical pharmacy; based on this foundation, be capable of closely supervising and managing the adherence to safe, effective, and economical drug use protocols.

4.2. About skills

4.2.1. Professional skills

PO4: Participate in the analysis, synthesis, and evaluation of data and information to provide scientifically sound solutions to problems. Contribute to the development of the institutional drug formulary by offering recommendations or providing evidence-based information on which drugs should be included or excluded to ensure the safe, rational, and effective use of medicines.

PO5: Possess communication and training skills in clinical pharmacy. Clinical pharmacists are expected to develop training plans, prepare materials, and update drug use

knowledge for physicians, pharmacists, nurses, technicians, and midwives within their institutions. All training plans and content must be approved by the hospital director.

PO6: Demonstrate skills in organizing, administering, and managing advanced professional activities. Provide guidance and supervision on drug use within hospitals.

4.2.2. *Soft skills*

PO7: Engage in research, development, and the creative application of technologies in academic and professional fields.

PO8: Demonstrate proficiency in a foreign language at Level 4/6 (B2) according to the Vietnamese 6-level Foreign Language Proficiency Framework or an equivalent level as stipulated by the Ministry of Education and Training.

4.3. Level of autonomy and responsibility

PO9: Conduct research to develop significant innovations. Provide drug information to patients and healthcare professionals: Clinical pharmacists are responsible for updating and disseminating information on drug use, new medications, and pharmacovigilance to healthcare staff and patients through various formats such as in-person consultations, written documents, hospital bulletin boards, email, posters, leaflets, and websites.

PO10: Demonstrate the ability to self-direct one's career development and mentor others; exhibit professional awareness and responsibility. Be capable of lifelong learning, continuously acquiring and enhancing knowledge and experience to stay updated and improve professional competence.

PO11: Make expert-level judgments and decisions in the specialized field of pharmacology and clinical pharmacy.

PO12: Manage, evaluate, and improve professional activities. Monitor and supervise adverse drug reactions (ADRs) and serve as the focal point for ADR reporting at the institution in accordance with current regulations.

5. TRAINING PROGRAM STRUCTURE

5.1. General knowledge modules: 08 credits.

- 08 credits of compulsory courses

5.2. Courses in the group of basic and specialized knowledge: 43 credits

- 08 credits of compulsory subjects in the basic knowledge of the industry and major;
- 27 credits (14 theory credits + 13 practical credits) of compulsory courses in the specialized knowledge block.;
- 08 credits for professional internship.

5.3. Graduation project: 09 credits.

Total credits of the training program: 60 credits.

6. SUPPLEMENTARY KNOWLEDGE COURSES FOR MAJORITIES THAT REQUIRE SUPPLEMENTARY KNOWLEDGE

Students who have graduated with a Bachelor's degree in Pharmaceutical Chemistry or Medicine.

- Number of supplementary courses: 4, totaling 12 credits.

Note: Students currently in their fourth year of the Bachelor's degree program in Pharmacy (or an equivalent level) with a cumulative GPA of at least “Good” and meeting other requirements set by the university may register to take certain master's level courses in advance. The number of recognized credits shall not exceed 15 credits from the master's program at the university. This credit recognition limit complies with Clause 2, Article 4 of Circular No. 23/2021/TT-BGDĐT dated August 30, 2021.

7. TRAINING PROGRAM STRUCTURE AND CONTENT

No.	Course code	Course name	Number of credits	Compulsory	Elective	Theory	Practice	Prerequisite course	Semester of implementation
I. General knowledge (08 credits)									
1	DHTH	Marxism- Leninism Philosophy	3	Compulsory		45			I
2	DHNN	English for Pharmacy	2	Compulsory		30			I
3	DHPP	Scientific research methodology in medicine and pharmacy	3	Compulsory		45			I
Total: 08 credits (Compulsory: 08 credits; Elective: 0 credits)									
II. Major base knowledge (08 credits)									
4	DHSL	Pathophysiology	2	Compulsory		30			I
5	DHSD	Biopharmaceutics	2	Compulsory		30			I
6	DHDD	Applied Pharmacokinetics in Clinical Practice	2	Compulsory		30			I
7	DHPT	Molecular Pharmacology	2	Compulsory		30			I
Total: 08 credits (Compulsory: 08 credits; Elective: 0 credits)									
III. Major and specialization knowledge (27 credits)									
8	DHCG	Drug Information and Pharmacovigilance	2	Compulsory		30			II
9	DHCG-TH	Drug Information and Pharmacovigilance - Practical Training	2	Compulsory			60		II
10	DHDG	Drug Interaction Assessment and Management	2	Compulsory		30			II
11	DHDG-TH	Drug Interaction Assessment and Management- Practical Training	2	Compulsory			60		II
12	DHKS	Pharmacokinetics and Pharmacodynamics in Antibiotic Use	2	Compulsory		30			II
13	DHKS-TH	Pharmacokinetics and Pharmacodynamics in Antibiotic Use - Practical Training	2	Compulsory			60		II
14	DHDT	Use of Medications in Treatment	2	Compulsory		30			II
15	DHDT-TH	Use of Medications in Treatment- Practical Training	3	Compulsory			90		II

7. TRAINING PROGRAM STRUCTURE AND CONTENT

No.	Course code	Course name	Number of credits	Compulsory	Elective	Theory	Practice	Prerequisite course	Semester of implementation
16	DHCS	Pharmaceutical Care	2	Compulsory		30			III
17	DHCS-TH	Pharmaceutical Care - Practical Training	2	Compulsory			60		III
18	DHQL	Hospital Pharmacy Administration	2	Compulsory		30			
19	DHQL-TH	Administration- Practical Training	2	Compulsory			60		III
20	DHHS	Clinical Biochemistry	2	Compulsory		30			III

Total: 27 credits (Compulsory: 27 credits; Elective: 0 credits)

IV. The professional internship (08 credits)

21	DHCM	The professional internship carries a credit load of 08 credits, conducted by the student at external agencies or organizations, and is evaluated through written reports and grading/presentations according to the plan set by the specialized faculty. The internship results are reflected in the transcript of the course modules for the program.							
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V. The graduation thesis/project (09 credits)

The graduation thesis/project consists of 09 credits and meets the content and format requirements according to current regulations.

8. RELATIONSHIP MATRIX BETWEEN TRAINING OBJECTIVES AND OUTPUT STANDARDS

TRAINING OBJECTIVES	OUTPUT STANDARD											
	KNOWLEDGE			SKILL					LEVEL OF AUTONOMY AND RESPONSIBILITY			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
M1	x	x	x					x				
M2				x	x	x	x					
M3									x	x	x	x

9. RELATIONSHIP MATRIX BETWEEN COURSES AND OUTPUT STANDARDS

COURSE			OUTPUT STANDARD											
			KNOWLEDGE			SKILL					LEVEL OF AUTONOMY AND RESPONSIBILITY			
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
No.	Code	Course name												
GENERAL KNOWLEDGE														
1	DHTH	Marxism-Leninism Philosophy	x									x		
2	DHNN	English for Pharmacy								x		x		
3	DHPP	Scientific research methodology in medicine and pharmacy	x	x	x				x		x	x		
MAJOR BASE KNOWLEDGE														
4	DHSL	Pathophysiology		x			x					x		
5	DHSD	Biopharmaceutics		x			x					x		
6	DHDĐ	Applied Pharmacokinetics in Clinical Practice		x	x	x	x				x	x	x	
7	DHPT	Molecular Pharmacology		x							x	x	x	
MAJOR AND SPECIALIZATION KNOWLEDGE														
8	DHCG	Drug Information and Pharmacovigilance			x	x	x	x	x		x	x	x	x
9	DHCG-TH	Drug Information and Pharmacovigilance - Practical Training			x	x	x	x	x		x	x	x	x
10	DHDG	Drug Interaction Assessment and Management			x	x	x	x	x		x	x	x	x

COURSE			OUTPUT STANDARD											
			KNOWLEDGE			SKILL					LEVEL OF AUTONOMY AND RESPONSIBILITY			
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
No.	Code	Course name												
11	DHØG-TH	Drug Interaction Assessment and Management- Practical Training			x	x	x	x	x		x	x	x	x
12	DHKS	Pharmacokinetics and Pharmacodynamics in Antibiotic Use			x	x		x				x	x	x
13	DHKS-TH	Pharmacokinetics and Pharmacodynamics in Antibiotic Use - Practical Training			x	x		x				x	x	x
14	DHØT	Use of Medications in Treatment			x	x	x	x	x			x	x	x
15	DHØT-TH	Use of Medications in Treatment- Practical Training			x	x	x	x	x			x	x	x
16	DHCS	Pharmaceutical Care			x	x	x	x	x			x		x
17	DHCS-TH	Pharmaceutical Care - Practical Training			x	x	x	x	x			x		x
18	DHQL	Hospital Pharmacy Administration			x	x	x	x	x		x	x	x	x
19	DHQL-TH	Administration- Practical Training			x	x	x	x	x		x	x	x	x
20	DHHS	Clinical Biochemistry			x	x					x	x		x
21	DHCM	Professional internship			x	x	x	x	x		x	x	x	x
22	DHØA	Graduation thesis/project			x	x	x	x	x		x	x	x	x

10. EVALUATION OF PROFESSIONAL INTERNSHIP RESULTS

10.1 Learners who have accumulated at least 30 credits from courses in the applied-oriented master's program may register for professional internships outside the training institution. Learners are responsible for contacting suitable internship sites relevant to their field of study. The university provides administrative support to assist learners in liaising with the internship sites. The internship is considered a mandatory component of the applied-oriented master's program.

10.2. The evaluation of the professional internship credit load is conducted through the assessment of the internship diary to evaluate attendance (weighted 30%) and the grading and

presentation of the internship report to assess professional performance during the internship (weighted 70%). The evaluation of the learner's internship results regarding professional content is carried out by the relevant academic department.

11. GRADUATION PROJECT EVALUATION

The evaluation of the graduation thesis is conducted by the Graduation Thesis Evaluation Committee established by the university in accordance with the current regulations on master's admissions and training.

RECTOR

**FACULTY OF
POSTGRADUATE STUDIES**

**FACULTY OF
PHARMACY**