



# GRADUATE PROGRAMS

FACULTY OF PHARMACEUTICAL SCIENCES  
KHON KAEN UNIVERSITY



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Assistant Professor Dr. Narin Chansri  
Dean of Faculty of Pharmaceutical Sciences

# Doctor of Philosophy Program in Pharmacy and Health System



# Doctor of Philosophy Program in Pharmacy and Health System

Faculty of Pharmaceutical Sciences

General information



- **Program**

Doctor of Philosophy (Pharmacy and Health System)



- **Degree**

Ph.D. (Pharmacy and Health System)



- **Total credits**

Type 1.1 48 credits (3 year program)

Type 2.1 48 credits (3 year program)

Type 2.2 72 credits (4 year program)



- **Study plan**

1) Type 1.1 Dissertation only

2) Type 2.1 Course work and Dissertation

3) Type 2.2 Course work and Dissertation



- **Language (Mode of teaching)**

Thai and English



- **Future career after graduation**

(1) Researcher

(2) University Instructor

(3) Industrial pharmacist

(4) Compounding pharmacist

## ● Program structure

	Program structure		
	Type 1.1	Type 2.1	Type 2.2
1) Compulsory	-	9	15
Compulsory*	6	2	-
2) Electives	-	3	9
3) Dissertation	48	36	48
<b>Total credits</b>	<b>48</b>	<b>48</b>	<b>72</b>

### Compulsory for Type 2.1 (audit)

Code	Course	Credit
PS627 990	Seminar in Pharmacy and Health System I	1(1-0-2)
PS627 991	Seminar in Pharmacy and Health System II	1(1-0-2)
PS627 992	Seminar in Pharmacy and Health System III	1(1-0-2)
PS627 993	Seminar in Pharmacy and Health System IV	1(1-0-2)
GS217 702	Scientific Article Writing	2(1-2-4)

### Compulsory for Type 2.1

Code	Course	Credit
PS627 710	Knowledge Enquiry in Health System	2(2-0-4)
PS627 712	Advanced Pharmacy and Health System	3(3-0-6)
PS627 990	Seminar in Pharmacy and Health System I	1(1-0-2)
PS627 991	Seminar in Pharmacy and Health System II	1(1-0-2)
PS627 992	Seminar in Pharmacy and Health System III	1(1-0-2)
PS627 993	Seminar in Pharmacy and Health System IV	1(1-0-2)
GS217 702	Scientific Article Writing	2(1-2-4)*
*GS217 702	Scientific Article Writing (audit)	

## Compulsory for Type 2.2

Code	Course	Credit
PS627 992	Seminar in Pharmacy and Health System III	1(1-0-2)
PS627 993	Seminar in Pharmacy and Health System IV	1(1-0-2)
PS627 994	Seminar in Pharmacy and Health System V	1(1-0-2)
PS627 995	Seminar in Pharmacy and Health System VI	1(1-0-2)
GS217 702	Scientific Article Writing	2(1-2-4)*
*GS217 702	Scientific Article Writing (audit)	

## Dissertation

Code	Course	Credit
PS627 997	Dissertation	48 credits
PS627 998	Dissertation	36 credits
PS627 999	Dissertation	48 credits

## Example for Study Plan Type 2.1, 2.2

Year 1, Semester 1		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 710	Knowledge Enquiry in Health System	-	2(2-0-4)	2(2-0-4)
PS627 712	Advanced Pharmacy and Health System	-	3(3-0-6)	3(3-0-6)
PS627 990	Seminar in Pharmacy and Health System I	1(1-0-2)	1(1-0-2)	1(1-0-2)
PS627 997	Dissertation	8	-	-
PSXXX XXX	Elective Courses	-	3	3
<b>Total credits</b>		<b>8</b>	<b>9</b>	<b>9</b>
<b>Accumulate credits</b>		<b>8</b>	<b>9</b>	<b>9</b>

Year 1, Semester 2		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 711	Methods for Pharmacy and Health System	-	-	2(2-0-4)
PS627 991	Seminar in Pharmacy and Health System II	1(1-0-2)	1(1-0-2)	1(1-0-2)
PS627 997	Dissertation	8	-	-
PS627 998	Dissertation	-	8	-
PSXXX XXX	Dissertation	-	-	6
<b>Total credits</b>		<b>9</b>	<b>9</b>	<b>9</b>
<b>Accumulate credits</b>		<b>16</b>	<b>18</b>	<b>18</b>

Year 2, Semester 1		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 992	Seminar in Pharmacy and Health System III	1(1-0-2)	1(1-0-2)	1(1-0-2)
PS627 997	Dissertation	8	-	-
PS627 998	Dissertation	-	8	-
PS627 999	Dissertation	-	-	6
GS217 702	Scientific Article Writing	2(1-2-4)	2(1-2-4)	2(1-2-4)
<b>Total credits</b>		<b>11</b>	<b>11</b>	<b>9</b>
<b>Accumulate credits</b>		<b>24</b>	<b>27</b>	<b>27</b>

Year 2, Semester 2		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 993	Seminar in Pharmacy and Health System IV	1(1-0-2)	1(1-0-2)	1(1-0-2)
PS627 997	Dissertation	8	-	-
PS627 998	Dissertation	-	8	-
PS627 999	Dissertation	-	-	8
<b>Total credits</b>		<b>9</b>	<b>9</b>	<b>9</b>
<b>Accumulate credits</b>		<b>32</b>	<b>36</b>	<b>36</b>

Year 3, Semester 1		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 994	Seminar in Pharmacy and Health System V	-	-	1(1-0-2)
PS627 997	Dissertation	8	-	-
PS627 998	Dissertation	-	8	-
PS627 999	Dissertation	-	-	8
<b>Total credits</b>		<b>8</b>	<b>8</b>	<b>9</b>
<b>Accumulate credits</b>		<b>40</b>	<b>44</b>	<b>45</b>

Year 3, Semester 2		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 995	Seminar in Pharmacy and Health System VI	-	-	1(1-0-2)
PS627 997	Dissertation	8	-	-
PS627 998	Dissertation	-	4	-
PS627 999	Dissertation	-	-	8
<b>Total credits</b>		<b>8</b>	<b>4</b>	<b>9</b>
<b>Accumulate credits</b>		<b>48</b>	<b>48</b>	<b>54</b>

Year 4, Semester 1		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 999	Dissertation	-	-	9
<b>Total credits</b>		<b>-</b>	<b>-</b>	<b>9</b>
<b>Accumulate credits</b>		<b>-</b>	<b>-</b>	<b>63</b>

Year 4, Semester 2		Credits		
		Type 1.1	Type 2.1	Type 2.2
PS627 999	Dissertation	-	-	9
<b>Total credits</b>		<b>-</b>	<b>-</b>	<b>9</b>
<b>Accumulate credits</b>		<b>-</b>	<b>-</b>	<b>72</b>

## Course description

<b>PS317 834</b>	<b>Adverse Drug Reaction Monitoring</b>	<b>2(1-3-2)</b>
Prerequisite : No		
Concept of adverse drug reactions (ADRs), roles of pharmacists in ADR monitoring, methods and techniques for ADR monitoring, detection of ADRs, assessment and management of ADRs, research design in ADR monitoring, drug-induced diseases in various body organs and case studies of ADRs		
<b>PS317 835</b>	<b>Advanced Biopharmaceutics and Pharmacokinetics</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Drug dosage form and dosage form design, correlation between these factors affecting bioavailability, intensity and time course of therapeutic and adverse effects of drugs application of mathematical models to predict in vivo phenomena, development of appropriate dosage regimens and graphical analysis of drug concentration data sets, apply of biopharmaceutical and pharmacokinetic theory to solve the clinical problems involved in optimizing and monitoring drug used in patients		
<b>PS317 836</b>	<b>Clinical Research Design</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Foundation of clinical trials in Phases I, II, III and IV, study design of clinical study and relevant statistics, development of protocol and informed consent, report writing, quality assurance of clinical trials according to international standards, clinical trial simulation using computer and pharmacokinetic/ pharmacodynamic data		
<b>PS317 840</b>	<b>Advanced Pharmacoepidemiology</b>	<b>2(1-3-2)</b>
Prerequisite : No		
Core elements of pharmacoepidemiology, contribution of pharmacoepidemiology to medical practice, methods in pharmacoepidemiological studies, pharmacoepidemiology research based on large administrative electronic databases, validity in exposure identification and outcome assessment, advanced biostatistics commonly used in assessment of efficacy of drugs and their adverse effects		

<b>PS317 844</b>	<b>Current Issues of Pharmaceutical Care in Community Pharmacy</b>	<b>2(1-3-2)</b>
Prerequisite : No		
Critique of pharmaceutical care in community pharmacy both in Thai context and international context, examples of extended roles of pharmaceutical care in community pharmacy, outcomes, problems, obstacles of providing extended pharmaceutical care in community pharmacy		
<b>PS337 732</b>	<b>Pharmacy Benefit Management</b>	<b>3(3-0-6)</b>
Prerequisite : No		
Relationship between drug utilization process and health insurance system; comparative health care financing for pharmacy benefit management, measurement efficiency in drug utilization and pharmaceutical services under economics perspectives; design of health care benefit for drug therapy; drug cost containment strategies; monitoring and evaluation in pharmacy benefit management		
<b>PS337 746</b>	<b>Sociology and Anthropology for Pharmacy</b>	<b>3(3-0-6)</b>
Prerequisite : No		
Health system in western culture and Thai context, health professional, self-medication, concepts and theories of sociology and anthropology in order to enhance social and cultural context which influence ways of thinking and practice of people, and this will bring about understanding toward both biomedicine and popular sectors		
<b>PS627 710</b>	<b>Knowledge Enquiry in Health System</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Causal reasoning in health, scientific enquiry process, concept of induction and deduction, emic and etic view approach, research philosophy, empirical methods, handling uncertainty due to random noise, handling systematic bias in research, translating research findings into practice		
<b>PS627 711</b>	<b>Statistic Methods for Pharmacy and Health System</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Basic concepts of statistical analysis, basic statistic methods, multiple linear regression, multiple logistic regression, factor analysis, survival analysis, Cox regression, hierarchical cluster analysis, and meta-analysis, and guideline for selecting statistic methods		

<b>PS627 712</b>	<b>Advanced Pharmacy and Health System</b>	<b>3(3-0-6)</b>
Prerequisite : No		
Health system and health insurance system of Thailand, regulations and policy related to pharmacy and drug system, relationship of pharmacy system, roles of pharmacists in every sector towards health insurance system development, health system of Thailand and other countries, current situation and pharmacy system development trends harmonizing with health system		
<b>PS627 851</b>	<b>Advanced Methods in Evaluation of Health Resource Utilization and Outcomes</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Analysis of drug use, health service utilization and expenditure, approaches to outcome comparison, econometric models for observational studies, health state valuation methods, modeling in cost-effectiveness evaluation, policy implication of health resource utilization and outcomes, ethic in research		
<b>PS627 852</b>	<b>Advanced Research Methodology in Pharmacy Practice</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Advanced methodology in pharmacy practice research including studies on factors affecting drug use behavior, factors affecting outcomes of pharmacy services, measurement of outcomes of adverse drug effects, measurement of satisfaction on pharmacy services, measuring quality of pharmacy services, analysis of electronic database of drug dispensing, analysis of electronic database of hospitalized patients, willingness to pay studies, health equity studies		
<b>PS627 853</b>	<b>Qualitative Research Methods</b>	<b>2(1-3-3)</b>
Prerequisite : No		
Types of qualitative research methods; observation, in-depth interview, focus group discussion. Literature review. Data analysis process. Writing a qualitative research report. Research ethics		
<b>PS627 854</b>	<b>Critical Perspective in Pharmaceutical Business</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Characteristics of pharmaceutical business, characteristics of drugs in marketing, political economy of drug industry, drug prices and patents as related to multinational and free trade, impacts of pharmaceutical promotion on attitude, knowledge, and behavior of stake holders, pharmaceutical business approaches, pharmaceutical representatives, pharmaceutical business strategies, interventions to counter drug promotion		

<b>PS347 734</b>	<b>Quantitative Psychology and Behavior for Health</b>	<b>3(3-0-6)</b>
Prerequisite : No		
Consumer Protection and Health Management Development of mathematical model to measure and evaluate psychological factors and behavior of health consumers, evaluation of the validity of the model, evaluation of the generalizability of the model to different subgroups of consumers		
<b>PS347 714</b>	<b>Epidemiology for Health Consumer Protection</b>	<b>3(3-0-6)</b>
Prerequisite : No		
Epidemiological methods used to describe pattern of distribution of unsafe health products and health service, factors effecting acceptance or rejection of unsafe health products and health service, surveillance of unsafe health products and health service, evaluation of effectiveness of interventions to minimize or eliminate unsafe health products and health service		
<b>PS347 715</b>	<b>Evidence-based of health products</b>	<b>2(2-0-4)</b>
Prerequisite : No		
Comprehensive and systematically review, analysis, and assessment of efficacy and safety of health products, including dietary supplements, herbal products, traditional medicines, to provide advice for appropriate use of health products		
<b>PS627 990</b>	<b>Seminar in Pharmacy and Health System I</b>	<b>1(1-0-2)</b>
Prerequisite : No		
Literature review, analysis, synthesis, writing, presentation and discussion on contemporary issues and research problems in pharmacy with merit to health system of Thailand		
<b>PS627 991</b>	<b>Seminar in Pharmacy and Health System II</b>	<b>1(1-0-2)</b>
Prerequisite : PS627 990		
Literature review, analysis, synthesis, writing, presentation and participation in discussion on contemporary issues and research problems in pharmacy with merit to global health systems		

<b>PS627 992</b>	<b>Seminar in Pharmacy and Health System III</b>	<b>1(1-0-2)</b>
Prerequisite : PS627 991		
Literature review, analysis, synthesis, writing, presentation and participation in discussion on theories and new knowledge for conducting research in pharmacy and health system		
<b>PS627 993</b>	<b>Seminar in Pharmacy and Health System IV</b>	<b>1(1-0-2)</b>
Prerequisite : PS627 992		
Literature review, analysis, synthesis, writing, presentation and participation in discussion on research methodology relevant to dissertation		
<b>PS627 994</b>	<b>Seminar in Pharmacy and Health System V</b>	<b>1(1-0-2)</b>
Prerequisite : PS627 993		
Literature review, analysis, synthesis, writing, presentation and participation in discussion on various researches relevant to dissertation, and utilization of research findings for pharmacy development at the domestic level		
<b>PS627 995</b>	<b>Seminar in Pharmacy and Health System VI</b>	<b>1(1-0-2)</b>
Prerequisite : PS627 994		
Literature review, analysis, synthesis, writing, presentation and participation in discussion on various researches relevant to dissertation, and utilization of research findings for pharmacy development at the international level		
<b>PS627 997</b>	<b>Dissertation</b>	<b>48 credits</b>
Prerequisite : No		
Conducting research on a topic in the area related to pharmacy and health system by demonstrating innovative ideas, using literature review, data collection, analysis, and synthesis skills and ethically in order to create new knowledge or application, writing up the research results in the form of a dissertation, and defense the dissertation under the supervision of the dissertation advisory committee		

PS627 998	Dissertation	36 credits
Prerequisite : No		
Conducting research on a topic in the area related to pharmacy and health system by demonstrating innovative ideas, using literature review, data collection, analysis, and synthesis skills and ethically in order to create new knowledge or application, writing up the research results in the form of a dissertation, and defense the dissertation under the supervision of the dissertation advisory committee		
PS627 999	Dissertation	48 credits
Prerequisite : No		
Conducting research on a topic in the area related to pharmacy and health system by demonstrating innovative ideas, using literature review, data collection, analysis, and synthesis skills and ethically in order to create new knowledge or application, writing up the research results in the form of a dissertation, and defense the dissertation under the supervision of the dissertation advisory committee		
GS217 702	Scientific Article Writing	2(1-2-4)
Prerequisite : No		
Research proposal writing, ethics in literature review and reference for academic writing, report, abstract and manuscript for publication in English		