

DOCTOR OF PHILOSOPHY IN PARASITOLOGY

■ FACULTY OF MEDICAL SCIENCE

DOCTOR OF PHILOSOPHY IN PARASITOLOGY

The doctoral program in Parasitology produces highly qualified graduates with in-depth knowledge and strong skills to effectively tackle problems in their professions, with ability to develop and add new knowledge to this field, especially, in health development at community and national levels.



Objectives

Desirable outcomes of graduates include:

- In-depth knowledge and understanding of theories and principles in parasitology.
- Ability in combining related knowledge to conduct research at an advanced level.
- Competency in creating and applying research findings into innovative applications in communities.
- Possessing logic in systematic analysis and synthesis of academic information.
- Being effective with ICT and up-to-date communications.
- Leadership with maturity in the profession, responsible to oneself and accountable to the public.
- Adhering to morality and professional ethics.

Admission

In accordance with the Graduate School Rules and Regulations. The program committee reserves the rights to require more qualifications as deemed appropriate.

Medium of Instruction

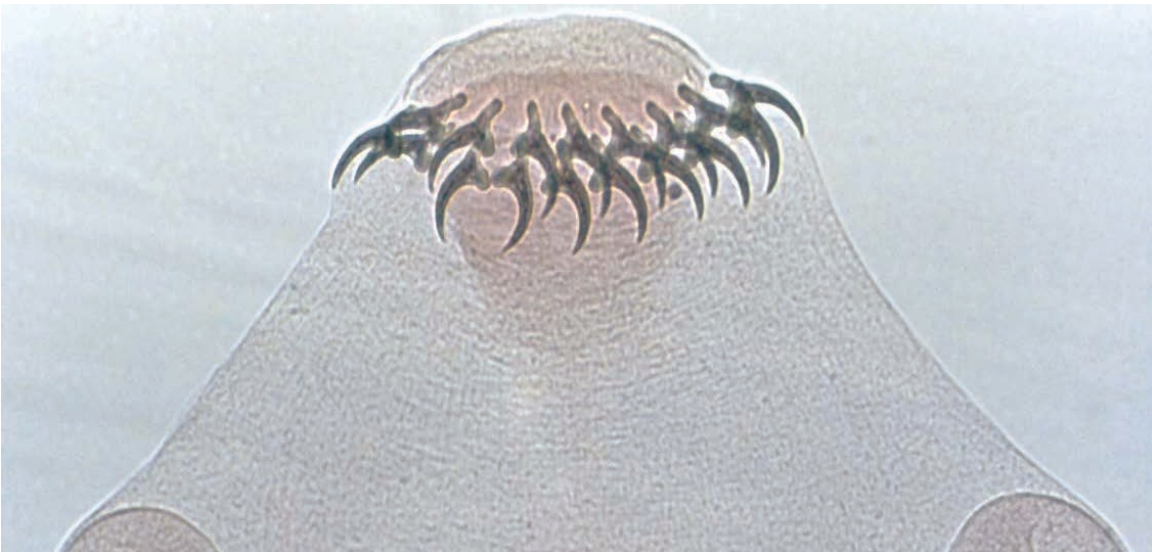
Thai and English

Research Focus

- Medical parasitology
- Molecular medical parasitology
- Medical entomology
- Epidemiology of parasitology
- Vector biology
- Immunology

Requirement for Graduation

In accordance with the Graduate School Rules and Regulations.



Doctor of Philosophy in Parasitology

■ FACULTY OF MEDICAL SCIENCE

Structure of the Program

1. Credit Requirements. *

Requirements	Option 1.1	Option 2.1	Option 2.1	Option 2.2
Coursework	-	-	12	24
Core Courses	-	-	3	9
Electives	-	-	9	15
Required Non-credit Courses	4	7	4	7
Dissertation	48	72	36	48
Total	48	72	48	72

* Minimum credits required.

2. Core Courses

Requirements	Option 1.1/1.2		Option 2.1		Option 2.2	
	Course No.	Credits	Course No.	Credits	Course No.	Credits
Advanced Medical Parasitology	-	-	424611	3	424611	3
Medical Parasitology	-	-	-	-	424511	3
Biochemistry, Cell and Molecular Biology	-	-	-	-	422514	3
Total	0	0	1	3	3	9

3. Electives

Requirements	Option 1.1/1.2		Option 2.1		Option 2.2	
	Course No.	Credits	Course No.	Credits	Course No.	Credits
Molecular Technique for Parasitology Research	-	-	424601	3	424601	3
Serological Technique for Parasitology Research	-	-	424602	3	424602	3
Advanced Ecology and Epidemiology of Parasites	-	-	424603	3	424603	3
Advanced Molecular Parasitology	-	-	424604	3	424604	3
Immunology of Parasitic Infections	-	-	424605	3	424605	3
Current Topic in Parasitology II	-	-	424606	3	424606	3
Bioinformatics in Parasitology	-	-	424607	3	424607	3
Advanced Medical Helminthology	-	-	424612	3	424612	3
Advanced Medical Protozoology	-	-	424613	3	424613	3
Culture Techniques of Medical Parasites	-	-	424614	3	424614	3
Advanced Medical Entomology	-	-	424621	3	424621	3
Immunology of Insect Vectors	-	-	424622	3	424622	3
Total	0	0	12	≥9	12	≥15

4. Required Non-credit Courses.

Requirements	Option 1.1		Option 1.2		Option 2.1		Option 2.2	
	Course No.	Cr.	Course No.	Cr.	Course No.	Cr.	Course No.	Cr.
Research Methodology in Health Sciences	-	-	-	-	-	-	422510	3
Seminar 1	424696	1	424696	1	424696	1	424696	1
Seminar 2	424697	1	424697	1	424697	1	424697	1
Seminar 3	424698	1	424698	1	424698	1	424698	1
Seminar 4	424699	1	424699	1	424699	1	424699	1
Total	4	4	4	4	4	4	5	7

5. Dissertation Credit Requirements.

Requirements	Option 1.1		Option 1.2		Option 2.1		Option 2.2	
	Course No.	Cr.	Course No.	Cr.	Course No.	Cr.	Course No.	Cr.
Dissertation 1	424651	8	424661	9	424671	9	424681	8
Dissertation 2	424652	8	424662	9	424672	9	424682	8
Dissertation 3	424653	8	424663	9	424673	9	424683	8
Dissertation 4	424654	8	424664	9	424674	9	424684	8
Dissertation 5	424655	8	424665	9	-	-	424685	8
Dissertation 6	424656	8	424666	9	-	-	424686	8
Dissertation 7	-	-	424667	9	-	-	-	-
Dissertation 8	-	-	424668	9	-	-	-	-
Total	6	48	8	72	4	36	6	48

Course Descriptions

424501 Experimental Parasitology 3(2-3-5)

Experimental methods and laboratory techniques for parasitological.

424502 Diagnosis of Parasitology 3(2-3-5)

Collection, specimen preparations, and laboratory diagnosis of parasitology with emphasis on standard techniques and applications.

424503 Ecology and Epidemiology of Parasites 3(2-3-5)

Ecological factors affecting the development, transmission, and dispersal of parasites; data analysis and interpretation; application for prevention and control of common parasitic diseases in the community.

424504 Molecular Parasitology 3(2-3-5)

Cytogenetic, genetic diversity, methods in molecular biology and its application for diagnosis of parasitic infections, and molecular typing.

424505 Immunology of Parasitic Infections 3(2-3-5)

Host-parasite infections, immune responses, pathophysiology of parasitic infections, immunological methods for detection, and vaccine development.

424506 Current Topics in Parasitology 1 3(2-3-5)

Extensive study of current and interesting topics in parasitology, presentations, discussions, and report-writing of current trends in medical protozoa, helminthes and arthropods.

424511 Medical Parasitology 3(2-3-5)

Fundamentals of medical parasites, morphology, life cycle, epidemiology, pathogenesis, symptomatology, diagnosis, treatments, and prevention and control of parasitic infections.

424512 Medical Helminthology**3(2-3-5)**

Investigation of the morphology, taxonomy, life cycle, epidemiology, transmission, pathogenesis, symptoms, laboratory diagnosis, treatments, prevention, and control of medical helminthes.

424513 Medical Protozoology**3(2-3-5)**

Overview of morphology, taxonomy, life cycle, epidemiology, transmission, pathogenesis, symptoms, laboratory diagnosis, treatments, prevention, and control of medical protozoa.

424514 Clinical Parasitology**3(2-3-5)**

Pathophysiology, pathogenesis, pathology, signs, symptoms, clinical diagnosis, treatments, and clinical correlation of parasitic diseases.

424515 Medical Malacology**3(2-3-5)**

Morphology, taxonomy, physiology, habitats, distributions, field surveys, host-parasite relationships, and methods for the cultivation of medically important mollusks.

424521 Medical Entomology**3(2-3-5)**

Morphology, taxonomy, biology, ecology, their application, control of medically important arthropods, collection and preservation of specimens, and examination of parasites or other infectious agents in vectors.

424522 Mosquitoes and Control**3(2-3-5)**

Morphology, classifications, identifications, biology, bionomics, pathogens, transmissions, vector capacities, mosquito research techniques, and mosquito control.

424523 Laboratory Techniques in Entomology 3(1-6-5)

Techniques in laboratory and field study, collections, preservations, dissection, insecticide susceptibility tests, and techniques for identification of medical arthropods.

424524 Forensic Entomology 3(2-3-5)

Principles, history, significance of arthropods and their applications to insects in forensic science.

521525 Taxonomy of Medical Arthropods 3(2-3-5)

Taxonomy, morphology, and identifications of medical arthropods.

424601 Molecular Technique for Parasitology Research 3(2-3-5)

Specimen collection, preparations, and techniques in molecular diagnosis as applied in parasitology research.

424602 Serological Technique for Parasitology Research 3(2-3-5)

Specimen collection, antigens and antibodies preparations, and techniques in serological diagnosis as applied in parasitological research.

424603 Advanced Ecology and Epidemiology of Parasites 3(2-3-5)

Development of research plan, data collection of ecological factors, transmission and dispersal of parasites, statistical analysis and interpretations, applications, and integration of geographic information system.

424604 Advanced Molecular Parasitology 3(2-3-5)

Molecular biology of parasites causing diseases to humans, molecular biology of arthropod vectors including current trends and topics in molecular parasitology research.

424605 Advanced Immunology of Parasitic Infections 3(2-3-5)

Immunological systems, host-parasites interactions, immune responses, parasite escape mechanisms, and current trends and topics in immunological research.

424606 Current Topic in Parasitology II 3(2-3-5)

Investigation of specific and interesting topics in parasitology, conclusions, analysis, and applications of current knowledge in parasitology research.

424607 Bioinformatics in Parasitology 3(2-3-5)

Biological data, data collection, data analysis, data alignment, information technology applications in experimental designs, laboratory designs, and genetic relationships of parasites.

424611 Advanced Medical Parasitology 3(2-3-5)

Ultrastructure, physiology, development of epidemiology, immunological responses to parasitic infections, vaccines, molecular biology, cancer causing parasites, anti-parasitic drugs, current research trends about parasites, and advanced knowledge in parasites.

424612 Advanced Medical Helminthology 3(2-3-5)

Essential concepts in morphology, taxonomy, life-cycle, epidemiology, transmissions, pathology, signs and symptoms, laboratory diagnosis, treatments, prevention and control including recent research in medical helminthes.

424613 Advanced Medical Protozoology 3(2-3-5)

Important concepts in morphology, taxonomy, life-cycle, epidemiology, transmissions, pathogenesis and symptoms, laboratory diagnosis, treatments, and prevention and control including recent research in medical protozoa.

424614 Culture Techniques in Medical Parasites**3(2-3-5)**

Extensive study of culture techniques in the laboratory about medical parasites.

424621 Advanced Medical Entomology**3(2-3-5)**

Essential concepts in morphology, taxonomy, biology, ecology, their application, control of medically important arthropods, collection and preservation of specimens, examination of parasites or other infections agents in vectors including recent researches in medical entomology.

424622 Immunology of Insect Vectors**3(3-0-6)**

Immunological systems of insect vectors, immune mechanisms against parasitic and microbial organisms and their application.

424651 Dissertation I, Option 1.1**8 Credits**

Identifying the research question, writing a research proposal describing the significance of the study and research methodologies in brief including an extensive review of the literature.

424652 Dissertation II, Option 1.1**8 Credits**

Nomination of the dissertation supervisory committee to the Graduate School and submission of the dissertation title to advisors.

424653 Dissertation III, Option 1.1**8 Credits**

Conducting an extensive research, reporting progress of the research to the dissertation advisors, and completing the qualifying examination.

424654 Dissertation IV, Option 1.1**8 Credits**

Completing the dissertation proposal examination, conducting an extensive research, and reporting progress of the research to dissertation advisors.

424655 Dissertation V, Option 1.1**8 Credits**

Conducting an extensive research, reporting progress of the research to the dissertation advisors, and preparing a scientific manuscript for publication under a standard peer-review process.

424656 Dissertation VI, Option 1.1**8 Credits**

Summarizing all research data, completing the dissertation defense, compliance with dissertation corrections if any, and submission of the completed dissertation to the Graduate School.

424661 Dissertation I, Option 1.1**9 Credits**

Identifying the research question writing a research proposal describing the significance of the study and research methodologies in brief including an extensive review of the literature.

424662 Dissertation II, Option 1.2**9 Credits**

Nomination of the dissertation supervisory committee to the Graduate School and submission of the dissertation title to advisors.

424663 Dissertation III, Option 1.2**9 Credits**

Conducting an extensive research and completing the qualifying exam.

424664 Dissertation IV, Option 1.2**9 Credits**

Completing the dissertation proposal examination, conducting an extensive research, and reporting progress of the research to dissertation advisors.

424665 Dissertation V, Option 1.2**9 Credits**

Conducting an extensive research and reporting progress of the research to the dissertation advisors.

424666 Dissertation VI, Option 1.2**9 Credits**

Conducting an extensive research and reporting progress of the research to the dissertation advisors.

424667 Dissertation VII, Option 1.2**9 Credits**

Collecting research data, and preparing a scientific manuscript for publication under a standard peer-review process.

424668 Dissertation VIII, Option 1.2**9 Credits**

Summarizing all research data, completing the dissertation defense, compliance with dissertation corrections if any, and submission of the completed dissertation to the Graduate School.

424671 Dissertation I, Option 2.1**9 Credits**

Nomination of the dissertation supervisory committee to the Graduate School and submission of the dissertation title to advisors.

424672 Dissertation II, Option 2.1**9 Credits**

Conducting an extensive research, reporting progress of the research to the dissertation advisors, and take the qualifying exam.

424673 Dissertation III, Option 2.1**9 Credits**

Conducting an extensive research, reporting progress of the research to the dissertation advisors, completing the dissertation proposal defense examination, and preparing a scientific manuscript for publication under a standard peer-review process.

424674 Dissertation IV, Option 2.1**9 Credits**

Summarizing all research data, completing the dissertation defense, complying with dissertation corrections if any, and submitting the completed dissertation to the Graduate School.

424681 Dissertation I, Option 2.2	8 Credits
Identifying the research question, writing a research proposal describing the significance of the study and research methodologies in brief including an extensive review of the literature.	
424682 Dissertation II, Option 2.2	8 Credits
Nomination of the dissertation supervisory committee to the Graduate School and submission of the dissertation title to advisors.	
424683 Dissertation III, Option 2.2	8 Credits
Conducting an extensive research and completing the qualifying exam.	
424684 Dissertation IV, Option 2.2	8 Credits
Completing the dissertation proposal examination, conducting an extensive research, and reporting progress of the research to dissertation advisors.	
424685 Dissertation V, Option 2.2	8 Credits
Collection of research data and prepare a scientific manuscript for publication under a standard peer-review process.	
424686 Dissertation VI, Option 2.2	8 Credits
Summarizing all research data, completing the dissertation defense, complying with dissertation corrections if any, and submitting the complete dissertation to the Graduate School.	
424696 Seminar I	1(0-2-1)
Extensive practice in searching, reading, critical thinking, and organization of information from articles or published papers and oral presentation practice on selected and current topics in parasitology.	

424697 Seminar II 1(0-2-1)

Seminar on selected and recent trends and topics in parasitology.

424698 Seminar III 1(0-2-1)

Comprehensive seminar on selected and advanced topics in parasitology.

424699 Seminar IV 1(0-2-1)

Seminar on selected and current issues in parasitology which are related to writing the doctoral dissertation.

422510 Research Methodology in Health Sciences 3(3-0-6)

Definitions, characteristics and goals of research, research methodologies, types of research, determination of research questions, variables and hypothesis, data collection, data analysis, research proposal and research report writing, research evaluation, research applications, ethics in research, and advanced research techniques in health sciences.

422514 Biochemistry, Cell and Molecular Biology 3(3-0-6)

Cells and cell cycles, properties and structures of major biomolecules, protein structures and functions, enzymes and kinetics, bioenergetics and metabolism of biomolecules, genomes organization, replications, DNA damage and repair, transcription and translation processes, bioinformatics, molecular biology, biochemistry of endocrines, and significant perspectives in biochemistry.