Research projects

Research in the Ph.D. Programme is aimed to provide research skill especially in the search for new knowledge or innovation of technology which can be applied to medical technology and other related fields. The wide variety of research area includes

- 1. Engineering of Biological and Chemical Polymers for Applications
- 2. Data Mining and Biomedical Informatics
- 3. Detection Tools and Analytical Process Development
- 4. Bioactive Compounds for Medical Applications
- 5. Infectious Diseases and Antibiotic Resistant Microorganisms
- 6. Molecular Genetics of Human Diseases and Cancer
- 7. Stem Cell Research in Life Science
- 8. Biosensor for Diagnostic and Medical Applications
- 9. Medical Imaging and Pattern Recognition Analysis
- 10. Area-based and Integrative Research for Well-Being and Sustainable Development of the Society
- 11. Molecular Informatics for Rational Design and Simulation of Biological and Chemical Entities
- 12. Food Safety and Environmental Pollution
- 13. Viruses and Neurodegeneration Research
- 14. Medical Laboratory Quality Management
- 15. Clinical and Educational Research
- 16. Aging and Non-Communicable Disease
- 17. Integrative Holistic Health and Wellness Research
- 18. Other related Research Areas

Curricula

Program Plan	Admission Requirements	Required Course (credit)	Elective Course (credit)	Thesis (credit)	Total (credit)
Plan 1 (Research only)	Candidates holding Master's degree in Med. Tech. or other related fields with G.P.A. of ≥ 3.5	-	-	48	48
	Candidates holding Bachelor's degree in Med. Tech. or other related fields with honors	15	≥10	48	73
Plan 2 (Course work & Bosearch)	Candidates holding Master's degree in Med. Tech. for less than 5 years with G.P.A. of \ge 3.5	7	≥ 5	36	48
(Cocalon)	Candidates holding Master's degree in Med. Tech. or other related fields for longer than 5 years with G.P.A. of \geq 3.5	15	≥ 10	36	61



		Required Courses	Credits (lecture-lab -self study)
SCID	500	Cell and Molecular Biology	3(3-0-6)
MTID	601	Clinical Laboratory Administration	2(1-2-3)
MTID	605	Research Methodology	3(2-2-5)
MTID	613	Advanced Seminar	2(2-0-4)
MTID	618	Clinical Laboratory Science I	2(2-0-4)
MTID	619	Clinical Laboratory Science II	1(1-0-2)
MTID	620	Research Technology and Innovation Management	2(2-0-4)
*MTID	604	Selected Topic in Medical Technology	2(2-0-4)
* Cand	idates	holding Master's degree in Med.Tech. for less than 5 years	5.

		Elective Courses Credits (lect	ure-lab-self study)
MTID	506	Design and Construction of Basic Clinical Laboratory Instrument	3(1-4-4)
MTID	513	Digital Electronics	2(1-2-3)
MTID	606	Current Technology in Molecular Biology	2(2-0-4)
MTID	607	Internship in Medical Technology Laboratory	4(0-16-4)
MTID	608	Current Diagnostic Technology and Future Trends	2(2-0-4)
MTID	610	Independent Selected Topics in Applied and Biomedical Technology	1(1-0-2)
MTID	614	Principle of Education and Education Development	2(1-2-3)
MTID	615	Learning and Teaching Management for Medical Technology Education	2(1-2-3)
MTID	616	Modern Entrepreneurship	2(1-2-3)
MTID	617	Bioinformatics	2(1-2-3)
MTCH	601	Advanced Clinical Chemistry	4(3-2-7)
MTCH	607	Advanced Clinical Toxicology	2(1-2-3)
MTCH	609	Clinical Nutrition	1(1-0-2)
MTCH	610	Experimental Methods and Instruments in Clinical Chemistry	2(1-2-3)
MTCH	611	Medical Molecular Genetics	2(2-0-4)
MTCH	612	Selected Topics in Clinical Chemistry	1(1-0-2)
MTCH	613	Biosensors in Clinical Chemistry	1(1-0-2)
MTMS	502	Current Topics in Hematology	2(2-0-4)
MTMS	605	Blood Bank Techniques and Immunohematology	2(1-2-3)
MTMS	609	Advanced Clinical Microscopy	4(3-2-7)
MTMS	612	Advanced Medical Genetics	2(2-0-4)
MTMI	601	Advanced Clinical Microbiology	3(3-0-6)
MTMI	604	Current Methods in Clinical Immunology	2(1-2-3)
MTMI	606	Current Methods in Clinical Microbiology	2(1-2-3)
MTMI	608	Enzymes and Microbial Products	1(1-0-2)
MTMI	610	Selected Topics in Molecular Microbiology	1(1-0-2)
MTMI	611	Cells and Tissue Culture Techniques	1(0-2-1)
MTMI	613	Independent Selected Topics in Microbiology	1(1-0-2)
MTMI	614	Advanced in Antimicrobial Agents and Drug Resistance	1(1-0-2)
MTMI	615	Emerging and Re-emerging InfectiousDiseases	2(2-0-4)
MTMI	616	Advanced Molecular Immunology	2(1-2-3)
MTCM	601	Population Health and Community Medical Technology	2(1-2-3)
MTCM	602	Health Informatics	2(1-2-3)
MTCM	603	Selected Topics in Medical Parasitology and Medical Entomology	2(2-0-4)

Other elective graduate courses from other faculties/institutions can also be selected by the approval of academic advisor.

Thesis

Credits (lecture-lab-self study)

MTID898Dissertation (Plan 1: Candidates holding Master's degree)MTID699Dissertation (Plan 2: Candidates holding Master's degree)MTID799Dissertation (Plan 2: Candidates holding Bachelor's degree)

48(0-192-0) 36(0-144-0) 48(0-192-0)

Language

English is used as the medium in all activities.

Tuition Fees for International Programme Students

Items	Cost (Thai Baht)	
1. Education Services Fee		
First semester	6,300 /semester	
Second semester	5,600 /semester	
2. Health Insurance	3,500 /year	
3. Graduate Tuition fee	9,000 /credit	
4. Thesis Registration Fee		
Doctoral Thesis Registration Fee 36 credits	54,000 /thesis	
Doctoral Thesis Registration Fee 48 credits	72,000 /thesis	
5. Research Supplies Fee	300,000	
6. Qualifying Examination Fee		
Doctoral Program	4,200 /time	

Admission Requirements

- 1. Hold Bachelor's degree in Medical Technology or other related discipline with honors or
- 2. Hold Master's degree in Medical Technology, health Science or other related discipline with a minimum G.P.A. of 3.50
- 3. Have a TOEFL ITP score of at least 500, TOEFL Internet-based score of 61 or IELTS score of 5.
- 4. Have at least 1 original research publication or academic work in peer reviewed international journal. (Plan 1 only)
- 5. Exemption from the above conditions may be granted by the Programme Committee under exceptional circumstances

For more details please contact

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THE FACULTY OF MEDICAL TECHNOLOGY MAHIDOL UNIVERSITY

DOCTOR OF PHILOSOPHY PROGRAMME IN MEDICAL TECHNOLOGY (INTERNATIONAL PROGRAMME)



The programme provides advanced courses and researches in a broad range of disciplines in medical technology and related sciences. The Faculty collaborates with leading universities and institutions both nationally and internationally. Almost all of the students have the opportunity to take some course works or part of their researches at oversea collaborating institutions.

In addition to the academic and research competencies, our Ph.D programme has produced scholars with eagerness for life-long learning and individuals who are capable of thriving in this ever-changing and globalize world. As such, our graduates have enjoyed pursuing careers in wide variety of setting including academia, research, profession, the private sector and in government service and business sectors.

Graduates from this programme should be able to

- 1. follow advancement of academic and technology, explain advance knowledge involving medical technology and related fields, develop life-long learning
- 2. creatively develop systemic and critical thinking, integrate and apply knowledge to solve complicated problems in order to improve medical technology profession and other related disciplines
- 3. develop research problem, present research project and conduct all involving research works to solve problem, improve work quality, achieve better work performance, and develop new knowledge and innovation
- apply effective information technology skill and effective skill in dissemination and communication to exchange and sharing their academic/research findings or evidences using English to public in both national and international level
- 5. demonstrate morals and ethics in academic, research, and profession and contribute to social responsibility
- 6. attain leadership and can work as team
- 7. demonstrate idea and principle of entrepreneurship including innovation management