Thailand International Postgraduate Programme : TIPP

Between 2026 – 2028 [2569-2571]

Theme: Public Health and Food Security

1. Course title: Innovation and Tropical Health

2. Master Degree: Master Degree in Innovation and Tropical Health

3. Academic Institution: Faculty of Medicine, Mahasarakham University

4. Duration: 2 Years (June 2026 – June 2028)

5. Background and Rational:

Faculty of Medicine, Mahasarakham University is well aware of the issues related to socio-economic changes within the country and in other ASEAN nations, therefore, the Faculty of Medicine, Mahasarakham University has been established "Doctor of Philosophy in Health Science Program in 2008 and the curriculum of "Doctor of Philosophy in Health Science Program (International Program)" has been established in 2017. At the onset of the new millennium, Faculty of Medicine, Mahasarakham University constructive curriculum is aimed at producing leading health scientists who are highly responsible and having competitive advantage on the world stage with skillful in advanced research. These health scientists are also capable of integrated knowledge for highly impact research, beneficial research, as well as research and development for practical innovation in health science suitable for local problems and needs in changing socio-economic context, thereby increasing people's health and quality of life in a sustainable way and eventually, society is happily living together.

Additionally, this program is designed by taking into account changes in global changes, international collaboration and phenomenal in multidisciplinary tropical diseases and public health situations, particularly in Southeast Asian nations, the curriculum is also aimed at producing health scientists who do not only have promising professional skills, but also capable of finding appropriate solutions to alleviate problems and better health care system, which eventually promoting people's health and quality of life within the diversified societies, languages, and cultures in a sustainable ways.

According to the Missions of the Mahasarakham University and our professional skill in tropical diseases and public health with several international publication, the collaboration and international academic services have been established to produce well-qualified graduates who meet the international standard and requirement. The Master degree in Tropical Health Innovation Curriculum (International Program) is created to achieve the

mission of the university by preparing graduates to become professional integrated health scientists who have right and constructive knowledge with highly advanced research skills, leading professional abilities, innovation, integration and ethics.

6. Objective

6.1) To produce the professional scientist in health science who can initiate and integrate between academic with multidisciplinary skill and establish innovation research

6.2) To provide the international young scientists in Asian countries and international institution with our collaborator for international standards

6.3) To encourage the Asian and our neighbor countries to develop academic network

7. Course Synopsis and Methodology

7.1) Study plan

Course	**Course Title**	**Credits**
		Type
1509xxx	Seminar in Tropical Health Innovation 1 Seminar in Tropical Health Innovation 2	S/U
1509xxx	Research Methodology and Innovation	3(3-0-6)
1509 xxx	Innovation and Technology in Health Sciences	3(3-0-6)
1509 xxx	Database System Design for Tropical Health and Innovation	3(3-0-6)
1509 xxx	Elective course 2	3(3-0-6)
1509 xxx	Thesis	12
1509 xxx	Thesis	12
1509 xxx	Thesis	12
	Total	**48**

Year 1 Core Course and Elective Course

Year 2 Thesis

7.2) Course content/study topic

7.2.1) Core Course

Research Methodology and Innovation 3(3-0-6)

Theoretical concepts related to research and innovation, experimental research, quantitative research, mixed-method research, research and development, and clinical research with applications in tropical health and health science, which cover research design, project planning, data collection and analysis, presentation and publication. Type of data, descriptive statistics, data exploratory, normality testing, statistical probability, estimation and hypothesis testing, categorical data analysis, continuous data analysis, regression analysis, sample size calculation and innovation research examples

Innovation and Technology in Health Sciences 3(2-2-5)

Learning knowledge in several categories, sciences and technology, humanity and social sciences coordinated with public health and medical science to establish health science innovation applicable for health surveillance, disease prevention and control and sustainable health system development, as well as ability to extend the local community innovation and technology to public policy, as well as innovations and technologies in health science and medicine

Seminar in Tropical Health Innovation 1 1(0-2-1)

Trend, developments, and important issues in the multidisciplinary field of Health Science with the more emphasis on special topics related to the student's proposed research project and innovation to allow students to exchange ideas with professors and interest participants

Seminar in Tropical Health Innovation 2 2(0-4-2)

Important issues and special topics in tropical health innovation and health science related to the student's proposed research project, discuss on health and scientific literature and exchange ideas with specialists in the field, and other participants

Integrated Tropical Health **3(3-0-6)**

Integrated tropical health is dealing with Tropical health and diseases in the population of a local to global community. The goal is to understand health problem and need, to identify crucial etiologic of different levels such as village, district, province and region) including integrated science and technology related for achieving desired goals

Research Practice in Innovation and Tropical Health **3(0-6-3)**

Principle of literature review in biomedical science and research practice in the approved laboratory or organization related to medical science research and innovation

Database System Design for Tropical Health and Innovation **3(3-0-6)**

Fundamentals of database design and management, principles and methodologies of database design, database application development, normalization, referential integrity, security, relational database models, and database languages

7.2.2) Elective Courses

Health care management

Collection and analysis of data and application of vital statistics in community health program. Techniques of data collection through community survey methods, sampling techniques and sample size determination; methods of hypothesis testing; application of tests of significance, techniques of analysis of parameters. Management of information technology in health: information dissemination, its origin and content, and applications of health information system, which include its usage, management, evaluation and research in both public and private sector organizations; impacts of information system on health care financials and other related aspects.

Cell and Molecular Biology

Cells and genomes, cell chemistry and biosynthesis, DNA and chromosomes, DNA replication and recombination, control of gene expression, membrane structure, Cell communication, The cell cycle and programmed cell death, cell adhesion and extracellular matrix, germ cells and fertilization, Technique in molecular biology, biology of cancer.

Laboratory Techniques in Tropical Diseases

Basic laboratory methods and technical details for diagnosis of Tropical diseases and research

Tropical Diseases

Tropical diseases; classification; morphology; life cycle; geographic distribution with emphasis on Thailand; mode of transmission; reservoirs and hosts; pathogenesis and pathology; laboratory diagnosis; prevention and control; new research trends

Medical Helminthology

Helminth causing human diseases; classification; physiology; morphology; life cycle; geographic distribution with emphasis on Thailand; mode of transmission; reservoirs and hosts; pathogenesis and pathology; laboratory diagnosis; prevention and control; new research trends

Molecular Biology

Molecular biology of Pathogenic agent causing diseases in humans; molecular biology of vectors; current trends in molecular biology research

Public Health Aspect of Parasitic Diseases

The public health importance of parasitic diseases with the emphasis on the health problems and solving the public health problems caused by those diseases, including the government policy and assessment of problem severity, parasitic burden, epidemiology and planning for the control program

Geographic Information System in Health Science Research

Geographic information system (GIS) of agents causing diseases in humans; application of GIS to prevent and control of infection and non-infection diseases; current trends GIS in health science

Nutrition, Food Security and Food safety

Food and nutrients; nutrition status assessment; current important nutrition problems and trends; complementary nutrition for health; application of knowledge in food and nutrition for healing and for health promotion; theoretical concepts and methods in nutritional anthropology; food system and food security; situations, phenomena, problems and solutions related to food and nutrition within the changing environment, social and cultural conditions

8. Application Qualifications

8.1) Applicants must graduate with a Bachelor degree in health science or related fields such as public health, nursing, pharmacy, associated medical sciences, dentistry, medicine, and others from an education institution approved by the MUA

8.2) Applicants must succeed a GPA of at least 2.75 or having research experience

8.3) Applicants must submit research proposal which is consistent of objective of their major and accepted by the Curriculum Administrative Committee or Proposal Committee of the Faculty.

Applicants who do not meet items 8.1 – 8.3 requirement may be admitted to the program according to the curriculum Administrative Committee's decision and approval.

Applicants must have good English skill, be able to communicate, and have a good score from a Standard English Test, for example obtaining TOEFL score of at least 450 or IELTS of at least 5.0 or pass an English Test as approved by the Faculty Graduate Study Committee.

9. Document Required

9.1) Degree or certificate document

9.2) Recommendation Letters

9.3) Publication (if any)

9.4) Agreement and Approval official letter from embassy

10. Academic Professor

10.1) International Professor

Professor Sung Jong Hong, Incheon University, South Korea

Professor Rossaline Hassan, USM, Malaysia

Professor Malina Osman, UPM, Malaysia

Professor Alexis Ribas, UB, Spain

Professor Dr. Yingsi Lai, Sun Yat-sen University, China

10.2) Internal

Assistant Professor Dr. Choosak Nithikathkul

11. Coordinator

Assistant Professor Dr. Choosak Nithikathkul

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