

Faculty of Veterinary Medicine

Master of Science Program in Bio-Veterinary Sciences (International Program)

M.S. (Bio-Veterinary Sciences)

Plan A Option 1:

Total credits required: minimum 36 credits

(1) Major courses: minimum 7 credits (audit)

- Seminar: 2 credits

01515597 Seminar 1,1

- Major requirements: 5 credits

01515541 Quantitative Epidemiology and Risk Modeling 2(2-0-4)

01515591 Research Methods in Bio-Veterinary Sciences 3(3-0-6)

(2) Thesis: minimum 36 credits

01515599 Thesis 1-36

Plan A Option 2:

Total credits required: minimum 36 credits

(1) Major courses: minimum 24 credits

- Seminar: 2 credits

01515597 Seminar 1,1

- Major requirements: 10 credits

01515521 Human and Animal Infectious Disease I 3(3-0-6)

01515525 Ecology of Host-pathogen and Parasite Interaction 2(2-0-4)

01515541 Quantitative Epidemiology and Risk Modeling 2(2-0-4)

01515591 Research Methods in Bio-Veterinary Sciences 3(3-0-6)

- Major electives: minimum 12 credits

Choose graduate electives at least 12 credits from the list below.

01515522 Human and Animal Infectious Disease II 2 (2-0-4)

01515523 Vector-borne Disease I 2 (2-0-4)

01515524 Vector-borne Disease II 2 (2-0-4)

01515531 Genome and Environment I 2 (2-0-4)

01515532 Genome and Environment II 2 (2-0-4)

01515533 Bioinformatics in Bio-Veterinary Sciences I 2 (2-0-4)

01515534 Bioinformatics in Bio-Veterinary Sciences II 2 (2-0-4)

01515542 Geographic Information System for Bio-Veterinary Sciences 2 (2-0-4)

01515543 Risk Analysis in Bio-Veterinary Sciences 2 (2-0-4)

01515551 Food-borne Pathogens 2 (2-0-4)

01515552 Food Safety in Bio-Veterinary Sciences 2 (2-0-4)

01515553 Detection Methods of Food Contaminants and Food-borne Pathogens 2 (2-0-4)

01515596 Selected Topic in Bio-Veterinary Sciences 1-3

01515598 Special Problems 1-3

(2) Thesis: minimum 12 credits

01515599 Thesis

1-12

Course Description

01515521	Human and Animal Infectious Disease I History, evolution, host-agent relationships, and status of current infectious diseases, zoonosis, genetic diversity, impact on public health, epidemiology, evolution and control of diseases caused by bacteria, virus, protozoa, and parasites.	3(3-0-6)
01515522	Human and Animal Infectious Disease II Pathogenesis of infectious diseases at molecular levels mechanisms of host defense and immunogenesis, evolution of immune defense of micro-organisms, methods for infectious diseases control.	2 (2-0-4)
01515523	Vector-borne Disease I Vectors related with pathogens, ecological and genetic diversity of vector population, vector control strategy, chemicals uses for vector control and drug resistance.	2 (2-0-4)
01515524	Vector-borne Disease II Vector pathogen interactions, mechanism of transmission, and methods of control, important vector-bone diseases in Thailand and South-East Asia.	2 (2-0-4)
01515525	Ecology of Host-pathogen and Parasite Interaction Dynamics of host-parasite or host-pathogen interactions, species diversity of parasites, mode of reproduction, and life cycle, distribution and abundance of parasites and pathogens, use of mathematical models for predicting impact of parasites and pathogens on host populations.	2 (2-0-4)
01515531	Genome and Environment I Genomic and ecological aspects having impact on emerging diseases, evolution and relationship; Genomic variation in different forms and adaptation to the environment.	2 (2-0-4)
01515532	Genome and Environment II Phylogenetic aspects such as genome, technique, and sample analysis; technical terms and character coding; tree of phylogeny and modified techniques for analysis; molecular genetic technique in population genetic.	2 (2-0-4)
01515533	Bioinformatics in Bio-Veterinary Sciences I Principle and concepts of population genetics. Construction of phylogeny using both morphological and DNA sequence data. Analytical methods, the use of phylogenies to analyze evolutionary patterns.	2 (2-0-4)
01515534	Bioinformatics in Bio-Veterinary Sciences II Concepts and techniques for analysis and modeling of phylogenetic trees. Calculating a fitness using multiple solutions. The role and significance of molecular genetics related to population genetics, evolution, systematics and phylogeny.	2 (2-0-4)
01515541	Quantitative Epidemiology and Risk Modeling Scope and concepts in quantitative epidemiology, study model in epidemiology, analysis guideline, interpretation of epidemiological research. Comparison of model and real time epidemiology with changing conditions. Creation of risk models.	2 (2-0-4)
01515542	Geographic Information System for Bio-Veterinary Sciences Design, organization, evaluation, case definition, surveillance protocols, contingency planning and emergency preparedness using epidemiological information system.	2 (2-0-4)

01515543	Risk Analysis in Bio-Veterinary Sciences Component and terminology of risk analysis, methodology, key elements of qualitative risk analysis, development of basic qualitative risk analysis model, for regulations and standard formulation.	2 (2-0-4)
01515551	Food-borne Pathogens Etiologic microorganisms of food-borne infections diseases, international transmission of pathogens, food-borne infections diseases, pathogen physiology, virulent factors and antimicrobial resistances, host and parasite immunity, food-borne pathogen identification and food safety control.	2 (2-0-4)
01515552	Food Safety in Bio-Veterinary Sciences International law and regulation of food, food control standard, food safety management, risk analysis, hazard analysis and critical control point.	2 (2-0-4)
01515553	Detection Methods of Food Contaminants and Food-borne Pathogens Principle in food-contaminant analysis, detection and diagnosis of food-borne pathogens, technique of analysis.	2 (2-0-4)
01515591	Research Methods in Bio-Veterinary Sciences Research principles and methods in bio veterinary sciences and problem analysis for research topic identification, data collection for research planning, identification of samples and techniques. Analysis interpretation and discussion; of research result report writing for presentation and preparation.	3 (3-0-6)
01515596	Selected Topic in Bio-Veterinary Sciences Selected topics in bio-veterinary science at the master's degree level. Topics are subject to changed each semester.	1-3
01309597	Seminar Presentation and discussion on interesting topics in bio-veterinary science at the master's degree level.	1
01515598	Special Problems Study and research in bio-veterinary science at the master's degree level and compile into a written report.	1-3
01515599	Thesis Research at the master's degree level and compile into a thesis.	1-36