



**C V E**

**Collaboration of  
Veterinary  
Education**

**between  
Japan and Thailand**

**for Sound Evolution of Asia**



Hokkaido University

# Hokkaido University



## Advanced Seminar in Veterinary Clinics : Small Animals

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## Advanced Seminar in Veterinary Clinics : Large Animals and Clinical Pathology

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Course Title    Advanced Seminar in Veterinary Clinics : Small Animals					
Type	Exercise, Elective	Number of credits	2	Hours	-

Course Title	Companion Animal Medicine Clinic I				
Course Instructor	Mitsuyoshi TAKIGUCHI, Kensuke NAKAMURA, Noboru SASAKI, Kiwamu HANAZONO				
Course Overview: Through communication with owners and clinical activities at the Veterinary Teaching Hospital, students cultivate problem-solving abilities required for caring for companion animals especially with neck and thoracic diseases.					
Course Goals: <ol style="list-style-type: none"> <li>1. To be able to conduct a medical interview with an owner</li> <li>2. To be able to design a diagnostic scheme</li> <li>3. To be able to make a differential diagnosis based on examination findings</li> <li>4. To be able to design a treatment plan and evaluate therapeutic effectiveness</li> </ol>					
For internal diseases of companion animals with especially neck and thoracic lesions, Students learn high knowledge and skills in making diagnostic schemes, treatment plans, and evaluating therapeutic effectiveness through at least one week clinical activities.					
Remarks: Maximum of 5 students					

Course Title	Companion Animal Medicine Clinic II				
Course Instructor	Mitsuyoshi TAKIGUCHI, Hiroshi OHTA, Keitaro MORISHITA				
Course Overview: Through communication with owners and clinical activities at the Veterinary Teaching Hospital, students cultivate problem-solving abilities required for caring for companion animals especially with abdominal diseases.					
Course Goals: <ol style="list-style-type: none"> <li>1. To be able to conduct a medical interview with an owner</li> <li>2. To be able to design a diagnostic scheme</li> <li>3. To be able to make a differential diagnosis based on examination findings</li> <li>4. To be able to design a treatment plan and evaluate therapeutic effectiveness</li> </ol>					
For internal diseases of companion animals with especially abdominal lesions, Students learn high knowledge and skills in making diagnostic schemes, treatment plans, and evaluating therapeutic effectiveness through at least one week clinical activities.					
Remarks: Maximum of 5 students					

Course Title	Companion Animal Surgery I
Course Instructor	Masahiro OKUMURA, Ryosuke ECHIGO, Takaharu ITAMI, Tomohito ISHIZUKA
<p>Course Overview: Through communication with owners and clinical activities at the Veterinary Teaching Hospital, students cultivate problem-solving abilities required for caring for companion animals especially with orthopedic and neurological diseases.</p>	
<p>Course Goals:</p> <ol style="list-style-type: none"> <li>1. To be able to conduct a medical interview with an owner</li> <li>2. To be able to make a differential diagnosis based on examination findings</li> <li>3. To be able to design a treatment plan and evaluate therapeutic effectiveness</li> <li>4. To be able to make decision to choose appropriate surgical procedures to respective pathological conditions and to estimate possible prognostic situations</li> <li>5. To be able to plan entire course of pain management and peri-operational anesthesia for surgical interventions for respective cases</li> </ol>	
<p>For companion animals with orthopedic and neurological disorders, students learn highly sophisticated knowledge and skills in making diagnostic schemes, treatment plans including surgical or non-surgical interventions and anesthesia, and evaluating therapeutic effectiveness through at least one week clinical activities.</p>	
<p>Remarks: Maximum of 5 students</p>	

Course Title	Companion Animal Surgery II
Course Instructor	Kenji HOSOYA, Satoshi TAKAGI, Yuki HOSHINO, Takaharu ITAMI, Tomohito ISHIZUKA
<p>Course Overview: Through communication with owners and clinical activities at the Veterinary Teaching Hospital, students cultivate problem-solving abilities required for caring for companion animals especially with surgical disorders in soft tissues.</p>	
<p>Course Goals:</p> <ol style="list-style-type: none"> <li>1. To be able to conduct a medical interview with an owner</li> <li>2. To be able to make a differential diagnosis based on examination findings</li> <li>3. To be able to design a treatment plan and evaluate therapeutic effectiveness</li> <li>4. To be able to make decision to choose appropriate surgical procedures to respective pathological conditions and to estimate possible prognostic situations</li> <li>5. To be able to plan entire course of pain management and peri-operational anesthesia for surgical interventions for respective cases</li> </ol>	
<p>For companion animals with pathologies in soft tissues, students learn highly sophisticated knowledge and skills in making diagnostic schemes, treatment plans including surgical or non-surgical interventions and anesthesia, and evaluating therapeutic effectiveness through at least one week clinical activities.</p>	
<p>Remarks: Maximum of 5 students</p>	

Course Title	Companion Animal Oncology
Course Instructor	Kenji HOSOYA, Satoshi TAKAGI, Yuki HOSHINO, Takaharu ITAMI, Tomohito ISHIZUKA
Course Overview: Through communication with owners and clinical activities at the Veterinary Teaching Hospital, students cultivate problem-solving abilities required for caring for companion animals especially with tumorous diseases.	
Course Goals: <ol style="list-style-type: none"><li>1. To be able to conduct a medical interview with an owner</li><li>2. To be able to make a differential diagnosis based on examination findings</li><li>3. To be able to design a treatment plan and evaluate therapeutic effectiveness</li><li>4. To be able to make decision to choose appropriate surgical procedures to respective pathological conditions and to estimate possible prognostic situations</li><li>5. To be able to plan entire course of pain management and peri-operational anesthesia for surgical interventions for respective cases</li></ol>	
For companion animals with pathologies in oncology, students learn highly sophisticated knowledge and skills in making diagnostic schemes, treatment plans including chemotherapy, radiotherapy and surgical resection, including pain management and anesthesia, and evaluating therapeutic effectiveness through at least one week clinical activities.	
Remarks: Maximum of 5 students	

Course Title	Advanced Seminar in Research Laboratory Rotation
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Type	Exercise, Elective	Number of credits	2	Hours	-																
Course Instructor		-																			
<p>Course Overview:</p> <p>Students experience laboratory practices, research seminars, lectures, and other activities, to learn basic/advanced skills/methodology in the research on microbiology and infectious diseases, and also in the different fields of veterinary science, through the rotation of research laboratories. Through the rotation of research laboratories, students also acquire basic and professional knowledge on research activities in the field of veterinary medicine.</p>																					
<p>Course Goals:</p> <ol style="list-style-type: none"> <li>1. To learn basic skills/techniques/methodology in the research on microbiology and infectious diseases</li> <li>2. To learn basic skills/techniques/methodology in each of the research laboratories</li> <li>3. To understand the details of research projects/themes in each of the research laboratories</li> </ol>																					
<p>Course Schedule:</p> <ol style="list-style-type: none"> <li>1. Students will spend 10 days (2 weeks) for research laboratory rotation (Parts I and II).</li> <li>2. <u>Part I</u>: student will choose one of the 5 laboratories (Laboratories of Microbiology, Parasitology, Infectious Diseases, Public Health, and Veterinary Hygiene; 2 students for each of the laboratories), and do modern laboratory practices, including lectures, experiments, and research seminars/discussion, <i>etc</i>, in the research on microbiology and infectious diseases.</li> <li>3. <u>Part II</u>: student will choose one of the 3 courses (Courses A, B, C); maximum of 4 students for each of the courses), and do modern laboratory practices, including lectures, experiments, and research seminars/discussion, <i>etc</i> (see Table below).</li> <li>4. This course also includes a seminar in advanced immunology (all students).</li> <li>5. Students can not transfer to other courses during the rotation.</li> <li>6. Spoken language of the courses is English.</li> <li>7. Courses are open twice (5-6th and 11-12th weeks) each academic year, and students take either one of the two.</li> </ol> <p>Courses for Part II</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>Course A (Maximum of 4 students)</th> <th>Course B (Maximum of 4 students)</th> <th>Course C (Maximum of 4 students)</th> </tr> </thead> <tbody> <tr> <td>Lab 1</td> <td>Anatomy</td> <td>Physiology</td> <td>Pharmacology</td> </tr> <tr> <td>Lab 2</td> <td>Biochemistry</td> <td>Comparative Pathology</td> <td>Laboratory Animal Science and Medicine</td> </tr> <tr> <td>Lab 3</td> <td>Toxicology</td> <td>Radiation Biology</td> <td>Wildlife Biology and Medicine</td> </tr> </tbody> </table>							Course A (Maximum of 4 students)	Course B (Maximum of 4 students)	Course C (Maximum of 4 students)	Lab 1	Anatomy	Physiology	Pharmacology	Lab 2	Biochemistry	Comparative Pathology	Laboratory Animal Science and Medicine	Lab 3	Toxicology	Radiation Biology	Wildlife Biology and Medicine
	Course A (Maximum of 4 students)	Course B (Maximum of 4 students)	Course C (Maximum of 4 students)																		
Lab 1	Anatomy	Physiology	Pharmacology																		
Lab 2	Biochemistry	Comparative Pathology	Laboratory Animal Science and Medicine																		
Lab 3	Toxicology	Radiation Biology	Wildlife Biology and Medicine																		
<p>Remarks:</p> <p>Part I: 2 students for each of the laboratories</p> <p>Part II: Maximum of 4 students for each of the courses</p>																					



# The University of Tokyo



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Course Title	Practice of Pathology (Diagnostic Pathology)				
Type	Exercise	Number of credits	2 (3.2)	Hours	-
Course Instructor	Hiroyuki NAKAYAMA, Kazuyuki UCHIDA, James K. CHAMBERS, Masaya TSUBOI				
Course Overview:					
<p>The practice course deals with diagnostic pathology in small animals, especially with neoplastic diseases. Skills for conducting necropsy, histopathology and cytology examinations as well as clinicopathological and morphological natures of tumors of neoplastic diseases are provided.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To understand morphological characteristics of tumors in small animals</li> <li>2. To understand principal protocols of necropsy, histopathology and cytology examinations</li> </ol>					
Course Schedule:					
<ol style="list-style-type: none"> <li>1. Principal techniques for necropsy, histopathology and cytology - Day 1</li> <li>2. Description methods for necropsy, histopathology and cytology findings - Day 1</li> <li>3. Learning through clinical cases - I - Day 2</li> <li>4. Learning through clinical cases II - Day 3</li> <li>5. Preparations and discussion for case report - Day 4</li> <li>6. Special stainings and immunohistochemistry - Day 4</li> <li>7. Case report presentation and discussion - Day 5</li> </ol>					
Remarks:					
May have a maximum number of students					



Course Title	Practice of Virology and Immunology				
Type	Exercise	Number of credits	1 (1.6)	Hours	-
Course Instructor	Taisuke HORIMOTO, Shin MURAKAMI				
Course Overview:					
<p>In this practice, students can learn basic procedures for virus isolation from infected animals, and for serological, antigenic, and genetic diagnosis for viral infections.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To understand the basic knowledge of viral infectious diseases</li> <li>2. To understand the clinical diagnosis for viral infectious diseases</li> </ol>					
Course Schedule:					
<ol style="list-style-type: none"> <li>1. Virus isolation from infected animals</li> <li>2. Serological method -1 (Virus-neutralization test)</li> <li>3. Serological method -2 (Hemagglutination-inhibition test)</li> <li>4. Serological method -3 (ELISA)</li> <li>5. Antigenic diagnostic method (Immuno-chromatography test)</li> <li>6. Genetic diagnostic method -1 (PCR)</li> <li>7. Genetic diagnostic method -2 (LAMP)</li> </ol>					
Remarks:					

Course Title	Practice of Veterinary Public Health				
Type	Exercise	Number of credits	0.5 (0.8)	Hours	-
Course Instructor	Katsuaki SUGIURA, Kazuhiro HIRAYAMA				
Course Overview:					
<p>In this course, students learn basic and applied epidemiological techniques for analysis of surveillance data and risk assessment for animal health and food safety. Students exercise with actual or mock data.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To understand basic epidemiological procedures to analyze data</li> <li>2. To learn how to use software for statistics</li> <li>3. To run epidemiological exercise with actual or mock data</li> </ol>					
Course Schedule:					
<ol style="list-style-type: none"> <li>1. Lecture and exercise for statistic software</li> <li>2. Analysis of actual or mock data with statistic software</li> <li>3. Presentation and discussion of analyzed data</li> </ol>					
Remarks:					

Course Title	Practice of Food Hygiene				
Type	Exercise	Number of credits	1 (1.6)	Hours	-
Course Instructor	Akio YAMADA, Kazuhiro HIRAYAMA				
Course Overview:					
<p>In this course, students learn basic knowledge and procedures to assure food safety, mainly in Japan. Students visit important site(s) for food safety assurance such as meat hygiene inspection office at slaughterhouse. Students also learn and practice methods to presume the cause and situation in food poisoning cases and to deal and proceed veterinary public health problems through exercise and simulation.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To understand principle and measures to assure food safety</li> <li>2. To understand Japanese and Thai systems for food hygiene and veterinary public health</li> <li>3. To understand and practice basic procedures to solve problems in veterinary public health and food hygiene</li> <li>4. To learn how to discuss, conclude and communicate the results of analysis on the problems in veterinary public health and food poisoning cases</li> </ol>					
Course Schedule:					
<ol style="list-style-type: none"> <li>1. Visit important site(s) to assure food hygiene and safety such as meat hygiene inspection office at slaughterhouse</li> <li>2. Discuss the differences in food hygiene and food safety measures between Thailand and Japan</li> <li>3. Lecture for methods to solve basic food safety and veterinary public health problems</li> <li>4. Simulation on the procedure for countermeasures against health hazard cases</li> <li>5. Practice for communication with related sections about health hazard cases</li> <li>6. Exercise on a case of food-borne health hazard to presume cause and situation</li> <li>7. Practice for the skill to discuss, conclude and present the results</li> </ol>					
Remarks:					

Course Title	Rotated Practice of Small Animal Surgery				
Type	Exercise	Number of credits	4 (6.4)	Hours	-
Course Instructor	Ryohei NISHIMURA, Manabu MOCHIZUKI, Takayuki NAKAYAMA, Naomi FUJITA				
Course Overview:					
<p>Small animal surgical rotations utilize the case method approach. Under supervision the student records case histories, performs physical or orthopedic examinations as well as diagnostic and basic surgical and anesthetic procedures, and learns basic case and client management.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To obtain basic skill of out patient clinic</li> <li>2. To obtain basic techniques of surgery and anesthesia/analgesia</li> </ol>					
Course Schedule:					
<ol style="list-style-type: none"> <li>1. Preliminary practice (out patient service, surgery, anesthesia) for three days</li> <li>2. Soft tissue surgery, out patient clinic for two days</li> <li>3. Orthopedics &amp; Neurosurgery, out patient clinic for two days</li> <li>4. Soft tissue surgery, surgery and anesthesia/analgesia for two days</li> <li>5. Orthopedics &amp; Neurosurgery, surgery and anesthesia/analgesi for two days</li> <li>6. Case presentation for one day</li> </ol>					
Remarks:					
<p>The student who doesn't belong to School of Veterinary Medicine in Japan is not allowed to do any medical activity even under his/her supervisor's surveillance by law.</p>					

Course Title	Rotated Practice of Small Animal Internal Medicine				
Type	Exercise	Number of credits	4 (6.4)	Hours	-
Course Instructor	Hajime TSUJIMOTO, Naoaki MATSUKI, Koichi OHNO, Tomohiro YONEZAWA				
Course Overview:					
<p>The student records case histories, performs physical examinations of patients under the supervision of doctors. The student also learns diagnostic, basic medical procedures, basic treatments, and case and client management through discussion with members.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To design a diagnostic scheme.</li> <li>2. To make a differential diagnosis based on examination findings</li> <li>3. To design a treatment plan and evaluate therapeutic effectiveness</li> </ol>					
Course Schedule:					
<ul style="list-style-type: none"> <li>- Guidance for clinical rotations in the Veterinary Medical Center</li> <li>- Clinical rotations (around 8 weeks)</li> <li>- Writing a report and give a presentation of one specific case</li> </ul> <p>The student should have knowledge of the following:</p> <ol style="list-style-type: none"> <li>1. Signs and symptoms of the condition</li> <li>2. Differential diagnosis - what conditions may present in a similar fashion</li> <li>3. Basic pathophysiology</li> <li>4. Primary work up and treatment</li> <li>5. Presentation techniques</li> </ol>					
Remarks:					
<p>The student who doesn't belong to School of Veterinary Medicine in Japan is not allowed to do any medical activity even under his/her supervisor's surveillance by law.</p>					



# Rakuno Gakuen University

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Course Title	Clinical Rotation (Livestock Animals)				
Type	Practice	Number of credits	6	Hours	270
Course Instructor	Motoshi Tajima, Masateru Koiwa, Satoshi Kawamoto, Kiyoshi Taguchi, Kazuyuki Suzuki, Masaharu Moriyoshi, Hiromichi Ohtsuka				
<p>Course Overview:</p> <p>Through a combination of clinical seminars, training for basic clinical skills and practice at the Veterinary Teaching Hospital, students gain clinical skills and problem-solving abilities required for practitioners of production animals.</p>					
<p>Course Goals:</p> <ul style="list-style-type: none"> <li>• To be able to gather information from an owner via medical interview</li> <li>• To be able to design a diagnostic scheme and explain it to the owner</li> <li>• To be able to make a differential diagnosis based on examination findings</li> <li>• To be able to design a treatment plan and explain it to the owner</li> <li>• To be able to explain an overview of feeding management and reproduction management to the owner, with the objective of preventing major diseases.</li> </ul>					
<p>1. Clinical seminars</p> <p>Students participate in clinical seminars and workshops sponsored by the division or other sponsored organizations, and learn case studies, the latest theories, and practical skills. In the case of participation in seminars outside the Veterinary Teaching Hospital, the submission of a report will be requested.</p> <p>2. Practice at teaching hospital</p> <p>Students are allocated to either 2 of following 4 stations (1 week each)</p> <p>1) Production animal internal medicine I</p> <p>Along with livestock handling methods, techniques for vital observation and clinical pathology examinations that form the basics of diagnosis, and methods for analyzing these, students grasp basic techniques such as medication administration from the treatment side.</p> <p>2) Production animal internal medicine II</p> <p>Through house-call examinations and treatments, students learn the techniques of medical interview, examination, diagnosis, and treatment required for primary medical care of production animals. Further, students learn examination methods and therapeutic techniques for differential diagnosis through the examination and treatment of hospitalized livestock (secondary medical care).</p> <p>3) Production animal surgery</p> <p>Along with learning the correct diagnosis, treatment and techniques, and hospitalization management methods for surgical diseases of production animals, students learn about the causes of the diseases and methods to prevent them. Students will visit farms as necessary and perform hands-on learning of diagnostic and disease-prevention methods for cattle herds.</p> <p>4) Theriogenology</p> <p>Along with learning techniques for making diagnostic schemes and treatment plans and evaluating therapeutic effectiveness for reproductive disorders of production animals, students learn the examination techniques, data collection, and analysis methods necessary for reproduction management.</p>					
<p>Remarks:</p>					

Course Title	Advanced Hygiene and Environmental Science I				
Type	Practice, Elective	Number of credits	1	Hours	15
Course Instructor	Katsuro Hagiwara, Shin Oikawa, Yutaka Tamura, Ken Nakada, Hajime Nagahata, Hidetoshi Higuchi, Yasukazu Muramatsu, Jun Noda, Kohei Makita, Masaru Usui, Mitsuhiko Asakawa, Hidetomo Iwano				
<p>Course Overview:</p> <p>Through a combination of laboratory training for basic/advanced diagnostic skills and seminars on 'one health' issues, students understand technology and administration related to safety and sustainable food delivery.</p>					
<p>Course Goals:</p> <ul style="list-style-type: none"> <li>• To learn advanced procedures for the diagnosis of diseases and risk of health problems</li> <li>• To learn advanced procedures for the diagnosis of food and environmental safety</li> <li>• To be able to explain how the safety of foods from different sources is guaranteed in both aspects on technology and administration</li> </ul>					
<p>1. Laboratory Rotation</p> <p>Students will be allocated to laboratories for 2 weeks.</p> <ol style="list-style-type: none"> <li>1) Laboratory of Food Microbiology and Food Safety</li> <li>2) Laboratory of Veterinary Herd Health</li> <li>3) Laboratory of Animal Health</li> <li>4) Laboratory of Zoonotic Diseases</li> <li>5) Laboratory of Environmental Health Science</li> <li>6) Laboratory of Veterinary Epidemiology</li> <li>7) Laboratory of Veterinary Virology</li> <li>8) Laboratory of Veterinary Parasitology</li> <li>9) Laboratory of Veterinary Biochemistry</li> </ol> <p>2. Seminar for International Veterinary Teaching Program (2015): Farm to Table- Safe and Sustainable food delivery</p> <p>Summary: More than 60% of Japanese food products depend on the foreign countries. Livestock products imported from Asia accounts for approximately 25% of the imports; in particular, many imported livestock products come from Thailand. Food safety is an important concept in food import and export between countries. In this program, Japanese and Thai students learn concepts in the following seven themes, through which they can deepen their understanding and discuss the issues related to safe and sustainable food delivery.</p> <ol style="list-style-type: none"> <li>1) Food safety risk assessment Associate Professor Kohei Makita DVM, Ph.D. Risk assessment is a part of Codex Alimentarius Commission risk analysis. Risk assessment quantifies the risks of food poisoning or food-borne zoonotic diseases due to food consumption. It can also present the magnitude of effects of the relevant factors at each step of the food chain and food processing. In this talk, risk assessment, which is a great tool in improving food safety, will be discussed using examples from Africa.</li> <li>2) Animal Quarantine Service in Japan Professor Katsuro Hagiwara, DVM, Ph.D. A quarantine system is implemented worldwide to prevent the incursion of animal diseases. Japan conducts both import and export inspections for livestock and other animals, as well as products and goods manufactured or derived from these animals. This program is intended to help students study the quarantine system in Japan. Students from Japan and Thailand can observe the animal quarantine inspection system at work through a visit.</li> <li>3) Food safety program in Japan-public health issue and inspection control Zoonotic Disease Professor Yasukazu Muramatsu DVM, Ph.D. Milk is a superior food item containing a well-balanced variety of nutrients. Apart from milk, various dairy products are consumed by people every day. Meanwhile, milk and dairy products are perfect growth sources for pathogenic microorganisms. This class aims to provide knowledge on hygiene control for ensuring safety in food supply through visits to sites of dairy manufacturing. Further, this class will employ previous cases to encourage students</li> </ol>					



to think and learn of the kind of measures required for the prevention of food poisoning caused by dairy products.

4) Antimicrobial resistance in bacteria as a risk factor in food

Professor Yutaka Tamura, DVM, Ph.D

Lecturer Masaru Usui, DVM, Ph.D.

A global concern in the food industry is that drug-resistant bacteria are selected by the use of antimicrobial agents for treating or promoting the growth of edible animals. These bacteria influence human health through the food chain. In this lecture, the definition of drug-resistant bacteria, mechanisms through which drug-resistant bacteria become prevalent, and measures for drug-resistant bacteria will be discussed. Testing of drug resistance and detection of resistance genes will be practiced.

5) Basic skills for dairy herd health management

Veterinary Herd Health

Professor Shin Oikawa DVM, Ph.D

Professor Ken Nakata DVM, Ph.D

This program aims to provide the fundamental concept of herd health and the basic skills required to enhance the clinical practice of dairy cattle herd health.

6) Bovine mastitis and milk quality control on dairy production

Professor Hajime Nagahata DVM, Ph.D.

Professor Hidetoshi Higuchi DVM, Ph.D.

Controlling mastitis and producing high-quality and safe raw milk are important issues in the dairy industry. This lecture aims to provide students with relevant knowledge and training in techniques required for the production of high-quality and safe raw milk through the control of mastitis. The HACCP will be explored as well.

7) Sustainable Farm management with Environmental conscious approach

Associate Professor Jun Noda Ph.D.

In livestock farming, care for the control of livestock waste and drug use, geared toward reducing environmental burden, has become an increasingly important issue. This lecture will cover previous cases and related information to help students understand the importance of farming management that prioritizes the environment for the promotion of sustainable livestock businesses.

8) Team Based Learning (group discussion)

Coordinator: Professor Katsuro Hagiwara, DVM, Ph.D.

Team-based learning (TBL) is a structured form of small-group learning that emphasizes student preparation outside the class and application of knowledge in class. Students are organized strategically into diverse teams of five to seven students working together throughout the class. Before each course unit or module, students prepare by reading on the topics beforehand.

Remarks:

Course Title	Veterinary Hospital Training Course				
Type	Exercise, Elective	Number of credits	1	Hours	45
Course Instructor	Seiya Maehara, Tetsuya Nakade, Kazuto Yamashita, Tsuyoshi Kadosawa, Tsuyoshi Uchide, Hiroshi Ueno, Yoshifumi Endo, Kenjiro Miyoshi, Takashi Tamamoto, Tadashi Sano				
<p>Course Overview:</p> <p>Students gain the problem-solving abilities required for small animal practice through participation in the clinical activities at the Veterinary Teaching Hospital that include communications with owners.</p>					
<p>Course Goals:</p> <ul style="list-style-type: none"> <li>- To be able to conduct a medical interview with an owner</li> <li>- To be able to design a diagnostic scheme</li> <li>- To be able to make a differential diagnosis based on examination findings</li> <li>- To be able to design a treatment plan</li> </ul>					
<p>Students may choose either 1 of following 6 clinical departments at Small Animal Teaching Hospital (2weeks)</p> <ol style="list-style-type: none"> <li>1) Ophthalmology (Maehara) : practice basic clinical skills that include interview with owners, diagnosis, treatment and evaluation of treatment outcomes with patients having eye problems</li> <li>2) Small Animal Internal Medicine (Uchide, Tamamoto) : practice basic clinical skills that include interview with owners, diagnosis, treatment and evaluation of treatment outcomes using clinical cases of internal medicine</li> <li>3) Small Animal Surgery (Ueno) : practice basic clinical skills that include interview with owners, diagnosis, treatment and evaluation of treatment outcomes using clinical cases of orthopaedic surgery</li> <li>4) Oncology (Kadosawa, Endo) : practice basic clinical skills that include interview with owners, diagnosis, treatment and evaluation of treatment outcomes using clinical cases of tumors.</li> <li>5) Diagnostic Imaging (Nakade, Miyoshi) : practice designing diagnosis, interpretation of images and preparation of reports to practitioners using clinical cases taken X-ray, ultrasonography, endoscopy, CT and MRI.</li> <li>6) Anesthesia and Analgesia (Yamashita, Sano) : practice basic clinical skills in anesthetic management, perioperative pain management and perioperative nutrition administration using clinical anesthesia cases.</li> </ol>					
<p>Remarks:</p> <p>Students are allocated to 1 of abovementioned 6 clinics for 2 weeks.</p>					



# Kasetsart University

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Course Title	Clinical Practice in Farm Animals				
Type	Exercise, Clinical Practices	Number of credits	6	Hours	180
Course Instructor	Pariwat POOLPERM, Nattavut RATTANAVANIJROTE, Pichai JIRAWATTANAPONG, Narin UPAGARIN, Kriangkrai WITOONSATHIEN, Visanu BOONYAWIWAT, Natthana THITICHAYAPONG				
Course Overview:					
Practice in farm visiting, production and health monitoring, clinical examination, diagnosis, treatment and preventive medicine in farm animals, emphasizing on swine, poultry and aquatic animals.					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To be able to gather information from history taking from farm owners</li> <li>2. To be able to plan a diagnostic scheme and further investigations</li> <li>3. To be able to do necropsy and make differential diagnosis based on lesions</li> <li>4. To be able to interpret laboratory results and make a conclusion of the clinical cases and explain to the owner</li> <li>5. To be able to explain an overview of management and medical suggestions to the owner, in the sense of preventing diseases in the future</li> </ol>					
Course Schedule:					
Week #:					
1: Introduction to Clinical Practice in Farm Animals					
2-5: Clinical practice in pigs: basic farm and health management, farm visit, necropsy and diagnosis					
6-9: Clinical practice in poultry: basic farm and health management, farm visit, necropsy and diagnosis					
10-11: Clinical practice in fishes: basic farm and health management, farm visit, necropsy and diagnosis					
12-13: Clinical practice in shrimp: basic farm and health management, farm visit, necropsy and diagnosis					
14-15: Practice Discussion and Presentation					
15: Examination					
Remarks:					

Course Title	Clinical Practice in Farm Animals 2				
Type	Exercise, Clinical Practices	Number of credits	2	Hours	60
Course Instructor	Pariwat POOLPERM, Nattavut RATTANAVANIJROTE, Pichai JIRAWATTANAPONG, Narin UPRAGARIN, Kriangkrai WITOONSATHIEN, Visanu BOONYAWIWAT, Natthana THITICHAYAPONG				
Course Overview:					
Practice in farm visiting, production and health monitoring, clinical examination, diagnosis, treatment and preventive medicine in farm animals, emphasizing on swine, poultry and aquatic animals.					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To be able to gather information from history taking from farm owners</li> <li>2. To be able to plan a diagnostic scheme and further investigations</li> <li>3. To be able to do necropsy and make differential diagnosis based on lesions</li> <li>4. To be able to interpret laboratory results and make a conclusion of the clinical cases and explain to the owner</li> <li>5. To be able to explain an overview of management and medical suggestions to the owner, in the sense of preventing diseases in the future</li> </ol>					
Course Schedule:					
Week #:					
1: Introduction to Clinical Practice in Farm Animals					
2-5: Clinical practice in pigs: basic farm and health management, farm visit, necropsy and diagnosis					
6-9: Clinical practice in poultry: basic farm and health management, farm visit, necropsy and diagnosis					
10-11: Clinical practice in fishes: basic farm and health management, farm visit, necropsy and diagnosis					
12-13: Clinical practice in shrimp: basic farm and health management, farm visit, necropsy and diagnosis					
14-15: Practice Discussion and Presentation					
15: Examination					
Remarks:					

Course Title	Clinical Practice in Microbiology II				
Type	Exercise, Clinical Practices	Number of credits	1	Hours	-
Course Instructor	Porn Tippa LEKCHAROENSUK, Kunyarat THUENG-IN, Win SURACHETPONG				
Key words:					
Sample collection and handling, diagnostic virology and serology, laboratory analysis and interpretation, human and animal health.					
Course Overview:					
Clinical practice in Microbiology. Knowledge integration of sample collection, sample handling, diagnostic virology, serology and molecular biology, laboratory analysis and interpretation for disease investigation. Using problem-based learning.					
Course Goals:					
<ol style="list-style-type: none"> <li>1. Understand principle of diagnostic virology and serology</li> <li>2. Understand how to apply virology and immunology to identify cause(s) of disease outbreaks</li> <li>3. Integrate previous and current knowledge to set a diagnostic plan for a disease investigation</li> <li>4. Conclude and interpret laboratory diagnostic data and results</li> </ol>					
Course Schedule:					
Each group of student will receive at least two problems. The instructors will advise the students to go through the following steps to solve each problem.					
<ol style="list-style-type: none"> <li>1. Instructor outlining steps of the study using problem-based learning and providing a problem set</li> <li>2. Opening the problem, setting objectives of learning and defining terminology</li> <li>3. Group meeting and self-study to set the diagnostic plan</li> <li>4. Student presentation: the tentative/differential diagnosis of the disease in the problem, present the diagnostic plan including sample collection and handling, possible diagnostic methods</li> <li>5. Laboratory practice, self-study regarding the principle of the diagnostic method(s) and understand the causative pathogen(s), immune response to infection, pathogenesis, disease prevention and control</li> <li>6. Student presentation: principle of the diagnostic method(s) and understand the causative pathogen(s), immune response to infection, pathogenesis, disease prevention and control</li> <li>7. Instructor conclusions and problem closing</li> </ol>					
Remarks:					

Course Title	Clinical Practice in Epidemiology				
Type	Exercise, Clinical Practices	Number of credits	2	Hours	60
Course Instructor	Sirichai WONGNAKPETCH, Suwicha KASEMSUWAN, Suporn THONGYUAN, Chaithep POOLKHET				
Course Overview:					
Practice in veterinary public health and epidemiology, survey and study design, statistical analysis, determination of risk and tabletop exercise.					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To better understand the study design in epidemiological context</li> <li>2. To practice the data analysis in epidemiology</li> <li>3. To better understand the control measurement of Thai authorities in veterinary practices</li> </ol>					
Course Schedule:					
Day #:					
<ol style="list-style-type: none"> <li>1: Design and planning on epidemiological study</li> <li>2: Statistical analysis for qualitative data</li> <li>3: Statistical analysis for quantitative data</li> <li>4: Sampling and sample size determination</li> <li>5: Tabletop exercise</li> <li>6: Risk determination</li> <li>7: Measurement of association</li> <li>8-10: Design, planning, data collection and interpretation of survey study</li> </ol>					
Remarks:					

Course Title	Clinical Practice in Large Animals				
Type	Exercise, Clinical Practices	Number of credits	6	Hours	180
Course Instructor	Pipat ARUNVIPAS, Somchai SAJAPITAK, Anawat SAENGMALÉE, Theera RUKWARMSUK, Adisorn YAWONGSA, Jaturong WONGSANIT, Tanu PINYOPUMMINTR, Anuchai PINYOPUMMINTR, Krittisak TANCHAROEN, Wandee TEINGTUM, Worakit CHEDCHOOTUM, Aree LAIKUL, Kanitha PETUDOMSINSUK, Pornchai SANTITISAREE, Nikorn THONGTIP				
Course Overview:					
<p>Combination of comprehensive lectures and clinical practices in medicine, surgery, theriogenology in ruminant, equine, and wildlife. Herd health management in ruminant species including dairy and beef cattle and small ruminants at veterinary teaching hospital and private farms. Wildlife ecology management practice in wildlife and exotic species practicing at veterinary teaching hospital and on wildlife national park.</p>					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To be able to practice in physical and clinical examination, diagnosis, treatments, prevention and control disease related to medical, surgical, and theriogenological problems in ruminants at individual and herd level.</li> <li>2. To be able to practice in physical and clinical examination, diagnosis, treatments, prevention and control disease related to medical, surgical, and theriogenological problems in horses.</li> <li>3. To be able to practice in physical and clinical examination, diagnosis, treatments, prevention and control disease related to medical, surgical in wildlife and exotic pets.</li> </ol>					
Course Schedule:					
Week #:					
<ol style="list-style-type: none"> <li>1: Introduction to Clinical Practice in Ruminants; infectious disease review, anesthesia review, hoof health and udder health review.</li> <li>2-7: Clinical practice in ruminants; basic farm and health management, farm visit</li> <li>8: Introduction to Clinical Practice in Equine; basic skill review (restraint and physical examination).</li> <li>9-12: Clinical practice in equine; equine ward practice, farm visit, surgical cases.</li> <li>13: Wildlife conservation medicine, anesthesia, drat practice, exotic pet medicine, rabbit medicine, and raptor medicine.</li> <li>14: Post mortem technique and clinical related – Rabbit model, radiographic interpretation, comparative medicine.</li> <li>15: Examination</li> </ol>					
Remarks:					



Course Title	Clinical Practice in Ruminants and Wildlife				
Type	Exercise, Clinical Practices	Number of credits	4	Hours	120
Course Instructor	Pipat ARUNVIPAS, Somchai SAJAPITAK, Anawat SAENGMALLEE, Theera RUKWARMSUK, Adisorn YAWONGSA, Jaturong WONGSANIT, Tanu PINYOPUMMINTR, Anuchai PINYOPUMMINTR, Krittisak TANCHAROEN, Wandee TEINGTUM, Pornchai SANTITISAREE, Nikorn THONGTIP				
Course Overview:					
Combination of comprehensive lectures and clinical practices in medicine, surgery, theriogenology in ruminant, and wildlife. Herd health management in ruminant species including dairy and beef cattle and small ruminants at veterinary teaching hospital and private farms. Wildlife ecology management practice in wildlife and exotic species practicing at veterinary teaching hospital and on wildlife national park.					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To be able to practice in physical and clinical examination, diagnosis, treatments, prevention and control disease related to medical, surgical, and theriogenological problems in ruminants at individual and herd level.</li> <li>2. To be able to practice in physical and clinical examination, diagnosis, treatments, prevention and control disease related to medical, surgical in wildlife and exotic pets.</li> </ol>					
Course Schedule:					
Week #:					
<ol style="list-style-type: none"> <li>1: Introduction to Clinical Practice in Ruminants; infectious disease review, anesthesia review, hoof health and udder health review.</li> <li>2-11: Clinical practice in ruminants; basic farm and health management, farm visit.</li> <li>12: Wildlife conservation medicine, anesthesia, dart practice, exotic pet medicine, rabbit medicine, and raptor medicine.</li> <li>13-14: Post mortem technique and clinical related – Rabbit model, radiographic interpretation, comparative medicine.</li> <li>15: Examination</li> </ol>					
Remarks:					

Course Title	Special Clinical Practice in Small Animal				
Type	Exercise, Clinical Practices	Number of credits	3	Hours	90
Course Instructor	Chalernpol LEKCHAROENSUK, Nirut SUWANNA, Jedee TEMWICHITR, Amornrate SASTRAVAHA, Chayakirt SINTHUSINGHA, Jatuporn NOOSUD, Kanja KAEWMONGKOL, Tassanee JAROENSONG, Panpicha SATTASATUCHANA, Sirikul SUNTARARAK, Sunee KUNAKORNSAWAT, Aree THAYANANUPHA, Monchanok VIJARNSORN, Naris THENGCH AISIRI, Sirirat NIYOM, Chaiyakorn THITIYANAPORN, Waraporn AUMARM, Wuttiwong TEERAPAN				
Course Overview:					
Student gains the clinical skills in small animal practice. The practice aims to obtain professional skills particularly on medicine, surgery and theriogenology in small animal.					
Course Goals:					
<ol style="list-style-type: none"> <li>1. To assimilate between the theory, application, and skill of medicine and surgery</li> <li>2. To increase the effectiveness of health evaluation, diagnosis and treatment of diseases</li> <li>3. To understand how to work on the clinic in the real life with problem oriented approach</li> <li>4. To practice and learn how to communicate with the clients effectively</li> </ol>					
Course Schedule:					
<ol style="list-style-type: none"> <li>1. How to take history and do physical examination effectively</li> <li>2. How to think critically with problem oriented approach</li> <li>3. How to calculate the useful number <ul style="list-style-type: none"> <li>-Fluid therapy</li> <li>-Continuing rate infusion</li> <li>-Clinical nutrition (enteral and parenteral nutrient requirements)</li> </ul> </li> <li>4. Plan the diagnosis and treatment, and interpret the results efficiently and effectively <ul style="list-style-type: none"> <li>-Complete blood count, blood chemistry, and urinalysis</li> <li>-Cytology</li> <li>-Imaging</li> <li>-Other tests</li> </ul> </li> <li>5. Plan the surgical procedure effectively Instructor conclusions and problem closing <ul style="list-style-type: none"> <li>-Anesthesia</li> <li>-Soft tissue and orthopedic surgery</li> </ul> </li> <li>6. Client communicate skill and real life practitioner</li> </ol>					
Remarks:					
Reading Materials					
<ul style="list-style-type: none"> <li>- DiBartola, S.P. 2012. Fluid therapy in small animal practice, 4th ed. St. Louis, Missouri, Elsevier Saunders</li> <li>- Fossum, T.W. 2007. Small animal surgery, 3rd ed. Missouri, Mosby-Elsevier, Inc.</li> <li>- Feldman, E.C. 1996. Canine and feline endocrinology and reproduction. Philadelphia, W.B. Saunders</li> <li>- Evans, H.E. 1993. Miller's anatomy of the dog. Philadelphia, WB Saunders Company</li> </ul>					



# Chulalongkorn University

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Course Title		Swine Clinical Laboratory Practice			
Type	Exercise, Elective	Number of credits	3	Hours	-
Course Instructor	Prof. Dr. Rungroje Thanawongnuwech Assoc. Prof. Dr. Kanisak Oraveerakul Assoc. Prof. Dr. Nopadol Pirarat Assoc. Prof. Dr. Padet Tummarak Assoc. Prof. Dr. Sanipa Suradhat Assoc. Prof. Dr. Sonthaya Tiawsirisup Assoc. Prof. Dr. Wijit Bunlunara Assist Prof Dr. Nuvee Prapasarakul Assist. Prof. Dr. Komkrich Teankum (Course coordinator) Assist. Prof. Dr. Sumitr Durongpongthorn Assist. Prof. Dr. Teerayut Kaewamatawong Instructor Dr. Pornchalit Assavacheep Instructor Dr. Suphot Wattanaphansak Instructor Dr. Woraporn Sukhumavasi Instructor Rachod Tantilertcharoen				
<b>Course Overview:</b> Clinical laboratory practice in medicine, surgery, obstetrics, pathology, and diagnostic techniques in swine.					
<b>Course Goals:</b> <ol style="list-style-type: none"> <li>1. To learn and practice necropsy, sample collection and handling with emphasis in swine.</li> <li>2. To understand the pathological diagnosis and other techniques</li> <li>3. To understand the concept and interpretation with application of immunological and serological techniques in swine</li> <li>4. To understand the concepts of microbiological techniques used in disease diagnosis with emphasis on important infectious disease in swine for further treatment, control and prevention plan.</li> </ol>					
<b>Course Schedule: (3 weeks)</b> <ol style="list-style-type: none"> <li>1. Necropsy technique Students learn the necropsy techniques, samples collection and handling, report writing and presentation. (The student will perform the necropsy under the supervision, collect samples for further analysis, write the report and present.)</li> <li>2. Basic and Practical Immunology</li> <li>3. Swine Parasitology Diagnosis</li> <li>4. Virology practice and Microbiology practice</li> <li>5. Swine gross pathology and Swine GI pathology</li> <li>6. PCVAD diagnostic pathology and Slaughter check</li> <li>7. Veterinary diagnostic laboratory</li> <li>8. Pathology diagnostic methods</li> <li>9. Serology interpretation: basic and application</li> <li>10. Swine respiratory bacterial diseases</li> <li>11. Principal of drug use in pigs farm</li> <li>12. Application of laboratory data for swine health management</li> <li>13. Swine anesthesia and surgery</li> <li>14. Swine reproductive disorders in female</li> <li>15. Pathology of boar</li> <li>16. Clinico-pathological case discussion</li> </ol>					
<b>Remarks:</b>					

Course Title	Swine Clinical Practice II				
Type	Exercise, Elective	Number of credits	2	Hours	-
Course Instructor	Prof. Dr. Monkol Techakumpu Assoc. Prof. Dr. Wichai Tantasuparuk Instructor Dr. Pornchalit Assavacheep Instructor Dr. Suphot Wattanaphansak (Course coordinator)				
<b>Course Overview:</b> Field practice of veterinary skills to control and prevent infectious, noninfectious and the epidemic diseases of swine; problem solving by the knowledge in epidemiology, preventive medicine, disease investigation, surveillance and eradication; advanced training and practice in swine farm and swine clinic at livestock hospital.					
<b>Course Goals:</b> 1. To understand the concept and the role of veterinarian in standard pig farm to control and prevent diseases					
<b>Course Schedule: (2 weeks)</b> 1. General swine farm management Basic skill for control and prevent infectious, noninfectious and the epidemic diseases of swine; learning through commercial standard pig farm. 2. Reproductive management Troubleshooting in boar stud, AI lab and service facilities Troubleshooting in farrowing facilities Troubleshooting in gestation, gilt pool and nursery facilities Swine fertility clinic: service under livestock hospital					
Remarks:					

Course Title	Equine Clinical Practice				
Type	Exercise, Elective	Number of credits	1	Hours	-
Course Instructor	Assist. Prof. Dr. Voraphan na Songkhla Assist. Prof. Dr. Theerawat Tharasanit		(Course coordinator)		
Course Overview: Clinical practice in examination, diagnosis and treatment of equine medicine, surgery and obstetrics					
Course Goals: <ol style="list-style-type: none"> <li>1. To learn and practice basic clinical examination in horse</li> <li>2. To learn and practice basic surgical and anesthetic methods in horse</li> <li>3. To learn, practice and perform basic reproductive examination</li> </ol>					
Course Schedule: (1 week) <ol style="list-style-type: none"> <li>1. Equine obstetrics Practice on reproductive examination in horse (per rectal examination), castration and/or spaying demonstration Laboratory techniques involved with equine reproductive practice</li> <li>2. Equine general medicine Practice on basic clinical examination in horse including nasogastric tubing, blood collection and etc. Laboratory techniques involved with hematological method, antitoxin production and etc.</li> <li>3. To practice basic surgical and anesthetic methods in horse Practice and perform clinical examination in relation to surgical problems including lameness Practice on basic local (and spinal nerve block) and general anesthesia in horse</li> </ol>					
Remarks:					

Course Title	Wildlife and Exotic Animal Health Management				
Type	Exercise, Elective	Number of credits	2	Hours	-
Course Instructor	Assoc. Prof. Dr. Sarinee Kalandakanond-Thongsong (Course coordinator)				
<p>Course Overview:</p> <p>Basic of biology of wild, zoo and exotic animals; principles of raising and managing these animals; common diseases and zoonotic diseases; related laws, regulations, ethics and animal welfare; preventive medicine and health management of wildlife animals, including conservation of wild animals in nature and new habitat.</p>					
<p>Course Goals:</p> <ol style="list-style-type: none"> <li>1. Understand the veterinary role in zoo and wildlife conservatory</li> <li>2. Understand the difference between the treatment of exotic/ zoo animals and wild animals and able to apply the basic veterinarian techniques on exotic/ zoo animals and wild animals treatments and management</li> <li>3. Learn and know how to diagnose and treat general diseases including bacterial infection, parasitic infection, wound and nutritional problems in exotic/ zoo animals and wild animals</li> </ol>					
<p>Course Schedule: (2 weeks)</p> <ol style="list-style-type: none"> <li>1. General medicine Practice on basic clinical examination in exotic/ zoo animals or wild animals</li> <li>2. General zoo management Observe and practice in zoo or elephant conservatory</li> </ol>					
Remarks:					

Course Title	Poultry Clinical Field Practice				
Type	Exercise, Elective	Number of credits	2	Hours	-
Course Instructor	Prof. Dr. Jiroj Sasipreeyajan (Course coordinator)				
Course Overview: Clinical field practice in poultry health management: husbandry, hygiene, diagnosis, treatment, control and prevention of diseases.					
Course Goals: 1. Understand the health management: husbandry, hygiene, diagnosis, treatment, control and prevention of diseases in standard commercial poultry farm					
Course Schedule: (2 weeks) 1. General poultry farm management 2. General hatchery management Observe and practice in standard commercial poultry farm					
Remarks:					



Course Title		Ruminant Clinical Field Practice			
Type	Exercise, Elective	Number of credits	2	Hours	-
Course Instructor	Prof. Somchai Chanpongsang Assoc. Prof. Dr. Kittisak Ajariyakhajorn Assist. Prof. Chatree Khatiworavage Assist. Prof. Dr. Chaidate Inchainri Assist. Prof. Thanasak Boonserm (Course coordinator) Instructor Dr. Nawapen Phutikanit Instructor Dr. Theerawat Swangchan-uthai Instructor Piyanat Prasomsri				
<b>Course Overview:</b> Clinical field practice in diagnosis, medical, surgical, and reproductive treatments of ruminants; evaluation of herd health status and diseases; report on disease cases and farm visit.					
<b>Course Goals:</b> <ol style="list-style-type: none"> <li>1. Understand and perform the basic clinical examination in dairy cattle for disease prevention and control</li> <li>2. Understand and perform the basic surgical methods in ruminant</li> <li>3. Understand the general health management in calve and heifer for dairy cow replacement plan</li> <li>4. Understand the dairy product management from milking process, milk production and standard quality control (on site) to reach standard quality and consumer health</li> <li>5. Understand the basic knowledge of milking system; in order to relate to possible health problem in cow and/or milk quality</li> <li>6. Understand the importance of lameness on cattle health and milk production; and know the process for problem evaluating for causes, treatment and prevention of leg and foot problem in herd</li> <li>7. Understand the importance of nutritional management in dairy farm, including feed evaluation, feed sampling for basic nutritional analysis</li> <li>8. Learn how to work as a team, with planning skill, data collection and evaluation, and presentation</li> <li>9. Learn and able to apply the veterinarian knowledge in standard dairy farm practice</li> </ol>					
<b>Course Schedule: (2 weeks)</b> <ol style="list-style-type: none"> <li>1. Introduction to Dairy farm management: general production line and general health practice</li> <li>2. Calve health management, colostrums and heifer replacement plan</li> <li>3. Practice in milk production analysis; diagnosis and treatment of mastitis; and analysis of raw milk on site</li> <li>4. Practice on laboratory techniques for milk quality analysis and be able to correctly interpret the data</li> <li>5. Perform the checking of milking system and milking process</li> <li>6. Perform, practice and evaluate the leg and hoof problems in herd including hoof dressing practice</li> <li>7. Evaluate the nutritional value of food and feed additive</li> <li>8. Practice on reproductive examination and gestation evaluation</li> <li>9. Perform evaluation on farm reproductive performance</li> <li>10. Practice and observe a surgical method for making bull teaser</li> <li>11. Practice as a team and brainstorming for effective dairy farm management</li> <li>12. Visit and practice in standard commercial dairy farm</li> <li>13. Case study/ Term paper presentation</li> </ol>					
<b>Remarks:</b>					