



Rakuno Gakuen University

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Syllabus 2017

Advanced Hygiene and Environmental Science I

Clinical Rotation (Livestock Animals)

Veterinary Hospital Training Course

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, Hidetoshi HIGUCHI, Yasukazu MURAMATSU, Jun NODA, Kohei MAKITA, Masaru USUI, Hidetomo IWANO, Masami KANEKO, Buho HOSHINO, Yuko TAKAHASHI				
Course Overview: 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.					
Course Goals: <ul style="list-style-type: none"> • To learn advanced procedures for the diagnosis of diseases and risk of health problems • To learn advanced procedures for the diagnosis of food and environmental safety • To be able to explain how the safety of foods from different sources is guaranteed in both aspects on technology and administration 					
Seminar for International Veterinary Teaching Program (2016): Farm to Table- Safe and Sustainable food delivery					
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.					
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.					
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.					
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 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
 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) Veterinary biochemistry
 Professor Iwano Hidetomo DVM, Ph.D.
 -PCR for examination of SNP in ALDH2 gene Preparation of your intraoral epithelial cells. Examine the one point mutation of your ALDH2 gene by PCR. Learn influence on phenotype by one base change of DNA.
 -Amplification of Plasmid DNA from Bacteria by PCR (Understand a principle of the PCR / Discriminate the bacteria by PCR)
- 9) Veterinary Ethics
 Associate Professor Yuko Takahashi
 This course introduces veterinary ethics and examines the religious and cultural background to human treatment of animals. The philosophical foundation of Western veterinary ethics is explained and compared to Japanese view of humans and animals. Discussion will apply the lecture content to Thai view of humans and animals. Students will write a report summarizing lecture content including their ideas of Thai veterinary ethics.
- 10) Conservation GIS
 Professor, Kaneko Masami / Professor Buho Hoshino Ph.D.
 Practical training of GIS and Remote sensing.
- 11) 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	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				
Course Overview: 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.					
Course Goals: <ul style="list-style-type: none"> • To be able to design a diagnostic scheme and explain it to the owner • To be able to make a differential diagnosis based on examination findings • To be able to design a treatment plan and explain it to the owner • To be able to explain an overview of feeding management and reproduction management to the owner, with the objective of preventing major diseases. 					
<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>1) Production animal internal medicine I 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 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 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 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>					
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, Mitsuhiro ISAKA, Yoshifumi ENDO, Kenjiro MIYOSHI, Takashi TAMAMOTO, Tadashi SANO				
Course Overview: 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.					
Course Goals: <ul style="list-style-type: none"> • To be able to design a diagnostic scheme • To be able to make a differential diagnosis based on examination findings • To be able to design a treatment plan 					
Practice at teaching hospital 1) Ophthalmology (Maehara) : practice basic clinical skills that include interview with owners, diagnosis, treatment and evaluation of treatment outcomes with patients having eye problems 2) Small Animal Internal Medicine (Isaka, Tamamoto) : practice basic clinical skills that include interview with owners, diagnosis, treatment and evaluation of treatment outcomes using clinical cases of internal medicine 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 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. 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. 6) Anesthesia and Analgesia (Yamashita, Sano) : practice basic clinical skills in anesthetic management, perioperative pain management and perioperative nutrition administration using clinical anesthesia cases.					
Remarks:					