|  |  |
| --- | --- |
| 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:* 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 deliverySummary: 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 controlZoonotic DiseaseProfessor 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 foodProfessor 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 managementProfessor　Shin Oikawa DVM, Ph.D　/　Professor　Ken Nakata DVM, Ph.DThis 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 productionProfessor 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 approachAssociate 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 biochemistryProfessor Iwano Hidetomo DVM, Ph.D.-PCR for examination of SNP in ALDH2 gene Preparation of your intraoral epithelial cells. Examin the one point mutaion 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 EthicsAssociate Professor　Yuko TakahashiThis 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 GISProfessor, Kaneko Masami / Professor Buho Hoshino Ph.D. Practical training of GIS and Remort 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: |