

Ally Course Syllabus 2020

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Sub-Module 1

モジュール番号 Module	1
科目名 Course Name	One Health セミナー One Health Seminar
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	堀内基広 Motohiro HORIUCHI
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 国際連携推進室 International Affair Section, Faculty of Veterinary Medicine
責任教員連絡先(メール) Instructor email	horiuchi@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-5293
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	2020 年 11 月 24 日-27 日 Nov 24 -27, 2020
Language	English
実施場所 Class Locations	Webex によるオンライン授業 On line lecture by Webex
引率学生数 Number of students	N/A

Class Information

Outline/Description (JPN)

One Health の概念は、1860 年代にドイツの病理学者 Virchow の人獣共通感染症の考え方に端を発し、2004 年のマンハッタン原則(野生動物保全協会)で「人獣共通感染症の制圧と生態系の健全性維持、さらには地球上の一つの健康(One Health)の実現のためには、医学、獣医学をはじめ多くの学問領域、多くのセクターの協働による学際的取り組み“One Health approach”が必要である」ことが提唱されたことにより明確化されました。その後も One Health の概念は進化し、「人と動物の病気の共通性から、医学・獣医学の連携は双方の健康の向上に繋がる」とする Zoobiquity(汎動物学)の観点からも、医学系と獣医学系領域の一層の連携推進が求められています。本セミナーでは、One Health の歴史と実際の活動から、One Health について具体的なイメージを持つことを目的としています。

(ENG)

The concept of One Health originates in the 19th century idea of “zoonosis” introduced by German pathologist Rudolf Virchow. The necessity of the One Health approach, an interdisciplinary, collaborative effort by multiple sectors to control zoonoses and maintain the health of ecosystems, furthermore, ensuring one health on the earth (One Health), was proposed in the 2004 Manhattan Principles of the Wildlife Conservation Society. The concept of One Health has since evolved, and further collaboration between medicine and veterinary medicine is needed from the perspective of Zoobiquity, which highlights how collaboration between medicine and veterinary medicine leads to the improved health of people and animals because of their commonalities in diseases.

Goal/Objectives

(JPN)

- 1) One Health の概念を理解する。
- 2) One Health approach の具体例から、One Health approach への貢献に必要な思考態度を身につける。

(ENG)

- 1) To understand the concept of “One Health”.
- 2) To acquire the mindset that is necessary for contributing to One Health approach from the learning of examples of One Health approach.

Requirement, textbook, materials

(JPN)

参考図書:以下を参照

(ENG)

Books of references

“One Health - People, Animal, and the Environment -“ Atlas and Maloy eds, American Society for Microbiology

ISBN 978-1-55581-842-5

“Zoonotic - The Astonishing Connection Between Human and Animal Health -

“ Natterson-Horowitz and Bowers eds, Vintage, ISBN 978-0-304-47743-9

Schedule and Activities

(JPN)

- 1) One Health の歴史 (北海道大学大学院獣医学研究院 堀内基広)
- 2) 新たなコンセプト「Zoobiquity」(大学院獣医学研究院 山崎淳平)
- 3) 感染症対策(人獣共通感染症リサーチセンター 澤洋文)
- 4) OH 活動の実践例(アフリカにおけるブルセラ症対策 酪農学園大学 蒔田浩平)
- 5) OH 活動の実践例(結核の制御 人獣共通感染症リサーチセンター 鈴木定彦)
- 6) OH 活動の実践例(鉱山による環境汚染対策への取り組み 大学院獣医学研究院 石塚真由美)
- 7) 環境健康対策(大学院保健科学研究所 荒木敦子)
- 8) OH 活動の実践例(国際行政機関の活動例 OIE アジア太平洋地域事務所 Dr. Lesa Thompson)

(ENG)

- 1) History of One Health (Dr Motohiro HORIUCHI, Faculty of Veterinary Medicine)
- 2) Zoobiquity, an emerging concept (Dr Junpei YAMASAKI, Faculty of Veterinary Medicine)
- 3) Counter measures for infectious diseases (Dr. Hirofumi SAWA, Research Center for Zoonosis Control)
- 4) Practical example of One Health approach (Dr. Kohei MAKITA, Rakuno-gakuen University, Control of brucellosis in African countries)
- 5) Practical example of One Health approach (Dr. Yoshihiro Suzuki, Research Center for Zoonosis Control, Control of tuberculosis)
- 6) Practical example of One Health approach (Dr. Mayumi ISHIZUKA, Faculty of Veterinary Medicine, Counter measures for environmental pollution by mining industry)
- 7) Counter measures for environmental health (Dr. Atsuko ARAKI, Faculty of Health Science)
- 8) Practical example of One Health approach (Dr. Lesa Thompson, OIE Regional Representation for Aisa-Pacific, Activities of International administrative organization)

<Schedule>

1	24-Nov	Tue	13:00-14:30
2	24-Nov	Tue	14:45-16:15
3	25-Nov	Wed	13:00-14:30
4	25-Nov	Wed	14:45-16:15
5	26-Nov	Thr	8:45-10:15
6	26-Nov	Thr	10:30-12:00
7	27-Nov	Fri	13:00-14:30
8	27-Nov	Fri	14:45-16:15

Remarks

One Health Ally course のモジュール 2 以降に参加するためには、モジュール 1 の One Health セミナーの受講は必須です。

The completion of One Health Seminar is essential to take modules 2 - 4 of the One Health Ally course.

Sub-Module 2

モジュール番号 Module	2
科目名 Course Name	Cancelled: Environmental Chemicals and Human Health
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	1
責任教員 Instructor name	荒木敦子 Atsuko Araki
責任教員所属 Affiliation of the instructor	北海道大学環境健康科学研究教育センター Hokkaido University Center for Environmental and Health Sciences
責任教員連絡先(メール) Instructor email	AAraki@cehs.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-4749
Link to instructor bio or website:	https://www.cehs.hokudai.ac.jp/staff/sennin/araki/
Teaching Assistant name and contact info	
実施期間 Periods	履修生(渡航者)は 7 月に公募予定 Call for participants (travelers will be open in July)
Language	English
実施場所 Class Locations	マヒドン大学(タイ、バンコク市) Mahidol University, Bangkok, Thailand
引率学生数 Number of students	

Class Information

Outline/Description (JPN)

(ENG)

There is growing evidence demonstrating that environmental chemicals production has been rapidly increasing in recent decades. There are a wide variety of chemicals including non-regulated materials have been released into the environment and consequently humans are exposed to these chemicals. These chemicals are globally distributed in the environment, wild life, and human bodies. In this course, we focus on hazard of human exposure to environmental chemicals, methods of exposure assessment, evaluation of the effects of these chemicals on human health, and approaches to health risk assessment, management and prevention.

Goal/Objectives (JPN)

(ENG)

- 3) Acquiring the knowledge of the concept of environmental chemicals, and evaluate their hazard risks to health.
- 4) Capacity building and increase knowledge of researchers about environmental epidemiology and prevention of chemical hazards.

Requirement, textbook, materials
(JPN)

(ENG)

Schedule and Activities

(JPN)

(ENG)

1. Introduction to environmental chemicals
2. Adverse health effects of chemical exposure
3. Exposure and outcome measurements
4. To assess the risk of hazardous chemicals
5. Impact of recent findings to improve human health
6. Importance of "Science to policy"
7. Exercise and discussion



Class photo



Students presentation

Remarks

This is a joint class with Graduate School of Public Health, Seoul National University and Mahidol University. The class will be held in Mahidol University, Thailand on November 19th and 20th. Call for travelers will be open in June 2020.

モジュール番号 Module	2
科目名 Course Name	One Health Debate
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	Michael HENSHAW
責任教員所属 Affiliation of the instructor	International Affairs Division, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	mike@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-6896
Link to instructor bio or website:	https://www.researchgate.net/profile/Michael_J_Henshaw
Teaching Assistant name and contact info	2 assistants (changes each year)
実施期間 Periods	Debate: 90 minutes in December Preparation: Periodic group meetings as needed
Language	English
実施場所 Class Locations	Faculty of Veterinary Medicine
引率学生数 Number of students	6

Class Information

Outline/Description (JPN)

(ENG)

Debating is like sports for your mind. You must take a position and coordinate with your teammates to win an argument against the other team. You are not fighting against the *people*, however—you are disagreeing about the *concepts*. This is completely student-led; debaters decide the topic, they practice in the weeks and months before the event, and they must address questions from students in the audience who vote on the winning argument.

Goal/Objectives

(JPN)

3)

(ENG)

- 5) To make a team strategy in constructing a logical narrative.
- 6) To learn persuasive yet polite language that will strengthen your public speaking.
- 7) To become accustomed to the pressure of performing in front of an audience who will be judging your speaking logic and style.

Requirement, textbook, materials
(JPN)

(ENG)

Several handouts from the instructor with language advice.

Schedule and Activities

(JPN)

9)

(ENG)

- 1) Create teams. Consult with instructor and other debaters to decide the topic and make teams of Pro (for) and Con (against).
- 2) Preparation (<2 months). In respective teams, meet with instructor for language training, and meet with assistant faculty for mock debate with advice. Meet as team as needed for practice.
- 3) The debate. 90 minutes total, roughly 60 minutes of speaking time (30 min per team). Teams alternate with 3 rounds of 5 minutes, plus 30 minutes of questions from audience and moderator.
- 4) The winner. Audience votes with opinion pre-debate, and again post-debate. Winning team is decided by net change of opinion towards that team's side.



Pro Team (support the proposition) Con Team (oppose the proposition)

Although it is competitive, the mood is still friendly.



A member of the Con team opposes the proposition *Public awareness is the key to fighting antimicrobial resistance*.



An audience member addresses a question to the Con team.

Remarks

Students should have at least an intermediate level of English, and have time to meet independently with teammates in the months and weeks before the debate.

モジュール番号 Module	2
科目名 Course Name	Global Leaders Workshop
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	Michael HENSHAW
責任教員所属 Affiliation of the instructor	International Affairs Division, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	mike@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-6896
Link to instructor bio or website:	https://www.researchgate.net/profile/Michael_J_Henshaw
Teaching Assistant name and contact info	3 assistants (changes each year)
実施期間 Periods	Half day within the first two weeks of August
Language	English
実施場所 Class Locations	Faculty of Veterinary Medicine
引率学生数 Number of students	25-35

Class Information

Outline/Description (JPN)

(ENG)

For multidisciplinary problem solving it is necessary to collaborate with people outside of your comfort zone. That is, you need to find the right language to communicate with those who don't share your expertise, culture, or English ability. This workshop challenges students to craft a solution to a One Health problem under time pressure with a small team of diverse people, and then deliver a presentation in front of an audience.

Goal/Objectives

(JPN)

4)

(ENG)

- 8) To develop leadership and management skills by using time wisely to complete a specific task with a small group (4-6 people).
- 9) To make yourself understood in English to people from diverse backgrounds.
- 10) To gain confidence that you can create a novel and interesting presentation within a half day.

Requirement, textbook, materials
(JPN)

(ENG)

Some weeks before the workshop, you will choose from one of three One Health scenarios, and subsequently receive a small handout which includes basic background information.

Schedule and Activities

(JPN)

10)

(ENG)

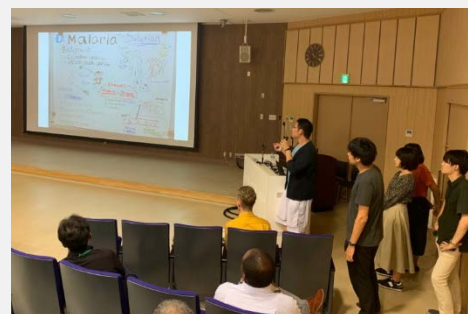
- 1) Before workshop. Select your 1st and 2nd choice of scenario. Past categories have included environmental science, comparative oncology, infectious disease, and research ethics.
- 2) Group discussion. You have around 2 1/2 hours to answer your question and design your poster.
- 3) Presentation. Each group has 5 minutes to present their novel ideas to an audience of peers and faculty who vote on their favorite.



Group D students break the ice after meeting.



Discussion time is almost up, and teams put the finishing touches on their posters.



The winning presentation on how to fight the world's worst zoonotic infections.

Remarks

All levels of English ability are welcomed; part of the challenge is making yourself understood to a wide range of English speakers.

Sub-Module 3

モジュール番号 Module	3
科目名 Course Name	Cancelled: Environmental Chemical Hazards and Health Issues in Asia
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	Environmental Health and Sustainable Development Goals I&II (2 credit hours)
責任教員 Instructor name	荒木敦子 Atsuko Araki
責任教員所属 Affiliation of the instructor	環境健康科学研究教育センター Center for Environmental and Health Sciences
責任教員連絡先(メール) Instructor email	AAraki@cehs.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-4749
Link to instructor bio or website:	https://www.cehs.hokudai.ac.jp/staff/sennin/araki/
Teaching Assistant name and contact info	TBD
実施期間 Periods	2020.6.15-19&6.22-26 (2weeks)
Language	English
実施場所 Class Locations	Center for Environmental and Health Sciences, Hokkaido University
引率学生数 Number of students	20

Class Information

Outline/Description

(JPN)

世界では環境化学物質による、健康障害が問題となっている。本コースでは、環境化学物質による健康障害の予防に関する WHO 研究協力センターの教員の指導の下、グループワークとして特にアジアを重点に、地域別に問題になっている環境化学物質について、レポート作成を行う。さらにターゲットを絞って環境化学物質を決定し、一般市民の化学物質ばく露について啓発することを目的としたリーフレットの作成を行う。

(ENG)

Exposure to environmental chemicals and its health effects is a global issue. In this course, students will write a report on environmental chemicals and their issues and produce a leaflet for general population to understand environmental chemical issues in Asia under the instruction of WHO collaborating center. This course includes group work and discussion.

Goal/Objectives

(JPN)

- 5) レポート作成を通して、アジアにおける地域別の環境化学物質ばく露による健康影響を理解する。
- 6) アジアにおける環境化学物質と健康障害に関するリーフレット作成を通して、一般市民の知識の啓発に貢献する。
- 7) 上記を発展させて、環境化学物質ハザードに関するレビューをWHO本部または地域オフィスと協力してまとめ、WHOの出版物に貢献する。

(ENG)

- 11) To understand health issues regarding environmental chemical exposures in Asia through writing reports.
- 12) To contribute on educating general population to understand environmental chemical hazards and its health issues.
- 13) To write review materials on above mentioned topics and/or contribute to WHO publications by working with WHO HQ or regional office.

Requirement, textbook, materials

(JPN)

参加者にはハンドアウトを配布。WHO の出版物の使用。

(ENG)

Handout will be distributed. In addition, WHO publications will be used.

Schedule and Activities

(JPN)

1. グループワーク1:リーフレットのコンテンツを決める
ブレインストーミングと担当グループ分け
2. グループワーク2:リーフレットのコンテンツとなる学
術的知見の収集とレポートの作成
3. グループワーク3:作成したレポートをもとに、リーフ
レットに入れる重要な項目を決定
4. グループワーク4:リーフレットのコンテンツの作成
5. グループワーク5:全体リーフレット案の完成
6. 環境化学物質リサイクル工場の実地見学
7. 作成したリーフレットについて WHOCC、WHO地
域オフィスの専門家から助言を受けて、修正、リーフ
レットを完成させて、web で公開

(ENG)

8. Groupwork 1: Grouping based on each
individual's interest on selected topics
and brain storming
9. Groupwork 2: Collection of necessary
data and make an individual report on
what each individual searched for
10. Groupwork 3: Based on the individual
report, discuss what will be appropriate
content for a leaflet
11. Groupwork 4: Making a content of the
leaflet
12. Groupwork 5: Gather all the content
from each group and make a draft of the
leaflet
13. Field trip to PCB recycling facility
14. Obtain advices on the draft from
experts from WHOCC and WHO regional
office, modify and complete a leaflet,
post on website

Remarks

本コースは、WHO 研究協力センターである環境健康科学研究教育センターの教員、スタッフのもと実施します。
This course will be conducted under the instruction of faculty members of WHOCC for
Environmental Health and Prevention of Chemical Hazards.

Hokkaido University WISE Program One Health Frontier Graduate School of Excellence Ally Course Syllabus

Photos



Example of leaflet (dioxin)



Example of leaflet (PFAS)



Opportunity to discuss with WHO officers and experts



Discussion of environmental chemical hazards in Vietnam

モジュール番号 Module	3
科目名 Course Name	One Health training on multiple solutions to the health risks for zoonoses
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	Nil
責任教員 Instructor name	Professor Katsuro Hagiwara
責任教員所属 Affiliation of the instructor	Faculty of Veterinary Medicine, Rakuno Gakuen University
責任教員連絡先(メール) Instructor email	k-hagi@rakuno.ac.jp
責任教員連絡先(電話) Instructor phone	011-388-4761
Link to instructor bio or website:	https://www.vetmed.hokudai.ac.jp/organization/microbiol/eindex.html
Teaching Assistant name and contact info	Professor Kohei Makita, Professor Hidetomo Iwano (Faculty of Veterinary Medicine, Rakuno Gakuen University)
実施期間 Periods	9-10 February 2021
Language	English
実施場所 Class Locations	Rakuno Gakuen University Seminar B, and laboratories

Class Information

Outline/Description

(JPN)

人獣共通感染症には時にアウトブレイク・パンデミックを起こす流行性疾患もあれば、身近に潜む常在性の疾患もある。

本コースでは日本でも身近に存在する二つのハザード：E 型肝炎ウイルス(HEV)とメチシリン耐性黄色ブドウ球菌(MRSA)について診断・疫学・生物学的解決法の側面から体験学習した上で、ワンヘルスをキーワードにリスクの中でどう健康を守っていくべきか参加者が主体的に討論する。

(ENG)

Some zoonotic pathogens cause epidemic in the forms of outbreak or pandemic, while others may be endemic even without drawing much attention.

In this course, students will experience hands-on practices on diagnosis, epidemiology, and biological solution for two common pathogens in Japan: hepatitis E virus (HEV) and methicillin-resistant *Staphylococcus aureus*, and actively discuss how to protect health within the risks based on One Health.

Goal/Objectives

(JPN)

- 1) ウイルス診断法、ファージセラピー、および疫学解析の基礎理論と手技を、体験を通して理解する。
- 2) 生きていくための「食」と関連した人獣共通感染症リスクを体感し、身近に潜む食の生産、流通、環境中のリスクへの対応を、参加者間で協力しながら検討し、発表するプロセスを理解する。

(ENG)

- 1) To understand basic theories and techniques on virus diagnosis, phage therapy and epidemiological analysis through practices.
- 2) To experience the closeness of the zoonotic risks associated with foods that are necessary to live, and to understand the processes of discussions among participants, and presentation, on the management of risks in food production, distribution, and environment.

Requirement, textbook, materials

(JPN)

参加者にはハンドアウトが配られます。

(ENG)

The handout will be distributed for the participants.

Schedule and Activities

(JPN)

- 1) 一日目:コース概要説明、HEV、MRSA、ファージの講義、サンプル採材と処理、調理肉中心温度の測定。
- 2) 二日目:PCR の原理、RNA 抽出、cDNA 合成、HEV-RNA 検出。
- 3) 三日目:HEV 検査判定、MRSA へのファージ攻撃、疫学解析。
- 4) 四日目:ファージ効果判定、バリューチェーン、エコヘルス、リスクアナリシス講義、対策ディスカッション。
- 5) 五日目:対策ディスカッション、プレゼンテーション、講評。

(ENG)

- 1) Day 1: Introduction of the course; lectures on HEV, MRSA, and phage therapy; meat sampling and treatment; temperature measurement of central part of cooked meat.
- 2) Day 2: Principle of PCR; RNA extraction; cDNA synthesis; and PCR for HE-RNA detection.
- 3) Day 3: HEV diagnosis; phage attack to MRSA; epidemiological analyses.
- 4) Day 4: Phage effect evaluation; lectures on value chain, ecohealth, and risk analysis; discussions on counter measures.
- 5) Discussions on counter measures continued; presentation, and comments from instructors.



分子学的診断 Molecular diagnosis



疫学解析 Epidemiological analysis



対策ディスカッション
Control measures discussion

Remarks

参加学生は全員がハンズオンで実習をし、積極的に自らディスカッションを進めます。

All students will attend hands-on practice and actively lead the discussions.

9月上旬に完成する別紙の会議予定表を参照ください。

Please refer to the meeting agenda to be dispatched in early September.

モジュール番号 Module	3
科目名 Course Name	Field sampling and species identification of ticks for risk profiling of tick-borne diseases
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	Nil
責任教員 Instructor name	Ryo Nakao, Faculty of Veterinary Medicine, Hokkaido Univ.
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 寄生虫学教室 Laboratory of Parasitology, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	ryo.nakao@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-5196
Link to instructor bio or website:	https://www.vetmed.hokudai.ac.jp/organization/parasitol/en_top.html
Teaching Assistant name and contact info	Keita Matsuno (Faculty of Veterinary Medicine Hokkaido Univ.), Yongjin Qiu (Research Center for Zoonosis Control, Hokkaido Univ.)
実施期間 Periods	1 February to 31 April
Language	English
実施場所 Class Locations	1. Potential field sites for tick sampling (may change depending on the weather and the number of participants): Wakayama experimental forest Shimane prefecture Okinawa prefecture Forest around Sapporo city 2. Laboratory class Research Center for Zoonosis Control, Hokkaido Univ.

Class Information

Outline/Description (JPN)

マダニは様々な病原体を伝播する公衆衛生上重要な外部寄生虫である。しかし、マダニ-病原体の関係は極めて複雑で、地域ごとのダニ媒介性感染症のリスクを完全に推定することは難しい。本科目では、本州および北海道におけるマダニ調査に参加し、気候の異なる地域におけるマダニ叢の違いを観察する。また、マダニ中の病原体を探索することで、ダニ媒介性感染症のリスクについての理解を深める。

(ENG)

Ticks are ectoparasites that transmit a variety of pathogens threatening human and animal health. Complicated interaction between ticks and pathogens hampers us to fully estimate the risk of tick-borne diseases in a particular area. Students will participate in the tick sampling in the fields (main island of Japan and Hokkaido) for finding the difference of tick fauna in different climate conditions. Laboratory investigation to identify pathogens in ticks is also included for understanding the risks of tick-borne diseases.

Goal/Objectives (JPN)

- 1) 野外におけるマダニ採集法ならびにマダニ種同定法を習得する。
- 2) 異なる気候条件におけるマダニ叢の違い、およびそれらの保有する病原体の違いを理解する。

3) マダニ中の病原体検出法を実践し、ダニ媒介性疾患のリスクについて考察する。

(ENG)

- 1) To understand tick collecting methods in the field and keys for species identification of ticks.
- 2) To understand the difference of tick fauna between two areas with different climate conditions and difference of pathogens in each tick species.
- 3) To conduct molecular detection of tick-borne pathogens and discuss about their risks.

Requirement, textbook, materials

(JPN)

野外調査に適した服装。

参加者にはハンドアウトが配られます。

(ENG)

Field wears.

The handout will be distributed for the participants.

Schedule and Activities

(JPN)

- 1) 事前講習: マダニ調査の概論、野外調査における注意等(1-2 時間)
- 2) 野外調査 1: 本州(2-3 泊、北大和歌山演習林など)
- 3) 野外調査 2: 北海道(日帰り、札幌近郊を予定)
- 4) 実習 1: マダニ種の同定(1 日)
- 5) 実習 2: マダニ中の病原体検出(1-2 日)

(ENG)

- 1) Pre-lecture: Introduction to tick study and risks of field study (1-2 hrs)
- 2) Field work 1: Honshu (2-3 nights, tentatively in Wakayama experimental forest)
- 3) Field work 2: Hokkaido (day trip, tentatively around Sapporo city)
- 4) Practice 1: Species identification of ticks (1 day)
- 5) Practice 2: Detection of tick-borne pathogens (1-2 days)



Tick sampling



Tick species identification



Molecular screening of tick-borne pathogens

Remarks

ダニ媒介性脳炎ワクチン接種(自費)が望ましい。

Vaccination for tick-borne encephalitis is recommended.

モジュール番号 Module	3
科目名 Course Name	International Chemical Hazard Symposium for Environmental Pollution
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	石塚真由美 Mayumi ISHIZUKA
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 毒性学教室 Laboratory of Toxicology, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	ishizum@vetmed.hokudai.a.c.jp
責任教員連絡先(電話) Instructor phone	011-706-6949
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	TBD (2 days)
Language	English
実施場所 Class Locations	Graduate School of Veterinary Medicine, Hokkaido University

Class Information

Outline/Description

(JPN)

環境汚染では新興、再興の化学物質が問題となっており、また越境による地球規模の拡散に様々な角度から取り組む必要がある。この授業では、ケミカルハザードに関してテーマを定め、様々な分野から研究者を招へいし、国際シンポジウムを企画・開催・運営する。

(ENG)

In environmental pollution, emerging and revitalizing chemical substances are a problem, and it is necessary to tackle global diffusion from various angles. In this class, we will set a theme for chemical hazards and invite researchers from various research fields, and hold and manage international symposiums.

Goal/Objectives

(JPN)

- 1) ケミカルハザードに関して著名な研究者と意見交換を行い、ケミカルハザードに関する最先端の情報を得る。
- 2) 国際シンポジウムの企画運営方法を学ぶ。
- 3) シンポジウムのテーマを通して化学物質をピックアップし、環境汚染のリスクプロファイルを作成する。

(ENG)

- 1) Exchange opinions with prominent researchers on chemical hazards and obtain cutting-edge information on chemical hazards
- 2) Learn how to plan and manage international symposiums
- 3) Pick up chemical substances through the theme of the symposium and create a risk profile for environmental pollution

Requirement, textbook, materials
(JPN)

必要な準備など、事前にオリエンテーションを行います。

(ENG)

Orientation is performed in advance, including necessary preparations.

Schedule and Activities

(JPN)

- 1) シンポジウムの企画チーム形成
- 2) 招聘者の選定
- 3) 広報、アナウンス
- 4) シンポジウムの開催
- 5) リスクプロファイルの作成

(ENG)

- 1) Symposium planning team formation
- 2) Selection of invited guests
- 3) Public relations and announcements
- 4) Holding a symposium
- 5) Create risk profile



ケミカルハザードシンポジウムのポスターセッション



シンポジウムにおけるディスカッション



ワークショップ形式のディスカッション

Remarks

モジュール番号 Module	3
科目名 Course Name	OIE Regional Expert Group Meeting for the Control of Avian Influenza in Asia
Credits (if register as Inter Graduate School Classes Course of Hokkaido Univ):	Nil
責任教員 Instructor name	Yoshihiro Sakoda
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	sakoda@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-5207
Link to instructor bio or website:	https://www.vetmed.hokudai.ac.jp/organization/microbiol/eindex.html
Teaching Assistant name and contact info	Masatoshi Okamatsu, Keita Matsuno (Faculty of Veterinary Medicine Hokkaido Univ.), Norikazu Isoda (Research Center for Zoonosis Control, Hokkaido University)
実施期間 Periods	TBD
Language	English
実施場所 Class Locations	Research Center for Zoonosis Control, Hokkaido University
引率学生数 Number of students	N/A

Class Information

Outline/Description (JPN)

1996 年に出現した H5 亜型の高病原性鳥インフルエンザウイルスによる家禽および野鳥における感染が世界各地で報告されている。アジア地域における鳥インフルエンザの発生を制御するため、国際獣疫事務局(OIE)アジア太平洋事務局が主導しワークショップを開催する。本ワークショップにオブザーバーとして参加し、国際機関等が開催する会議の準備・運営・報告等の運営支援を通じて国際機関の活動を体験する。

(ENG)

Infections in poultry and wild birds with the H5 subtype highly pathogenic avian influenza virus that appeared in 1996 have been reported worldwide. The World Organization for Animal Health (OIE) Asia-Pacific office will lead a workshop in order to control the outbreak of avian influenza in the Asian region. Students will participate in this workshop as an observer and experience activities at an international organization by helping with its work, such as preparation, running and reporting at a meeting held by the international organization.

Goal/Objectives (JPN)

- 1) アジアにおける最新の鳥インフルエンザ発生状況の情報共有ならびに分離ウイルスの抗原性および遺伝的データの特徴を理解する。
- 2) アジアの 4 つの OIE レファレンスラボラトリーと協力して、鳥インフルエンザ対策への加盟国間の協力を促進することを理解する。
- 3) 鳥インフルエンザ対策の方針と実施方法の調和、サーベイランスの強化、リスク分析などをアジア地域で推進することを理解する。

(ENG)

- 1) To understand information sharing of the latest avian influenza situation as well as the characterization antigenic and genetic data of isolated viruses in Asia.
- 2) To understand strengthening collaboration amongst member countries in collaboration with the four OIE Reference Laboratories in Asia.
- 3) To understand harmonizing the control policies and measures, enhancing surveillance and joint risk assessments.

Requirement, textbook, materials

(JPN)

参加者にはハンドアウトが配られます。

(ENG)

The handout will be distributed for the participants.

Schedule and Activities

(JPN)

- 1) 講義: 動物インフルエンザの世界的および地域的狀況
- 1) 各国の発表: 近年の鳥インフルエンザの発生とそれに対する対策、または発生への備え
- 2) グループディスカッション: 高病原性鳥インフルエンザの制圧に向けた家禽における不顕性感染の摘発
- 3) グループディスカッション: 検査施設間のネットワーク構築と診断サポートの現状と展望
- 4) 鳥インフルエンザの征圧に向けた提言の作成

(ENG)

- 1) Lecture: Global and regional situation of influenza in animals
- 2) Technical session: Recent outbreaks and response activities undertaken or preparedness
- 3) Group discussion: How to detect silent infection in poultry for the control of highly pathogenic avian influenza
- 4) Group discussion: Laboratory networking and cooperation for diagnosis: current situation and prospects
- 5) Wrap up the recommendations for the control of avian influenza in Asia





OIE Regional Expert Group Meeting for diseases of poultry in Asia and the Pacific Region
Sapporo, Japan, October 2-4 2019

Provisional Programme

DAY 1 – Expert consultation		
Time	Theme	Speaker
09:00 – 09:15	Registration of experts	OIE RRAP
09:15 – 09:30	Introduction and opening of scientific meeting	Dr Hirofumi Kugita & Professor Yoshihiro Sakoda
	Technical session I: Situational analysis and updates	Chair: Prof Hiroshi Kida (TBC)
09:30 – 09:50	Update on OFFLU network for avian influenza and scientific networks for other poultry diseases	Dr Gounaïan Pavade, OIE HQ
	Updates from each of the experts on avian influenza in their	

Agenda of this workshop



Group photo of the participants



Technical session in the workshop

Remarks

学生は会議の傍聴者として参加します。

Students will attend this meeting as observer.

9月上旬に完成する別紙の会議予定表を参照ください。

Please refer to the meeting agenda to be dispatched in early September.

モジュール番号 Module	3
科目名 Course Name	Student Free Design Activities (One Health Collaborative Training)
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	2
責任教員 Instructor name	石塚 真由美 Mayumi ISHIZUKA
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 Faculty of Veterinary Medicine
責任教員連絡先(メール) Instructor email	ishizum@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706- 6949
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	Periods will be announced on April 2021 and will vary for each activity, please refer to the syllabus for each activity.
Language	English
実施場所 Class Locations	Locations will vary for each activity, please refer to the syllabus for each activity
引率学生数 Number of students	

Class Information

Outline/Description (JPN)

One Health/One Health approach について、実践的な経験を積むために、One Health Seminar および One Health Transferable skill training を修了した学生を対象として、学生自身が学外機関で One Health/One Health approach に関する活動を計画して実施する。学外機関は国内外の民間、行政、教育研究機関、非営利団体など広く想定している。One Health/One Health approach が異分野間の協働が重要であることを意識して、学生が興味を持つ分野で、学生自らが活動を希望する機関と連絡調整を行い活動計画を策定する。活動計画は One Health Ally Course 運営委員会委員を中心に構成される ad hoc 委員会で審査し、承認が得られた活動に対して上限額を設定して旅費、宿泊費を支給する。活動終了後は、活動の内容、成果、および今後の課題等についてレポートを作成・提出するとともに、公開での活動報告会での発表を行い、経験を関係各位と共有する。

(ENG)

To gain practical experience on the One Health/One Health approach, students who have completed the One Health Seminar and One Health Transferable skills training will plan their own off-campus activities related to One Health/One Health approach. Off-campus organizations include a wide range of domestic and international private sector, government, educational and research institutions, and non-profit organizations, etc. Recognizing the importance of inter-disciplinary collaboration in the "One Health/One Health" approach, students themselves will make their own activity plan in their field of interest by coordinating with organizations in which they would like to engage in activities. Activity plans are reviewed by the ad hoc committee consisting mainly of One Health Ally Course Steering Committee members, and if approved, travel and accommodation expenses will be paid under the rule of HU with a maximum amount set. After the activity, the students have to prepare a report on the content, results, and future problem that

need to be addressed, as well as make a presentation at an open reporting session to share their experiences with other students.

Goal/Objectives

(JPN)

- 1) 活動計画の策定を通じて、学外機関、他分野との協働の重要性を理解する。
- 2) 実践的な活動を通じて、One Health/One Health approach を経験し、必要な能力、思考態度を理解する。
- 3) 活動報告(レポートおよび公開発表会)を行い、準備段階からの活動全体を振り返り、One Health/One Health approach に対する理解を深める。

(ENG)

- 1) To understand the importance of collaboration with external organizations and other fields through the development of activity plans.
- 2) To understand the necessary competencies and mindset for One Health/One Health approach through experience of practical activities.
- 3) To deepen understanding of the One Health/One Health approach, through making report on activities (written reports and oral presentations) and reconsideration on the overall activities from the preparation stage.

Schedule and Activities

(JPN)

- 1) 学生自身が実施機関と協議しながら活動計画を策定
- 2) 活動計画を ad hoc 委員会が審査
- 3) 必要に応じて活動計画を修正
- 4) ad hoc 委員会が活動を承認
- 5) 活動計画に則って活動を実施
- 6) 報告書の提出
- 7) 公開活動報告会で活動内容を口頭発表



Symposium at TICAD (Tokyo International Conference on African Development)
Group photo of the participants



Booth exhibition and research presentations at TICAD (Tokyo International Conference on African Development))

(ENG)

- 1) Students make their own activity plans in discussion with their supervisor and the counterpart at the off-campus organization.
- 2) ad hoc committee reviews the activity plan.
- 3) Revision of the activity plan as needed.
- 4) ad hoc committee approves activities.
- 5) Perform activities in accordance with the activity plan.
- 6) Submission of activity report.
- 7) Oral presentation of activities at an open briefing session.



Organize the meetings with embassies, JICA, World Bank and Zambian ministries and agencies

Remarks

(JPN)

- ・ 学生自身が作成する活動計画の審査および旅費支弁等の事務手続きに時間を要しますので、原則、活動開始の2か月前に獣医学研究院国際連携推進室卓越大学院担当(ohf@vetmed.hokudai.ac.jp)に活動計画を提出すること。
- ・ 活動計画の作成の際は指導教員および実施予定機関とよく相談すること。申請には指導教員の許可が必要となります。
- ・ 活動期間は1週間もしくはそれ以上とします。
- ・ 旅費・宿泊費の支給額上限は、活動を実施する国および地域により異なりますので、獣医学研究院国際連携推進室卓越大学院担当(ohf@vetmed.hokudai.ac.jp)までお問い合わせください。
- ・ 活動の場合には実施する国や地域に応じて、ワクチン接種が必要となる場合があります。ワクチン接種にかかる費用は自己負担となります。
- ・ 海外活動の場合には必ず保険に加入していただきます。保険費は本プログラムで負担しますが、決められた保険に加入いただきます。

(ENG)

- Students must submit their activity plans to the WISE Program Office, International Affair section, Faculty of Veterinary Medicine (ohf@vetmed.hokudai.ac.jp), TWO MONTHS prior to the start of the activities because it will take time to review the activity plans and complete the administrative procedures such as payment of travel expenses.
- Please discuss with your supervisor and the institution where you plan to have your activity carefully when preparing the activity plan. You must obtain your supervisor's permission to apply.
- The activity period is one week or longer.
- The maximum amount of travel and accommodation expenses varies depending on the country or region where the activity takes place, so please contact the WISE Program

モジュール番号 Module	3
科目名 Course Name	放射能や放射線による健康への慢性的な影響について理解する / Understanding of the chronic effects of radioactivity and radiation on health
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	2
責任教員 Instructor name	豊田 和弘 Kazuhiro TOYODA
責任教員所属 Affiliation of the instructor	北海道大学大学院地球環境科学院 Faculty of Environmental Earth Science
責任教員連絡先(メール) Instructor email	kazuhiro@ees.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-4512
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	2021 September or October (About one week)
Language	English
実施場所 Class Locations	北海道大学大学院地球環境科学院 その他 Faculty of Environmental Earth Science, Hokkaido University, etc.
引率学生数 Number of students	

Class Information

Outline/Description (JPN)

放射能や放射線は目には見えないので、その健康への影響の規模が著しく誤解されることも多い。本コースでは、ガンマ線スペクトロメータで食品中の放射性核種含有量を定量するほか、研究用原子炉のそばの管理区域へ行って、放射化物の取り扱いや測定などの経験を積むことで、まず放射能や放射線の存在と種類についての理解を深める。その上で各自の対象に関連する文献調査を行い、例えば、自分の故郷での天然の環境放射能による被曝量の健康への影響、または人為的な放射能汚染を想定して、その健康被害(生涯発がんリスク)についての見積もりをおこなう。発表会では参加者同士で議論を行い、各自その内容をレポートにまとめる。

(ENG)

Since radioactivity and radiation are invisible to the eye, the magnitude of their health effects is often significantly misunderstood. In this course, you will gain experience in handling and measuring radioactivity by quantifying the content of radionuclides in food with a gamma-ray spectrometer and going to a controlled area near a research reactor. By actually handling them, students first deepen their understanding of radioactivity and the existence and type of radiation, then conduct a literature search related to their subject. Participants estimate the health hazards (lifetime cancer risk), for example, assuming the effects of exposure to natural environmental radioactivity in their hometown on health, or artificial radioactive contamination. Participants will discuss with each other at a report meeting and summarize the contents in a report.

Goal/Objectives

(JPN)

放射能や放射線の種類や存在形態についてハンズオンで実習して理解した上で、放射線被ばくが健康に与える影響について科学文献を論拠に正当に評価できるようになり、他人にも説明できるようになる。できれば、重金属摂取による健康被害など他のリスクとの比較もおこなえるようになりたい。

(ENG)

After hands-on training and understanding of radioactivity and the types and forms of radiation, it will be possible to properly evaluate the effects of radiation exposure on health based on scientific literature and to explain it to others. If possible, I would like to be able to compare it with other risks such as health hazards caused by heavy metal intake.

Schedule and Activities

(JPN)

- 1) 本コースの責任教員と連絡相談しつつ、受講の数ヶ月前に見積もる放射能と核種の影響評価の対象を学生自身が選定する。必要ならば受講前に試料採取計画も策定する。
- 2) (原子炉へ行く場合には)北海道大学主催の放射線障害防止及びエックス線障害防止のための教育訓練(放射性同位元素等)の春の講習会を受ける。
- 3) 対象とする放射能の影響評価に関する講義や実習を受講する。必要ならば、液体シンチレーションで低エネルギー β 線測定や空中のラドンのアルファ線のトラック跡を数えたりもする。
- 4) 本コースの責任教員との指導下で、自分の調査対象に関する文献を読んで、学生自身が放射線被ばくが健康に与える影響について見積もる。
- 5) 講義の最後に、各自発表をしながら、参加者間で検討を重ねて、最終的に各自でレポートとして提出する。



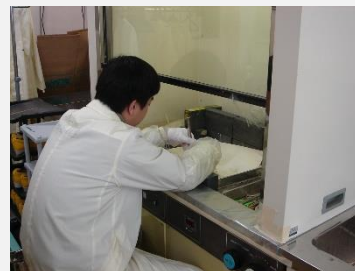
北海道大学大学院地球環境科学研究院内での演習中
Exercise in a room of Faculty of Environmental Earth Science, Hokkaido University



京都大学複合原子力科学研究所の会議室での発表会
を聞いている学生 Students listening to the presentation at the conference room of Institute for Integrated Radiation and Nuclear Science, Kyoto University

(ENG)

- 1) While contacting and consulting with the instructor responsible for this course, the students themselves select the targets of the assessment of the effects of radioactivity and nuclides estimated several months before the course. If necessary, formulate a sampling plan before attending the class.
- 2) (When going to a nuclear reactor) Take a spring training course (radioactive isotopes, etc.) for prevention of radiation damage and X-ray damage sponsored by Hokkaido University.
- 3) Take lectures and practical training on the evaluation of the effects of targeted radioactivity. If necessary, liquid scintillation can be used to measure low-energy beta rays and to count the traces of radon alpha rays in the air.
- 4) Under the guidance of the instructor responsible for this course, read the literature on your research and estimate the health effects of radiation exposure on your own.
- 5) At the end of the lecture, each participant will make a presentation, and the participants will discuss each other and finally submit it as a report.



原子力科学研究所(東海村/日本原子力研究開発機構)内での放射化物の取り扱いと γ 線測定
Handling of radioactive substances and gamma-ray measurement in a room of Nuclear Science Research Institute (Tokai-mura/JAEA)



原子力科学研究所(東海村/日本原子力研究開発機構)内での放射化物の取り扱いと γ 線測定
Handling of radioactive substances and gamma-ray measurement in a room of Nuclear Science Research Institute (Tokai-mura/JAEA)

Remarks

(JPN)

受講の数ヶ月前には、本コースの責任教員と連絡相談する必要がある。研究用原子炉にて実習をするためには講習の数ヶ月前に、北大主催の放射線障害防止及びエックス線障害防止のための教育訓練(放射性同位元素等)の講習会(2021 春)などを受けておく必要がある。2021 年での研究用原子炉の稼働日時が確定後に講習の期日を確定させる。

(ENG)

It is necessary to contact and consult with the instructor responsible for this course several months before taking the course. To practice in a research reactor, it is necessary to take a training course, "Education and training of persons applying for new registration as a user of radioisotopes, radiation generators, etc." at Hokkaido University (Spring 2021), several months before the training. After the operation date and time of the research reactor in 2021 is confirmed, the training date will be announced.

モジュール番号 Module	3
科目名 Course Name	アジアにおける動物のピロプラズマ病やトリパノソーマ病のリスク調査 / Analysis of risk factors associated with animal piroplasmosis and trypanosomiasis in Asia
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	横山直明(帯広畜産大学・原虫病研究センター) Naoaki Yokoyama: National Research Center for Protozoan Diseases, Obihiro University of Agriculture and Veterinary Medicine
責任教員連絡先(メール) Instructor email	yokoyama*obihiro.ac.jp
責任教員連絡先(電話) Instructor phone	0155-49-5649
Link to instructor bio or website:	https://www.obihiro.ac.jp/facility/protozoa/
Teaching Assistant name and contact info	菅沼啓輔(帯広畜産大学・原虫病研究センター) Keisuke Suganuma: National Research Center for Protozoan Diseases, Obihiro University of Agriculture and Veterinary Medicine
実施期間 Periods	TBD (Scheduled for 1-2 weeks)
Language	English
実施場所 Class Locations	帯広畜産大学・原虫病研究センター National Research Center for Protozoan Diseases, Obihiro University of Agriculture and Veterinary Medicine

Class Information

Outline/Description (JPN)

牛や馬のピロプラズマ病やトリパノソーマ病は、アジアを含む世界各地で報告されている。本科目では、アジアにおける原虫病の疫学マップを作成し、国際獣疫事務局(OIE)が交付する OIE 診断・予防マニュアルや OIE 陸生動物衛生基準を活用しながら上記原虫病のリスク因子について議論する。最終的には、想定国で活用できる原虫病に対する対応策ガイドラインを自ら考案し、家畜原虫病の重要性と OIE の活動を理解する。

(ENG)

Bovine and equine piroplasmosis and trypanosomiasis, which are economically significant protozoan diseases, have been reported throughout the world, including Asia. In this course, you will create epidemiological maps to illustrate the distributions of these diseases in Asia, and discuss the risks factors based on the “OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals” and “OIE Terrestrial Animal Health Code” published by the OIE. At the end of this course, in addition to understanding the significance of animal protozoan diseases and OIE activities, you will prepare guidelines for the control of these protozoan diseases in the endemic countries.

Goal/Objectives**(JPN)**

- 1) アジアにおける牛や馬のピロプラズマ病やトリパノソーマ病の分布状況を把握する。
- 2) 最新の OIE 診断・予防マニュアルや OIE 陸生動物衛生基準を活用して、そのリスク因子を調査する。
- 3) 家畜原虫病の重要性と OIE の活動について理解する。
- 4) 想定流行国で活用できる原虫病に対する対応策ガイドラインを考案する。

(ENG)

- 1) To understand the distributions of piroplasmosis and trypanosomiasis in cattle and horses in Asia.
- 2) To identify the risk factors based on “OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals” and “OIE Terrestrial Animal Health Code” to assess the risks.
- 3) To understand the importance of protozoan diseases and OIE activities
- 4) To prepare guidelines for controlling the protozoan diseases in endemic countries.

Requirement, textbook, materials**(JPN)**

参加者にはハンドアウトが配られます。

(ENG)

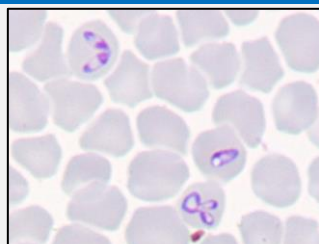
Handouts will be distributed among the participants.

Schedule and Activities**(JPN)**

- 1) 講義:牛や馬のピロプラズマ病とトリパノソーマ病について紹介する。
- 2) 調査:選択した原虫病のアジアにおける分布状況を文献調査し、その疫学マップを作成する。
- 3) 発表:OIE 診断・予防マニュアルや OIE 陸生動物衛生基準を活用して、選抜した原虫病のリスク因子を解説する。
- 4) 提言:選抜した想定流行国で活用できる原虫病の対応策ガイドラインを作成する。

(ENG)

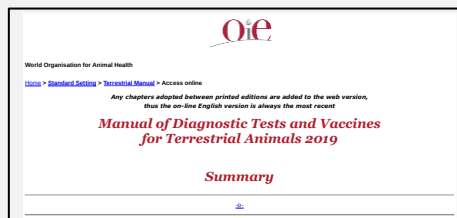
- 1) Lecture: Introduction to piroplasmosis and trypanosomiasis in cattle and horses.
- 2) Literature survey: Epidemiological maps will be prepared to illustrate the distribution of selected protozoan diseases in Asia.
- 3) Presentation: Risk factors of selected protozoan diseases will be identified based on “OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals” and “OIE Terrestrial Animal Health Code”.
- 4) Recommendations: Guidelines for the control of protozoan diseases in selected endemic countries will be prepared.



ピロプラズマ Piroplasma



トリパノソーマ Trypanosoma



公開されている OIE マニュアル
Published OIE manual

Remarks

Hokkaido University WISE Program
One Health Frontier Graduate School of Excellence
Ally Course Syllabus

モジュール番号 Module	3
科目名 Course Name	Bilateral Symposium on the One Health Approach: Environmental remediation on the risk-based studies of KAMPAI and DRINK projects in Zambia
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	石塚真由美 Mayumi ISHIZUKA
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 毒性学教室 Laboratory of Toxicology, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	ishizum@vetmed.hokudai.a.c.jp
責任教員連絡先(電話) Instructor phone	011-706-6949
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	March 24 (WED), 2021
Language	English
実施場所 Class Locations	Online

Class Information

Outline/Description

(JPN)

ザンビアにおける鉛汚染問題を解決するために、どのような研究がなされているか、その進捗やゴールについて情報を共有します。このシンポジウムでは、北海道大学、ザンビア大学における工学、鉱山、農学、地球環境、保健、経済、獣医学、情報、理学、教育など、多分野の研究者や学生がその研究を報告します。JICA、JST、日本大使館、ザンビア行政関係者が参加を予定しており、2 国間による国際シンポジウムとなります。

(ENG)

We will share information on the progress and goals of what research is being done to solve the problem of lead contamination in Zambia. Researchers and students from Hokkaido University and the University of Zambia will present their research in the fields of engineering, mining, agriculture, earth environment, health, economics, veterinary medicine, information, science, education, etc. JICA, JST, the Japanese Embassy, and Zambian government officials are scheduled to participate in this bilateral international symposium.

Goal/Objectives

(JPN)

参加学生はシンポジウムの運営に携わり、One Health に関する実践的な研究とともに、どのように国際的なシンポジウムを開催運営するのか学びます。

(ENG)

Participating students will be involved in organizing the symposium and will learn how to organize and run an international symposium as well as practical research on One Health.

Requirement, textbook, materials

(JPN)

(ENG)

Schedule and Activities

(JPN)

3 月 シンポジウムの企画

3 月 シンポジウムの準備

3 月 24 日 当日の運営と内容の記録(報告書の作成)

(ENG)

March: Planning for the Symposium

March: Preparation for the symposium

24th March: Management of the day and recording of the contents (preparation of reports)



Pictures of the meeting (online this time)



Pictures of the meeting (online this time)



Pictures of the meeting (online this time)

Remarks

3 月 24 日までシンポジウムの企画準備が続きます。シンポジウム当日まで、本授業への参加は随時受け付けます。
Planning and preparation for the symposium will continue until March 24. Participation in this class will be accepted at any time until the day of the symposium.

Sub-Module 4

モジュール番号 Module	4
科目名 Course Name	One Health Surveillance for Environmental Pollution in Africa
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	石塚真由美 Mayumi ISHIZUKA
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 毒性学教室 Laboratory of Toxicology, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	ishizum@vetmed.hokudai.a.c.jp
責任教員連絡先(電話) Instructor phone	011-706-6949
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	TBD (about 10 days)
Language	English
実施場所 Class Locations	Zambia, etc (Africa)

Class Information

Outline/Description

(JPN)

鉛やカドミウム、ヒ素、水銀などは人や動物への毒性が強く、鉱床など地下資源を有する国において汚染の進行が問題となっている。アフリカなどの地域では、これら金属・半金属による大規模な中毒例も報告されている。この授業では、世界的に問題となっている金属を中心に、環境汚染について、実際に海外における調査を実施する。

(ENG)

Lead, cadmium, arsenic, mercury, etc. are highly toxic to humans and animals, and the progress of pollution is a problem in countries with underground resources such as mining. In areas such as Africa, cases of large-scale poisoning caused by these metals and metalloids have been reported. In this class, student join the overseas surveys on environmental pollution majorly caused by metals, which is a global problem.

Goal/Objectives

(JPN)

- 1) 海外、特に途上国でどのような環境汚染が問題となっているのか理解する。
- 2) 海外における調査にあたって必要な事前の情報や各機関との連携の方法について学ぶ。

(ENG)

- 1) Understand what environmental pollution are problem overseas, especially in developing countries.
- 2) Learn advance information necessary for overseas surveys and how to collaborate with each organization.

Requirement, textbook, materials

(JPN)

必要な準備など、事前にオリエンテーションを行います。ワクチン接種として、A 型肝炎、黄熱病、狂犬病、破傷風を求めることがあります。

(ENG)

Orientation is performed in advance, including necessary preparations. Vaccinations may be required; hepatitis A, yellow fever, rabies, and tetanus.

Schedule and Activities

(JPN)

- 1) オリエンテーション
- 2) 現地における協力体制の構築
- 3) 現地におけるサンプリング
- 4) サンプル処理と分析
- 5) データ解析
- 6) ディスカッション

(ENG)

- 1) Orientation
- 2) Establishment of local cooperation system
- 3) Local sampling
- 4) Sample dissension and analyses
- 5) Data analyses
- 4) Discussion



ザンビアにおける犬の血液採取



ザンビアにおける牛のサンプリング



現地関係機関との協議

Remarks

渡航前に調査に必要な準備を説明します。また、当該分野の技術等の経験がなくともかまいません。

Explain the necessary preparations for the survey before traveling. In addition, it is not necessary to have experience in the field of technology.

モジュール番号 Module	4
科目名 Course Name	疾病制御のための疫学 / Epidemiology for disease control
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	Professor Kohei Makita
責任教員所属 Affiliation of the instructor	酪農学園大学 獣医学群獣医学類 獣医疫学ユニット Veterinary Epidemiology Unit, Department of Veterinary Medicine, School of Veterinary Medicine, Rakuno Gakuen University
責任教員連絡先(メール) Instructor email	kmakita@rakuno.ac.jp
責任教員連絡先(電話) Instructor phone	011-388-4761
Link to instructor bio or website:	http://veterinaryepidemiology.jp/english/ http://rakuno-oiecenter.org/en/
Teaching Assistant name and contact info	Professor Katsuro Hagiwara (Rakuno Gakuen University)
実施期間 Periods	TBD
Language	English
実施場所 Class Locations	Myanmar and/or Vietnam
引率学生数 Number of students	2 students each trip

Class Information

Outline/Description

(JPN)

酪農学園大学 OIE 食の安全ジョイントコラボレーティングセンターでは連携教員と共にアジア・アフリカ地域の畜産物生産力向上、食の安全を含む人獣共通感染症研究を実施している。

2020 年 2 月に、ベトナム国でこれまで実施してきた動物と人の E 型肝炎ウイルスの疫学調査結果を基にした次の研究ステップの検討、またミャンマーでは家畜のブルセラ病の疫学・家畜衛生経済学のフィールド調査が計画されている。参加学生は事前に関連知識を学習した後、会議・調査に参加し、現地のステークホルダーとともに疾病制御についての討議を体験学習する。

(ENG)

Rakuno Gakuen University OIE Joint Collaboration Centre for Food Safety has been conducting improvement of livestock productivity and researches on zoonotic diseases including food safety in Asia and Africa, under collaboration with affiliated researchers.

In 2020 February, discussion on the next step based on the previous researchers on Hepatitis E virus infections in animals and humans in Vietnam, and fieldworks of epidemiological and animal health economics surveys on brucellosis in Myanmar are scheduled. Students are expected to study about relevant knowledge before the fieldworks, attend meetings and surveys, and get experience of discussions on the disease control together with stakeholders in the countries.

Goal/Objectives

(JPN)

発展途上国における畜産物生産力向上・人獣共通感染症制御のための研究・介入プロジェクトの実際を体験し、必要な総合的思考・能力について理解する。

(ENG)

To understand holistic thoughts and abilities required for the research and/or intervention projects to improve livestock productivity and to control zoonotic diseases in developing countries.

Requirement, textbook, materials

(JPN)

参加希望者に参考文献を配布。渡航 2 週間前までに狂犬病・A 型および B 型肝炎・破傷風ワクチン接種終了のこと。

(ENG)

Literatures will be distributed to the participants. Completion of vaccinations against rabies, hepatitis A and B, and tetanus must be completed by two weeks before travel.

Schedule and Activities

(JPN)

- 1) 事前に関連論文を参加者に送付。学生は内容を簡単にまとめたレポートを教員に提出する。
- 2) 教員に付き添い、フィールド調査・診断用務・会議に参加する。
- 3) カウンターパートやステークホルダーとともに学習内容についてディスカッションを行う。
- 4) 後日学習内容をレポートにまとめて教員に提出する。

(ENG)

- 1) Literatures will be sent to students in advance, and students submit the report about the contents.
- 2) Students will accompany researchers and participate in field activities, diagnoses, and meetings.
- 3) Students will discuss with counterparts or stakeholders on what they learned.
- 4) After the fieldwork, students will submit the study report to the researchers.



ベトナムでの会議の様子
Meeting in Vietnam



E 型肝炎ウイルス診断
Diagnosis for Hepatitis E virus



牛からの採血(ウガンダ)
Blood sampling from cows (Uganda)

Remarks

モジュール番号 Module	4
科目名 Course Name	モンゴルにおける食品媒介感染症の調査研究 / Surveillance of foodborne diseases in Mongolia
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	
責任教員 Instructor name	堀内 基広 Motohiro HORIUCHI
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 獣医衛生学教室 Laboratory of Veterinary Hygiene, Faculty of Veterinary Medicine, Hokkaido University
責任教員連絡先(メール) Instructor email	horiuchi@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706-5293
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	TBD
Language	English
実施場所 Class Locations	Ulaanbaatar Veterinary Office, School of Veterinary Medicine, Mongolian University of Life Science, JICA
引率学生数 Number of students	一回の訪問につき上限 3 名 Maximum three students per visit.

Class Information

Outline/Description

(JPN)

モンゴルではブルセラ症、カンピロバクター感染症、腸管出血性大腸菌感染症、リステリア症など、食品媒介感染症の発生状況や起因菌の存在状況に関するデータが乏しいのが現状です。本活動では、モンゴルの保健衛生機関、獣医科大学、および JICA と協働して、モンゴルにおける食品媒介感染症の発生状況、起因菌の侵淫状況ならびに薬剤耐性を含む性状解析を進めデータを集積します。活動はモンゴル人カウンターパートの協力を得て実施します。活動を通じて、同国の食品媒介感染症の制御対策の進展に貢献するとともに、国際協力プロジェクトによるカウンターパートの能力強化について考えます。

(ENG)

In Mongolia, there are few scientific data on prevalence and characterization on foodborne diseases and their causative agents, such as brucellosis, campylobacteriosis, enterohemorrhagic E coli infection and listeriosis. In this program, in cooperation with hygiene sector(s), veterinary school in Mongolia and JICA, we will analyze the prevalence of foodborne disease and characterize the causative agents including antimicrobial resistance. The activities will be carried out in cooperation with the counterparts in Mongolia. Aim of this program is to contribute to capacity building of counterpart as well as the progression of the control measures of foodborne diseases in Mongolia.

Goal/Objectives

(JPN)

- 1) ブルセラ症、カンピロバクター感染症、腸管出血性大腸菌感染症、リステリア症などの食品媒介感染症に関する途上国での国際共同研究を進める上での問題点を理解する。

2) 国際協力プロジェクトにおける、多機関連携、人材育成、能力強化の必要性を理解する。

(ENG)

1) To understand problems on conducting international collaboration on surveillance of foodborne diseases such as *brucella* spp, *campylobacter* spp, enterohemorrhagic *E. coli* infection and *listeria* spp in developing countries.

2) To understand necessity of multi-sectoral collaboration, human resource development and capacity building in the international cooperation project.

Requirement, textbook, materials

(JPN)

渡航前に調査に必要な準備を説明します。また、当該分野の技術等の経験がない学生には、調査に必要な技術研修を実施しますので、文系の学生さんでも参加可能です。

(ENG)

Content of surveillance and preparation for the travel will be explained in a briefing before the visit. Technical training will be provided to students who do not have experience of the area concerned, thus PhD students in Humanities field can participate.

Schedule and Activities

(JPN)

- 1) 調査票の準備
- 2) サンプルの準備、細菌分離同定様の試薬類、DNA 解析用の試薬類の準備
- 3) 農場あるいは市場等でのサンプリング(乳汁、血液、糞便、食品など)
- 4) 農場での聞き取り調査
- 5) 実験室での菌分離、同定、および性状解析
- 6) 結果の解析とディスカッション
- 7) モンゴルで実施中の JICA 国際協力プログラムの視察

(ENG)

- 1) Preparation of questionnaire (JPN, MN)
- 2) Preparation for sampling, reagents for isolation and identification of bacteria, and for molecular analysis (JPN, MN).
- 3) Sampling (milk, blood, feces and food) at farms and markets (MN).
- 4) Questionnaires at farms (MN).
- 5) Isolation, identification, and characterization of bacteria (MN).
- 6) Analysis of the results and discussion (MN).
- 7) Visitation to the project site of JICA program in Mongolia (MN).



養鶏場でのサンプリング



遊牧民



家畜集積場



ヒツジの消化管内容サンプリング



市場でのサンプリング



実験室での作業風景

Remarks

希望する学生は 3 期間のうちいずれか一つを選んでください。Those who would like to join this program will be asked to select one of the three terms.

高度な英語のスキルは必要ありません。No need to have an excellent English proficiency.

モジュール番号 Module	4
科目名 Course Name	Student Free Design Activities (One Health on site Training)
Credits (if register as Inter Graduate School Classes Course of Hokkaido University):	2
責任教員 Instructor name	石塚 真由美 Mayumi ISHIZUKA
責任教員所属 Affiliation of the instructor	北海道大学大学院獣医学研究院 Faculty of Veterinary Medicine
責任教員連絡先(メール) Instructor email	ishizum@vetmed.hokudai.ac.jp
責任教員連絡先(電話) Instructor phone	011-706- 6949
Link to instructor bio or website:	
Teaching Assistant name and contact info	
実施期間 Periods	TBD
Language	English
実施場所 Class Locations	Locations will vary for each activity, please refer to the syllabus for each activity
引率学生数 Number of students	

Class Information

Outline/Description (JPN)

One Health/One Health approach について、実践的な経験を積むために、One Health Seminar および One Health Transferable skill training を修了した学生を対象として、学生自身が学外機関で One Health/One Health approach に関する活動を計画して実施する。学外機関は国内外の民間、行政、教育研究機関、非営利団体など広く想定している。One Health/One Health approach が異分野間の協働が重要であることを意識して、学生が興味を持つ分野で、学生自らが活動を希望する機関と連絡調整を行い活動計画を策定する。活動計画は One Health Ally Course 運営委員会委員を中心に構成される ad hoc 委員会で審査し、承認が得られた活動に対して上限額を設定して旅費、宿泊費を支給する。活動終了後は、活動の内容、成果、および今後の課題等についてレポートを作成・提出するとともに、公開での活動報告会での発表を行い、経験を関係各位と共有する。

(ENG)

To gain practical experience on the One Health/One Health approach, students who have completed the One Health Seminar and One Health Transferable skills training will plan their own off-campus activities related to One Health/One Health approach. Off-campus organizations include a wide range of domestic and international private sector, government, educational and research institutions, and non-profit organizations, etc. Recognizing the importance of inter-disciplinary collaboration in the "One Health/One Health" approach, students themselves will make their own activity plan in their field of interest by coordinating with organizations in which they would like to engage in activities. Activity plans are reviewed by the ad hoc committee consisting mainly of One Health Ally Course Steering Committee members, and if approved, travel and accommodation expenses will be paid under the rule of HU with a maximum amount set. After the activity, the students have to prepare a report on the content, results, and future problem that

need to be addressed, as well as make a presentation at an open reporting session to share their experiences with other students.

Goal/Objectives

(JPN)

- 1) 活動計画の策定を通じて、学外機関、他分野との協働の重要性を理解する。
- 2) 実践的な活動を通じて、One Health/One Health approach を経験し、必要な能力、思考態度を理解する。
- 3) 活動報告(レポートおよび公開発表会)を行い、準備段階からの活動全体を振り返り、One Health/One Health approach に対する理解を深める。

(ENG)

- 1) To understand the importance of collaboration with external organizations and other fields through the development of activity plans.
- 2) To understand the necessary competencies and mindset for One Health/One Health approach through experience of practical activities.
- 3) To deepen understanding of the One Health/One Health approach, through making report on activities (written reports and oral presentations) and reconsideration on the overall activities from the preparation stage.

Schedule and Activities

(JPN)

- 1) 学生自身が実施機関と協議しながら活動計画を策定
- 2) 活動計画を ad hoc 委員会が審査
- 3) 必要に応じて活動計画を修正
- 4) ad hoc 委員会が活動を承認
- 5) 活動計画に則って活動を実施
- 6) 報告書の提出
- 7) 公開活動報告会で活動内容を口頭発表

(ENG)

- 1) Students make their own activity plans in discussion with their supervisor and the counterpart at the off-campus organization.
- 2) ad hoc committee reviews the activity plan.
- 3) Revision of the activity plan as needed.
- 4) ad hoc committee approves activities.
- 5) Perform activities in accordance with the activity plan.
- 6) Submission of activity report.
- 7) Oral presentation of activities at an open briefing session.



Household joint survey abroad
(Economics, Health and Veterinary Medicine)



Blood collection from dogs abroad



Overseas joint geological surveys
(agricultural, engineering, earth and environmental sciences)

