

ONE HEALTH: BASIC CONCEPTS (OHB 801)

(Course leader: Chiara Trevisan)

The One Health Basic Concepts module aims to provide knowledge, skills and competences to address multifaceted global challenges and bring efficient solutions to improve the health of: humans, animals and the environment through education, cross-disciplinary research and collaboration between relevant institutions and stakeholders.

The module will focus on antimicrobial and drug resistance, zoonoses, emerging health-related problems, disease surveillance, animal and human health at the livestock and wildlife interface, food and water security and safety, environmental health and much more.

The module provides an overview of the tools used in the One Health approach by drawing on successful international achievements characterized by widely cross-disciplinary collaboration between public authorities, research bodies and the industry.

NUMBER OF CREDITS

4 ECTS

MODE OF STUDY

This module is blended. It includes an optional one-week field “Face-to-face” component in South Africa in which students will see how a One Health approach can be used when addressing challenges for health at the livestock/wildlife and human interface in a resource restricted area and a web based “Online” component where students will be distance learning.

LEARNING OBJECTIVES

At the end of the course the student should be able to:

- Explain the One Health concept and its cross-sectorial perspectives
- Identify and describe One Health cases within various areas
- Describe the advantages and challenges of applying One Health approaches in industry and public administrations
- Identify the roles, responsibilities and needs of key stakeholders in One Health challenges
- Describe basic research ethic principles and their applications when working with One Health
- Apply research ethical principles and informed consent procedures in the research conduct and demonstrate research ethical principles in data management
- Explain the fundamental principles of cross-sector human and animal health economics
- Explain of the principles for prioritizing intervention between different health issues
- Describe the principles for identifying methods for prevention and control of infectious diseases, food safety threats, antimicrobial resistance and health risks

CONTENT

The content of the module is arranged into 4 themes:

1. The ABC of One health

Students understand the concept of OH and are able to identify a problem that requires an integrated approach

2. Who makes One health work?

Students are able to identify the stakeholders in a OH approach and are able to communicate cross-sectorial

3. Ethics in cross - sectorial research

Students understand the ethical considerations in OH approach

4. Tools for One health research

Students are able to prioritize interventions using a OH approach Students are able to identify and apply methods for addressing OH challenges

After completing the module, the students will be expected to have a holistic, multidisciplinary view of human, livestock and wildlife health and management in the context of ecosystems. The students will be able to identify challenges that need One Health approaches to be solved or mitigated, be able to contribute critically to the implementation of the One Health approach when needed, explain how the transmission of diseases from livestock to human can be prevented and be able to identify challenges that need One Health approaches to be solved or mitigated, and be able to contribute critically to the implementation of the One Health approach when needed.

TEACHING AND LEARNING METHODS

The educational approach is for the majority of the module web-based distance learning. Self-directed learning by the student is therefore essential. Although there is some reading material recommended, much of the facilitation of learning in this module will be done through the interactive tools on an online platform, in particular through audio recorded lectures, on-line discussions and other co-operative methods. It is the students` responsibility to actively participate in these. This module also includes an optional one-week field "Face-to-face" component in South Africa at the Hans Hoheisen Wildlife Research Station.

ASSESSMENT

To pass this module, students must complete and submit all assignments/exercises. One assignment is foreseen for each theme. The final score for the module will be based on the scores obtained for each of these and a final exam.

Assignment 1: Presentation – Disease case

A group presentation is prepared where a disease case illustrating the One Health aspects and challenges linked to the disease from the human, animal and environmental perspective is presented.

Assignment 2: Stakeholder analysis

A stakeholder analysis keeping the disease case in mind, is performed and submitted individually.

Assignment 3: Ethics reflection

Students reflect and discuss on the online platform the ethical issues related to the disease case and are evaluated in terms of content and participation

Assignment 4: Transmission model exercise

Individually, the student replies to all the questions foreseen in the exercise.

Final assessment: Disease case and One Health intervention plan

As a group, the students prepare a One Health intervention plan and submit it as word document one week prior to the submission of the recorded presentation.

| Theme | Marks (%) |
|--------------|------------|
| Assignment 1 | 17 |
| Assignment 2 | 17 |
| Assignment 3 | 8 |
| Assignment 4 | 33 |
| Final exam | 25 |
| Total | 100 |

ADMISSION REQUIREMENTS

Identical to the admission requirements of the MSc in Tropical Animal Health.

SELECTION CRITERIA

Identical to the selection criteria of the MSc in Tropical Animal Health.

READING MATERIAL

Useful additional reading Theme 1

- [Queenan et al 2017 - Roadmap to a One Health Agenda 2030](#)
- BOOK: One Health, the theory and practice of Integrated Health approaches. 1st Edition, CAB International 2015.

Useful additional reading Theme 2

- [Cipolla et al 2015 - From "One Health" to "One Communication": The Contribution of Communication in Veterinary Medicine to Public Health](#)

- [Herdiana et al 2015. Intersectoral collaboration for the prevention and control of vectorborne diseases to support the implementation of a global strategy: A systematic review](#)
- [Sripa et al 2017 The Lawa model - A sustainable, integrated opisthorchiasis control program using the EcoHealth approach in the Lawa Lake region of Thailand](#)
- [Tangkawattana & Sripa 2018 Integrative EcoHealth - OneHealth approach for sustainable liver fluke control - The Lawa model](#)

Useful additional reading Theme 3

- [CIOIMS 2016 International Ethical Guidelines for Health-related Research Involving Humans](#)
- [BOOK: A guide to Research Ethics; University of minnesota center for bioethics 2003](#)
- [Manual for Research Ethics Committees, 6th Edition, Cambridge University Press](#)
- [Rabinozitz et al 2018. A planetary vision for one health](#)
- [Guraya et al 2014. Ethics in medical research](#)
- [Herten et al 2018. One Health as a moral dilemma: Towards a socially responsible zoonotic disease control](#)
- [Marckmann et al 2015. Putting public health ethics into practice: a systematic framework](#)

Useful additional reading Theme 4

- [Lebov et al 2017 - A framework for One Health research](#)
- [Devleesschauwer et al 2014. DALY calculation in practice: a stepwise approach](#)
- [Devleesschauwer et al 2014. Calculating disability-adjusted life years to quantify burden of disease](#)
- [Stärk et al 2015. One Health surveillance – More than a buzz word?](#)
- [Hoinville et al 2013. Proposed terms and concepts for describing and evaluating animal-health surveillance systems](#)
- [Kyvsgaard et al 2007. Simulating transmission and control of Taenia solium infections using a Reed-Frost stochastic model](#)
- [Braae et al 2016. CystiSim - An Agent-Based Model for Taenia solium Transmission and Control identical to the admission requirements of the MSc in Tropical Animal Health.](#)

STAFF INVOLVED

Dr Chiara Trevisan – Module coordinator

Dr Mieke Stevens – Module facilitator

Dr Famke Jansen – Module facilitator

A number of international colleagues are invited to provide recorded lectures, however these change based on the yearly availability and content proposed