Curriculum for the programme CAS One Health

UNIVERSITÄT BERN

April 17, 2024

The CAS in One Health degree programme (hereinafter referred to as the "Degree Programme") is a university continuing education programme that leads to the award of the "Certificate of Advanced Studies in One Health, University of Bern (CAS OH Unibe)". The legal basis is the Vetsuisse Faculty Regulations for the CAS in One Health degree programme of 22 May 2024.

1. Aims, scope and structure of the degree programme

Goals

The participants

a understand the fundamentals and governance of the One Health approach,

b have a good understanding of key One Health methods and topics,

c acquire competencies in systems thinking,

d are able to assess and communicate the effectiveness and added value of the One Health approach,

e are able to implement the One Health approach in their professional activities and to collaborate across sectors.

Scope and structure

The degree programme comprises 15 ECTS credits (approx. 375 – 450 working hours) and consists of modules totalling 11 ECTS credits and two cross-module assessments totalling 4 ECTS credits.

The degree programme consists of basic modules and compulsory elective modules.

2. Scope, objectives and content of the modules

A detailed description of the modules can be found in the appendix of the curriculum.

Basic Modules (Component 1)

One Health – Basic Modules

Scope: 4 modules, 1.5 ECTS credits per module, a total of 6 ECTS credits.

Component 1 comprises the compulsory basic modules as well as a cross-module assignment (Assessment 1) worth 2 ECTS credits.

Thematic Modules (Component 2)

One Health – Thematic Modules

Scope: Selection of 5 modules, 1 ECTS credit per module, a total of 5 ECTS credits.

Component 2 comprises the compulsory elective modules as well as a cross-module assignment (Assessment 2) worth 2 ECTS credits.

3. Performance assessments

Performance assessments

Module-specific performance assessments

The assessments at the module level consist of written and/or oral work. The form of the performance assessment is determined at the beginning of the module and communicated to the students.

Cross-module performance assessments

Component 1: Group work

Component 2: Individual work

Requirements for passing the CAS program

Completion of the modules with an attendance of at least 80%, passing the module-specific performance assessments as well as the cross-module performance assessments.

Appraisal of results

The assessment of performance is regulated in the Study Regulations. Insufficient performance assessments can be repeated once. The repetition must occur no later than six months after the written notification of the participant.

The programme management decides on the passing and awarding of the CAS degree on the basis of the evaluation of the performance records and the fulfilment of the other performance requirements.

Implementing provisions for performance assessments

The details of the performance assessments for the modules are regulated in the implementation regulations for the performance assessments, which are issued by the programme management.

4. Final provisions

Coming into force

This curriculum will come into force on 1 November 2024.

Decided by the programme management:

BernApril 17, 2024 The Chairperson

Prof. Dr. Salome Dürr

Approved by the faculty:

Bern 22 May 2024 The Dean

Prof. Dr. David Spreng

Appendix to the curriculum CAS One Health

Catalogue of modules (descriptions)

One-Health - Basic Modules (Component 1)

Basic Module 1: What is One Health and where is it helpful?

ECTS credits	**1.5 ECTS credits (incl. self-study and performance assessment)**	**Scope**	3 days attendance; 38-45 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Know the fundamental definition, concepts and principles of One Health • Know examples of benefits and tensions at the interface between humans, animals and the environment • Understand the difference between One Health and related concepts such as Ecohealth or Planetary Health • Are able to apply a systemic approach to their professional activities		
Contents	• Examples of benefits and tensions at the interface between humans, animals and the environment • Theoretical foundations on the history, definitions, concepts and principles of One Health • Where is One Health helpful and where not? • System-based approaches applied to One Health		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	none		
Language of instruction	German, English (for documents: German, English)		

Basic Module 2: Think, collaborate and co-construct knowledge across sectors

ECTS credits	**1.5 ECTS credits (incl. self-study and performance assessment)**	**Scope**	3 days attendance; 38-45 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Understand and consider different thinking perspectives • Know the basics of the nature of ethics • Understand and can critically discuss the values underpinning the One Health • Understand intersectorality, interdisciplinarity, transdisciplinarity and related concepts • Can apply methods to engage efficient collaborations and cooperations across different disciplines and sectors • Can share and collectively construct knowledge with collaborators across different disciplines and sectors		
Contents	Humanities and social sciences perspective on the One Health approach • Philosophical, ethical, and anthropological concepts of nature • Sociology of professions linked to One Health Ethics of One Health • The foundations: welfare-based vs. right-based vs. virtue-based accounts • Principles of justice from an ethical standpoint • The moral status of humans, animals, biotopes Intersectoral/transdisciplinary collaboration • An introduction to communication and linguistics related to One Health • Tools and methods for transdisciplinary collaboration		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	Module 1 recommended		
Language of instruction	German, English (for documents: German, English)		

Basic Module 3: One Health in Practice

ECTS credits	**1.5 ECTS credits (incl. self-study and performance assessment)**	**Scope**	3 days attendance; 38-45 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Can apply a One Health approach in a concrete field example • Know the principles of surveillance, prevention and management of adverse health events related to One Health • Understand the opportunities, challenges and techniques of data collection and sharing between sectors • Can suggest plans for shared data collection and usage		
Contents	One Health Implementation • Methods and tools for implementing One Health • Theory of Change applied to One Health Health risk preparedness and response • Basics on risk analysis • Integrated One Health surveillance and prevention • One Health action plan and crisis management Intersectoral data management • Data collection, sharing, protection, regulations • Benefits and challenges of intersectoral data sharing		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	Modules 1 and 2 recommended		
Language of instruction	German, English (for documents: German, English)		

Basic Module 4: Operationalisation and Communication of One Health

ECTS credits	**1.5 ECTS credits (incl. self-study and performance assessment)**	**Scope**	3 days attendance; 38-45 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Know the global and national governance and regulations of One Health • Can explain the policy cycle and political processes in relation to health • Know tools for assessing the added value and effectiveness of One Health • Have notions of tools for assessing the One Health-ness of a project • Can communicate effectively with different audiences to promote One Health		
Contents	One Health governance • Global, European and Swiss Governance of One Health • Stakeholder mapping and power relations One Health assessment • Evidence-based research for policy guidance • Qualitative and quantitative tools to assess the added value and effectiveness and One Health-ness of a One Health project One Health communication • Methods of awareness-raising, community, and political engagement • Joint health promotion		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	Module 1, 2 & 3 recommended		
Language of instruction	German, English (for documents: German, English)		

One Health – Thematic Modules (Component 2)

Thematic Module 1: Climate Change, Natural Resource Management and One Health

ECTS credits	**1 ECTS point (incl. self-study and performance assessment)**	**Scope**	2 days attendance; 25-30 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Can illustrate the impact of agriculture, health services, urbanisation, globalisation, and climate change on the environment, society, and non-communicable diseases • Understand how economies and policies can impact health preparedness and resilience • Can explain the links between One Health, sustainability, and resilience • Know the Swiss governance and recognise conflicting regulations related to environment and health • Identify future socio-economic and environmental challenges related to health that can be addressed through a One Health approach		
Contents	• Examples of impacts of agriculture, health services, urbanisation, globalisation, and climate change on the environment, society, and non-communicable diseases • System-based approaches to non-communicable diseases and environmental health • Links between the environment, mental health, and animal welfare • Examples and notions of sustainability and resilience in various health sectors • Global and Swiss environmental and health governance		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	None		
Language of instruction	German, English (for documents: German, English)		

Thematic Module 2: Infectious Diseases at the Environmental-Animal-Human Interface

ECTS credits	**1 ECTS point (incl. self-study and performance assessment)**	**Scope**	2 days attendance; 25-30 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Can explain the underlying principles of ecosystems, ecology, and biodiversity • Know the risk and management of emerging and re-emerging infectious diseases and zoonoses associated with ecosystem vulnerabilities and changes • Know the priority infectious diseases and zoonoses at the environment-animal-human interface and the associated socio-economic burden in Switzerland • Know the Swiss governance related to communicable diseases • Can identify future socio-economic and environmental challenges related to infectious diseases that can be addressed through a One Health approach		
Contents	• Principles of ecosystems, ecology, and biodiversity • The collapse of biodiversity in relation to the emergence of infectious diseases from the perspective of social, ecological, biological, and pathogenic interactions • Integrated One Health surveillance and prevention (linked to Basic Module 3) • Ecosystem vulnerabilities and emerging and re-emerging infectious diseases and zoonoses • The Wildlife health - a One Health metric • Swiss governance of infectious diseases and zoonoses		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	None		
Language of instruction	German, English (for documents: German, English)		

Thematic Module 3: Antimicrobial Resistance and One Health

ECTS credits	**1 ECTS point (incl. self-study and performance assessment)**	**Scope**	2 days attendance; 25-30 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Have an overview of the Antimicrobial Use (AMU) and Antimicrobial Resistance (AMR) situation in the global, European, and Swiss contexts • Understand the biological and social causes and mechanisms of AMR • Know about current perspectives regarding new drug development and alternatives to antibiotic use • Can place AMR issues within a complex system approach • Know the global and Swiss One Health surveillance, governance, and action plans for AMU and AMR		
Contents	• The situation of AMU and AMR at the Global, European, and Swiss scale • The medical, social, economic, and environmental burden of AMR • The social causes and mechanisms of AMR within complex systems • Biological mechanisms of AMR • Current perspectives regarding new drug development and alternatives to antibiotic use • One Health surveillance, action plans, and governance for AMU and AMR		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	None		
Language of instruction	German, English (for documents: German, English)		

Thematic Module 4: One Health implementation in the Swiss Administration

ECTS credits	**1 ECTS point (incl. self-study and performance assessment)**	**Scope**	2 days attendance; 25-30 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Know the cantonal and federal administrative structures and stakeholders involved in the deployment of One Health in Switzerland and how they interplay with each other • Can illustrate One Health initiatives at the local and cantonal level • Can develop proposals for One Health operationalisation in their professional context		
Contents	• Swiss local, cantonal, and federal One Health initiatives and governance • Swiss cantonal, federal, and international coordination for One Health implementation • Current challenges for One Health Swiss operationalisation • Assessment of existing and development of One Health initiatives in practical contexts		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	None		
Language of instruction	German, English (for documents: German, English)		

Thematic Module 5: Biosecurity, Biorisks and One Health

ECTS credits	**1 ECTS point (incl. self-study and performance assessment)**	**Scope**	2 days attendance; 25-30 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Know the history and meaning of the different concepts of biosafety, biosecurity, and biological risk management • Can illustrate priority One Health biosafety issues in Switzerland • Can place biosafety issues within a complex system approach • Know the International and Swiss governance and infrastructures for biological risk management and preparedness		
Contents	• Fundamentals of biosafety, biosecurity, and biological risk management • Field, farm and laboratory biosafety/biosecurity • Biosafety issues within complex social, economic, and environmental systems • One Health methods and approaches for biosafety • Global and Swiss biosafety governance and structures • One Health surveillance and action plan for biosafety and biosecurity issues		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	None		
Language of instruction	German, English (for documents: German, English)		

Thematic Module 6: Vector-borne diseases and One Health

ECTS credits	**1 ECTS point (incl. self-study and performance assessment)**	**Scope**	2 days attendance; 25-30 working hours
Proof of performance	Written or oral work as part of the learning activities	**Attendance Requirements**	80 %
Objectives	The participants: • Have basic knowledge of the biology and population of the main vectors in Switzerland • Know the top priority vector-borne diseases (VBD), their epidemiology and their challenges in Switzerland • Can place the VBD issue within a complex system approach • Know the Swiss One Health surveillance, governance, and action plans for VBD		
Contents	• Biology and population of endemic and emerging vectors and the influence of climate change • Epidemiology of VBD • VBD within a complex system and socio-economic-environmental aspects • One Health surveillance, action plans, control methods and governance for VBD		
Teaching/Learning Methods	• Activation of participatory forms of teaching • Blended Learning Components • Case studies		
Required prior knowledge	None		
Language of instruction	German, English (for documents: German, English)		

Performance assessment 1: Group work

ECTS credits	**2 ECTS credits**	**Scope**	50-60 working hours
Proof of performance	Written/oral group work	**Attendance Requirements**	None
Objectives	The participants: • Can plan and present a project selected by the group on a One Health theme		
Contents	Range: Component 1 (Modules 1-4) • Selection of objectives from the modules in Component 1		
Method	Supervised cross-module project work		
Language	German, French, English		

Performance assessment 2: Individual work

ECTS credits	**2 ECTS credits**	**Scope**	50-60 working hours
Proof of performance	Written/oral individual work	**Attendance Requirements**	None
Objectives	The participants: • Can plan and present a project applying a One Health approach		
Contents	Range: Components 1 and 2 • Fundamentals of Component 1 • Selection of objectives from Component 2		
Method	Supervised cross-module project work		
Language	German, French, English		