



# ONEH\*6000 One Health Approaches to Research

Winter 2020

Section(s): C01

Department of Population Medicine

Credit Weight: 0.50

Version 1.00 - December 19, 2019

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## 1 Course Details

### 1.1 Calendar Description

A multidisciplinary course for graduate students that provides in-depth knowledge on the One Health approach, exploring complex issues at the interface of human, animal, and environmental health. Active learning lessons will foster strong skill development for One Health research in collaboration, systems thinking, transdisciplinarity, critical thinking, problem solving, leadership, and communication.

**Restrictions:**

Instructor consent required. Preference will be given to students in the Collaborative Specialization in One Health. If capacity remains after enrolling those students, any other student is eligible to take the course.

### 1.2 Course Description

Our world is faced with many wicked problems. Many of these issues occurs at the intersection of human, animal, and environmental health, and therefore require a holistic approach. One Health is a collaborative approach that integrates transdisciplinarity and system thinking to generate new knowledge on and effective solutions for these complex challenges. This course is one of the core requirements for the Collaborative Specialization in One Health and is designed to build the core competencies in One Health for graduate students. Graduate students not enrolled in this collaborative specialization can also enroll.

### 1.3 Timetable

Mondays and Wednesdays from 2:30 - 4:00 pm from January 6th to April 1st, inclusive. Please see WebAdvisor for the latest information.

### 1.4 Final Exam

There is no final exam for this course.

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## 2 Instructional Support

This course will be primarily delivered by Dr. Clow. Any questions regarding the course and assessments should be directed to her. That being said, One Health is inherently multidisciplinary and collaborative and this has been embraced in the course by having a diverse teaching team to provide an enriching and valuable learning experience. More information on guest lecturers can be found in the course schedule.

### 2.1 Instructional Support Team

<b>Course Co-ordinator:</b>	Katie Clow
<b>Email:</b>	kclow@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x53944
<b>Office:</b>	OVCS 2531

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## 3 Learning Resources

There are no assigned textbooks for this course. The three books listed below are excellent resources and are available online for free through the University of Guelph Library. All additional reading (journal articles, grey literature) will be listed on CourseLink and will be accessible online, either through open access journals or the University of Guelph library.

### 3.1 Recommended Resources

#### **One Health (Textbook)**

Zinsstag J, Schelling E, Waltner-Toews D, et al. One Health: The theory and practice of integrated health approach. Swiss Tropical and Public Health Institute; 2015.

#### **One Health Case Studies (Textbook)**

Cork S, Hall DC & Liljebjelke K. One Health Case Studies: Addressing Complex Problems in a Changing World. 5M Publisher; 2016.

#### **Beyond One Health (Textbook)**

Herrmann JA, Johnson-Walker YJ. Beyond One Health: From Recognition to Results. John Wiley & Sons, Inc; 2018.

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## 4 Learning Outcomes

The course learning outcomes are founded on the One Health Core Competencies established for the University of Guelph. In this context, a competency is defined as the expected performance associated with the knowledge, skills and attitudes required to be a One Health practitioner (adapted from Albanese et al. 2008). These competencies are: Holistic Understanding of Health, Systems Thinking, Problem Solving and Critical Thinking,

Resilience and Health, Leadership and Collaboration, Informatics, Research, Professional and Ethical Behaviour, and Breadth and Depth of Understanding.

## 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Formulate a holistic definition of health that can be applied to assess animal, human and environmental health and their interconnections in a variety of different contexts.
2. Illustrate complex health issues as systems by identifying the components, their functions and the interconnections within and between systems.
3. Analyze problems in a holistic manner, incorporating various perspectives as well as disciplinary and traditional knowledges.
4. Synthesize and analyze data and literature from a variety of sources to make informed, evidence-based decisions.
5. Develop strategies using new and existing frameworks to approach complex health issues and deal with uncertainty.
6. Explain complex One Health problems to a variety of audiences using several modes of communication and knowledge dissemination tools.
7. Establish and support equitable relationships across disciplines and with a variety of stakeholders.
8. Apply relevant One Health approaches, skills and knowledge to conduct independent research.

## 5 Teaching and Learning Activities

The teaching and learning activities associated with this course are designed to foster the development of One Health competencies. Sessions will involve minimal didactic teaching and focus on active learning, group work and student-led activities. Readings will be provided in advance of all sessions and are expected to have been reviewed prior to class.

### 5.1 Lecture

Topic		
Date	Topic	Description
January 6	Introduction to One Health	An overview of the course and One Health will be provided. Students will draft a classroom contract and share goals for the course.
January	Health and disease:	Students will examine various dimensions of health and

Topic		
8	What do they really mean?	formulate a working definition. Disease will be discussed in broad terms, including basic terminology, modes of transmission, and measurements.
January 13	Animal health in One Health	Animal health will be explored in the context of One Health at local, national and international level, including zoonoses.
January 15	Human health in One Health	Human health will be explored in the context of One Health, including infectious and chronic diseases, and social and environmental determinants of health.
January 20	Environmental health in One Health	Environmental health will be explored in the context of One Health, including climate change, habitat loss, population growth, pollution and contamination. The concepts of resiliency and sustainability will be introduced.
January 22	Complexity and systems thinking - Part 1	The concept of complexity will be introduced as well as the basic elements of a system.
January 27	The World in 2020	The current context of health will be discussed from the global and local levels, including key drivers of health change. Major initiatives including the Global Burden of Disease, the Global Burden of Animal Disease and the Global Burden of Crop Loss will be covered by guest lecturer Dr. Theresa Bernardo, Department of Population Medicine.
January 29	Complexity and systems thinking - Part 2	The application of systems thinking to complex problems will be explored through several real-world examples.
February 3	Technology in One Health	Technological innovations with applications to One Health will be discussed with guest lecturer Dr. Theresa Bernardo, Department of Population Medicine.
February 5	Transdisciplinarity	Trans-, multi-, inter- and disciplinary approaches will be examined as well as different ways of knowing. Students will work through real world examples to explore diverse perspectives in complex problems.
February 10	Case Study Presentations	Group presentations. See Assessments for more details.
February	Study Design - Part 1:	Key elements of One Health research studies will be

Topic		
12	Foundational Elements	highlighted, including ethical considerations of working with human and animal subjects. Current standards for One Health research will be shared.
WINTER BREAK		No classes.
February 24	Leadership and Management of a Diverse Research Team	Strategies and best practices for effective leadership and management will be shared by guest lecturer Dr. Davar Rezania, Department of Management.
February 26	Study Design - Part 2: Integrating Social Science	The value and importance of social science within One Health will be demonstrated by a case study with Dr. Travis Steffens, Department of Sociology and Anthropology. Common methodologies used in One Health studies will be
March 2	Study Design - Part 3: Research methods	introduced. The value of integrating knowledge from across disciplines, from the molecular to population level will be emphasized.
March 4	Study Design - Part 4: Research proposals	An overview of the research proposal assignment will be delivered, and students will have an opportunity to discuss their own research in groups and receive feedback on their ideas.
March 9	Collaboration	Students will examine the principles of collaborative research and devise strategies to support these principles in their own research. Technological tools for collaboration will also be explored. This session will be VIRTUAL and co-delivered with Dr. Theresa Bernardo, Department of Population Medicine.
March 11	Community Engaged Scholarship	Foundational concepts and approaches to community engaged scholarship will be explored with Dr. Jeji Varghese, Department of Sociology and Anthropology.
March 16	Communication in One Health	Strategies to communicate through a variety of modes and to a variety of audiences will be shared. Students will apply these strategies to create several communication messages for their own research.
March 18	One Health Policy	Foundational components of policy and best practices for policy development will be introduced by Dr. Troy Riddell, Department of Political Science.
March 23	Governance and	Human, animal and environmental governance will be explored on the local, regional, national and international scales. The added value of One Health will be illustrated

Topic		
	Economics in One Health	from the economic perspective. Challenges in governing and financing One Health initiatives will also be explored.
March 25	The Future of One Health	Students will be exposed to opportunities where they can continue to contribute to One Health on the local, national and global scale.
March 30	Research Proposal Presentations	See Assessments for details.
April 1	Research Proposal Presentations	See Assessments for details.

## 6 Assessments

### 6.1 Assessment Details

#### Critical Reflections (20%)

**Date:** Sunday by 11:59 pm at the end of weeks 1, 2, 3, 4, Courselink Dropbox

**Learning Outcome:** 1, 2, 3

Each student will submit a critical reflection based on a topic related to the previous week's content, activities and readings. Additional details will be provided at the end of each week to guide the reflection.

#### Case Study (15%)

**Date:** Mon, Feb 10, In class presentation

**Learning Outcome:** 2, 3, 4, 5

Students will be placed in groups designed to foster cross-disciplinary collaboration. Each group is responsible for presenting a case study related to a pre-assigned theme. Each group will deliver a presentation on the case study (~20 to 25 minutes) and then facilitate discussion with the class (~15 minutes). Following the case study, each group will be required to submit their presentation as well as a facilitation outline for the in-class discussion. Assessment will be conducted at the group level and be based on the content presented and the in-class facilitation.

#### Critical Review (10%)

**Date:** Sun, Mar 8, Courselink Dropbox

**Learning Outcome:** 3, 4, 5

Each student will choose a research article from the literature and assess the study design, methodologies, data analysis and conclusions from the lens of One Health research. The

critical review should be no more three pages in length and provide an overview of the study, its strengths and limitations, and considerations for changes in study design (if appropriate).

**Communication Piece (10%)**

**Date:** Sun, Mar 22, Courselink Dropbox

**Learning Outcome:** 6

Each student will prepare one communication piece on their research for a relevant stakeholder. Creativity is strongly encouraged, and a variety of communication modes are acceptable (e.g., infographic, video, twitter). Along with their submission, students should describe how this communication piece would change (messaging and modality) for two other relevant audiences.

**Participation (10%)**

**Date:** Throughout the semester, In class

**Learning Outcome:** 1, 2, 6, 7

One Health, by definition, is collaborative and therefore, all students enrolled in this class are expected to be active participants in all lessons and activities. Participation includes active listening, posing questions, engaging in classroom discussions and collaborating with peers. Quality of participation is valued over quantity. Each session is worth 0.5 points, excluding the case study and research proposal presentation sessions. If a class is missed, please communicate with the instructor. The general approach will be to redistribute the 0.5% over the remaining classes.

**Research Proposal and Presentation (35%)**

**Date:** Mon, Mar 30 - Wed, Apr 1, In class

**Learning Outcome:** 3, 4, 5, 8

Students are required to present their proposed thesis research and submit a written proposal that clearly outlines how their thesis research applies a One Health approach. Presentations should provide a general overview of the objectives, methodology, and significance and allocate time for questions from classmates and a panel of One Health experts. The research proposal should introduce the topic through a review of the literature and explain in detail the proposed research plan. Expectations for the scope of the thesis will be based on level of study (Masters vs PhD). NB: Students enrolled in the Collaborative Specialization in One Health must receive a passing grade on this assignment in order to continue in the program.

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## 7 University Statements

### 7.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

## 7.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

## 7.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

## 7.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

## 7.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website  
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website  
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

## 7.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community—faculty, staff, and students—to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct  
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 7.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

## 7.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

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