

## **SPPH 522: Topics in Environmental Health (Winter 2023)**

Synchronous Sessions: Monday 900 AM – 1200 PM  
Room: SPPH B104

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### **Course Description:**

This course is a survey of approaches to effectively understand and assess environmental health topics and offers an introduction to specific issues of importance to the public health practitioner. Environment is approached as one of the determinants of health for individuals and human populations and framed to consider implications across cultures in Canada and globally. Methods for the evaluation of environmental health are introduced, including: exposure assessment, toxicology, epidemiology, risk assessment and standards. Exposures to chemical, biological, and physical hazards in air, water, food, consumer products, soil, and solid waste are considered while global climate change, sustainability, and urban/ecosystem health are included as overarching issues. The course emphasizes prevention rather than treatment of human illness with specific emphasis on measures and programs currently in place in Canada to address risks from environmental hazards.

### **Learning Outcomes:**

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

1. Discuss environmental determinants of health within the population health and global health paradigms
2. Explain the main scientific and regulatory approaches used to assess potential environmental health hazards. Discuss the benefits and limitations of these approaches with reference to specific hazards
3. Describe the major agencies/organizations involved in environmental health protection in Canada and internationally and explain their basic responsibilities
4. Explain how risks are perceived by the public and how risk perception can be incorporated into the management of environmental health risks
5. Describe fundamental principles by which contamination of specific media (air, water, soil, food) may impact human health. Support this description with specific examples
6. Discuss examples of the effectiveness of interventions to mitigate impacts of environmental contamination on human health
7. Discuss major human health impacts associated with global environmental change, including an understanding of important uncertainties
8. Explain the linkages between public and ecosystem health and apply the ecosystem approach to health to the management of an emerging environmental health hazard
9. Analyze at least one current environmental health issue of concern to assess its potential health significance and the scientific, social, and legal/political approaches to its management.

**Readings and Resources:**

**Required Readings:** Each week has a new set of required and optional readings which are listed on the Introduction Page for each topic section within a Module. For most sections this includes links to peer-reviewed journal articles or other published materials and videos. The expectation is that students will read all the materials listed as these will be used in class for discussion.

**Additional Readings:** For each topic, "recent" news articles are given to provide real-life examples of the topics covered in this course. In addition, there are many links within the module material that you may wish to read for more detail.

An extensive list of additional readings is provided along with links to related topical readings in the current scientific literature on the course website. These are especially useful for student presentations and assignments to provide more detailed/current information on specific topics.

**Textbook (optional):** Environmental Health: From Global to Local edited by Howard Frumkin (3rd Edition, 2016). Available at no cost online through the UBC library:

<https://ebookcentral.proquest.com/lib/ubc/detail.action?docID=4405576>.

For general background this text, while still US-focused, has a more global perspective than most texts. Still, given that no Canadian environmental health textbook exists, this text is best used to describe general principles and concepts and serve as a reference. Links to more specific and more Canadian material will be posted within the Modules to highlight Canadian issues and approaches during class discussions.

**Assessment of Student Performance:**

Assessment of student performance will be through participation (online & in class discussions), individual project/video/briefing note, and written assignments:

Participation during in-class sessions	15%
Participation in online discussions	15%
Written assignments (3 x 15%)	45%
Individual project - video (8%), online discussion (4%), briefing note (13%)	25%
Self-assessment short-answer and multiple-choice questions	(unmarked)

**Assignment Submission Guidelines:**

- All assignments are to be submitted via the Assignment Page on or before the due date/time noted on the Course Schedule or Course Calendar.
- Without advance notification of class absence, no consideration will be given for late assignments or missed class sessions (i.e. students will be given a zero for participation and any assignments that are due). No late assignments will be accepted without approval in advance from the instructor.

**Assignment Descriptions:**

**Participation:** Your participation mark will be based upon your active contribution to online (written) and in-person discussions. Higher participation marks require sustained contributions to discussions and

bringing insight from the readings and your own experiences to discussions. Online participation marks will be based on the quality, thought and effort of your contributions to online discussions.

**Online Discussion Activities:** Online activities are to be completed in the online discussion forum on Canvas. These online activities should be completed during the week which is dedicated to that topic, unless explicitly indicated otherwise. More detailed instructions will be posted for each online discussion, in general these activities may include discussing relevant stories in the news or in the weekly course readings, or another suggested topic. You may also be asked to provide discussion questions and/or comment on the posts of your fellow classmates.

**Written Assignments:** There are 3 written assignments throughout the course (one per module) which are to be submitted and received by the due date and time listed in the course schedule. A portion of each written assignment will require the use of additional resources besides the course text. Many relevant readings are already posted on the course website which will continue to be updated throughout the course.

Answer each question using readings, lecture notes, your own thoughts AND any additional references you wish to cite. Support your answers with evidence (including references) wherever possible. **Maximum 1 page for EACH numbered question** (not including references). Equal weight is given to all questions. Please be sure to read the questions in their entirety!

**Individual Project / Video / Briefing Note:** The individual project in this course consists of three components:

1. Prepare a 5 minute (7 minutes absolute maximum) narrated slide presentation or video based on your selected topic (see list of topics on the [Assignments](#) page). Where applicable the presentation should clearly identify the key issues, include a discussion of the tools used to address the problem (i.e. exposure assessment techniques, major epidemiological/ toxicological evidence related to the problem), the legal, political and social issues affecting the problem and its management, and identification of the major agencies (government and non-governmental) involved.  
See [Schedule](#) for detailed due dates. Click [here](#) for helpful video creation instructions.
2. Leave a question/comment on posted presentation videos. After watching the presentations posted by your fellow classmates, you will be required to post a question or comment to at least 10 different presentations throughout the duration of the course.
3. Provide a 3-page written briefing note for a decision-maker / policy-maker on the same topic as your video presentation (5 pages absolute maximum including references; single space; 12-point font and minimal 1 inch margins). If not already specified you should identify the decision-maker/policy-maker to which the note is addressed according to expected roles and responsibilities for the specific issue in question. The briefing note is due two weeks after the video submission. See [Schedule](#) for detailed due dates. Additional details and a list of topics are on the [Assignments](#) page.

### **Course Structure:**

SPPH 522 is a **blended in-person course**, which means that you will be working with your instructor and fellow students on a weekly basis both synchronously and asynchronously online using [Canvas](#). It is necessary for you to participate fully in all parts of this course to successfully complete it. Lectures by the instructor and online material, combined with pre-assigned readings and resources, will outline key issues and concepts. All components of this course have been designed to provide an opportunity for application of these concepts. The online component includes course materials, class discussion, and

additional readings to provide you with the necessary components for achieving a sufficient level of understanding. There are a total of three main modules with weekly sub-modules distributed over the entire term. Synchronous class time will focus on overviews and discussions of core concepts led by the instructor and active learning exercises.

**Course Schedule (current as of December 24, 2022 – subject to changes to be announced during term):**

<b>Module 1: Introduction to environmental health/environmental health tools</b>		
Week 1	Topic 1.1 – Intro to Environmental Health, Introductions, Course Overview, What is Environmental Health?	Jan 9
Week 2	Topic 1.2 – Environmental Health Tools, Part 1	Jan 16
Week 3	Topic 1.3 – Tools, Part 2 & Environmental Health Practice in Canada	Jan 23
<b>Module 1 Assignment Due: January 30, 11:59pm</b>		
<b>Module 2: Media-Specific Environmental Contamination</b>		
Week 4	Topic 2.1 – Food Safety, Security, and Sovereignty	Jan 30
Week 5	Topic 2.3 – Solid Waste, Soil, Access to Nature	Feb 6
Week 6	Topic 2.2 – Water	Feb 13
<b>Week 7 – Reading Week February 20-24</b>		
Week 8	Topic 2.4 – Outdoor Air	Feb 27
Week 9	Topic 2.5 – Indoor Air	Mar 6
Week 10	Topic 2.6 – Physical Hazards	Mar 13
<b>Module 2 Assignment Due: March 13, 11:59pm</b>		
<b>Module 3: Climate Change, Sustainability and Other Global Issues</b>		
Week 11	Topic 3.1 – Global Environmental Health & Climate Change	Mar 20
Week 12	Topic 3.2 – Disasters and Learning from Mistakes	Mar 27
Week 13	Topic 3.3 – Sustainability and Ecosystem Health, Course Wrap-up & Evaluation	Apr 3
<b>Module 3 Assignment Due: April 10, 11:59pm</b>		