

## SPPH 535: Principles of Occupational and Environmental Hygiene

---

<b>Instructor:</b>	Dr. Karen Bartlett, Room 364, 2206 East Mall 604-822-6019, <a href="mailto:karen.bartlett@ubc.ca">karen.bartlett@ubc.ca</a> Office hours: by appointment.
<b>T.A.:</b>	TBD Office hours by appointment.
<b>Rationale:</b>	The purpose of this course is to introduce students from a variety of undergraduate backgrounds to the science of hygiene, a specialized discipline within environmental health. Occupational hygiene is practiced within workplaces, while environmental hygiene is practiced in the community, or general population. The course will survey the broad field of hygiene science.
<b>Objectives:</b>	<ul style="list-style-type: none"><li>- The student will be introduced to the classic hygiene science triad of recognition, evaluation, and control.</li><li>- The course will challenge students to think creatively about means to prevent hazardous exposures.</li><li>- Students will demonstrate their ability to critically evaluate peer reviewed scientific literature and other publications or policies relevant to hygiene practice.</li><li>- The student will incorporate vocabulary and content to be able to effectively interact with professional hygienists to help solve occupational and environmental health problems.</li><li>- Students who successfully complete this course will be qualified to pursue hygiene studies at a more advanced level.</li></ul>
<b>Course Format</b>	The class meets twice weekly for lectures. Additional, out-of-classroom time will be required to complete homework assignments and the term project. Each lecture will be introduced with a reading assignment accompanied by questions to consider. Students are expected to participate in all class discussions, and will lead the discussion of at least one of the assigned readings. There will be five homework assignments involving problem solving, analysis of reading materials, or design of controls. Solutions to the homework will be discussed in class. The term project will be presented to SPPH 535 class members in the form of a poster presentation and short oral presentation plus written report.
<b>Required Texts</b>	Perkins JL. Modern Industrial Hygiene, Volume 1. 2 <sup>nd</sup> Edition. ACGIH Press 2008. ISBN 978-1-882417-75-9 (\$99.95 USD)  ACGIH. 2017 TLVs and BEIs Threshold Limit Values for Chemical Substances and Physical Agents. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 2017 (\$54.95 USD)

Please purchase these two books directly from ACGIH publications at the following web address:

<http://www.acgih.org/forms/store/CommercePlusFormPublic/search?action=Feature> (or phone 1-513-742-2020).

You will also need to access the on-line version of the Workers Compensation Board of British Columbia Occupational health and Safety Regulation (BC Regulation 296/97 as amended)

<https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-05?origin=s&returnurl=https%3A%2F%2Fwww.worksafebc.com%2Fen%2Fsearch%23q%3DExposure%2520limits%2520%26sort%3Drelevancy%26f%3Alanguage-facet%3D%5BEnglish%5D&highlight=Exposure+limits%2B#EF9C1BDFE1974316838AA37BBE7A32E7>

## Evaluation

Evaluation of student performance will be based on a worksite evaluation (term project) = 25%, five written assignments = 60%, and leading and participating in classroom discussions = 15%. The grade will reflect the student's understanding of the course material, ability to synthesize and critically evaluate material from a variety of sources, and ability to develop innovative and effective solutions to hygiene problems.

Arrangements must be made in advance with the instructor for any planned absences.

### Criterion standards

**“A” level work (80 – 100%):** *Is reserved for exceptional work that greatly exceeds course expectations on every criterion. In addition, the work must show a level of creativity and initiative that goes well beyond what is provided or discussed in class. Work deserving of an “A” is distinguished in virtually every aspect. For example, “A” level work will show accuracy and depth of understanding, as well as initiative, insight, and probing analysis. In addition, the work must show there was careful attention to detail in every regard. (A+ = 90 – 100%; A = 85 – 89%; A- = 80 – 84%)*

**“B” level work (68-79%):** *This category of work is typified by adequate understanding, analysis, and representation of the concepts, principles, and theoretical perspectives explored during the term. It is distinguished from “A” level work by any one of four things: (1) one or more significant errors in understanding; (2) superficial understanding or representation of course content; (3) lack of initiative; or (4) multiple problems with presentation, e.g. writing that lacks clarity or contains multiple spelling, grammatical or punctuation errors. For example, the top level (76 – 79%) will be awarded if the work shows adequate and accurate understanding and analysis, and goes beyond what was provided, but is not professional in its presentation. (B+ = 76 – 79%; B = 72 – 75%; B - = 68 – 71%)*

**The lowest grade acceptable to maintain graduate student academic standing is 68%.**

## General Notes:

### Some notes on Critical Thinking:

Thinking reasonably about problems, as opposed to mindless following rules or memorization. To prepare a rational argument:

- Look for evidence and reasons

- Proportion conviction to the strength of the evidence

- Be aware of tendencies to:

  - Over-generalize evidence

  - Use personal experience and anecdotal evidence

  - Be swayed by personalities or perceived motives

Consider objections and contrary views

- Once again, proportion this consideration to the strength of evidence

- Search for additional information where evidence is incomplete

- Be prepared to make decision in the face of incomplete evidence, making limitations clear.

### Religious Holidays:

#### Policy #65: Religious Holiday (Approved May 1994)

**Purpose:** To enable students and members of faculty and staff to observe the holy days of their religions.

**Policy:** Recognizing the religious diversity of the UBC community, UBC permits students who are scheduled to attend classes or write examinations on holy days of their religions to notify their instructors in advance of the holy day of their wish to observe it by absenting themselves from class or examination.

**Procedure Summary:** Students are required to give two weeks' notice of their intention to absent themselves under the terms of this policy. They shall notify the instructor of each course, or, where this cannot be done, the Head of Director of the unit concerned.

### Student Misconduct (Section 61 University Act)

**Plagiarism** is a form of academic misconduct in which an individual submits or presents the work of another person as his or her own. Scholarship quite properly rests upon examining and referring to the thoughts and writings of others, however, when excerpts are used in paragraphs or essays, the author must be acknowledged through footnotes or other accepted practices. Substantial plagiarism exists when there is no recognition given to the author for phrases, sentences, and ideas of the author incorporated in an essay. Complete plagiarism exists when an entire essay is copied from an author and represented as original work. Students in doubt as to what constitutes a case of plagiarism should consult their instructor. **NOTE:** Plagiarism includes submitting the same essay, presentation or assignment more than once whether the earlier submission was at this or another institution, unless prior approval has been obtained.

**Disrupting** instructional activities, including making it difficult to proceed with scheduled lectures, seminars, etc. and with examination and tests. **NOTE:** this includes disruption caused by electronic means of communication.

**Injuring** a person or damaging property in any way which demonstrates or results from hate, prejudice or bias against a individual or group based on race, national or ethnic origin, language, colour, religion, sex, age, mental or physical disability, sexual orientation or any other similar factor.



**SPPH 535 Class Schedule Fall 2017:**

**Mondays 10:00 – 11:30 am**

**Fridays 2:00 – 3:30 pm**

**Room B108 2206 East Mall**

<b>Date</b>	<b>Overview</b>	<b>Specific Topic</b>	<b>Pre-Class Readings</b>
Friday, Sep 8	Introduction	Definition of OH; books, agencies; evaluation	
Monday, Sep 11	Recognition	Disease agents, hazard communication	Perkins Ch. 4
Friday, Sep 15	Recognition	Routes of exposure, hazard surveillance	Perkins Ch. 6
Monday, Sep 18		<b>Discuss Assignment 1: Hazard Recognition</b>	Perkins Ch. 5
Friday, Sep 22	Recognition	Exposure standards, definitions, setting limits	Perkins Ch. 10, WCB Part 5, TLVs, <i>article</i>
Monday, Sep 25	Recognition	Exposure standards, mixtures <i>Worksite Evaluation – choice of site to be made by this date</i>	Perkins Ch. 10, WCB Part 5, TLVs
Friday, Sep 29	Recognition	Exposure standards, overtime, toxicokinetics	Perkins Ch. 10, WCB Part 5, TLVs, <i>article</i>
Monday, Oct 2		<b>Discuss Assignment 2: Exposure Standards</b>	
Friday, Oct 6	Evaluation	Measurement of gases and vapours ( <b>class in LAB 369</b> )	Perkins Ch. 21-23
Monday, Oct 9	No class	Thanksgiving – University closed	
Friday, Oct 13	Evaluation	Measurement of aerosols and particulates ( <b>class in LAB 369</b> )	Perkins Ch. 24, 28

Monday, Oct 16	Evaluation	Measurement of bioaerosols, dermal exposure ( <b>class in LAB 369</b> )	TLVs, WCB, <i>articles</i> Perkins Ch. 7
Friday, Oct 20		<b>Discuss Assignment 3: Exposure Measurement</b>	
Monday, Oct 23	Evaluation	Data distributions	Perkins Ch. 7, <i>Articles</i>
Friday, Oct 27	Evaluation	Sampling strategies and compliance	Perkins Ch. 14, <i>Articles</i>
Monday, Oct 30	Evaluation	Recognizing Bioaerosols	<i>Articles</i>
Friday, Nov 3	Evaluation	Evaluating Bioaerosols, IAQ & risk assessment	<i>Articles</i>
Monday, Nov 6		<b>Discuss Assignment 4: Exposure Data Evaluation</b>	
Friday, Nov 10	No class	Remembrance Day – University closed	
Monday, Nov 13	Control	Engineering controls, administrative controls	<i>H&amp;G Ch.21 &amp; 22</i>
Friday, Nov 17	Control	Personal protective equipment, confined spaces	<i>H &amp; G Ch. 23, Plog Ch. 22, article</i>
Monday, Nov 20		<b>Discuss Assignment 5: Exposure Controls</b>	
Friday, Nov 24	Physical hazards	Illumination	<i>H &amp; G Ch. 11, WCB, Plog Ch. 12, article</i>
Monday, Nov 27	Physical hazards	Pressure extremes (Sherri Ferguson)	<i>Articles</i>
Friday, Dec 1	Physical hazards	Temperature extremes	<i>Plog Ch. 12, WCB Part 7 &amp; 24, TLVs, article</i>

**Friday Dec 8<sup>th</sup>**

**Worksite Evaluations: Poster presentation and Written report due**

---