



SPPH 563 Technical Aspects of Chemical, Physical and Biological Hazard Control 2021

Course Description

This course introduces the student to technical aspects of selection, evaluation and monitoring of the engineering, administrative and personal protective equipment controls most commonly applied to chemical, physical and biological hazards encountered in the workplace.

Detailed Course Description

This course will provide the graduate student in occupational hygiene and environmental health with the fundamental occupational hygiene knowledge and skills necessary to serve as an organization's advisor and practitioner responsible for the selection and monitoring of controls typically applied to reduce worker exposure to chemical, physical and biological hazards.

Emphasis is placed in four areas:

- ***Selection of control method(s) as per OHS regulatory requirements***
- ***Monitoring the effectiveness of the control method selected and implemented***
- ***Educating and training workers and others in the use of control methods***
- ***Recognizing and troubleshooting typical technical issues with engineering and PPE controls***

Evaluation

Quiz 1 (takehome)	15%	Comments: Self-Test quizzes will be provided
Quiz 2 (takehome)	20%	
Assignment 1	15%	
Assignment 2	20%	
Final Exam	30%	
TOTAL	100%	

Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to demonstrate the ability to:

1. - ***access and apply OHS law, design and operational standards and similar documents*** related to occupational hygiene hazard exposure control.
2. – ***use a duly diligent method to select the appropriate engineering, administrative and/or PPE control*** for any occupational hygiene hazard for which an evaluation/risk assessment has determined that there is an unacceptably high risk of worker exposure
3. – ***recognize those workplace conditions that create thermal stress, evaluate thermal stress risk*** using indicators such as WBGT and Wind Chill and ***recommend appropriate controls***
4. – ***recognize those workplace situations in which pressure extremes are a potential hazard, evaluate the level of risk*** and ***use tools such as dive tables to recommend appropriate controls***
5. – ***recognize the forms of ionizing radiation most often encountered in the workplace and their sources, evaluate the level of exposure risk, recommend appropriate controls*** and ***assist organizations in the management of regulation-required ionizing radiation safety programs***
6. – ***recognize the forms of nonionizing radiation most often encountered in the workplace and their sources, evaluate the level of exposure risk, recommend appropriate controls*** and ***assist organizations in the management of regulation-required nonionizing radiation safety programs***
7. – participate at a high level in the ***creation, management and evaluation of an organization's WHMIS and TDG programs***
8. – ***create Exposure Control Plans and evaluate the effectiveness*** of the implementation of these ECP

Instructor

Warren Fox *MSc CRSP, CPHI(C) (retired)*

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Office Hrs.

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Learning Resources

Required:

Students will be provided with a list of resource materials

Information for Students

This course includes mandatory off-campus field trips as allowed by current COVID-19 restrictions and UBC policy

Several guest speakers will present information to the class.

Assignment Details

Detailed assignment information will be provided as the course progresses

Assignment 1: Will involve research into the regulatory requirements for selected physical hazards and the most common controls applied to these hazards

Assignment 2: Will involve self-study and research into the regulatory requirements and technical Standards that govern respirator selection, fit testing and maintenance

Schedule

Date	Outcome/Material Covered	Reference/Reading	Assignment	Notes
Sept 10	<i>Introduction Approach to Control Selection</i>			
Sept 17	<i>Temperature Extremes: R-E-C</i>			
Sept 24	<i>Pressure Extremes: R-E-C Ionizing Radiation: R-E-C</i>			
Oct 1	<i>Ionizing Radiation: R-E-C Nonionizing Radiation: R-E-C QUIZ 1</i>		Assignment 1	
Oct 8	<i>Nonionizing Radiation: R-E-C</i>			
Oct 15	<i>Chemical Hazards: Engineering Controls</i>			
Oct 22	<i>Chemical Hazards: Engineering Controls</i>			
Oct 29	<i>Chemical Hazards: Administrative Controls (including WHMIS and TDG)</i>		Assignment 2 Assignment 1 Due	Will include WHMIS and TDG Train – the-Trainer training
Nov 5	<i>Chemical Hazards: PPE QUIZ 2</i>			Will include respirator fit testing training
Nov 12	Midterm Break. No class. Self study exercise will be assigned			
Nov 19	<i>Chemical Hazards: PPE Biological Hazards: Engineering Controls</i>			
Nov 26	<i>Biological Hazards: Administrative Controls</i>		Assignment 2 Due	
Dec 3	<i>Biological Hazards: PPE</i>			
Dec 10	FINAL EXAMINATION			