Course Goals

Overall Objective: to provide an introduction to the principles and practice of occupational hygiene for students not majoring in this subject area. Occupational hygiene is concerned with the Anticipation, Recognition, Evaluation and Control of workplace hazards to health and safety. These functions all require a sound understanding of industrial toxicology, methods of exposure measurement, behavior of chemical and physical agents in the environment, the application of guidelines and standards, and technical and administrative approaches to controlling risks from these exposures, topics that form the basic elements of the course.

Course Objectives:

Upon completing the course, each student should expect to:

1. Describe the nature of the health effects associated with exposure to industrial agents;
2. Be familiar with the standard methods for measuring and evaluating worker exposure to chemical and physical agents and identify strengths and weaknesses to typical approaches;
3. Apply and interpret health and safety standards and regulations for the workplace environment;
4. Apply feasible approaches to controlling worker exposure to health and safety hazards to a specific industrial setting.
5. Describe how the social and economic context of work affects workers’ and employers’ ability to control threats to health and safety.

Course Format

Instruction will consist of one to two lecture sessions per week, with four in-class problem solving exercises. Students are expected to view materials, read texts and solve problems on assigned topics between each class. In-class exercises will require assembling and reading background materials in advance, with group problem-solving in class and individual written responses to selected material.

Course Requirements
1. Reading assignments will be made for most lectures and should be completed prior to the lecture. All required reading will be from the text, from public domain publications on the internet, or from the TLV Booklet (required texts listed below.) The student is held responsible for the material covered in the reading assignments.

2. Active participation in the problem-solving exercises is expected. Each exercise will involve reading background material provided, finding and assembling supplemental information needed to solve the problems, and responding with a written assignment. In-class discussions will be conducted in assigned groups and with the whole class.

2a. Each student will answer a few short (e.g., 1 paragraph) questions about each exercise. Due one week after the in-class exercise.

2b. For two of the four exercises, each student will develop a comprehensive paper addressing the background, analysis and recommendations, with associated background material. A final version is due two weeks after the class. Undergraduate papers will be approximately 5 pages. Graduate student papers will be approximately 7 pages, include at least five references from the peer reviewed literature, and will delve into one aspect of the problem in more detail.

3. One final exam will be given to test students on integrative concepts of the quarter, and specific information delivered on the final three class topics.

Evaluation

% of grade

Classroom preparation and participation 20

2 Exercise short answer assignments 20 (10% each)

2 Comprehensive papers 40 (20% each)

Final Exam 20

Required Texts

- Additional readings provided as pdfs on course website

Suggested General References
These are available for use in the Department Library F-453, or for loan in F-226:

- American Conference of Governmental Industrial Hygienists. Documentation of the Threshold Limit Values. 7th Edition. 2001. (Later supplements are included.)

ACADEMIC NOTICES

Academic Integrity ([http://sph.washington.edu/students/academicintegrity/](http://sph.washington.edu/students/academicintegrity/))

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity.

The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university’s policies on cheating and plagiarism, and the SPH Academic Integrity Policy. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website.

Access and Accommodation

Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent
disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

## Course Summary:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
<th>Due by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue Oct 3, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857030">Session 2: Toxicology and Risk</a></td>
<td>10:30am</td>
</tr>
<tr>
<td>Thu Oct 5, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857031">Session 3: Guidelines and Standards</a></td>
<td>10:30am</td>
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<tr>
<td>Tue Oct 10, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857032">Session 4: PBL #1 Developing a Standard</a></td>
<td>10:30am</td>
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<tr>
<td></td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857033">Session 4: PBL #1: Standards</a></td>
<td>10:30am</td>
</tr>
<tr>
<td>Thu Oct 12, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857034">Session 5: Gas and Vapor Sampling</a></td>
<td>10:30am</td>
</tr>
<tr>
<td>Tue Oct 17, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857035">Session 6: Aerosols</a></td>
<td>10:30am</td>
</tr>
<tr>
<td>Thu Oct 19, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857036">Session 7: Real Time Monitoring</a></td>
<td>10:30am</td>
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<tr>
<td>Tue Oct 24, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857038">Session 8 PBL 2: Measurement Assignment</a></td>
<td>10:30am</td>
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<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857037">Session 8: Painting and Blasting</a></td>
<td>10:30am</td>
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<tr>
<td></td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857039">Session 9: The Industrial Hygiene Preliminary Survey</a></td>
<td>10:30am</td>
</tr>
<tr>
<td>Date</td>
<td>Session</td>
<td>Due Time</td>
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<tr>
<td>Thu Oct 26, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857016">Session 10: Exposure Data Analysis</a></td>
<td>10:30am</td>
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<tr>
<td>Tue Oct 31, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857017">Session 11: Exposure Models and Banding</a></td>
<td>11:59pm</td>
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<tr>
<td>Thu Nov 2, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857018">Session 12, Biological Monitoring</a></td>
<td>10:30am</td>
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<tr>
<td>Tue Nov 7, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857019">Session 13: Lead Monitoring Readings</a></td>
<td>10:30am</td>
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<tr>
<td>Thu Nov 9, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857020">Session 13: PBL #3, Exposure Assessment</a></td>
<td>10:59pm</td>
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<tr>
<td>Tue Nov 14, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857021">Session 14: Hierarchy of Controls</a></td>
<td>10:30am</td>
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<tr>
<td>Thu Nov 16, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857022">Session 15: PPE</a></td>
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<td>Tue Nov 21, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857023">Session 16: Work Organization and Management</a></td>
<td>10:30am</td>
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<td>Tue Nov 28, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857024">Session 17 PBL #4: Controls Strategies</a></td>
<td>10:30am</td>
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<tr>
<td>Thu Nov 30, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857025">Session 17, PBL #4: Control Strategies</a></td>
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<tr>
<td>Tue Dec 5, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857026">Session 18: Thermal Stress</a></td>
<td>10:30am</td>
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<tr>
<td>Thu Dec 7, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857029">Session 19: Ergonomics</a></td>
<td>10:30am</td>
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<tr>
<td>Tue Dec 12, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857027">Session 20: Noise</a></td>
<td>10:30am</td>
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<tr>
<td>Thu Dec 14, 2017</td>
<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857012">Final Exam</a></td>
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<td><a href="https://canvas.uw.edu/courses/1116971/assignments/3857004">Additional Resource 2 for Mini PBL #3</a></td>
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</table>
Additional Resource for Mini PBL #3
(https://canvas.uw.edu/courses/1116971/assignments/3857005)

Additional Resource for Mini PBL Activity #2 - MSDS for silica sand stone
(https://canvas.uw.edu/courses/1116971/assignments/3857006)

Additional Resource for Mini PBL Activity #2 - MSDS: Primer Moisture Cure Urethane
(https://canvas.uw.edu/courses/1116971/assignments/3857007)

Additional Resource for Mini PBL Activity #2 - MSDS: Reducer No. 15
(https://canvas.uw.edu/courses/1116971/assignments/3857008)

Additional Resource for Mini PBL Activity #4 - Surface and Respirator Contamination Evaluation XYZ Inc.
(https://canvas.uw.edu/courses/1116971/assignments/3857009)

Additional Resources for Mini PBL Activity #2 - MSDS Pages (will be made available upon request)
(https://canvas.uw.edu/courses/1116971/assignments/3857011)

Long Assignment 1
(https://canvas.uw.edu/courses/1116971/assignments/3857013)

Long Assignment 2
(https://canvas.uw.edu/courses/1116971/assignments/3857014)

Participation
(https://canvas.uw.edu/courses/1116971/assignments/3857015)

Short Assignment 1
(https://canvas.uw.edu/courses/1116971/assignments/3857040)

Short Assignment 2
(https://canvas.uw.edu/courses/1116971/assignments/3857041)

Videos for Session 8 In-Class Viewing (will be auto-released at start of class)
(https://canvas.uw.edu/courses/1116971/assignments/3857042)