**OEH:5620 Occupational Health**

Fall xxxx

Tuesdays and Thursdays 9:00-10:15 AM

CPHB xxxx

Course Directors:

**Renée Anthony, PhD**

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**Description**

The course covers a wide cross-section of occupational health and safety. It is designed primarily as an introduction to occupational health and safety for graduate students in industrial hygiene, environmental health, occupational health nursing, ergonomics, injury prevention, agricultural health and safety, occupational epidemiology, and occupational medicine residents. Topics that will be covered include: health effects of exposures; anticipation, recognition, evaluation, and control of workplace hazards; screening and disease prevention; basic principles of industrial hygiene, occupational medicine, occupational safety, occupational health nursing and ergonomics; legal and regulatory issues; evaluation and control of health risks in the workplace; ethics in occupational health; and special populations at risk for occupational disorders. The course meets twice weekly.

**Goals**

Students will gain experience in interdisciplinary problem-solving in occupational health.

Students will improve and use skills as active learners.

* Students should be able to take an occupational health problem, independently search the literature to find relevant materials, and then synthesize the information obtained.
* Students should be able to review the assigned readings and to find the most important issues in them.

Students will understand the legal and regulatory environment in which occupational health operates. They should have an understanding of the social and economic as well as labor-management influences that can affect issues of health in the workplace.

Students will be familiar with the ways in which health risks in the workplace can be anticipated, recognized, evaluated and controlled. They should understand the strategies and methods available for evaluation, and know their limitations and constraints. They should understand the hierarchy of engineering controls, administrative controls, and personal protective controls. They should be familiar with the basic technical aspects of engineering controls and personal protective controls.

Students will be familiar with a wide range of occupational disorders and understand the relationship between workplace exposures and health effects.

Students will understand the basic principles of occupational medicine, industrial hygiene, occupational health nursing, occupational safety, and ergonomics.

**Requirements**

1. Classes will consist of lectures and discussions of the assigned readings. *Students will be responsible for preparing for each class by completing the reading assignments and completing any assigned homework*. Students will be responsible for attending class and participating in class discussions.

2. Homework assignments will be posted on ICON for many of the class periods. These homework assignments will not be graded, but will be due for discussion the class period *following* the lecture on the topic material. The homework assignments are designed to highlight important points from the lectures and reading assignments and will help the students prepare for the examinations.

3. Students will be responsible for working in a multidisciplinary team to conduct a preliminary hazard analysis of an industrial worksite. Students will be introduced to concepts of a preliminary hazard analysis in class, multidisciplinary teams will be formed, and tours for the walk-through evaluations will be scheduled. These visits are scheduled outside of class time, and each student is expected to attend at least one visit. Each team will be required to submit a report (10-15 pages) and a ***15min in-class presentation that summarizes their activities, observations, and recommendations*** for one of the worksites. Dr. Anthony will grade this exercise.

4. After Exam 1, students will be organized into interdisciplinary teams and assigned a topic on which to complete a review of current literature and present their analysis during the last 15 minutes of the class in which that topic is the focus of the lesson (dates and topics will be assigned, check on ICON). Team members will be expected to perform a literature review on a specific health question of personal interest within the assigned broad topic assigned. On-line search methodology, as described by the OEH librarian, Julia Venske, is presented on ICON to describe your search methods; we encourage teams to contact Julia directly for assistance. Teams will present this work to the class. PowerPoint slides of presentations must be provided prior to the presentation.

**We recommend that you get access to a copy of the Levy, Wegman, Baron, and Sokas (2011) text book so you can read the assigned chapters.** *Note that the 5th edition is significantly different in chapter numbers and content.*

ACGIH, xxxx TLVs and BEIs, ACGIH Signature Publications, 2012. (A copy will be available for team use, and sections of the book will be made available on ICON for completing homework.)

Levy BS, Wegman DH, Baron SL, Sokas RK. Occupational and Environmental Health: Recognizing and Preventing Disease and Injury, **6th edition**; Oxford University Press, **2011.**

Rosenstock L, Cullen, Mark, Brodkin C, Redlich C. Clinical Occupational and Environmental Medicine, 2nd edition; Philadelphia; Elsevier Saunders 2005. **Not required**. But instructive for those health professional students or others who want more in-depth knowledge of the occupational diseases covered in the Levy, Wegman, Baron, Sokas textbook.

Environmental and Occupational Medicine, Fourth Edition. William N. Rom, Ed. 2007. Wolters Kluwer/Lippincott Williams & Wilkins. **Not required**. But instructive for those health professional students or others who want more indepth knowledge of the occupational diseases covered in the Levy, Wegman, Baron, Sokas textbook.

Rogers B, Occupational and Environmental Health Nursing: Concepts and Practice, 2nd edition; Philadelphia: WB Saunders 2003. (We will provide handouts) Additional assigned readings throughout the semester will be posted on the course website with each lesson. Students will need to access some websites to find assigned readings.

***Guide to Initials for Assigned Readings***

|  |  |
| --- | --- |
| **LWBS** | Levy BS, Wegman DH, Baron SL, Sokas RK. Occupational and Environmental Health: Recognizing and Preventing Work-Related Disease, 6th edition; Philadelphia: Lippincott Williams and Wilkins, 2011. |
| **ROG** | Rogers B, Occupational and Environmental Health Nursing: Concepts and Practice, 2nd edition; WB Saunders, 2003. |
| **TLV/BEI** | 2013 TLVs and BEIs, ACGIH Signature Publications, Cincinnati, Ohio, 2010 |
| **IOM** | **Institute of Medicine publications:** Musculoskeletal Disorders and the workplace: Low back and upper extremity. Institute of Medicine. National Academy Press, 2001. Executive summary  Integrating Employee Health: A Model Program for NASA. National Academy Press, 2005. Executive Summary |
| **PHA** | Preliminary Hazard Analysis |
| **Ch** | Chapter |

**Additional required readings/websites:**

Additional articles will be posted on ICON for reading on specific topics throughout the semester to assist with understanding of the course materials. Students are expected to read and be ready to discuss these articles in classes.

**Grades**

Grades will be determined as follows:

* **Three** one-hour examinations (multiple choice, essay, and short answer)--75%
* **One** 10- to 15- page report of an industrial site visit (preliminary hazard analysis) and presentation--15%
* **One** occupational medicine literature review presentations (team) – 10%

Standard letter grades will be assigned, using:

A = 90 -100%, B=80-89%, C=70-79%, D=60-69%, F=<60%

**Housekeeping –**

**Administrative Home**

This course is given by the College of Public Health. This means that class policies on matters such as requirements, grading, and sanctions for academic dishonesty are governed by the College of Public Health. Students wishing to add or drop this course after the official deadline must receive the approval of the Associate Dean for Academic and Student Affairs in the College of Public Health. Details of the University policy of cross enrollments may be found at: http://www.uiowa.edu/~provost/deos/crossenroll.doc

**Electronic Communication**

*University policy specifies that students are responsible for all official correspondences sent to their standard University of Iowa e-mail address (@uiowa.edu). Students should check this account frequently.*

**Availability of Accommodations for Students with Disabilities**

*Any student eligible for and needing academic adjustments or accommodations under the Americans with Disabilities Act is requested to notify the instructor as soon as possible to make appropriate arrangements.*

http://www.uiowa.edu/~sds/accommodations-services/index.html .

**Academic Misconduct**

Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Education and Student Affairs. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. **It is the student’s responsibility to seek clarification of any situation in which he/she is uncertain whether plagiarism is/has been involved. Students who are uncertain about what constitutes plagiarism should consult with the course instructor.** Students are expected to abide by the University of Iowa Code of Student Life, which clearly defines academic misconduct (1.1a), found at: <http://www.uiowa.edu/~our/opmanual/iv/01.htm>

*Academic Misconduct includes but is not limited to the following:*

* *presentation of ideas of others without credit to the source;*
* *use of direct quotations without quotation marks and without credit to the source;*
* *paraphrasing without credit to the source;*
* *participation in a group project which presents plagiarized materials;*
* *failure to provide adequate citation for material obtained through electronic research;*
* *downloading and submitting work from electronic databases without citation;*
* *submitting material created/written by someone else as one’s own, including purchased term/research*
* *papers;*
* *copying from someone else’s exam, homework, or laboratory work*
* *allowing someone to copy or submit one’s work as his/her own;*
* *accepting credit for a group project without doing one’s share;*
* *submitting the same paper in more than one course without the knowledge and approval of the instructors involved;*
* *using notes or other materials during a test or exam without authorization;*
* *not following the guidelines specified by the instructor for a “take-home” test or exam.*

**Classroom Behavior**:

**General:** The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behaviors are a violation of the Code of Student Life (http://studentservices.

uiowa.edu/students/policies/2a.php )

**Cell Phones & Pagers:** Set cell phones and pagers on vibrate prior to entering class. Do not speak on the phone in class. Leave the room if you must speak with someone.

**Concerns about Faculty Actions**

Students who believe they have been subjected to unfair treatment in the administration of academic policies may seek resolution of their complaints through the College of Public Health, as explained in Chapter XI (Student’s Policies and Procedures) found at: http://www.public-health.uiowa.edu/faculty-staff/faculty/handbook/pdf//Chapter\_XI.pdf *Students who have a concern about a faculty action should first address the issue with the instructor, then the course supervisor (if there is one), and then the departmental DEO (Peter Thorne). Students may also contact the Associate Dean for Education and Student Affairs in the College of Public Health. Another resource for students is*

*the Office of the University Ombudsperson. If a complaint cannot be resolved at the departmental and/or collegiate level, students may file a formal complaint utilizing the procedure specified in the (II-29.7), found at* http://www.uiowa.edu/~our/opmanual/ii/29.htm *.*

**Nondiscrimination Statement**

The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identity, or associational preference. The University also affirms its commitment to providing equal opportunities and equal access to University facilities. For additional information on nondiscrimination policies, contact the Office of Equal Opportunity and Diversity, (319) 335-0705.

**Understanding Sexual Harassment**

*Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment (*http://www.uiowa.edu/~eod/policies/sexual-harassment-guide/index.html)*for assistance, definitions, and the full University policy.*

**Reacting Safely to Severe Weather**

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site: *visit http://hawkalert.uiowa.edu/*

**Syllabus: Course Schedule and Readings**

OEH: 5620 Occupational Health

TTh 9:00-10:15 AM, CPHB xxxx

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| **Week** | **Date** | **T/TH** | **Topic** | **Lecturer** | **Text & Chapter** | |
| 1 | Aug 26 | T | Introduction- Occupational Health Principles | RA | LWBS Ch 1, 2 | |
|  | Aug 28 | TH | Scope of OHS and Laws and Regulations | RA | LWBS Ch 2, 30 | |
| 2 | Sept 2 | T | Health and Safety Surveillance | RA | LWBS Ch 3, 24 OIICS Manual\* | |
|  | Sept 4 | TH | Injuries and Occupational Safety | RA | LWBS Ch 15 | |
| 3 | Sept 9 | T | Industrial Hygiene Principles | RA |  | |
|  | Sept 11 | TH | Recognizing and Evaluation Gases and Vapors | RA | LWBS Ch 11 | |
| 4 | Sept 16 | T | Recognizing and Evaluation Dusts | RA | LWBS 11,7; TLV App.B,C | |
|  | Sept 18 | TH | Bioaerosols, Skin Exposures, Biological Monitoring | RA | LWBS Ch 13, 22 | |
| 5 | Sept 23 | T | Recognizing and Evaluation Physical-Noise | RA | LWBS Ch 21; TLV Noise | |
|  | Sept 25 | TH | Recognizing and Evaluation Physical- Thermal | RA | LWBS Ch 12B, TLV Thermal Stress | |
| 6 | Sept 30 | T | Recognizing and Evaluation Physical – Radiation | RA | LWBS Ch 12C- Radiation | |
|  | **Oct 2** | **TH** | **EXAM 1** | *-* |  | |
| 7 | Oct 7 | T | Controlling Hazards | RA | LWBS Ch 11, supplemental | |
|  | Oct 9 | TH | Personal Protection | RA | LWBS Ch 11, supplemental | |
| 8 | Oct 14 | T | Evaluating a Worksite | RA | LWBS Ch 26, 34 TLV/BEI Book: Introduction section | |
|  | Oct 16 | TH | Preliminary Hazards Assessment | RA | LWBS Ch 34, PHA readings | |
| 9 | Oct 21 | T | Clinical Occupational Health Practice | KG | LWBS Ch 28, Handouts | |
|  | Oct 23 | TH | Ergonomics | NF | LWBS Ch 12A, 27; IOM, 2001 | |
| 10 | Oct 28 | T | Disorders: Musculoskeletal | BB | LWBS Ch 16 | |
|  | Oct 30 | TH | Disorders: Cardiovascular & Blood | BB | LWBS Ch 23, **11** | |
| 11 | Nov 4 | T | Disorders: Kidney & Liver Disorders | BB | LWBS 11 | |
|  | Nov 6 | TH | Disorders: Neurological & Psychiatric | BB | LWBS Ch **11, 19** | |
| **12** | **Nov 11** | **T** | **EXAM 2** | - |  | |
|  | Nov 13 | TH | Agriculture and Construction Industries | RA/DR | LWBS Ch 36, 39 | |
| 13 | Nov 18 | T | Disorders: Respiratory | BB | LWBS Ch 18 | |
|  | Nov 20 | TH | Disorders: Reproductive & Cancer | BB | LWBS Ch 17, 20 | |
| **Week** | **Date** | **T/TH** | **Topic** | **Lecturer** | **Text & Chapter** |
| 14 | Dec 2 | T | Healthy Workforce and Risk Communication | DR | LWBS 38, 29 |
|  | Dec 4 | TH | *Student Presentation of Group Preliminary Hazards Assessment Assignment* | - | - |
| 15 | Dec 9 | T | Organized Labor and Non-Governmental Orgs (NGOS)  *FINAL PHA REPORT is DUE* | RA | LWBS Ch 32, 33 |
|  | Dec 11 | TH | Injury Prevention – Development of Intervention Plans | CC | See ICON |
| - | - | - | Final Exam (to include PHA) |  |  |

**RA = Renee Anthony**

**BB = Brenda Buikema**

**KG = Kimberly Gordon**

**NF = Nathan Fethke**

**FG = Fred Gerr**

**DR = Diane Rohlman**

**CC = Carri Casteel**

\*OIICS Manual (January 2012) can be found at: <http://wwwn.cdc.gov/wisards/oiics/Doc/OIICS%20Manual%202012%20v201.pdf> . Bookmark this link for reference (don’t print… it is 550 pages).

**Final Exam** is scheduled, per University Schedule (to be posted mid-September).

**Public Health Competencies (OEH) Addressed in Occupational Health – OEH**

Occupational Health is a required course for multiple OEH disciplines and degree programs. Below is the list of student competencies that this course develops and assesses throughout the semester. These align with CEPH OEH, the University of Iowa’s College of Public Health MPH and other degree-program competencies.

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| **Successful completion of Occupational Health is accomplished when students can:** |
| Describe the principles of the practice of occupational medicine, industrial hygiene, occupational health nursing, ergonomics and occupational health management. |
| Describe regulatory programs, guidelines, and authorities that seek to control environmental health or occupational health issues. |
| Identify the organization and functions of governmental agencies and regulatory bodies impacting occupational health. |
| Explain the current regulatory issues concerned with occupational health hazards |
| Explain the association between contemporary human health issues and the biological, chemical and physical factors of the natural environment and occupational settings that adversely affect health |
| Describe ways to reduce risk factors associated with occupational injuries and illnesses. |
| Describe the direct and indirect human, ecological, and safety effects of major occupational hazards and agents. |
| Apply intervention and control approaches for assessing, preventing and controlling occupational hazards that impact human health and safety. |

**ABET Industrial Hygiene (IH) Competencies Addressed in Occupational Health**

In addition to the MPH Competencies, above, this course is designed to meet the following outcomes, below, which map to specific student outcomes (1-11) specified in the OEH student handbook for MS-IH students.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Specific Outcomes of Instruction** | **UI-Defined Student Outcomes** | | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** |
| Understand legal and regulatory environment in which OH operates |  |  |  |  |  |  |  | x | x | x |  |
| Understand social, economic, labor-management influences on health in workplace |  |  |  |  |  |  | x | x |  |  |  |
| Describe general methods used to anticipate, recognize, evaluate and control hazards |  |  |  | x |  |  |  | x |  |  |  |
| Understand strategies and methods to evaluate exposures, including limitations and constraints | x | x |  | x | x |  |  | x |  |  |  |
| Understand hierarchy of controls and be familiar with basic aspects of engineering and PPE controls |  |  |  |  |  | x |  | x |  |  |  |
| Recognize multiple occupational disorders and understand relationship between workplace exposures and health effects | x |  | x |  | x |  |  | x |  |  |  |
| Understand basic principles of occ. medicine, industrial hygiene, occ. health nursing, safety, and ergonomics |  | x |  |  |  |  | x | x |  |  |  |