

The University of North Carolina at Chapel Hill  
UNC Gillings School of Global Public Health  
Public Health Leadership Program

**PUBH/PHNU 785: Interdisciplinary Approaches to Occupational Health**  
Spring 2017—Distance Learning Course  
Classes begin Wednesday, January 11, 2017 and end Friday, April 28, 2017

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**Credits:**       3

**Course Prerequisites:** None

**COURSE DESCRIPTION**

This on-line course is designed to provide students with an opportunity to gain knowledge about work and its effect on health. The complexities of workplace exposures and the impact of work-related health hazards and their interactions will be examined. Concepts of risk assessment, risk management, and risk communication will be studied within the context of prevention, health promotion, and health protection strategies to reduce work-related health risks. Regulatory influences, ethical issues, and epidemiologic concepts related to workplace exposures and their implications for worker health and safety will be discussed. Interdisciplinary approaches to occupational health problem identification, investigation, and resolution will be a major emphasis. This is a required course for all NIOSH-funded ERC students.

**OBJECTIVES**

1. Discuss workforce, workplace, and work-related epidemiologic injury and illness trends, issues, and impacts.
2. Discuss major legislative/regulatory, labor, and related issues that impact occupational health and the importance of program evaluation.
3. Discuss the interdisciplinary nature and role of the occupational health team in the recognition, management, control, and prevention of occupational health hazards and related ethical issues.
4. Discuss risk assessment, risk management, and risk communication approaches including screening, surveillance, and control/abatement measures in dealing with occupational health problems.
5. Describe health protection and health promotion strategies (primary, secondary, and tertiary levels) to effectively reduce work-related health risks and improve quality of life.

### **REQUIRED TEXTBOOKS/READINGS**

Levy, B.S., Wegman, D.H., Baron, S.L., & Sokas, R.K. (2011). *Occupational and Environmental Health. Recognizing and Preventing Disease and Injury* (6<sup>th</sup> Ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

National Institute for Occupational Safety and Health. (2016). *Fundamentals of Total Worker® Health: Essential Elements for Advancing Worker Safety, Health, and Well-Being*. DHHS (NIOSH) Publication No. 2017-112. Access the document from: [https://www.cdc.gov/niosh/docs/2017-112/pdfs/2017\\_112.pdf](https://www.cdc.gov/niosh/docs/2017-112/pdfs/2017_112.pdf)

National Institute for Occupational Safety and Health. (2004). *Worker Health Chartbook, 2004*. DHHS (NIOSH) Publication No. 2004-146. Access the document from <https://www.cdc.gov/niosh/docs/2004-146/pdfs/2004-146.pdf>

### **RECOMMENDED READINGS**

Institute of Medicine. (2000). *Safe Work in the 21<sup>st</sup> Century: Education and Training Needs for the Next Decade's Occupational Safety and Health Personnel*. Washington, DC: National Academy Press.

### **TEACHING METHODS**

Lectures/discussion forums

Online Videos: *Brown Lung Disease* and *Worker to Worker*

Individual and group work

Virtual tour (walkthrough) to learn about work processes and related health hazards

### **VALUING DIVERSITY**

Promoting and valuing diversity in the classroom enriches learning and broadens everyone's perspectives. Inclusion and tolerance can lead to respect for others and their opinions, which is valuable in itself and is critical to maximizing the learning that occurs in this course. Therefore, this class follows principles of inclusion, tolerance, and respect for multiple and diverse points of view.

### **ASSIGNMENT DATES**

<b>Evaluation</b>		<b>Percent of Grade</b>	<b>Assignments Due</b>
<b>Participation</b>	<b>Discussion Forums</b>		
	1. Brown Lung Disease	10%	Post <b>Jan 17 - Jan 23</b>
	2. Core Disciplines in Occupational Health	10%	Post <b>Feb 7 – Feb 13</b>
	3. Risk Communication in times of Disaster	10%	Post <b>Feb 21 – Feb 27</b>
	4. Health Protection/Health Promotion		Post <b>Mar 21 – Mar 27</b>
<b>Virtual Tour</b>	<b>Individual Assignment</b>	20%	<b>April 3</b>

<b>Interdisciplinary Group Work</b>	<p>Paper on assigned industry to assess work process, various health hazards, and adequacy of control measures</p> <p>PowerPoint slides should be presented using Blackboard Collaborate or Voice Thread.</p> <p>Group participation form</p>	40%	<p><b>February 13</b> (choices for paper submitted)</p> <p><b>April 26</b> (paper, PowerPoint slides, group participation form)</p>
<b>Course Evaluation</b>	Everyone should complete; you will receive an email directing you to a link.	0%	<b>Just prior to end of course</b>

Please turn in written assignments using Dropbox in Sakai. **Assignments are due on Mondays at 6pm EST.**

**Participation (60%)**

Everyone is expected to view the *Brown Lung Disease* and *Worker to Worker* (online video). Students are expected to read all the readings and review pertinent web sites. **Students should actively participate in the discussion forums** (see Discussion Forum guidelines). You must post your own responses to the questions and **respond to at least 3 posts by classmates**, thus contributing to a discussion. You are not expected to comment on everyone’s post.

Students also view the virtual tour and answer the questions (see Virtual Tour assignment).

**Interdisciplinary Group Work (40%)**

Groups will be assigned by faculty. Each group will submit at least 2 choices for your paper (industry with a specified hazard/population) to course faculty by **February 13, 2017** for approval. The relevant NORA Sector will also need to be identified.

The group will prepare a **joint paper, 12-15 double-spaced typed pages, along with appropriate, current references in APA format**. The paper should include the following:

1. Describe the nature and scope of the work (major products; operational processes; relevant toxicological data, types of jobs or job classifications);
2. Review and summarize previous studies (work-related health hazards; major causes of illnesses/injuries/lost work-time);
3. Describe control measures used to mitigate health hazards and risks (engineering; work practices; administrative; personal protective equipment), and standards/regulations indicating compliance directives;
4. Recommend abatement, control, and prevention strategies; and
5. Describe the role of the occupational safety and health team in problem identification and problem solving.

**Each group member will also submit the group participation form** stating that you actively participated in the paper.

**Each group will submit and present PowerPoint slides of the paper** using Blackboard Collaborate or Voice Thread. The paper, powerpoint slides, and participation form are due **April 26, 2017**.

### **HONOR CODE**

The University of North Carolina at Chapel Hill has had a student-administered honor system and judicial system for over 100 years. The system is the responsibility of students and is regulated and governed by them, but faculty share the responsibility. If you have questions about your responsibility under the honor code, please bring them to your instructor or consult with the office of the Dean of Students or the Instrument of Student Judicial Governance. This document, adopted by the Chancellor, the Faculty Council, and the Student Congress, contains all policies and procedures pertaining to the student honor system. Your full participation and observance of the honor code is expected.

Information about the Honor Code is listed in the Student Handbook. All written work should be submitted with the following pledge with your signature: “On my honor, I have neither given nor received unauthorized aid on this assignment.”

### **OTHER**

1. By enrolling as a student in this course, you agree to abide by the UNC-Chapel Hill policies related to the Acceptable Use of online resources. Please consult the Acceptable Use Policy (<http://help.unc.edu/1672>) on topics such as copyright, net-etiquette, and privacy protection.
2. As part of this course, you may be asked to participate in online discussions or other online activities that may include personal information about you or other students in the course. Please be respectful of the rights and protection of other participants under the UNC-Chapel Hill Information Security Policies ([http://its.unc.edu/TTS/about\\_its/its\\_policies/index.htm](http://its.unc.edu/TTS/about_its/its_policies/index.htm)) when participating in online classes.
3. When using online resources offered by organizations not affiliated with UNC-Chapel Hill, such as Google or Youtube, please note that the Terms and Conditions of these companies and not the University’s Terms and Conditions apply. These third parties may offer different degrees of privacy protection and access to rights to online content. You should be well aware of this when posting content to sites not managed by UNC-Chapel Hill.
4. When links to sites outside of the unc.edu domain are inserted in class discussions, please be mindful that clicking on sites not affiliated with UNC-Chapel Hill may pose a risk for your computer due to the presence of malware on such sites.

### **GRADING**

H = 93-100  
P = 85-92  
L = 80-84

**PUBH/PHNU 785, Spring 2017**

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Module	Topics	Assignments
<p><b>1. Work and Health Influences</b></p> <p>January 11 to February 13</p>	<ul style="list-style-type: none"> <li>▪ <b>Lecture 1:</b> Overview of Work and Health— Bonnie Rogers</li> <li>▪ <b>Lecture 2:</b> Legislative/Regulatory Context—Judy Ostendorf</li> <li>▪ <b>Lecture 3:</b> Labor Perspectives—Tom O’Connor</li> <li>▪ <b>Lecture 4:</b> Interdisciplinary Occupational Health Team--Susan Randolph</li> <li>▪ <b>Lecture 5:</b> Epidemiology—Myduc Ta</li> </ul>	<ol style="list-style-type: none"> <li>1. Listen to the lectures.</li> <li>2. View videos.</li> <li>3. Read assigned chapters in text and web links.</li> <li>4. Discussion Forums:               <ul style="list-style-type: none"> <li>▪ Brown Lung Disease (Post <b>January 17 to 23</b>)</li> <li>▪ Core Disciplines in Occupational Health (Post <b>February 7 to 13</b>)</li> </ul> </li> </ol>
<p><b>2. Hazard Identification and Related Issues</b></p> <p>February 14 to March 20 (<i>Mar 13- 17 Spring Break</i>)</p>	<ul style="list-style-type: none"> <li>▪ <b>Lecture 1:</b> Work-Related Hazards (Chemical)— Nelson Couch</li> <li>▪ <b>Lecture 2:</b> Musculoskeletal—Gary Greenberg</li> <li>▪ <b>Lecture 3:</b> Respiratory Hazards—Gary Greenberg</li> <li>▪ <b>Lecture 4:</b> Bioterrorist Agents—David Weber</li> <li>▪ <b>Lecture 5:</b> OHDEN—Gary Greenberg</li> <li>▪ <b>Lecture 6:</b> Screening, Surveillance, and Biological Monitoring—Mike Jacobs</li> <li>▪ <b>Lecture 7:</b> Risk Assessment, Management, &amp; Communication—John Staley</li> </ul>	<ol style="list-style-type: none"> <li>1. Listen to the lectures.</li> <li>2. Read assigned chapters in text and web links.</li> <li>3. <b>Group Project:</b> Submit at least 2 choices for your paper (industry with a specified hazard/population) to course faculty by <b>February 13</b> for approval. You need to identify the relevant NORA Sector with your choice.</li> <li>4. Discussion Forum:               <ul style="list-style-type: none"> <li>▪ Risk Communication in times of Disaster (Post <b>February 21 to 27</b>)</li> </ul> </li> </ol> <p>[Work on group paper]</p>
<p><b>3. Control and Evaluation in Occupational Health</b></p> <p>March 21 to April 28</p>	<ul style="list-style-type: none"> <li>▪ <b>Lectures 1-3:</b> Health Promotion Measures—Karen Mastroianni               <ol style="list-style-type: none"> <li>a. Health Promotion Principles</li> <li>b. Successful Programs</li> <li>c. Program Design</li> </ol> </li> <li>▪ <b>Lectures 4-7:</b> Health Protection Measures—Nelson Couch               <ol style="list-style-type: none"> <li>a. Basic Control Strategies</li> <li>b. Administrative Controls</li> <li>c. Personal Protective Equipment</li> <li>d. Respiratory Protection</li> </ol> </li> <li>▪ <b>Lecture 8:</b> Ethics—Bonnie Rogers</li> <li>▪ <b>Lecture 9:</b> Evaluation—Carol Runyan</li> </ul>	<ol style="list-style-type: none"> <li>1. Listen to lectures.</li> <li>2. Read assigned chapters in text and web links.</li> <li>3. Discussion Forum:               <ul style="list-style-type: none"> <li>▪ Health Protection/Health Promotion (Post <b>March 21 to 27</b>)</li> </ul> </li> <li>4. Virtual Tour: Animal Labs (due <b>April 3</b>)</li> </ol> <p>[Work on group paper]</p>

Module	Topics	Assignments
<b>Group Work</b>	<p>See handout with detailed instructions.</p> <p>Submit at least 2 choices for your paper (industry with a specified hazard/population) to course faculty by <b>February 13, 2017</b> for approval. You need to identify the relevant NORA Sector with your choice. Each group will be assigned a specific industry to research.</p> <p>The paper should address the following points along with appropriate, current references using <u>APA format</u>:</p> <ol style="list-style-type: none"> <li>6. Describe the nature and scope of the work (major products; operational processes; relevant toxicological data, types of jobs or job classifications);</li> <li>7. Review and summarize previous studies (work-related health hazards; major causes of illnesses/injuries/lost work-time);</li> <li>8. Describe control measures used to mitigate health hazards and risks (engineering; work practices; administrative; personal protective equipment), and standards/regulations indicating compliance directives;</li> <li>9. Recommend abatement, control, and prevention strategies; and</li> <li>10. Describe the role of the occupational safety and health team in problem identification and problem solving.</li> </ol> <p>Power point slides of the paper are also required. Each group will present their slides using either Blackboard Collaborate or Voice Thread.</p> <p>Each group member will also submit the group member participation form with your score stating how you participated in the paper and presentation.</p> <p>Paper, PowerPoint slides, and group participation form are due <b>April 26, 2017</b>. Students can view the present and also provided comments.</p>	
<b>Course Evaluation</b>	<p>Everyone is expected to complete the course evaluation. You will receive an email directing you to a link to the course evaluation. Your input is very important and is used to make course improvements.</p>	