Course Title: Principles of Occupational Health

Course Number: ENOH 0693J

Course Location: Rutgers School of Public Health, Piscataway—Room 334

Course Date & Time: 6:10-9:00 PM, Tuesday Evenings, 9/6/2016-12/13/2016

Course Instructor: Michael E. Pratt, MD MPH, Instructor, Rutgers School of Public Health, pratt@eohsi.rutgers.edu (848) 445-6048

Office Hours: By Appointment Only and after most Tuesday classes

Course Assistant: Tanya Ferguson fergustd@sph.rutgers.edu (732) 235-4774


NOTE: For those who may have access, an electronic version of this book is in the ACCESSMedicine database available through myportal.rutgers.edu→Research tab→Library Channel—Research→Library Resources→Databases→Biomedical→Related→ACCESSMedicine.

Course Description: The purpose of this course is to convey the principles that underlie the recognition and control of workplace health hazards and address some of the injuries and illnesses related to workplace exposures.

Selected Department Competencies Addressed:
- Explain the basic mechanism of toxicology and dose-response regarding environmental/occupational toxicants
- Describe the federal and state regulatory programs that relate to environmental (community) and worker (occupational) protection
- Describe the direct and indirect human and ecological health and safety effects of various environmental and occupational exposure agents
- Determine what risks are present in a particular community and develop a basic risk assessment plan for the identification, characterization, management, and remediation of that risk
- Diagnose and apply appropriate approaches for assessing, preventing, and controlling environmental hazards that pose risks to health and safety
- Develop an intervention/prevention plan to ameliorate a particular environmental or occupational risk in a community workplace, respectively

Course Objectives: Upon completion of the course, the students will be able to:
- Understand the major principles guiding the field of occupational health
- Demonstrate how to take an occupational health history
- Understand the major categories of effects of physical agents, biological agents, chemical agents, and psychosocial factors
- Examine specific workplace problems (toxicology, ergonomics, indoor air-pollution)
- Describe the musculoskeletal injuries that can occur in the workplace
- Understand the health effects of workplace hazards
- Apply the principles of hazard recognition and control to promote workplace health and safety
- Demonstrate a foundational knowledge of occupational and environmental health: programs, databases, regulatory agencies, and laws (including ADA and Workers’ Compensation)

### Course Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Instructor</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9/6/2016</td>
<td>Pratt</td>
<td><strong>Lecture:</strong> Course Introduction</td>
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<td>Introduction to Occupational &amp; Environmental Health</td>
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<td>Occupational History Taking</td>
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<td>Reproductive Hazards &amp; Employment</td>
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<td><strong>Reading Assignment:</strong> Chapter:</td>
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<td>International Occupational &amp; Environmental Health</td>
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<td>The Occupational &amp; Environmental Medical History</td>
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<td>9/13/2016</td>
<td>Laumbach</td>
<td><strong>Lecture:</strong> Hazard Identification and Industrial Hygiene</td>
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<td>Respiratory protection</td>
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<td>Occupational Safety</td>
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<td>Industrial (Occupational) Hygiene</td>
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<td>9/20/2016</td>
<td>Laumbach</td>
<td><strong>Lecture:</strong> Noise and Radiation</td>
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<td>Injuries Caused by Physical Hazards</td>
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<td>9/27/2016</td>
<td>Udasin</td>
<td><strong>Lecture:</strong> Medical Surveillance</td>
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<td>Americans with Disabilities Act</td>
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<td>Medical Surveillance</td>
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<td>Gases &amp; Other Airborne Toxicants</td>
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<td>10/4/2016</td>
<td>Pratt</td>
<td><strong>Lecture:</strong> Work-related Musculoskeletal Disorders/ Ergonomics</td>
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<td><strong>Reading Assignment:</strong> Chapter:</td>
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<td>Musculoskeletal Injuries</td>
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<td>Shoulder, Elbow, &amp; Hand Injuries</td>
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<td>Back and Lower Extremity Injuries</td>
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<td>Ergonomics &amp; the Prevention of Occupational Injuries</td>
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10/11/2016  Lecture: Occupational Lung Diseases  Kipen
Reading Assignment: Chapter: Occupational Lung Diseases 23

10/18/2016 Lecture: Occupational Cancer and Carcinogens  Kipen
Indoor Air Quality/Unexplained Symptoms  Kipen
Reading Assignment: Chapter: Occupational Cancer 19
Outdoor Air Pollution  46
Building-Associated Illness  47

10/25/2016 Lecture: Heavy Metals, Hazards to the Liver and Kidneys  Gochfeld
Ethical Challenges in the Workplace and Safety  Gochfeld
Reading Assignment: Chapter: Liver Toxicology 25
Renal Toxicology  26
Metals  30

11/1/2016 Lecture: Healthcare Workers  Udasin
Reading Assignment: Chapter: Occupational Infections 20

11/8/2016 Lecture: Chemical, Solvent, & Pesticide Hazards  Pratt
Reading Assignment: Chapter: Chemicals 31
Solvents  32
Pesticides  34

11/15/2016 Lecture: Regulatory Agencies & Workers’ Compensation  Pratt
Occupational Health Databases  Pratt
Reading Assignment: Chapter: Workers’ Compensation 6
Disability Management & Prevention  7
Disease Surveillance  40

11/22/2016 Lecture: Neurotoxicity and Neurobehavioral Toxicology  Fiedler
Depression in the Workplace  Fiedler
Reading Assignment: Chapter: Neurotoxicology 27

11/29/2016 Lecture: Occupational toxicology  Pratt
Reading Assignment: Chapter:
Occupational Toxicology 16
12/6/2016 Oral Presentations Pratt
12/13/2016 Final Exam Pratt

Course Requirements and Grading:
1. Oral Presentation 300 points
2. Paper 300 points
3. Final Examination 300 points
4. Participation/Attendance 100 points

Course Grading (based on % of 1000 points):
   93-100% FOR A
   90-92.99% FOR A-
   85-89.99% FOR B+
   80-84.99% FOR B
   77-79.99% FOR B-
   73-76.99% FOR C+
   70-72.99% FOR C
   ≤69.99% C-/D/F or incomplete, as determined

Guidelines for Participation
All students are required to participate in the weekly Principles of Occupational Health discussion boards found on Moodle. Points will be weighted in favor of:
   • Quality posts (anytime)
   • Posts that start a thoughtful thread of discussion on newly opened boards (Tuesdays and Wednesdays)

Participation points will be assigned as follows:
   • One point per timely lecture attendance and classroom participation (10 points max)
   • Discussion boards (90 points max)

Guidelines for Paper due on 10/25/2016
Your paper will address occupational health practices in a specific occupational sector. It includes, but is not limited to:
   • Background
   • Pertinent statistical information and trends derived from databases (e.g. Bureau of Labor Statistics)
   • Applicable laws and regulations, including governmental agencies
   • Occupations in the sector and typical work hazards and controls
   • Discussion about improved population health and safety in the occupational sector
   • Pertinent resources and references

Topics must be pre-approved and may NOT include the occupational sector you will present orally in December. The paper length may not exceed 10 pages (excluding charts/tables in appendix). Please refer to the School of Public Health Honor Code for expectations regarding work originality.

Guidelines for Oral Presentation on 12/6/2016
Select an occupation, and identify a specific worker. Follow that worker for at least half a day:
   • Describe the job duties and observe the work practices.
   • Identify any hazards on the job; including physical, chemical, biological and psychological hazards.
Describe the adequacy of any safety or protective measures that are currently in use by the worker(s), including engineering controls, administrative controls and personal protective equipment.

Recommend specific changes (protective measures) that will reduce worker hazardous exposure.

Incorporate the principles you have learned during the POH coursework. You may also use the course textbook as a guide in describing hazards. Your observations and recommendations must be based on scientific evidence and must have practical applications.

- Prepare a power point presentation based on your findings above.
- Duration of presentation is 15 minutes (+ 5 minutes for questions)
- I recommend 15 power point slides.
- **Relevant pictures of the work process(es) should be included in your presentation.

You should identify the occupation and person you wish to follow early in November and get the proper permissions including those for photographs of worksite and individuals being photographed. Topics must be pre-approved.

Note: Please provide Dr. Pratt with an electronic version of your power point presentation (via e-mail) on or before 5pm Tuesday November 29, 2016.

Final Examination
The final exam will cover lecture content and assigned reading in Occupational & Environmental Medicine by LaDou and Harrison.

School of Public Health Honor Code: The School of Public Health Honor Code is found in the student bulletin (sph.rutgers.edu/academics/catalog/index.html ). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another’s work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the school community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.