

- Course Title:** Introduction to Environmental Health, Fall 2017
- Course Number:** PHCO0503
- Course Location:** Stanley S. Bergen Building, 65 Bergen Street, Newark, NJ, SSB 744.
- Course Date & Time:** Weekly on Mondays, 6:00-9:00pm, 9/11/2017-12/18/2017
- Course Instructor:** Robert J. Laumbach M.D., M.P.H., C.I.H.
Associate Professor, Department of Environmental and Occupational Health, Rutgers School of Public Health. (848) 445-6084, use voice mail as applicable, laumbach@eohsi.rutgers.edu
- Office Hours:** *By appointment*; however, each Monday instructor will remain after class for questions.
- Required Course Text:** Environmental Health: From Global to Local. Howard Frumkin, Ed. 3rd Ed. S.F., CA: Jossey-Bass. 2016.

Additional/Supplemental Readings/Resources:

For supplemental readings by topic/subtopics covered in each thematic module, please see online supplemental materials, <http://moodle.rutgers.edu/>

Course Description: We will explore ways in which environments can and do affect health. We examine how ecosystems provide goods and services that support life and health, and how natural and human activity can lead to harm from biological, chemical, physical, and radiological agents in air, water, soil, food, homes, and workplaces. We will apply multidisciplinary concepts and analysis from ecology, toxicology, epidemiology, and behavioral science. We will review policies intended to improve public health by altering or maintaining environments. We will focus on environmental health challenges and responses in urban settings, with examples from greater Newark.

Competencies Addressed: The competencies addressed in this course include:

- Specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and safety.
- Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.

- Specify current environmental risk assessment methods.
- Describe generic, physiological and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
- Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.
- Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.
- Develop a testable model of environmental insult.
- Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.

Course Objectives: By completion of the course, the student will be able to:

- Describe the spectrum of environmental and occupational health problems;
- Characterize target populations exposed to hazardous agents, and susceptibility and vulnerability factors;
- Describe the tools that are used to analyze health impacts of environmental exposures, such as the risk assessment process, epidemiology, and industrial hygiene;
- Describe the main methods used to control health hazards, such as reducing or preventing exposure;
- Describe the existing regulatory framework for controlling environmental and occupational agents.

Course Requirements and Grading:

The course sessions will be a mixture of questions and answers based on readings and previous class discussions, instructor presentation, and whole group and small group problem-solving and discussion. The usual course session format will be structured as follows:

- Opening question(s) and discussion (~20 min)
- Instructor presentation and discussion (~35 min)
- Break (~5 min)
- Review of both the weekly readings and the at-home quiz on weekly readings (~20 min)
- Individual readiness interactive questions and discussion (~25 min)
- Break (~5 min)
- Small or large group exercises and discussion (~60 min)

Assigned reading and participation in discussions are required to make the course a successful learning experience. We will discuss expectations for participation in class. Part of the assessment of class participation will be a self-assessment early in the course, so that we can develop collaborative strategies to encourage and maintain high-quality student engagement. In addition, keeping up with assigned readings and class participation will be important for

success on the written exams and projects. Weekly before-class, open-book, quizzes based on the readings will be a substantial part (20%) of the overall grade.

Numeric grades from exams, assignments and related class participation will be weighted in the proportions shown below to produce an overall numeric course grade:

Class participation	10%
Weekly open-book quizzes (best 10 of 12)	20%
Mid-term examination	20%
Final examination	30%
Small Group Project	20%

Final letter grades will be assigned for the course as follows:

<u>Sum of Numeric Grades</u>	<u>Letter Grade</u>
≥ 93.6	A
88.6-93.5	A-
84.6- 88.5	B+
80.6-84.5	B
76.6-80.5	B-
72.6-76.5	C+
69-72.5	C
C-/D/F is ≤68 or INC, as determined	

Course Schedule: *Please see attached*

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.

PHCO0503 INTRODUCTION TO ENVIRONMENTAL HEALTH, Newark, Fall 2017
Course Schedule and Topics (subject to change as needed; readings may be supplemented)

DATE	TOPIC(S) and REQUIRED READINGS from Frumkin (2016) 3rd Edition.
9/11/2017	Course Introduction / Ecology / Ecosystems (Frumkin Ch. 1, 2)
9/18/2017	Sustainability / Toxicology (Ch. 3 and 6)
9/25/2017	Environmental and Occupational Epidemiology / Geospatial Analysis (Ch. 4, 5)
10/2/2017	Exposure Science / Industrial Hygiene / Risk Assessment (Ch. 8 and 27)
10/9/2017	Ethics / Environmental Justice (Ch 10 and 11)
10/16/2017	Solid and Hazardous Waste / Environmental Disasters (Ch. 17 and 24) (Garetano)
10/23/2017	Water and Health / Food Systems (Ch 16 and 19)
10/30/2017	Midterm Exam / Pest Control and Pesticides (Ch 18)
11/6/2017	Work and Health / Injuries (Ch 21 and 23) (Pratt)
11/13/2017	Air Pollution / Energy and Health (Ch 13 and 14)
11/20/2017	Climate Change / Communicating Environmental Health (Ch 12 and 28)
11/27/2017	Healthy Communities / Buildings and Health (Ch 15 and 20)
12/4/2017	Radiation (Ch. 22) / Preparation for presentations
12/11/2017	Presentations and Discussion
12/18/2017	Review and Wrap-up / Final Exam