PUBLIC HEALTH CORE COURSE
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RUTGERS
School of Public Health

COURSE BASICS

Course Title:	Introduction to Environmental Health
Course Number:	PHCO0503, Spring Semester 2023
Course Location:	Environmental and Occupational Health Sciences Institute (EOHSI) Conference Room C 170 Frelinghuysen Road, Busch Campus
Course Date & Time:	Fridays 12:30pm - 2:30pm
Course Instructor:	Panos G. Georgopoulos, PhD Professor, Rutgers SPH-ENOHJ EOHSI Rm 308,170 Frelinghuysen Rd., Piscataway, NJ phone (848) 445-0159, email panosg@ccl.rutgers.edu *(When emailing, please include the course number [PHCO 0503] in the subject)*
Office Hours:	After class or by appointment
Course Website:	Access course via canvas.rutgers.edu using NetId and Password
Required Course Textbook:	Howard Frumkin, ed. (2016), *Environmental Health: From Global to Local,* 3rd edition, published by Jossey-Bass, ISBN 978-1-118-98476-5 (The weekly assigned readings follow this 3rd edition of the book)

Additional/Supplemental Readings/Resources:
Additional reading assigned will be provided on Canvas within the course modules.

Course Description:
We will explore ways in which environments can and do affect health. We will 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.

Minimum Grade Requirement for Select Prerequisite Courses
PHCO 0503 Introduction to Environmental Health serves as a prerequisite course for ENOH 0656 Environmental Risk Assessment. ENOH 0656 requires not only completion of PHCO 0503 but also requires a minimum grade of "B" or better in PHCO 0503. Students who have completed PHCO 0503 with the required minimum grade will be allowed to register for ENOH 0656. Students who have completed PHCO 0503 with a grade less than the required minimum grade should review the Minimum Grade Requirement for Select Prerequisite Courses Policy(https://sph.rutgers.edu/academics/assets/docs/PolicyPrereqMinimumGradeRequirement.pdf) for more information.

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COURSE COMPETENCIES

Competencies Addressed:
The competencies addressed in this course include:

- 1 Identify the core functions of public health and the 10 Essential Services;
- 2 Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues;
- 3 Explain effects of environmental factors on a population's health;
- 4 Explain an ecological perspective on the connections among human health, animal health and ecosystem health;
- 5 Specify current environmental risk assessment methods;
- 6 Explain the general mechanisms of toxicity associated with various environmental exposures;
- 7 Specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and safety;
- 8 Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents;
- 9 Describe physiologic, social and psychological factors that affect susceptibility and vulnerability to adverse health outcomes following exposure to environmental hazards;
- 10 Explain biological and genetic factors that affect a population's health;
- 11 Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity; and
- 12 Explain how globalization affects global burdens of disease.

Please visit the Concentration webpages on the School of Public Health's website at sph.rutgers.edu for more information about the curriculum and competencies for our degrees and concentrations.

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

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

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COURSE REQUIREMENTS

Course Assignments and Grading:
The class sessions will be a mixture of instructor presentation, questions and group discussion based on readings and previous class discussions, and whole-group and small-group problem-solving and discussion.

Preparation prior to each class is essential. The usual weekly class preparation usually includes reading 2 chapters in the textbook, watching or listening or reading supplemental articles, videos, etc. which will be listed in the course modules, and taking a thought-provoking, open-book quiz before class. Quizzes are due before class.

Assigned reading and participation in discussions are required to make the course a successful learning experience. We will discuss expectations for participation in class.   In addition, keeping up with assigned readings and class participation will be important for success on the written exams. Weekly (except week 1 and exam days) before-class, open-book, quizzes based on the readings will be a substantial part (20%) of the overall grade and are due before class.

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

This table contain required activities and their grade value

ACTIVITY	GRADE VALUE
Attendance	5%
Class participation (Discussion Board)	25%
Weekly open-book quizzes (best 10 of 12)	20%
Mid-term examination	25%
Final examination	25%

Grading Policy (%)*
This table contains numerical and letter grades

Numeric Value	Letter Value
94 -100	A
90 - <94	A-
87 - <90	B+
84 - <87	B
80 - <84	B-
77 - <80	C+
70 - <77	C
<70	F

*Grades will not be rounded.

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Mapping of Competencies, Objectives, Modules and Assessments

Competency	Course Objective	Module	Assessments
1	A, B, C, D ,E	1	Midterm
2	D, E	1,5,7,8, 9,10,12,13, 14	Module Quiz, Midterm, Final Exam
3	A, B, C	1,2,3,4,5,6,7,8,9,10,11,12,13,14	Module Quiz, Midterm, Final Exam
4	A, B ,C ,D, E	1,2,11,14	Module Quiz, Midterm, Final Exam
5	B, C, E	1,5,710,11	Module Quiz, Midterm, Final Exam
6	A, D	1,3,4	Module Quiz, Midterm
7	B, C, D, E	1,2,4,7,8,9,10,12,13,14	Module Quiz, Midterm, Final Exam
8	A, B, C, D, E	1,2,3,4,5,6,8,9,10,11,12,13,14	Module Quiz, Midterm, Final Exam
9	A, B,C,D	1,3,4,6,10	Module Quiz, Midterm, Final Exam
10	A,B, C,D	1,4,6,10	Module Quiz, Final Exam
11	B, C, E	2,3,4,5,12	Module Quiz, Midterm, Final Exam
12	A, B, C, D, E	1,2,3,6,7,8,9,10,11,13,14	Module Quiz, Midterm, Final Exam

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COURSE SCHEDULE

PHCO0503 INTRODUCTION TO ENVIRONMENTAL HEALTH, Spring 2023

WEEK	DATE	TOPIC(S) and REQUIRED READINGS from Frumkin (2016) 3rd Edition
1	1/20/23	Introduction to Environmental Health (Ch. 1); The 10 Essential Services of Environmental Public Health (Ch. 26) *Georgopoulos*
2	1/27/23	Environmental and Occupational Epidemiology (Ch. 4) *Rivera-Nunez* Geospatial Information Systems (Ch. 5) *Georgopoulos*
3	2/3/23	Ecology and Ecosystems (Ch. 2) and Global Sustainability (Ch. 3) *Burger*
4	2/10/22	Toxicology and Environmental Genetics/Genomics (Ch. 6 and Ch 7) *Zarbl*
5	2/17/22	Ethics and Environmental Justice (Ch. 10 and 11) *Budolfson*
6	2/24/23	Radiation (Ch. 22) *Gochfeld*
7	3/3/23	Outdoor and Indoor Air Pollution (Ch. 13) and Energy (Ch. 14) *Georgopoulos*
8	3/10/23	Exposure Science (Ch. 8); Buildings and Health (Ch. 20) *Georgopoulos*
	3/11/23	"Take Home" Midterm Exam; due 3/23/23
	3/17/23	Spring Break - No classes
9	3/24/23	Work, Health and Well-Being (Ch. 21) *Pratt*
10	3/31/23	Water, Food, Pesticides and Health (Ch. 16, 18 and 19) *Robson*
11	4/7/23	Communicating Environmental Health Issues and Risks (Ch. 28) *Hallman*
12	4/14/23	Risk Assessment in Environmental Health (Ch. 27) *Laumbach*
13	4/21/21	Environmental Disasters (Ch. 24) *Buckley*
14	4/28/23	Climate Change and Health (Ch. 12); Concepts of Planetary Health - *Georgopoulos*
15	5/5/23	Discussion of Emerging Issues in Environmental Health - *Georgopoulos*

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ASSIGNMENT STANDARDS

Lateness. Assignments turned in after the official collection period are considered late. Unless the instructor and student come to an arrangement at least one week before class, there is a 10% possible point penalty for written work turned in late. Assignments are posted to Canvas by the due date. If you need to turn in something after the date due, please discuss it with the instructor to avoid point penalty.

Grammar/Spelling. If more than eight (8) gross punctuation, grammar or spelling errors occur in the written assignments, they will be returned with no grade. These can be resubmitted within one week with a 10% possible point penalty or the student can accept a failing grade.

Citations. Written assignments (online postings) should be supported with relevant, up-to-date references from the peer-reviewed literature. Preferred citation style for references will be the American Psychological Association (APA) style.

Margins and Page/Word Limits and Other Requirements. Refer to each assignment instructions for page or word limits and other requirements. A deduction of 10% will occur if the assignment is over these limits. Specific instructions per assignment will be available on Canvas.

Extra Credit (if offered). Extra credit opportunities will be posted.

SCHOOL POLICIES

Learning Management System: Canvas will be used extensively throughout the semester for course syllabus, assignments, announcements, communication and/or other course-related activities. It is the student's responsibility to familiarize themselves with Canvas and check it regularly. If you have difficulties accessing Canvas, please inform the instructor and Canvas Support (help@oit.rutgers.edu). Canvas is accessible at canvas.rutgers.edu.

School of Public Health Honor Code: The School of Public Health Honor Code is found in the School Catalog (sph.rutgers.edu/academics/catalog.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.

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Students with Disabilities: Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student must apply for Services by first completing a Registration Form with the Rutgers Office of Disability Services (ODS) at ods.rutgers.edu. The student will also be required to participate in an ODS intake interview and provide documentation. If reasonable accommodations are granted, ODS will provide you with a Letter of Accommodations which should be shared with your instructors as early in your courses as possible.

Commitment to Safe Learning Environment: The Rutgers School of Public Health is committed to helping create a safe learning environment for all students and for the School as a whole. Free expression in an academic community is essential to the mission of providing the highest caliber of education possible. The School encourages civil discourse, reasoned thought, sustained discussion, and constructive engagement. Provocative ideas respectfully presented are an expected result. An enlightened academic community, however, connects freedom with responsibility. The School encourages all students to disclose any situations where you may feel unsafe, discriminated against, or harassed. Harassment or discrimination of any kind will be not tolerated and violations may lead to disciplinary actions.

Student Well-Being: The School of Public Health recognizes that students may experience stressors or challenges that can impact both their academic experience and their personal well-being. If the source of your stressors or challenges is academic, students are encouraged to discuss these challenges and circumstances with their instructor, if they feel they may need additional support or temporary accommodations at the beginning or during this course. The course instructor may consider making reasonable temporary adjustments depending on the student's situation. For personal concerns or if additional support is needed, students may reach out to the Office of Student Affairs or any of the appropriate referral resources listed on the SPH Student Connect Canvas page.

Reporting Discrimination or Harassment: If you experience any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, know that help and support are available. You may report such incidents to the RBHS Title IX Office or to the School of Public Health's Office of Student Affairs Office of Student Affairs. Rutgers University has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. If you experience any other form of discrimination or harassment, including racial, ethnic, religious, political, or academic, please report any such incidents to the School's . The School strongly encourages all students to report any incidents of discrimination or harassment to the School. Please be aware that all Rutgers employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers as listed in Appendix A to Policy 10.3.12) are required to report information about such discrimination and harassment to the School and potentially the University. For example, if you tell a faculty or staff member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty or staff member must share that information with the RBHS Title IX Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources in Appendix A to University Policy 10.3.12. For more information about your options at Rutgers, please visit Rutgers Violence Prevention and Victim Assistance.

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Overview of School Policies: Academic and non-academic policies and procedures, such as Auditing a Course, Retaking Courses, Grade Grievance and others that cover registration, courses and grading, academic standing and progress, student rights and responsibilities, graduation and more may be found under Policies on the School of Public Health website. Below are select specific policies; however, students are responsible for keeping informed about academic and non-academic policies and procedures beyond those noted on this syllabus.

Graduate Student Computer Policy: Students are required to possess a personal laptop, no older than approximately two years, that must meet minimum requirements which may be found online at: sph.rutgers.edu/student-life/computer-support.html

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.

Policy Concerning Use of Turnitin: Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Canvas) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.

Withdrawal/Refund Schedule: Students who stop attending their course(s) without submitting a completed Add/Drop Course Leave of Absence form will receive a failing grade. Furthermore, students dropping to zero credits for the semester are considered withdrawn and must submit a completed form from the School of Public Health's Office of Student Affairs. The School of Public Health refunds tuition only. Administrative and technology fees are non-refundable. You may find the Withdrawal/Refund Schedule on the School of Public Health website at: sph.rutgers.edu/academics/academic-calendar.html