

11:30 -12:20 MWF
Olscamp 206 (MF)
Health Center 120 (W)

Lecture: Gary Silverman, 214 Health Center
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Office hours: MF 10:15-11:15 & by
appointment
Lab: Hailu Kassa, 224 Health Center
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Syllabus
Environmental Health Science - ENVH 105

Course Aim

To provide an introduction to environmental health science using engaging and contemporary contexts and hands-on experiences. Students will use the process of integrating environmental health science principles into real world decision making. Both the lecture and laboratory components of the course are designed to develop skills in scientific inquiry in addition to providing topic knowledge.

Student Learning Outcomes

Students completing this course should have:

- Knowledge of the major topical areas within environmental health science.
- An understanding of foundational principles in natural science.
- Life-long learning skills to enable the use of scientific inquiry methods (including hypothesis development and testing) in problem solving.
- The ability to examine data and concepts critically and use data in the scientific process
- Enhanced ability to communicate about scientific information and concepts

General Education Outcomes

Successful completion of this course fulfils a BGSU General Education course requirement in the natural sciences. These outcomes are to:

- develop the skills and practice of using quantitative and qualitative approaches to study scientific concepts.
- learn to understand the nature of scientific evidence, how it is obtained and how it is used in the scientific process.
- learn how to solve problems using the logical approach of science.

Reading Requirement

The required text is *Our Global Environmental, A Health Perspective (5th edition)* (2000) by Anne Nadakavukaren. The chapter numbers on the schedule above refer to the chapters in this text. Reading is due *prior* to the first class meeting on a topic.

Schedule and Course Content

<u>Week</u>	<u>Topic</u>	<u>Laboratory Exercise</u>	<u>Chapter</u>
1/12	Ecological Principles	Hypothesis development	1
1/19	Population Dynamics	Tombstone study	2
1/26	Population Control & Hunger	Food habits	3&4
2/2	Ecosystem Effects	Information resources	5
2/9	Diseases	Minamata Disease	6
2/16	Toxicology	Brine shrimp LC ₅₀	7
2/23	Pests and Pesticides	Invertebrates	8
3/1	Food Quality (Midterm 1 on 3/5)	Molds	9
3/8	Spring Break		
3/15	Radiation (no class 3/15)	Sources & measurements	10
3/22	The atmosphere	Pollution measurement	11
3/29	Air pollution	Indoor air quality	12
4/5	Noise & Occupational Health (Peace Lecture, 7:00 p.m., April 7, Union Theater)	Noise survey	13
4/12	Water Resources	Water use	14
4/19	Water Pollution	pH, chlorine, temperature	15
4/26	Waste Management	Waste stream survey	16
5/7 (10:45)	Final Examination (comprehensive)		

Instructional Strategies

The typical weekly format for the course will be:

First lecture meeting (Mondays)

Laboratory write-ups from previous week due electronically (by 11:30 A.M.)
 Current reading due – pop quizzes possible
 Lecture providing understanding of underlying scientific concepts and elaborating on and further explaining topic material

Lab meeting (Wednesdays)

Answers to text questions due electronically (11:30 A.M.)
 Learning by inquiry through hypotheses development and testing
 Hands-on/minds-on exercises addressing environmental health science topics

Second lecture meeting (Fridays)

Discussion of lab exercises
 Further discussion of underlying scientific concepts and topic material
 Application to real life situations
 Pop quizzes possible

Student Learning Activities

Students should complete all the assigned readings prior to the first lecture on the topic, fully participate and be engaged in laboratory sessions, and be active participants in class discussions and exercises. Regular homework will be assigned to encourage this process using electronic resources.

Laboratories will often be organized through group activities to develop abilities to lead and to function effectively as a team member. Each laboratory session will be concluded by completion of a laboratory report (submitted electronically no later than 11:30 A.M. the following Monday).

This will become part of an electronic laboratory notebook designed to measure personal growth in using the scientific process for exploration and critical thinking.

Students are required to complete a final paper reflecting on their understanding of, and ability to use, the scientific process for problem solving. This paper will be the final product of the electronic laboratory notebook.

Procedures for evaluating student performance

This course uses a large number and variety of evaluative tools. Weekly quizzes and/or homework will be given. Each student is required to prepare and submit electronically a laboratory report weekly as part of an electronic laboratory notebook. A final reflective paper is required of all students to complete their notebook. Records will be maintained of students asking important questions reflecting critical thinking and inquisitiveness. A midterm and final examination will be given.

Plan for assessing student learning outcomes

Outcome	Assessment
Knowledge of the major topical areas within environmental health science.	Quizzes and homework Examinations
An understanding of foundational principles in natural science.	Quizzes and homework Examinations
Life-long learning skills to enable the use of scientific inquiry methods (including hypothesis development and testing) in problem solving.	Examinations Laboratory reports Final reflective paper
The ability to examine data and concepts critically and use data in the scientific process	Examination questions Laboratory reports Final reflective paper
Enhanced ability to communicate about scientific information and concepts	Laboratory reports Final reflective paper

Policies:

Course policies will follow those detailed in the University’s General Codes of Conduct as defined in the *BGSU Student Handbook* (http://www.bgsu.edu/offices/sa/book/Student_Handbook.pdf).

Please see the instructor if you have questions about any policy, or applicability of any policy.

Grading		
Quizzes/Homeworks (15 @ 12 points each)	180	A > 899 points
Lab Reports (13 @ 20 points each)*	260	B > 799 points
Final Reflective Paper	30	C > 699 points
Interaction	30	D > 599 points
Midterm Examination	200	F < 599 points
Final Examination	300	
TOTAL POINTS POSSIBLE	1000	

Studying Environmental Health at BGSU

Our Environmental Health Program is one of only 24 programs in the United States recognized by the National Environmental Health Science and Protection Accreditation Council. Our program's learning outcomes for students are to:

1. think critically and creatively.
2. demonstrate knowledge and abilities useful in the professional workforce.
3. function as a member of an environmental health team in the public or private sector.
4. learn independently over a lifetime
5. fully participate in the art and science of identifying, evaluating and managing environmental factors that can adversely impact the health of humans and their environment.

Our graduates have many opportunities for careers in government and industry, or to continue their education in graduate school or professional school. If you're interested in learning more about majoring or minoring in the Program, just ask any of the program faculty.

* Your 13 best lab grades will count toward your total points. No lab make-up opportunities are available.