

**Mississippi Valley State University**  
Natural Sciences and Environmental Health  
Course Syllabus

**Course:** EH 510, Environmental Health Practice

**Class hours:** Thursday 6:00-8:40pm

**Instructor:** Dr. Swatantra Kethireddy (a.k.a.: Dr. Reddy)

**Office hours:** MWF, 2:00-2:50pm

T, 10:00-10:50, 11:00-11:50

R, 10:00-10:50, 11:00-11:50

**Location:** Science & Technology building, Rm 2209

**Phone:** (662)-254-3394

**Email:** [swatantra.kethireddy@mvsu.edu](mailto:swatantra.kethireddy@mvsu.edu)

**Required Text:** 1). Environmental Health, from global to local. Third edition by Howard Frumkin

**Recommended Text:** 1). Geospatial analysis of environmental health, Juliana A. Maantay and Sara McLafferty Editors.

2). Environmental Health, third edition by Dade W. Moeller.

Recommended text pdf copy can be downloaded from

[http://ssu.ac.ir/cms/fileadmin/user\\_upload/Daneshkadaha/dbehdasht/behdasht\\_mohit/ebook/Environmental\\_Health\\_Third\\_Edition.pdf](http://ssu.ac.ir/cms/fileadmin/user_upload/Daneshkadaha/dbehdasht/behdasht_mohit/ebook/Environmental_Health_Third_Edition.pdf)

**Credit Hours:** 3

**Description:** “Environmental health is the field of public health that addresses physical, chemical, biological, social, and psychological factors in the environment. It aims both to control and prevent environmental hazards and to promote health and well-being through environmental strategies.” – *Howard Frumkin*.

The graduate level Environmental Health Practice course discusses the practical aspects. In addition to traditional environmental health topics—air, water, chemical toxins, radiation, pest control—it offers remarkably broad, cross-cutting coverage, including such topics as urban and regional planning, energy, transportation, disaster preparedness and response, climate change, and environmental psychology. Environmental health is a critically important topic, and it reaches into fields as diverse as communications, technology, regulatory policy, medicine, and law. This course addresses the field's most pressing concerns, with a practical bent that takes the material beyond theory. This course consists of instructor delivered face to face lectures, tests, a midterm, and a final exam.

**Course outcomes and learning objectives:**

- Explore the cross-discipline manifestations of environmental health.
- Understand the global ramifications of population and climate change.
- Understand the geospatial perspective of environmental health.
- Learn how environmental issues affect health and well-being closer to home.
- Discover how different fields incorporate environmental health perspectives.

Cited from the book, Environmental Health – Howard Frumkin

**MVSU's Environmental Health Core Competencies:**

**1. Assessment**

- 1A. Information Gathering: The capacity to identify sources and compile relevant and appropriate information when needed, and the knowledge of where to go to obtain the information.
- 1B. Data analysis and Interpretation: The capacity to analyze data, recognizes meaningful test results, interpret results, and present the results in an appropriate way to different types of audiences.
- 1C. Analyzes and synthesizes data to enhance decision making for the practice of environmental health.

## **2. Management**

- 2A. Problem Solving: The capacity to develop insight into and appropriate solutions to environmental health problems.
- 2B. Organizational Knowledge and Behavior: The capacity to function effectively within the culture of the organization and to be an effective team player.
- 2C. Identifies organizational and community stakeholders, concerns, and assets.
- 2D. Project Management: The capacity to plan, implement, and maintain fiscally responsible programs and projects using skills and prioritize projects across the employee's entire workload.
- 2E. Computer/Information Technology: The capacity to use information technology as needed to produce work products.
- 2F. Reporting, Documentation, and Record-Keeping: The capacity to produce reports to document actions, keeps records, and informs appropriate parties
- 2G. Collaboration: The capacity to form partnerships and alliances with other individuals and organizations to enhance performance on the job.

## **3. Communication**

- 3A. Educate: The capacity to use the environmental health practitioner's front-line role to effectively educate the public on environmental health issues and the public health rationale for recommendations.
- 3B. Communicate: The capacity to effectively communicate risk and exchange information with colleagues, other practitioners, clients, policy-makers, interest groups, media, and the public through public speaking, print and electronic media, and interpersonal relations.
- 3C. Marketing: The capacity to articulate basic concepts of environmental health and public health and convey an understanding of their value and importance to clients and the public.

## **4. Ethics**

- 4A. Ability to make good decisions daily, which protect public health and promote public's trust in environmental health profession.
- 4B. Ability to apply ethical and legal guidelines in protecting the environmental health.

## **5. Flexibility**

Ability to adapt to the rapidly changing field of environmental health practice, new technologies, changing laws, emerging environmental threats, and fiscal limitations.

## **6. Dedication**

Ability to practice the skills daily in local, state, and federal agencies; industry and private practice.

**This course meets the following core competencies presented in the table**

<b>Objective</b>	<b>MVSU's EH core competency</b>	<b>EHAC core competency</b>	<b>Evaluation</b>
Explore the cross-discipline manifestations of environmental health.	1A, 1C, 5, 3A, 3B	General EH, Administrative skills, Research methods,	Weekly assignments, Homework
Understand the global ramifications of population and climate change.	1B, 1C, 3A, 3B, 4A, 4B	Research Methods, Analytical Skills, Communication skills,	Weekly assignments, Homework, Written tests,
Understand the geospatial perspective of environmental health.	1B, 1C, 2E, 5,	Analytical skills, Statistical analysis,	Weekly assignments, Homework, Written tests,
Learn how environmental issues affect health and well-being closer to home.	3A, 3B, 6	Risk assessment, communication, and management, epidemiology,	Weekly assignments, Homework, Written tests,
Discover how different fields incorporate environmental health perspectives.	2E, 5, 1C, 2C	Administrative skills, Communication skills,	Weekly assignments, Homework, Written tests,

**Course work:**

**PART 1 METHODS AND PARADIGMS 1**

Chapter 1 Introduction to Environmental Health 3

*Howard Frumkin*

Chapter 3 Sustainability and Health 59

*Cindy L. Parker, Jessica D. Rhodes, and Brian S. Schwartz*

Chapter 4 Environmental and Occupational Epidemiology 83

*Kyle Steenland and Christine L. Moe*

Chapter 5 Geospatial Data for Environmental Health 111

*Lance A. Waller*

Chapter 6 Toxicology 123

*Gary W. Miller*

Chapter 7 Genes, Genomics, and Environmental Health 153

*David L. Eaton and Christopher M. Schaupp*

Chapter 8 Exposure Science, Industrial Hygiene, and Exposure Assessment 181

*Michael G. Yost and P. Barry Ryan*

Chapter 9 Environmental Psychology 203

*Nancy M. Wells, Gary W. Evans, and Kristin Aldred Cheek*

Chapter 10 Environmental Health Ethics 231

*Andrew Jameton*

Chapter 11 Environmental Justice and Vulnerable Populations 251

*Rachel Morello-Frosch and Manuel Pastor*

**PART 2 ENVIRONMENTAL HEALTH ON THE GLOBAL SCALE 273**

Chapter 12 Climate Change and Human Health 275

*Jonathan A. Patz and Howard Frumkin*

**PART 3 ENVIRONMENTAL HEALTH ON THE REGIONAL SCALE 317**

Chapter 13 Air Pollution 319

*Michelle L. Bell and Jonathan Samet*

Chapter 14 Energy and Human Health 345

*Howard Frumkin*

Chapter 15 Healthy Communities 377

*Andrew L. Dannenberg and Anthony G. Capon*

Chapter 16 Water and Health 413

*Timothy Ford*

**PART 4 ENVIRONMENTAL HEALTH ON THE LOCAL SCALE 451**

Chapter 19 Food Systems, the Environment, and Public Health 503

*Pamela Rhubart Berg, Leo Horrigan, and Roni Neff*

Chapter 20 Buildings and Health 539

*Howard Frumkin*

Chapter 22 Radiation 603

*Matthew P. Moeller*

Chapter 24 Environmental Disasters 667

*Mark E. Keim*

Chapter 25 Nature Contact 693

*Howard Frumkin*

**PART 5 THE PRACTICE OF ENVIRONMENTAL HEALTH 723**

Chapter 26 Environmental Public Health: From Theory to Practice 725

*Lynn R. Goldman*

Chapter 27 Risk Assessment in Environmental Health 747

*Mary C. Sheehan, Juleen Lam, and Thomas A. Burke*

Chapter 28 Communicating Environmental Health 769

*Edward Maibach and Vincent T. Covello*

Useful web links and resources:

[http://www.who.int/phe/health\\_topics/en/](http://www.who.int/phe/health_topics/en/)

<http://www.niehs.nih.gov/health/topics/>

[https://www.niehs.nih.gov/health/materials/new\\_environmental\\_health\\_the\\_508.pdf](https://www.niehs.nih.gov/health/materials/new_environmental_health_the_508.pdf)

<u>Criteria for grading</u>	<u>% of final grade</u>
Midterm examination	30
Final examination	40
Class attendance	10
Tests	20

Grading scale

90 – 100%     A

80 – 89%	B
70 – 79%	C
60 – 69%	D
Below 60%	F

Class attendance: (See class attendance policy from the Mississippi Valley State University catalog). Students at Mississippi Valley State must fully commit themselves to their program of study. One hundred percent (100%) punctual class attendance is expected of all students in all scheduled classes and activities. Instructor keeps daily attendance records and copy of excused and unexcused absence. Students must understand that **EVEN WITH AN OFFICIAL EXCUSE OF ABSENCE, THEY ARE RESPONSIBLE FOR THE WORK REQUIRED DURING THEIR ABSENCE.**

#### Academic integrity

Full responsibility is placed on the students from the content and integrity of all academic work submitted in the form of quizzes and examinations. Copying another person's work or portions of it is a violation of academic integrity and will be handled according to Mississippi Valley State University policy.

#### Make-up policy

No makeup tests will be given except in cases of an immediate family member's death or personal illness in which the proper documentation must be presented to the instructor. A valid excuse slip should be submitted upon return to class. Makeup tests and quizzes must be taken no later than the second class meeting after the test date or during the same week when test or quizzes are given. If tests are not taken within the allotted time frame, the grade will be ZERO and there will be NO EXCEPTION.

#### Cell Phones

All cell phones must be turned off or switched to vibration mode before entering the class to avoid interrupting instructor and fellow students. Penalty will be assessed if students fail to comply. Cell phones cannot be used during quizzes or exams.

#### **Services for Students with Disabilities (SSD)**

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester.

For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005 or [billy.benson@mvsu.edu](mailto:billy.benson@mvsu.edu).

**NOTE:** Violation of academic integrity will be handled according to the Mississippi Valley State University policy.

*\*\*\*This document doesn't constitute a contract with the university, it contains guidelines.  
Please be advised that the contents of this course syllabus are subject to change at the discretion of  
the instructor.*