**Health Science 320: Environment, Health & Technology**

**100% ONLINE, ASYNCHRONOUS**

**Spring 2024 Syllabus**

**Instructor:** Michelle Shulfer (facilitator), in collaboration with Rebecca Sommer, PhD.

**Office:** D145 Science Building

**Phone:** 715-346-2780 (office)

**E-mail:** mshulfer@uwsp.edu

**Office Hours:** Tuesday 12pm – 2:30pm; Wednesday 9am – 12 pm; or by appointment

### Course Description:

An analysis of the changing global environment, its relationship to human health and technology

will be considered. Historical impact, current concerns, and future projections will be addressed. Selected topics include health effects of environmental concerns including radiation, water and air pollutants, antibiotics, emerging infectious diseases, and global overpopulation. Case studies will be presented.

### Required Text:

Nadakavukaren, Anne and Caravanos, Jack, 2020. *Our Global Environment, A Health*

*Perspective.*  8th Edition. Waveland Press, Inc., 10-digit ISBN: 1478637714 or 13-digit

ISBN 978-1478637714

### Supplemental Reading Assignments:

Readings in addition to the text, such as journal articles, reports by governmental and nongovernmental agencies, or other online resources will be assigned most days. Supplemental readings will be accessed via Canvas.

### Course Goals:

A goal of environmental sustainability is to improve the quality of human life while conserving

natural resources, reducing pollution, and decreasing harm to the environment. This course

seeks to facilitate your abilities to:

1. Recognize areas of interaction between human society and the natural environment.
2. Identify individual, social, cultural, and ecological factors that influence environmental sustainability.
3. Evaluate competing claims that inform environmental debates.
4. Develop and demonstrate awareness of environmental responsibility to encourage a more environmentally sustainable lifestyle for self and/or for practice as a healthcare professional.

### Online Lectures:

Weekly online lectures (PowerPoint presentation with recorded audio) will be posted in Canvas.

The PowerPoints are available in the “Home” section of Canvas along with all assignments.

### Course Grades:

Derived from a percentage of total points possible, it is the number of points earned/total points

possible for the course. Each point carries equal weight. The instructor reserves the right to grade up to half of the weekly assignments for completeness only. Selection of which weeks will be graded for completeness will be done after submission and will be the same for all students. The discussions, any assigned projects, unit reflections and final will be graded in-full for all students.

Weekly Assignments (25 pts each) 45%

Discussions / Challenges 35%

Final 20%

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| **A:**  94.0-100% | **B:** 83.0-86.9% | **C:** 73.0-76.9% | **D:** 60.0-64.9% |
| **A-:** 90.0-93.9% | **B-:** 80.0-82.9% | **C-:** 70.0-72.9% | **F:** 59.9% or below |
| **B+:** 87.0-89.9% | **C+:** 77.0-79.9% | **D+:** 65.0-69.9% |  |

### Late Work:

The course is online and asynchronous, however, please note there are due dates for each

assignment to ensure successful completion in a timely manner. **All assignments are open**

**minimally one week in advance, students have one week to work on activities, & have up to**

**one week to submit after the due date for a total of 3 weeks. For this reason, assignments**

**8 or more days late will receive zero points. Students are encouraged to set a schedule for**

**the class & work ahead rather than behind. No work will be accepted after May 15 at 11:59 PM**.

### Overview of Course Assignments:

Additional information will be given in Canvas for each assignment. To convey a general idea of the

requirements of this course, there will be:

1. Weekly Learning Activities (Homework) to check on understanding and to help students focus on important aspects of each weekly lecture and reading materials. A part of each weekly assignment will strive to provide an exercise that can be translated into real-world action to improve the health of the environment/people.
2. Challenges (Homework in action) The purpose of the challenges are to expose students to a new way of thinking through meaningful activities that coincide with weekly topics.
3. Final Course Reflection (1 page, single spaced) examining Course Goals, which is more than a simple description of the learning experience. The prompt is: “***What key concept or piece of information did you learn in this course AND how did/will you apply it to be more environmentally sustainable as a responsible citizen?***  The reflection paper will apply the learning experience to understanding of self, others, and/or the course concepts. It will convey meaningfulness of the experience to the student and to course learning objectives. It may connect past experiences or personal goals to the learning experience and should demonstrate ability of the student to develop a new way of thinking, and/or ability to question their own biases, stereotypes, preconceptions, or assumptions.

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| Course Schedule Spring 2024*This schedule is tentative & subject to modifications at the instructor’s discretion.*

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|  | **Topic** | **Learning Activity** |
| **Week 1**Jan. 22  | What is the environment?Health Issues in Rural Environments | Read:* Textbook: pg. 113 and Section 5-1 *Microbial Killers* on pgs. 115-116
* *Preventing Disease Through Healthy Environments*

Watch:* Topic 1: Environmental Health Lecture (PowerPoint)
* *Determinants of Health: A Framework for Reaching Healthy People 2020 Goals*
* *What is Environmental Science*?

**Complete:*** **Assignment 1 due Jan. 29 at 11:59pm**
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| **Week 2**Jan. 29 | Air Quality/Pollution | Read:* Textbook: Chap. 11, pgs. 319-355, and *Ozone Depletion*, Chap. 9, pgs. 263-265

Watch:* Topic 2: Air Quality Lecture (PowerPoint)
* *NASA Study: First Direct Proof of Ozone Hole Recovery to Chemical Ban*

**Complete:*** **Assignment 2 due Feb. 5 at 11:59pm**
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| **Week 3** Feb. 5 | Water Quality/Pollution | Read:* Textbook: Chap. 13 pgs. 371-392, Chap. 14 pgs. 393-430, Chap. 15 pgs. 434-436
* *Municipal Drinking Water Safety: The link between groundwater, pathogens, and public health*
* *Camp Lejeune Overview & History*
* *Camp Lejeune Health Effects*

Watch:* Topic 3: Water Quality Lecture (PowerPoint)

Listen:* NOAA Ocean Podcast: Episode 14 *Garbage Patches: Gyres Take our Trash Out to Sea*

**Complete:*** **Assignment 3 due Feb. 12 at 11:59pm**
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| **Week 4** Feb. 12  | Global Climate Change | Read:* Textbook: Chap. 10 pgs. 269-301
* Green New Deal Resolution

Watch:* Topic 4: Global Climate Change Lecture
* *Cap and Trade Explained in Two and a Half Minutes*
* *Carbon Tax and Cap and Trade*

Listen:* Audio Introduction to Rep. Ocasio-Cortez’s Green New Deal

**Complete:*** **Assignment 4 due Feb. 19 at 11:59pm**
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| **Week 5** Feb. 19  | TBD | **Assignment due Feb. 26 at 11:59pm** |
| **Week 6** Feb. 26 | Emerging Infections and Antibiotics | Read:* Textbook: *Microbial Killers* on pgs. 115-116, *Vectors of Disease* pgs. 172-178, *Battling Malaria* pgs. 181-182, *Dengue Fever Spreads as the World Warms* pgs. 188-189, and *Abusing a Valuable Resource*: pgs. 206-207

Watch:* Topic 6: Emerging Infections and Antibiotics Lecture
* *Systems Thinking: A Cautionary Tale (Cats in Borneo)*
* *GMO Mosquito Control*

**Complete:****Assignment 6 due March 4 at 11:59pm** |
| **Week 7** March 4 | Medical Waste | aRead:* Textbook: *Personal Care Products Down the Drain*, pgs. 422-423 and Medical Waste Tracking Act on pg. 455

Watch:* Topic 7: Medical Wastes Lecture
* *The Drugs We Wash Away: Pharmaceuticals, Drinking Water and the Environment*

**Complete:****Assignment 7 due March 11 at 11:59pm**  |
| **Week 8** March 11 | PesticidesChildhood Exposures to Toxicants | Read:* Textbook: Chap. 8, *Pesticides and Resistance* pgs. 178-186, *Environmental Contamination* pgs. 187-201, and selected toxic substances in Chap. 6, pgs. 137-168
* Summary of the Toxic Substances Control Act (TSCA)

Watch:* Topic 8: Pesticides and Toxic Substances Lecture

**Complete:*** **Assignment 8 due no later than March 18 at 11:59 pm**
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| March 18 | SPRING BREAK |  |
| **Week 9** March 25 |  | Read:* Textbook: Chap. 5, *Cancer* pgs. 124-136, and Chap. 9, *Radiation* pgs. 233-263
* Case Study: *Stephen’s Story*

Watch:* Topic 9: Carcinogens and Radiation Lecture

Listen:* *Dark Lives Of “The Radium Girls” Left a Bright Legacy for Workers, Science*

**Complete:*** **Assignment 9 due April 1 at 11:59pm**
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| **Week 10** April 1 | TBD | * **Assignment due April 8 at 11:59pm**
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| **Week 11** April 8  | Genetically Modified Organisms   | Read:* Textbook: *Can GMOs End World Hunger?* pgs. 81-82 and *The Promise of Golden Rice* pgs. 71-72

Watch:* Genetically modified organisms intro video
* *Genetically Modified Food: A Debate*

**Complete:*** **Assignment 11 due April 15 at 11:59pm**
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| **Week 12** April 15 | Food Quality | Read:* Textbook partial Chapter 8 pgs. 203-212
* Intro and larger font areas of The Food Trust: *Access to Healthy Food and Why It Matters*

Watch:* Topic 12: Food Quality Lecture

Listen:* Science Friday: “Borax: It’s What’s for Dinner”

**Complete:****Assignment 12 due April 22 at 11:59pm** |
| **Week 13** April 22 | Food, Drug and Cosmetics | Read:* *Sulfanilamide Disaster*

Watch:* Topic 13: Food and Drug Administration Lecture
* *American Chamber of Horrors*

**Complete:** **Assignment 13 due April 29at 11:59pm**  |
| **Week 14** April 29 | Environmental and Health Inequities and Disparities  | Read:* *Can We Create a Fair Shot at Health?*
* CDC Health Disparities Summary
* Environmental Justice FY 2017 Progress Report

Watch:* Topic 14 Health Disparities Lecture

Listen:* *How COVID-19 Patients are Affected by Health and Other Disparities*

**Complete:*** **Assignment 14 due May 6 at 11:59 PM**
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| **Week 15**May 6  | Course Reflection/Exam | Read:* Instructions for Final: Reflection Paper
* Reflection Paper Rubric

**Complete:****Final Course Reflection is due no later than Monday, May 13 at 11:59 PM** |
| **Week 16**May 13 | Course Reflection Due  | **Complete**: * **No course work will be accepted after Wednesday, May 15 at 11:59 PM**
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Students with DisabilitiesIn compliance with the Americans with Disabilities Act, students are encouraged to register with UWSP Disability and Assistive Technology Center (DACT) for assistance with accommodations. It is the student's responsibility to work with DATC to document permanent or temporary disability in order to determine eligibility and receive reasonable accommodations. The college cannot assume responsibility for providing accommodations or services to students who have not identified themselves as having a qualifying disability. Contact DACT at datctr@uwsp.edu, 715-346-3365, Room 609 Albertson Hall, 900 Reserve Street, Stevens Point, WI 54481.Academic Honesty & MisconductAcademic honesty is a core principle of learning and scholarship. When you violate this principle, you cheat yourself of the confidence that comes from knowing you have mastered the targeted skills and knowledge. You also hurt all members of the learning community by falsely presenting yourself as having command of competencies with which you are credited, thus degrading the credibility of the college, the program, and your fellow learners who hold the same credential.All members of the learning community share an interest in protecting the value, integrity, and credibility of the outcomes of this learning experience. We also have the responsibility to censor behaviors that interfere with this effort. The following behaviors will be subject to disciplinary action:**Plagiarism** - presenting someone else's words, ideas, or data as your own work.**Fabrication** - using invented information, falsifying research or other findings.**Cheating** - misleading others to believe you have mastered competencies or other learning outcomes that you have not mastered. Examples include but are not limited to: 1. Copying from another learner's work2. Allowing another learner to copy from your work3. Collaborating on an assessment (graded assignment or test) without permission from the instructor4. Copying answers or other materials from the internet (e.g., Quizlet)5. Taking a test for someone else or permitting someone else to take a test for you**Turnitin** will be used to scan all materials submitted by students. Turnitin shows similarity to other materials, such as online content and past student papers and assignments. Students are not allowed to copy material from others (internet or other students). In addition, students are not allowed to turn in work that they completed for another course.**Academic Misconduct** - other academically dishonest acts such as tampering with grades, taking part in obtaining or distributing any part of an assessment, or selling or buying products such as papers, research, projects or other artifacts that document achievement of learning outcomes. Academic dishonesty is not acceptable. UWSP subscribes to the definitions of academic dishonesty provided by the National Association of Student Personnel Administrators. Academic misconduct in the University of Wisconsin System is defined by UWS Chapter 14. The complete text of the chapter is available to you from the Dean of Students, or you can visit for more information. |

*The course instructor/facilitator reserves the right to make changes to syllabi, or course content at their discretion anytime during the semester. Any significant change will be documented in a revised syllabus and posted on CANVAS. It is the students’ responsibility to know what changes have been made. It is also the student’s responsibility to check official UWSP email, and/or CANVAS frequently for course announcements.*