

Instructor: Daniel Keymer
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Office Hours: Thursdays 12-1 PM or by appointment

I. Course description:

Overview of sources, transport behavior, and environmental fate of conventional and emerging contaminants. Predicting exposure pathways and assessing risk to human or ecosystem health. Evaluating possible strategies for prevention, mitigation, and remediation of environmental contamination.

II. Course Aims and Objectives:

Aims

Students in this course will gain a deeper understanding of the factors influencing the presence of contaminants in environmental media. Emphasis will be on understanding available scientific data, interpreting those data in a logically supported manner, evaluating relative risks for exposures to different contaminants, and discussing alternatives for managing the contamination.

Specific Learning Objectives

By the end of this course, students will be able to:

1. Identify major sources of environmental contaminants.
2. Explain how different contaminants are cycled and transported in environmental media.
3. Predict probable exposure pathways to different contaminants based on properties of fate and transport.
4. Describe the process of assessing risk to human and ecosystem health from contaminant exposures.
5. Evaluate possible strategies for prevention, mitigation, and remediation of environmental contamination.

III. Course Format:

This course can be completed entirely in an asynchronous online format. Readings, brief lecture videos, quizzes, and assignments will be provided in Canvas. Online discussions will be conducted during scheduled windows of time to allow students to participate when their schedules allow. Students will have the opportunity to learn from each other through prompted discussions and by preparing and responding to presentations of researched material.

Participation policy

Due dates for assignments and quizzes will be communicated in Canvas. Late work will not be accepted unless previous arrangements have been made with your instructor. If you cannot participate in a scheduled discussion, you must contact your instructor immediately to make other arrangements.

Expectations

My expectations are that you will respect others, take responsibility for your own learning, participate, ask questions, and challenge yourself. All communication with instructors or classmates must be respectful in content and tone. The online classroom must be an environment where everyone feels comfortable and able to learn. Accordingly, students are required to treat others with respect and any behavior that impedes the ability of other students to learn will not be tolerated. I expect that you will reach out to ask for help when you need it.

As your instructor, you can expect me to do everything in my power to be fair, to be available and willing to help you, to provide feedback on work in a timely manner, and to listen.

In addition to the specific expectations outlined above, all participants in the course are expected to act in accordance with the UWSP rules for academic conduct. For more information, see the following link: <https://www.uwsp.edu/dos/Pages/Student-Conduct.aspx>.

IV. Course Requirements

Required materials

I have not identified a suitable textbook that covers all the content areas included in the course. Accordingly, assigned readings will be taken from a variety of sources and provided as .pdf files or links on the Canvas course page. Students will be expected to find and use scientific research articles when needed to complete assignments; this can be done through the UWSP Library search page and Google Scholar, among other databases.

Topical briefs

These written assignments will address controversial issues selected by the instructor and provide a concise explanation of the science that is known and unknown about the topic. Relevant scientific literature sources will be used and cited to support your summary. Unlike online discussions, topical briefs should not include value judgements and should focus on data and assertions that are supported by your cited sources.

Oral presentation

As an introduction to the wide variety of types of contaminants that affect human and ecosystem health, each student in the course will research one contaminant (from a selected list) and produce a short voice-over slide show describing key information needed to understand the expected distribution of that contaminant in the environment. A grading rubric will be provided in Canvas when the assignment is disseminated.

Quizzes

Online quizzes will be used to periodically assess basic comprehension of principles discussed in this course. You may use notes and other resources when completing these quizzes, but you will have a finite amount of time to complete them once you begin.

Discussions

Online discussions will be used to share ideas about current event topics, intersections of science and policy, and evaluation of management alternatives. The instructor will provide a prompt to which students will provide their own responses, as well as responding to posts from other students in the course. Specific instructions will be provided regarding what constitutes

satisfactory participation in each discussion. Unlike topical briefs, discussion posts do not need cited references. Each discussion will be available for several days to allow all students adequate time to post responses to the prompt and to others' comments.

Final paper

Students in this course will apply their accumulated knowledge of contaminant origins and behavior to analyze a hypothetical situation and propose realistic action. Specific instructions and expectations will be provided when Dr. Keymer introduces the project on Canvas.

Grading scale

Letter grade assignments will be made according to the following scale:

A = 93 – 100%	B = 83 – 86%	C = 73 – 76%	D = 63 – 66%
A- = 90 – 92%	B- = 80 – 82%	C- = 70 – 72%	D- = 60 – 62%
B+ = 87 – 89%	C+ = 77 – 79%	D+ = 67 – 69%	F = below 60%

Point distribution

Student grades will be determined based on the following breakdown of points:

Topical briefs	30%
Oral presentation	10%
Quizzes	15%
Discussions	25%
Final paper	20%
Total	100%

V. Academic Integrity

All students have agreed to the UWSP Code of Conduct and are expected to know and abide by the rules documented therein. The policy can be found through the Dean of Students Office (<https://www.uwsp.edu/dos/Documents/UWS%2014-1.pdf>). This includes knowing the difference between plagiarism and paraphrasing, whether summarizing someone else's work in writing or on presentation slides. Individual student work submitted for credit will be your own and not submitted for credit in another course. Appropriate credit must be given to all authors of assignments submitted for credit. Dr. Keymer should be notified if you are aware of any student taking credit for someone else's work. Violation of this policy could lead to failure on the assignment/exam, failure of the course, or other disciplinary action at the University level.

Lecture materials and recordings for this course are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

VI. Academic Accommodations

Accommodations for students with disabilities will be made on an individualized basis. Students must register with Disability and Assistive Technology Center to identify and confirm appropriate accommodations. Dr. Keymer will be happy to accommodate, but must be notified of any documented accommodations at the start of the semester, so that satisfactory arrangements may be provided. Please notify Dr. Keymer immediately if circumstances arise during the semester that change your accommodation needs.

VII. Anticipated Course Schedule (See *Canvas for actual due dates*):

Week	Topics	Assessments
1	Types of contaminants	
2	Types of contaminants	Discussion 1
3	Types of contaminants	Oral presentation
4	Fate and transport	Discussion 2
5	Fate and transport	Discussion 3
6	Fate and transport	Topical brief 1
7	Toxicity and exposure	Quiz 1
8	Toxicity and exposure	Discussion 4
9	Environmental legislation	Discussion 5
10	Environmental legislation	Topical brief 2
11	Management techniques	Quiz 2
12	Management techniques	
13	Management techniques	Topical brief 3
14	Emerging contaminants	Quiz 3
15	Emerging contaminants	Final paper