Lecture Mon/Wed 8:00-9:15 in TNR 255

Instructor: Daniel Keymer
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Office Hours: Monday 9:30-10:30 AM, Tuesday 2-3 PM, or by appt.

I. Course description:

A vast diversity of hazardous chemicals is continuously generated by our increasingly industrialized culture. The role of responsible hazardous waste management is to minimize the effects of these chemicals on human and environmental health, despite an incomplete understanding of these effects. In this course, we investigate the particular characteristics of hazardous chemicals that control health outcomes and how the waste can be effectively managed and treated. We will also discuss social, economic, and regulatory factors that influence how hazardous waste is managed.

II. Learning Objectives:

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

1. Define and identify the characteristics of hazardous materials
2. Discuss the important environmental laws and regulations that govern the management of hazardous waste
3. Apply the concepts of risk assessment and remediation standards
4. Explain how thoughtful hazardous waste management can provide social, environmental, and economic benefits.
5. Evaluate different treatment technologies used for waste treatment and site remediation based on defined criteria.
6. Describe the management concerns pertaining to underground storage tanks.

III. Course Format:

This course contains both lecture and discussion components, but these activities will be interspersed throughout the entire scheduled class time. Activities may include question and answer exercises, problem solving, case study analysis, broader discussions, etc.

Attendance policy

If you cannot attend a scheduled class session or will be excessively tardy (>5 minutes late), you must have an excused absence to be eligible for any points awarded during the missed class. Excused absences will be considered by Dr. Keymer on a case-by-

case basis. It is your responsibility to contact Dr. Keymer at least one week prior to an absence if you have a scheduled conflict that cannot be moved. Illness related absences must be excused by a doctor's note. For other unforeseen circumstances resulting in a missed class, Dr. Keymer must be contacted within 36 hours to arrange for any make-up activity. For both excused and unexcused absences, the student is responsible for reviewing all covered material and announcements with Dr. Keymer or his/her classmates.

Expectations
My expectations for you are that you will respect others, take responsibility for your own learning, participate and ask questions, and maintain a safe working environment. All communication with instructors or classmates must be respectful in content and tone. The 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. Such disrespectful behavior includes, but is not limited to, talking out of turn, using tobacco products in class, and using electronic devices for non-class related activity. Students are expected to come prepared to lab, having read through the laboratory procedures and ready to begin the exercises. Assignments must be completed before arriving in class on the day they are due. Unless otherwise stated, late assignments will be assessed a 10% point reduction per day.

As your instructor, you can expect Dr. Keymer to do everything in his power to be fair, to be available and willing to help you, to provide feedback on work in a timely manner, to relate tasks to real-world skills, and to ask you think.

In addition to the specific expectations outlined above, all participants in the course are expected to act in accordance with the UWSP Rights and Responsibilities document. For more information, see the following link: https://www.uwsp.edu/dos/Pages/Student-Conduct.aspx.

Regrade requests
Requests for regrading any assignment or exam must be submitted to Dr. Keymer in writing within one week of the graded item being returned.

IV. Course Requirements

Required textbook
Basic Hazardous Waste Management, Third Edition by William C. Blackman (2001) CRC Press, Boca Raton, FL.

Supplemental materials
Course materials will be made available through D2L. Students must view lecture slides and video summaries prior to class so they are prepared for discussions or activities. Handouts, assignments, and announcements may be disseminated via D2L, email, or in class.

Exams
There will be six quizzes administered throughout the course addressing material on recent assigned readings and topics discussed during class. The final exam will be a comprehensive written exam and will be administered during the scheduled exam period (Thursday, May 16th from 10:15 AM to 12:15 PM).

Assignments
The assignments and individual project for this course primarily involve previous incidents of hazardous waste mismanagement. These activities will assess your ability to apply the concepts and calculations discussed in class to specific hazardous waste management situations. Unless otherwise stated, assignments must be typed, and include appropriate acknowledgement of outside sources using reference lists and citations. Specific instructions and expectations will be provided when Dr. Keymer introduces the assignments in class.

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

Quizzes	24%
Assignments	25%
Individual project	20%
Peer review	5%
Final written exam	20%
Participation	6%
Total	**100%**

Dr. Keymer may also offer extra credit opportunities at his discretion.

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

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

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 Division of Student Affairs (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.

Working in groups is encouraged and required for parts of this course. This does not include quizzes or exams and any collaboration among students on quizzes and exams is strictly forbidden. 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.

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 during the first three weeks of the semester, so that satisfactory arrangements may be provided. Please notify Dr. Keymer immediately if unusual circumstances arise during the semester that change your accommodation needs.

VII. Anticipated Course Schedule: (*Subject to change*)

Week#	Date	Topics	Readings
1	1/23	The Hazardous Waste Perspective; History	pp. 1-36
2	1/28-1/30	Environmental legislation; Definition and Characteristics of Hazardous Waste	pp. 37-49
3	2/04-2/06	Pathways, Fates and Disposition of Hazardous Waste Releases (**Quiz 1**)	pp. 51-66
4	2/11-2/13	Toxicology	pp. 69-85
5	2/18-2/20	Risk assessment and management (**Quiz 2**)	
6	2/25-2/27	RCRA - Generators, transporters and TSD's	pp. 89-141
7	3/04-3/06	Superfund - Site Assessment and Evaluation (**Quiz 3**)	pp. 173-192
8	3/11-3/13	Underground storage tanks	pp. 375-393
9	SPRING BREAK	NO CLASS	
10	3/25-3/27	Treatment technologies (**Quiz 4**)	pp. 271-298
11	4/01-4/03	Biological treatments	
12	4/08-4/10	Physical-Chemical treatments (**Quiz 5**)	pp. 142-157
13	4/15-4/17	Thermal treatments	pp. 158-165
14	4/22-4/24	Land disposal (**Quiz 6**)	pp. 173-192
15	4/29-5/01	Pollution prevention, waste minimization, reuse and recycling	pp. 197-210
16	5/06-5/08	TBA	
17	**5/16**	**Final exam**	