

E562
Solid and Hazardous Waste Management
Indiana University School of Public and Environmental Affairs

Fall 2024

Instructor:	Rex Howard
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Class Meeting:	Monday and Wednesday, 6:30pm to 7:45pm
Location:	PV A205
Office Hours:	By appointment

* The preferred contact method is via Canvas message to the instructor.

Course Description:

This course is designed to develop a foundation in the areas of solid and hazardous waste management. Specific topics covered will be:

- Types and sources of solid waste
- Collection methods
- Disposal techniques: sanitary landfill, incineration, composting, reclaiming, or recycling; advantages and disadvantages of each
- Special and hazardous waste handling
- Operation and management of solid and hazardous waste programs

Text: There is no required textbook – assigned reading materials will be posted to Canvas.

Additional Resources: Will be posted to Canvas.

Learning Outcomes:

At the conclusion of the course students will:

1. Recognize the sources, characteristics, and properties of solid and hazardous waste.
2. Recognize the public health, regulatory, and environmental importance of proper solid and hazardous waste management.
3. Have a basic understanding of relevant regulations and standards relating to solid and hazardous waste management.
4. Have a basic understanding of common solid and hazardous waste management technologies and their associated advantages and limitations.
5. Be familiar with the most common solid and hazardous waste management facilities and their associated design and operational concerns.

Attendance and Participation:

Participation - Participation is required and is worth ten percent of your grade. You will be responsible for material that is covered in lectures that may not be from the provided readings. Preparation and subsequent participation in online or in-person discussions should be a goal for the semester. The schedule of topics and reading assignments is subject to change depending on progress made throughout the semester. Topics and/or reading assignments and recommendations may be added, removed, or changed. Changes will be posted to Canvas, and you will be responsible for being aware of them.

Quizzes and Assignments:

Short answer/multiple choice quizzes will account for ten percent of your course grade.

Homework assignments will account for ten percent of your course grade. Late homework will not be accepted.

Exams:

There will be two exams, one at the mid-term and one during finals. The final exam will concentrate on material covered after the mid-term. Each of these exams will account for thirty percent of your grade.

Term Paper/Presentation:

A short term paper (8 pages) will be required from one of the following suggested categories or an approved topic of your choice. A term paper proposal should be submitted by September 16. Submit your paper by November 22. Points will be deducted for late papers. A fifteen-minute presentation will be made to the class based on the term paper.

- Solid waste management
- Hazardous waste management
- Recycling
- Approved topic of your choice

Evaluation:

10 percent – Participation
20 percent – Homework assignments/Quizzes
20 percent – Term paper/presentation
25 percent – Mid-term exam
25 percent – Final exam

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Date	Topic	Reading
Week 1 (8/26,28)	Course Overview / Syllabus	None
Week 2 (9/4)	<i>No Class September 2</i> Historical Waste Management / Significant Environmental Incidents	TBA
Week 3 (9/9,11)	Regulatory Development / MSW Overview (waste stream characteristics) / Source Reduction – Quantity	TBA
Week 4 (9/16,18)	Source Reduction – Toxicity / MSW Collection / Recycling, Materials Recovery, and Markets	TBA
Week 5 (9/30, 10/2)	Recycling, Materials Recovery, and Markets (cont.)	TBA
Week 6 (10/7,9)	Special Wastes / Composting MSW	TBA
Week 7 (10/14,16)	MSW Incineration / Sanitary Landfills	TBA
Week 8 (10/21,23)	Review / Mid-term Exam	
Week 9 (10/28,30)	Hazardous Materials Awareness and Recognition / Using Hazard Information Resources	TBA
Week 10 (11/4,6)	Principles of Hazardous Waste Management / RCRA Hazardous Waste Identification	TBA
Week 11 (11/11,13)	RCRA Hazardous Waste Identification (cont.) / RCRA Regulatory Requirements for Generators/Transporters/TSDs	TBA
Week 12 (11/18,20)	Hazardous Waste Treatment and Disposal Technologies	TBA
Week 13 (11/25,27)	<i>No class on 11/25 or 11/27</i>	TBA
Week 14 (12/2,4)	Hazardous Waste Site Clean-up	TBA
Week 15 (12/9,11)	E562 Presentations	
Week 16 (12/18)	Final Exam 7:40-9:40 PM EST	

Note: Supplemental reading or multi-media selections may be assigned or recommended. These selections will be posted to Canvas or distributed in class.

SPEA Academic Policies

Please refer to <https://studentcode.iu.edu> for the complete IU Code of Student Rights, Responsibilities, and Conduct.

Academic Integrity

The O'Neill School takes matter of honesty and integrity seriously because O'Neill is the training ground for future leaders in government, civic organizations, health organizations, and other institutions charged with providing resources for the public, and for members of society who are vulnerable and who are lacking in power and status. Precisely because O'Neill graduates tend to rise to positions of power and responsibility, it is critical that the lessons of honesty and integrity are learned early.

According to the IU Code of Student Rights, Responsibilities, and Conduct, the following behaviors reflect academic integrity:

- Academic integrity requires that students take credit only for ideas and efforts that are their own. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person or organization without acknowledgment.
- A student must give credit to the originality of others and acknowledge indebtedness whenever:
 - directly quoting another person's actual words, whether oral or written;
 - using another person's ideas, opinions, or theories;
 - paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
 - borrowing facts, statistics, or illustrative material, or
 - offering materials assembled or collected by others in the form of projects or collections without acknowledgment.
- A student must not use or attempt to use unauthorized assistance, materials, information, or study aids in any academic exercise.
- A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized such assistance.
- A student must not use another person as a substitute in the taking of an examination or quiz.
- A student must not steal examinations or other course materials.
- A student must not allow others to conduct research or to prepare any work for him or her.
- A student must not take any credit for a team project unless the student has made a fair and substantial contribution to the group effort.
- A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.
- A student must not violate course rules as contained in a course syllabus or other information provided to the student.
- A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct.

SPEA faculty do not tolerate any form of academic dishonesty. Academic dishonesty includes submitting fraudulent work, giving or receiving unauthorized assistance, tampering

with the credibility of coursework, plagiarism, cheating on exams or similar measures of performance, or any other suspect behavior. O'Neill's code also extends to matters of civility and professional conduct, including, e.g., expectations about class attendance, punctuality, participation in class, and decorum in class.

Academic dishonesty can result in a grade of F for the class (an F for academic dishonesty cannot be removed from the transcript). Significant violations of the Code can result in expulsion from the University. The processes used by the O'Neill School to handle cases of academic dishonesty are the same as those described in the IU Code of Student Rights, Responsibilities, and Conduct.

Specific Academic Integrity Violations:

Plagiarism - Plagiarism is using another person's words, ideas, artistic creations, or other intellectual property without giving proper credit. According to the *Code of Student Rights, Responsibilities, and Conduct*, a student must give credit to the work of another person when he/she does any of the following:

- a. Quotes another person's actual words, either oral or written;
- b. Paraphrases another person's words, either oral or written;
- c. Uses another person's idea, opinion, or theory; or
- d. Borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

Note Selling - Several commercial services have approached students regarding selling class notes/study guides to their classmates. Selling the instructor's notes/study guides in this course is not permitted. Violations of this policy will be reported to the Dean of Students as academic misconduct (violation of course rules). Sanctions for academic misconduct may include a failing grade on the assignment for which the notes/study guides are being sold, a reduction in your final course grade, or a failing grade in the course, among other possibilities. Additionally, you should know that selling a faculty member's notes/study guides individually or on behalf of one of these services using IU email, or via Canvas may also constitute a violation of IU information technology and IU intellectual property policies; additional consequences may result.

Online Course Materials - The faculty member teaching this course holds the exclusive right to distribute, modify, post, and reproduce course materials, including all written materials, study guides, lectures, assignments, exercises, and exams. While you are permitted to take notes on the online materials and lectures posted for this course for your personal use, you are not permitted to re-post in another forum, distribute, or reproduce content from this course without the express written permission of the faculty member. Any violation of this course rule will be reported to the appropriate university offices and officials, including to the Dean of Students as academic misconduct.

Civility and Professional Conduct

The O'Neill School takes matters of honesty and integrity seriously because O'Neill is the training ground for future leaders in government, civic organizations, health organizations, and other institutions charged with providing resources for the public, and for members of society who are vulnerable and who are lacking in power and status. Precisely because O'Neill graduates tend to rise to positions of power and responsibility, it is critical that the lessons of honesty and integrity are learned early.

O'Neill requires that all members of its community – students, faculty, and staff – treat others with an attitude of mutual respect both in the classroom and during all academic and nonacademic activities outside the classroom. A student is expected to show respect through behavior that promotes conditions in which all students can learn without interruption or distraction. These behaviors foster an appropriate atmosphere inside and outside the classroom:

- Students are expected to attend class regularly and to be prepared for class.
- Students must be punctual in their arrival to class and be present and attentive for the duration of the class. Eating, sleeping, reading the newspaper, doing work for another class, wandering in and out of the classroom, and packing up or leaving class early are not civil or professional behaviors.
- Students must abide by the course policy regarding use of electronic devices in the classroom.
- Students must responsibly participate in class activities and during team meetings.
- Students must address faculty members, other students, and others appropriately and with respect, whether in person, in writing, or in electronic communications.
- Students must show tolerance and respect for diverse nationalities, religions, races, sexual orientations, and physical abilities.
- Students must not destroy or deface classroom property nor leave litter in the classroom.

Incompletes and Late Withdrawals

The grade of Incomplete used on the final grade reports indicates that the work is satisfactory as of the end of the semester but has not been completed. The grade of Incomplete may be given only when the completed portion of a student's work in the course is of passing quality. Instructors may award the grade of Incomplete upon a showing of such hardship to a student as would render it unjust to hold the student to the time limits previously fixed for the completion of his/her work.

Withdrawal after the automatic withdrawal period requires approval by the instructor and relevant Program Director, and must be based on dire circumstances relating to extended illness or equivalent distress. Requests to drop due to a failing grade will not be approved. The student must be passing the course at the time of withdrawal.

Students Called to Active Duty

SPEA encourages any student who is in the Indiana Military Reserves and is called to active duty to finish his/her coursework if possible.

Final Exam Schedule

If a final exam is given, it must be held on the day and time set in the final exam schedule established by the Office of the Registrar. Please refer to official final examination policies for additional information and exception procedures.