



# ENVH 445: Solid Waste Management

Course Syllabus  
Solid Waste Management and Environmental Health  
ENVH 445  
Fall Quarter 2017  
(3 Credits)

## Course Meeting Times and Location

1:30 - 4:20 p.m.  
Friday  
SOCC 221

## Course Instructor

**Tania Busch Isaksen**, Lecturer  
Department of Environmental & Occupational Health Sciences  
Office: F-561B Health Sciences Center  
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Office Hours: By appointment.

## Learning Objectives

It is intended that at the completion of this course, each student should be able to:

1. Identify and discuss the public health, regulatory, planning, technical, and economic principles that influence the solid waste management system, Nationally and within Washington State;
2. Describe appropriate methods to minimize the impact to public and occupational health from solid waste related activities;
3. Analyze, make recommendations and communicate to a lay audience the importance of one of the components of a current solid waste disposal challenge (group project); and
4. Analyze at least one environmental health topic for its impact on health and propose solutions based on what is known about the challenges/barriers (individual project).

## Class Format

This course is built around problem-based learning pedagogy.

Each week students will read, examine, and dissect an aspect relative to their group's solid waste disposal challenge, discuss what they already know, identify key issues and hypotheses ("what we think,") and information needed to understand and work through



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the issues of the challenge. Students assign themselves “learning objectives” to research and post their acquired knowledge on canvas before the next class session. Posting prior to the next class session gives the other group members and the instructor the opportunity to review what has been learned and to come prepared with additional questions. In addition to the students’ own syntheses, they also post links to articles, web sites, and other data resources. Problem-based learning is an iterative process, with each class building on knowledge acquired through student learning objectives.

## Course Requirements

1. **Participation/Individual Assignments:** Students are expected to come to class having read and prepared for the day. Questions and comments on the subject matter are encouraged. In addition to participating in group discussions, several individual learning objectives and self-assessment activities will be assigned. These assignments will be listed on the canvas website in each applicable class/module, as well as introduced during class (~100 pts).

**Note about attendance:** Problem-based learning shifts control and power in the classroom from the teacher to students working in small groups. The real work of learning occurs in the group setting, where faculty acts as facilitators rather than teachers. Every group member shares responsibility for reaching the learning objectives, both individually and as a group. When a student misses a PBL class, part of the thinking that is needed to work the case will be missing. Discussion won’t be as rich, and the group may be stretched too thin to address the learning objectives effectively.

For this reason, students are strongly encouraged to attend all the scheduled class time unless faced with illness or a true emergency. Those who miss class will nonetheless be expected to review the list of learning issues or objectives from the missed day, contact classmates to confirm their role in working them, and post work in Canvas in time for discussion. In other words, students should prepare to undertake the same level of effort outside of class that they would have if they had attended the class session.

**Field Trips:** Three class-time field trips have been scheduled to visit various solid waste handling facilities. Attendance and completion of worksheets at each will be factored into your final grade (45 pts). For those unable to attend any or all of the field trips due to scheduling conflicts, special assignments will be available for complete credit upon the student’s request. **Dress attire for field trips: jeans, jacket and substantial shoes (i.e. hiking boots).**

2. **Individual Project:** In addition to group work, each student will choose and analyze a particular solid waste/public health-related topic to explore in-depth (see end of syllabus for suggested topic list). Students will prepare a written report (~5 pages,



double spaced, 12 pt. font) and will prepare and present (~5 min.) an electronic poster to the class on **Friday, December 8, 2017**.

The individual project should:

- a) Be based on information gathered by the student from: the periodic literature; government, NGO and other websites; and, the popular press. A visit to a federal, state or local government agency (or attendance of a city or county council meeting, a regional planning council meeting, or a public hearing), dealing with your environmental health program or issue would also be helpful and is encouraged, but is not required.
- b) Present the following content:
  - Define the Problem: - What is the problem? - Why is it a problem, i.e. what are the health consequences? Who are the health consequences affecting?
  - Describe the underlying scientific evidence or theories.
  - Describe the Environmental Public Health Issue(s)
  - Identify the "stakeholders": - Responsible government agency or agencies; Industry; User (consumers) groups
  - Discuss the political and legal ramifications
  - Student's conclusions and recommendations
- c) Consist of an electronic poster presentation and accompanying written report.

The poster will be presented to the class during the last week of the quarter. In order to reduce waste, conserve resources and save the students money, the "poster" presentation will consist of a single PowerPoint slide submitted electronically to the instructor by **Noon on Thursday, December 7th** and include the following:

- The project title;
- The name of the student;
- A statement of the problem or issue being investigated;
- A discussion of the legal, political and social issues affecting the problem;
- Identification of the major government agencies, private sector and non-governmental organizations or citizens groups involved; and,
- The results found and conclusions drawn by the student.

A PowerPoint template will be available on the canvas website for use in constructing an electronic poster.

The written report should include the above noted information, as well as information on any field visits, additional content and/or or discussion, and provide appropriate in-text citations as well as a complete reference section or bibliography. Any academic citation style is fine.



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## Individual project timeline/grades (100 pts):

- Paper topic submitted Oct. 6, 2017 in class
- News article summary related to your topic due October 13, 2017 (10 pts)
- Paper outline due October 20, 2017 (5 pts)
- Rough Draft of paper due for peer review on November 17, 2017
- Peer review of another student's paper due back before Thanksgiving break (electronically sent to the student with the instructor cc'd - 10 pts)
- Final paper due via canvas December 8, 2017 (~5 pages, double spaced, 12 pt font - 40 pts)
- Poster to instructor by noon on December 7, 2017
- Presentation of posters on December 8, 2017 (40 pts)

3. **Group Project:** During the first week of the course, the class will be divided into 3 groups, assigned by the instructor, which will analyze a current solid waste disposal challenge. Each group will be responsible for preparing a communication piece (YouTube, infographic etc), to a lay audience, the importance of their topic with respect to public health. The group project should:

- Be based on information gathered by the group from: the periodic literature; government, NGO and other websites; and, the popular press.
- Present the group's topic-related facts, conclusions and recommendations to a lay audience.
- Consist of a communication piece (YouTube's no longer than 2-3 minutes) that is tasteful and obeys all copyright laws. These group communication pieces will be "debuted" during class on Friday, December 8, 2017.

**Note:** A single grade will be assigned to each group. However, the grade for each member of the group will be adjusted based on a peer evaluation performed by each member of the group. *It is critically important to your grade that everyone (including yourself) complete the peer evaluation form -- failure to do so could negatively affect your grade in the course as your final grade for the project will be adjusted according to the grades submitted by your peers.* A major purpose of the group project is for each member of the class to gain experience working together as a group to analyze a current issue or problem. This is a skill, which has become increasingly important in both private and public agencies and organizations.



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## Course Policies

### 1. **Academic Integrity** (<http://sph.washington.edu/students/academicintegrity/>)

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity.

The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website.

**Notice:** The University has a license agreement with VeriCite, an educational tool that helps prevent or identify plagiarism from Internet resources. Your instructor may use the service in this class by requiring that assignments are submitted electronically to be checked by VeriCite. The VeriCite Report will indicate the amount of original text in your work and whether all material that you quoted, paraphrased, summarized, or used from another source is appropriately referenced.

### 2. **Access and Accommodation** (<http://depts.washington.edu/uwdrs/faculty-resources/syllabus-statement/>): Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or [uwdrs@uw.edu](mailto:uwdrs@uw.edu) or [disability.uw.edu](http://disability.uw.edu). DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

### 3. **Written Assignments:** All written assignments must be submitted electronically through Canvas. Your written assignments will be graded on the substance of your report and on the effectiveness of its organization and presentation.



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4. **Grading:** Your final grade will be the average of the individual learning objective, assessments and field trip assignments (100 pts), your group course project (100 pts), individual paper and poster (100 pts) + any extra credit points.

**Websites:** Most of the required and supplement readings can be found on the internet. Additional addresses (URLs) will be provided throughout the quarter. Websites of interest include:

EPA Office of Solid Waste

<https://www.epa.gov/learn-issues/learn-about-waste>

Washington State Department of Ecology – Solid Waste and Financial Assistance

<http://www.ecy.wa.gov/programs/swfa/index.html>

Washington State Bills and Laws

Bills - <http://apps.leg.wa.gov/billinfo/>

RCWs/WACs - <http://www1.leg.wa.gov/LawsAndAgencyRules/>

King County Solid Waste Division Services

<http://your.kingcounty.gov/solidwaste/index.asp>

Public Health Seattle/King County – Solid Waste

<http://www.kingcounty.gov/healthservices/health/ehs/garbage.aspx>

Seattle Public Utilities

<http://www.seattle.gov/util/MyServices/Garbage/index.htm>



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**Solid Waste Management**  
**Course Schedule - Tentative**  
 ENVH 445 – Fall Quarter, 2017  
 Fridays – 1:30 p.m. to 4:20 p.m.

| Lec. No. | Date               | CLASS   |
|----------|--------------------|---|
| 1        | Friday<br>Sept. 29 | <ul style="list-style-type: none"> <li>• Introduction;</li> <li>• What is Problem-based learning and how does this room work?</li> <li>• EH/Public Importance;</li> <li>• Integrated SW Management concepts; and</li> <li>• SW Management Team</li> </ul>     |
| 2        | Friday<br>Oct. 6   | <ul style="list-style-type: none"> <li>• Laws and Regulations;</li> <li>• Collection and Transfer; and</li> <li>• Recycling and resource recovery / Source Reduction &amp; Reuse</li> <li>• Get to know your community partners (needs assessment)</li> </ul> |
| 3        | Friday<br>Oct. 13  | <b>Field Study –</b> <ul style="list-style-type: none"> <li>• City of Seattle North Transfer Station</li> </ul>   |
| 4        | Friday<br>Oct. 20  | <ul style="list-style-type: none"> <li>• SW Planning and Characterization</li> <li>• Risk Communication</li> </ul>  |
| 5        | Friday<br>Oct. 27  | <b>Field Study –</b> <ul style="list-style-type: none"> <li>• Cedar Grove Composting<br/> <a href="http://www.cedar-grove.com/about/technology/default.htm">http://www.cedar-grove.com/about/technology/default.htm</a> </li> </ul>                           |
| 6        | Friday<br>Nov. 3   | <ul style="list-style-type: none"> <li>• Sustainability / Climate change &amp; Solid Waste connection</li> </ul>  |
|          | Nov. 10            | No Class – Veterans day   |
| 7        | Friday<br>Nov. 17  | <ul style="list-style-type: none"> <li>• Group work</li> </ul>  |
|          | Nov. 25            | No Class - Thanksgiving   |
| 8        | Friday<br>Dec. 1   | <b>Field Study –</b><br>Cedar Hills Landfill<br><a href="http://www.metrokc.gov/dnrp/swd/facilities/cedarhills.asp">http://www.metrokc.gov/dnrp/swd/facilities/cedarhills.asp</a>   |
| 9        | Friday<br>Dec. 8   | <b>Student Term Paper Presentations</b>   |
| F        | Monday<br>Dec. 11  | <b>Final's time slot – 6:30-8:30 pm</b>   |



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## Individual project – Suggested Topics List

ENVH 445 – SOLID WASTE MANAGEMENT

Fall Quarter – 2017

### I. Purpose

The purpose of this project is to provide a forum for an in-depth examination of a solid waste issue of the student's choice.

### II. Possible Paper Topics

Construction Recycling “Green Building Programs”/Sustainable building

‘Take it back’ electronic recycling programs

E-waste – non-recycling impacts

Gas to Energy projects

Recycled tire products (crumb rubber used for sports fields or playground)

Community Litter Clean-up Programs

Bio-solids application

Biodiesel production/use

Recycled Earth Products

Disaster-related SW Disposal Issues (e.g. 9-11 World Trade Center site / SE Asia  
Tsunami / Hurricane Katrina)

War time SW disposal issues

Incandescent vs. compact florescent light bulbs

Clothing – 2ndary market

The practice of Garbage Picking

Kamikatsu, Japan's zero waste city

Policies banning a particular waste stream (France & Plastics; various municipalities  
and plastic bags/styrofoam, etc.)

Cradle-to-cradle design

**OR**

Make a proposal!