

# Course Syllabus

## Solid Waste Management and Environmental Health

### ENVH 445

Spring Quarter 2009  
(3 Credits)

**Time:** Tuesdays, 1:30 - 4:20 p.m.

**Location:** Health Science E-216

**Instructor:** **Tania M. Busch Isaksen, REHS, MPH**  
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E-mail: taniabusch@yahoo.com  
Office Hours: To be arranged by appointment

**Textbook:** A textbook is **not** required. However, for supplemental reading the following textbook is recommended. Hickman, Lanier H. *Principles of Integrated Solid Waste Management*, ISBN 1-883767-26-1, 1999.

Other reading materials will be distributed at no cost during the spring quarter

#### **Course Goals and Objectives:**

The primary goal of this course is to provide students with a comprehensive understanding of solid waste management from an environmental public health perspective. "Environmental health" is defined in the Washington State Public Health Improvement Plan of 1994 to be:

*an organized community effort to minimize the public's exposure to environmental hazards by identifying the disease or injury agent, preventing the agent's transmission through the environment, and protecting people from the exposure to contaminated and hazardous environments.*

Upon completion of this course, the student will be able to:

- Identify and discuss the public health, regulatory, planning, technical, and economic principles that influence the solid waste management system within Washington State.
- Describe appropriate methods to minimize the impact to the public's health from solid waste related activities.
- Analyze the importance of an integrated solid waste handling system – including source reduction, recycling and reuse, composting, landfilling and combustion.
- Develop a more informed opinion on a variety of solid waste related issues.

**Schedule:** The class schedule is identified in the attached "Course Outline."

**Homework:** There will be several homework assignments throughout the quarter. Assignments are intended to encourage critical thinking, while practicing skills important to the environmental public health professional.

**Paper:** Students will be required to prepare and present a research paper on a solid waste topic of their choice. Suggested topics are described in the attachment “Research Paper”

**Exams:** Examinations will include a midterm and final.

**Field Trips:** Three class-time field trips have been scheduled to visit various solid waste handling facilities. Attendance at each will be factored into your final grade. 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).**

**Grades:**

Homework:	(45 pts)
Field Trip Attendance/Special Assignments:	(35 pts)
Midterm Examination:	(50 pts)
Paper/Presentation:	(100 pts)
Final Examination or Project:	(50 pts)

**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  
<http://www.epa.gov/epaoswer/osw/index.htm>
- 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://dnr.metrokc.gov/swd/>
- Public Health Seattle/King County – Solid Waste  
<http://www.metrokc.gov/health/hazard/solidwaste.htm>
- Seattle Public Utilities  
<http://www.seattle.gov/util/Services/Garbage/index.asp>

# Solid Waste Management Course Schedule

ENVH 445 - Spring Quarter, 2009  
Tuesdays – 1:30 p.m. to 4:20 p.m.

Lec. No.	Date	CLASS	Lecturer
1	Tuesday March 31	<ul style="list-style-type: none"> <li>• Introduction;</li> <li>• EH/Public Importance;</li> <li>• Integrated SW Management concepts; and</li> <li>• SW Management Team</li> </ul>	Tania Busch Isaksen
2	Tuesday April 7	<ul style="list-style-type: none"> <li>• Laws and Regulations;</li> <li>• SW Planning /SW Characterization; and</li> <li>• Source Reduction &amp; Reuse</li> </ul>	Tania Busch Isaksen
3	Tuesday April 14	<ul style="list-style-type: none"> <li>• Collection and Transfer; and</li> <li>• Recycling and resource recovery</li> </ul>	Tania Busch Isaksen UW Recycling
4	Tuesday April 21	<p><b>Field Study –</b></p> <ul style="list-style-type: none"> <li>• Cascade Recycling Center <a href="http://wmnorthwest.com/cascaderecycling/">http://wmnorthwest.com/cascaderecycling/</a></li> <li>• Recycling product &amp; S.R./reuse research time</li> </ul>	
5	Tuesday April 28	<ul style="list-style-type: none"> <li>• <b>Midterm Examination;</b></li> <li>• Recycling product &amp; S.R./reuse Presentations</li> </ul>	
6	Tuesday May 5	<p><b>Field Study –</b></p> <ul style="list-style-type: none"> <li>• Cedar Grove Composting <a href="http://www.cedar-grove.com/about/technology/default.htm">http://www.cedar-grove.com/about/technology/default.htm</a></li> </ul>	
7	Tuesday May 12	<ul style="list-style-type: none"> <li>• Landfilling</li> </ul>	Cris Matthews, DOE Brian Buttler, Landau & Associates
8	Tuesday May 19	<p><b>Field Study –</b></p> <ul style="list-style-type: none"> <li>• Cedar Hills Landfill <a href="http://www.metrokc.gov/dnrp/swd/facilities/cedarhills.asp">http://www.metrokc.gov/dnrp/swd/facilities/cedarhills.asp</a></li> </ul>	
9	Tuesday May 26	<ul style="list-style-type: none"> <li>• Final Project work</li> </ul>	TB Isaksen
10	Tuesday June 2	<b>Student Term Paper Presentations</b>	
--	June 12	<b>Final Examination</b>	2:30 – 4:30 pm

# Research Paper

ENVH 445 – SOLID WASTE MANAGEMENT  
SPRING QUARTER – 2009

**I. Purpose**

The purpose of this paper is to provide a forum for an in-depth examination of a solid waste issue.

**II. Suggested Paper Topics**

- Construction Recycling “Green Building Programs”/Sustainable building
- Composting
- ‘Take it back’ electronic recycling programs
- E-waste – non-recycling impacts
- Gas to Energy projects
- Recycled tire products
- 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 / Asia Tsunami)
- War time SW disposal issues
- Food waste recycling
- Incandescent vs. compact florescent light bulbs

**OR**

Make a proposal!

**III. Final Product**

Each student will be responsible for:

- 1) Developing a written project paper that
  - a) Grammatically correct and supported by references;
  - b) Answers the question “What is the problem?” OR “What is the problem this initiative/program is trying to address?” **Please be specific;**
  - c) Addresses the Who, What, Why, Where, and How;
  - d) Describes the barriers encountered to fixing the problem; and
  - e) Gives me your opinion about what you think could be done to help solve the problem, or (in the case of a product/program) what you think about the product/program’s measurable outcomes.
- 2) Conducting a 10 minute power point presentation to the class.
- 3) Reviewing a written paper for a peer.

**IV. Grading**

- Paper 50%
- Class presentation 40%
- Peer review 10%
- **OVERALL CLASS GRADE – ~36%**

**V. SCHEDULE**

Choose a project topic	Tuesday, April 7 <sup>th</sup>
Draft paper due for peer review	Tuesday May 12 <sup>th</sup>
Deadline for Term paper	Tuesday, May 26 <sup>th</sup>
Class presentations	Tuesday, June 2 <sup>nd</sup>