Course Description: Waste is a universal problem in developed and developing nations alike. In this course we study the generation and composition of waste; the constituent elements of the “Waste Management Hierarchy” including landfill disposal and incineration, energy recovery facilities, recycling and composting, and waste reduction and product design; and, U.S. and European waste management policies and regulations.

Grading: 500 point system

- Mid-term Exam: 100 points
- Final Exam: 150 points
- Paper: 150 points
- Quizzes/Reading Summaries: 100 points

Required Texts:
- Garbology: Our Dirty Love Affair With Trash, Edward Humes
- Online Selections: Available on Gauchospace

The reading selections are a central component of this course and are therefore essential to your success on the mid-term exam, final exam and quizzes. Each week's reading assignment is listed in the syllabus and is available online through Gauchospace. In addition to the reading assignments listed on the syllabus, I will also post timely journal articles and other materials throughout the quarter. Please complete the readings before lecture. Instructions for logging on to the Gauchospace course website are available at: https://gauchspace.ucsb.edu/courses/login/index.php

Paper:

Your assignment is to choose a country (other than the United States) and describe its solid waste management practices. First, the paper should examine the country’s waste composition. What is produced and in what quantities? Second, describe what happens to the waste through the lens of the Waste Management Hierarchy.

- How much waste is disposed?
- How much is processed for energy recovery?
- What types of waste-to-energy technologies are employed and in what proportions?
- How much of the waste is recycled? How much is composted?
- What source reduction and reuse programs are employed? Most notably, what extended producer responsibility (EPR) legislation is in place and for which products or materials?

Papers shall be a minimum of 10 pages (of text) in length and shall not exceed 15 pages (of text). Charts and graphs shall not be included in the text, but rather should only be referenced in the text and included as appendices. Appendices shall not count toward the minimum or maximum paper length requirement. Papers shall be double-spaced, have one-inch margins and shall be 12 point Calibri font. You need not include a title page, but include your first and last name on each page.
**Paper Citations:** Note that every claim, statistic and assertion that is not common knowledge (e.g. gravity holds objects to the earth, etc.) must be documented and backed up by a credible source. Citations shall conform to American Psychological Association (APA) citation and format style or similarly accepted citation convention.

Acceptable Sources include: government studies, white papers, academic journals, trade journals, books, newspapers, etc. Your paper shall include citations from a minimum of ten (10) discrete sources. Unacceptable sources include: blogs, Wikipedia; and/or, overtly biased interest groups (e.g. [www.trashruintheearth.com](http://www.trashruintheearth.com)). Under no circumstances shall material from lecture be cited in your papers.

Papers will be scored as follows:

- Thoroughness of Hierarchy Discussion: 75 points
- Writing Quality: 25 points
- Length: 25 points
- Appropriate & Credible References: 25 points

Papers are due by **9:00 am on Tuesday, November 28, 2017**. Late papers shall be penalized by -30 points (20%) for each day that they are submitted beyond the due date.

**Attendance:**

Consistent attendance is crucial to performing well in this course. I will at times take attendance. Other times, quizzes, covering both reading assignments and lecture material, will be given or you will be asked to write a short summary of the reading. **Quizzes and/or reading summaries may not be made up due to absence.**

**Chronology of Lectures:** Please be sure to check Gauchospace frequently as I will post materials used during lecture (lecture slides, links to videos, etc.) following each class meeting.

1. **September 28: Course Intro and History of Waste Management**
   - Reading:
     - Humes: chapters 1 & 2
     - Phillips: Managing America's Solid Waste: pp. 8-18
     - Optional Audio – “Garbage” This American Life Broadcast:

2. **October 5: Waste Composition and Characterization; Introduction to Landfills**
   - Reading:
     - Humes: chapter 3
     - EPA: Municipal Solid Waste Generation, Recycling and Disposal in the US – 2011 Facts and Figures ([Executive Summary ONLY](http://www.trashruintheearth.com))
     - BioCycle: State of Garbage in America – October 2010

3. **October 12: Finish Introduction to Landfills and Recycling: legislation and practice of**
   - Reading:
     - Humes: chapter 4
     - The Evolution of Mixed Waste Processing Facilities: Executive Summary and pp. 30-39
     - The Green Fence of China
     - China to Ban Recovered Materials
4. October 19: Finish Recycling, Organics Management; Midterm Review
   Reading:
   • The State of Composting in the U.S.:
     o Section 1: 1-23, 28-31
     o Section 2: 40-43
     o Section 3: 70-71

5. October 26: **Midterm**; Finish Organics Management
   Reading:
   • The State of Composting in the U.S.: Appendices A, B,C,D
   • Humes: Chapter 5

6. November 2: Waste to Energy
   Reading:
   • Humes: chapter 7
   • Emerging Waste to Energy Technologies
   • Oneida Nation and Green Bay Ban the Burning of Waste:

7. November 9: Waste to Energy (continued)
   Reading:
   • Humes: chapter 8
   • Waste to Energy – A Global Perspective

8. November 16: Waste to Energy (finish); and, Nexus Between Diversion and Greenhouse Gas Reduction
   Reading:
   • Humes: Chapter 11
   • OECD Issues Paper: The State of Play on EPR: Opportunities and Challenges
   • Recycling Today: Extended Responsibility


   **Papers Due: Tuesday, November 28th 9:00 am** *(submit via Assignment on Gauchospace)*

10. November 30: Source Reduction and Reuse; and, Future of Solid Waste Management
    Reading:
    • Humes: Epilogue
    • City of San Jose Green Vision 2014 Annual Report: Executive Summary and pp. 36-49
    • Making Sense of the Mix
    • Multiple Layers
    • What Comes After Single Stream?

11. December 7: Final Exam Review
    Reading: None

12. December 14: **Final Exam: 7:30 PM - 10:30 PM**