

Environmental Impact: Using Gov Docs for Lifecycle Analysis

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About UC Santa Cruz

- Focus on undergraduate education
- Student Enrollment: 17,175
- Popular Majors: Environmental Studies, Biological Sciences, Economics, Psychology, etc...



About The UCSC Library

- Depository since 1965
- Two Libraries on campus: McHenry and the Science & Engineering Library
- Government Documents Dept is in McHenry - Arts, Humanities and Social Sciences library
- Collection Strengths: Environmental Studies, Economics, Legislative, Education, Politics

ENVS140: Environmental Policy

- Class Size: 80 -100 Students per quarter
- Class Focus - Address Environmental impact of various products
- Overview of the Assignment: What's a Lifecycle Analysis?
- What the Library does to help: website, worksheets, instruction sessions, drop-in help

Working with ENVS140 was not always this organized....

- Moved from students picking any product (CHAOS!) to supplying students with a list of products to choose from.
- Present list (9): Aluminum, flat glass, plastic resin, petroleum refining, pulp mills, steel mills, glass containers, nitrogenous fertilizer, cement

ENVS140: History 1995-2002



ENVS140: History 1995 - 2002

- History: 1995-Spring 2001
- 9/11's Impact on Spring 2002
 - It's a good idea to make backup copies of electronic material!

Current Conditions

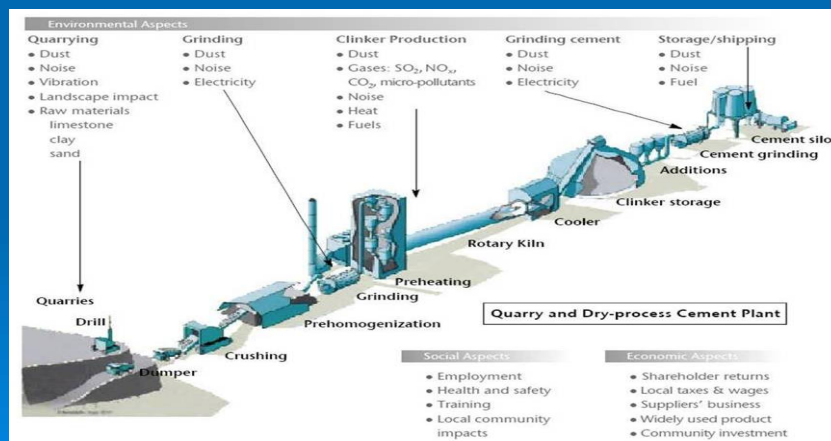


ENVS140: Spring 2003 -

- Class becomes more data driven
- Gov Pubs staff offer worksheet suggestions
- Products added and deleted based on staff input
- Staff provide even more detailed assistance with understanding government surveys and datasets

ENVS140: The Assignment

Example: Cement Manufacture



Elements of the Lifecycle Analysis

- Diagram showing how product is made
 - include raw materials, chemical processes if applicable
- How much of the product was made?
- How much energy is consumed in the process?
- Where is energy used and where is it lost?
- Where and what kind of pollutants are emitted?
- What is the regulatory or oversight of the industry?
- What industry groups or associations are involved?
- How can effects be mitigated?
 - Alternative energy sources, or fuel switching
 - reduction in raw materials, or other changes in processing, recycling
 - Are tax subsidies or credits appropriate? Are there other policies that would mitigate effects?

ENVS140: Documents Used

Dept of Energy

- Manufacturing Energy Consumption Survey (conducted every four years, 1991-2006)
- Industrial Technologies Program from DOE

Census Bureau

- Annual Survey of Manufacturers: Statistics for Industry Groups and Industries
- Pollution Abatement Costs and Expenditures, Current Industrial Reports

EPA

- Air Pollutant Emission Trends and National Emission Inventory
- Compilation of Air Pollutant Emission Factors

USGS

- Commodity Statistics and Information AND Historical Statistics for Mineral and Material Commodities in the United States

Faculty Relationships

- Faculty want to know what you can do to help their students
- A strong relationship with a professor can be very good for your department and your Library
- Be open to professors' needs but realistic about availability of information and what level of service you can provide

Final Thoughts

- EPA and DOE have a surprising quantity of information helpful for environmental questions
- Data driven assignments tend to help students avoid "magical thinking" to problem-solve complicated issues