Accounting Syllabi
Related to Pollution Prevention

- Management of Environmental Issues
  Mark Cohen, Vanderbilt University

- Environmental Accounting
  Christopher Stinson, University of Texas

- Seminar on Environmental Accounting
  Donald E. Stone, University of Massachusetts

- Waste Reduction, Treatment, and Disposal
  Mark White, University of Virginia
Management of Environmental Issues

Mark Cohen
Management 5596, Spring 1993
Owen Graduate School of Management
Vanderbilt University
GOALS OF THE COURSE:

When the first Earth Day celebration was held in 1970, environmentalists were viewed by most business and government leaders as a fringe group in society. Business leaders were almost unanimous in fighting against these "extremist" views. Management of most firms ignored environmental concerns. Aside from hiring an environmental compliance staff (generally engineers who dealt with the construction and maintenance of pollution control equipment), the only other "environmental management" issue might be lobbying Congress or EPA in favor of less stringent laws or regulations.

Today, the world is vastly different. 80% of the U.S. public claims to be an "environmentalist." Managers at major corporations are now beginning to integrate environmental considerations into literally every functional area of their organization. Some are adopting environmental quality as major components of their strategic plans and corporate cultures. Despite a growing need for "environmental literacy," few business schools offer courses dealing specifically with environmental issues. "Management of Environmental Issues" is an attempt to fill this gap at Owen.

The course will begin with an overview of the "state of the environment," and a brief look at the historical growth of the environmental movement, current public attitudes and likely future trends. We will then review some of the theoretical models of public policy, including both positive and normative theories. This section will include such issues as interest group politics, cost-benefit analysis, property rights and market approaches to solving environmental problems. We will also spend some time examining the current state of environmental law and enforcement issues. Following that introduction, we will examine topical environmental issues such as air pollution, wetlands, waste disposal, global warming, deforestation, etc. In each instance, the course will be designed to provide students with:

1) a basic technical/scientific understanding of the issue
   and the nature of any scientific controversy
(2) the public policy issues, such as the social costs and benefits of alternative policies, and the distribution of costs and benefits

(3) the political issues, such as interest group and media behavior

(4) strategic management concerns

Environmental issues now touch virtually every functional area of the firm. We will spend some time exploring the implications of environmental concerns on each functional area of the firm. For example: Finance: emission offsets & marketable permits (e.g. Chicago Board of Trade auction of pollution credits), green investing; Marketing: green marketing; Accounting: environmental auditing, SEC disclosure requirements; Operations: environmental TQM and product design issues; HRM: Community and worker "Right-to-Know" laws; Law Department: criminal liability of corporate officers; Strategic Management: new product development and marketing issues; International: free trade issues, international treaties and negotiations.

This course will not attempt to indoctrinate students from either the right or the left. Instead, we will hear from both sides - including readings from such favorite environmentalists as our new Vice-President elect as well as from some very serious scientists who would be more inclined to agree with Bush's characterization of Al Gore as "Ozone Man." My goal for this course is to help you understand both sides of these very complex issues, so that you can deal with future business-related environmental issues from an informed and rational perspective.

COURSE REQUIREMENTS:

The course will be a combination of lectures, cases, videos and guest speakers. An extensive reading list follows, and a Class Pack is available for purchase through the Bookstore. A few readings are also on reserve at the Owen library. One textbook (Rogene A. Buchholz, Principles of Environmental Management, 1993) has also been assigned.

A major part of the class grade is devoted to participation. Students are expected to come to each class having read the assigned material. Discussion questions will often be handed out in the prior class in order to facilitate reading and subsequent class discussions. Students may be called upon to discuss the readings.

Several short writing assignments will be given throughout the semester. Examples of the type of assignments to be required include: (1) brief summaries or analyses of assigned readings, (2) preparation of an "op-ed" piece suitable for publication in the Wall Street Journal, and (3) short in-class quizzes on the
readings. In most cases, these assignments will be done in groups of 3-5 students.

Finally, students will be expected to prepare a research paper on a topic of their choice. Students may choose to work individually or in a group. I will also consider approving requests to conduct field projects (either firm-specific or consumer-oriented marketing projects) that are related to this course. All projects, topics and groups must be approved in advance by the instructor no later than 5:00 PM, Wednesday, February 3, 1992. Reports on completed project and/or papers are due no later than 5:00 PM, Friday, April 23, 1992.

The paper will constitute 50% of the class grade. The remaining 50% will be equally divided up between class participation and other short written assignments.

READING LIST AND COURSE OUTLINE
I. INTRODUCTION TO COURSE
"Life in the Balance," (film, shown in class)

I. A. ENVIRONMENTAL CHALLENGES: AN OVERVIEW
Buchholz, chapters 1&2

I. B. CAN CAPITALISTS BE ENVIRONMENTALISTS?
Buchholz, chapter 3
Barry Commoner, "Can Capitalists be Environmentalists?" Business and Society Review, Fall 1990, p. 31-5. [on reserve in library]
II. BUSINESS AND ENVIRONMENTAL INSTITUTIONS IN THE U.S.

II. A. ENVIRONMENTAL MOVEMENT: PAST, PRESENT AND FUTURE

Buchholz, Chapter 4, pp. 102-10


Jo Ann Kwong, "In Whose Interest?" reprinted in Lehr, Rational Readings on Environmental Concerns, 1992 p. 277-289. [on reserve in library]

Stevenson Swanson, "For Poor, Pollution Just One More Hazard," Chicago Tribune, June 29, 1992, p. 1. [on reserve in library]

II. B. MEDIA COVERAGE OF ENVIRONMENTAL ISSUES

Guest Speaker, Mike Haggerty, Reporter and Visiting Fellow, Freedom Forum


II. BUSINESS RESPONSE TO ENVIRONMENTAL ISSUES


II. D. GLOBAL WARMING: SCIENCE OR POLITICS?

"Fear of Frying" - Guest Speaker, Cliff Russell, VIPPS

"Future Conditional: Global Climate Change," (film)

Buchholz, chapter 5.

Douglas Cogan, "Has Global Warming Begun?" in The Greenhouse Gambit: Business and Investment Responses to Climate Change, 1992, pp. 5-22. [on reserve in library]


### III. PUBLIC POLICY ANALYSIS OF ENVIRONMENTAL ISSUES

#### III. A. POSITIVE THEORIES OF ENVIRONMENTAL REGULATION

Buchholz, chapter 4, pp. 78-102.


see Buchholz, pp. 231-50 for background on Pesticides


#### III. B. ECONOMIC EFFICIENCY & POLICY OPTIONS FOR PROTECTING THE ENVIRONMENT


Peter Brimelow and Leslie Spencer, "You Can’t Get There from Here," *Forbes*, July 6, 1992, p. 59-64.


III. C. COST BENEFIT ANALYSIS & THE VALUE OF ENVIRONMENTAL AMENITIES


III. D. RISK PERCEPTION, NIMBY AND PUBLIC POLICY


HBS Case #9-390-085: Oxford Energy


IV. ENFORCEMENT OF ENVIRONMENTAL LAWS

Guest Speaker, Larry Lavender, Administrative Assistant to Congressman Spencer Bachus (R-Alabama)

"The Heat's On: Environmental Law Compliance in the 1990's" (film, shown in class)


Dan A. Bailey, "The Director As Polluter," Directors and Boards, Summer 1991, pp. 40-42. [on reserve in library]


V. CASE STUDIES IN ENVIRONMENTAL REGULATION

Toxic Release Inventory; Guest Speakers:
Jim Tramel, TN Environmental Council (tentative)
Ed Thackston, Professor of Civil & Environmental Engineering and Public Policy, Vanderbilt (tentative)

V. A. AIR POLLUTION

Buchholz, chapter 6


V. B. WASTE DISPOSAL

Buchholz, chapter 9, pp. 271-85.

Buchholz, chapter 12, pp. 374-87.


V. C. HAZARDOUS WASTES AND SUPERFUND

Buchholz, chapter 9, pp. 286-305.


V. D. WETLANDS

Buchholz, chapter 11


VI. MANAGING ENVIRONMENTAL ISSUES

Guest Speaker: Gary Minck, Senior Manager of Environmental Affairs, Northern Telecom

VI. A. CRISIS MANAGEMENT: OIL SPILL CASE

HBS CASE: Exxon Valdez


VI. B. GREEN PRODUCT DESIGN: TQM

Guest Speaker, Steve Hays, Gobbell Hays Partners


VI. C. GREEN MARKETING

Buchholz, chapter 12, pp. 388-94.


VI. D. GREEN FINANCE & ACCOUNTING


VII. OTHER GLOBAL ENVIRONMENTAL ISSUES

VII. A. DEFORESTATION & SPECIES EXTINCTION

Buchholz, chapter 10


VI. B. INTERNATIONAL TREATIES & FREE TRADE ISSUES


Environmental Accounting

Christopher H. Stinson
Accounting 380K, Spring 1994
University of Texas
Businesses use accounting systems to collect and aggregate information that is used by management, investors, lenders, and other parties. Since the National Environmental Policy Act was passed in 1969, there has been an extremely rapid increase in the number of state and federal environmental laws and regulations affecting businesses. This increase in laws and regulations has affected every traditional area of accounting (i.e., financial accounting for public reports, managerial accounting for internal analysis, and tax accounting). Environmental laws and regulations have even created a new area of substance “accounting” in the effluent monitoring reports that many firms must submit to regulators.

The class will review relevant laws and regulations, discuss how these impact the information being reported by different accounting systems (e.g., managerial accounting, tax accounting, financial accounting), and consider how business decisions are being affected by these different sources of information. This class will also consider the impacts of environmental regulations on product costs, the firm’s incentive systems, reporting requirements, etc. An environmental accounting class offers several potential benefits to students of environmental management (as well as to students in other areas) including (i) the opportunity to integrate decision-making across several areas of a business (e.g., simultaneous consideration of effects on managerial cost estimates, financial accounting results, and tax effects of a decision), and (ii) the opportunity to analyze the effects of environmental regulations on a business (in addition to simply understanding the underlying rules).

Course grades will be based on the following assignments:

- Written assignments (4) 20% [5% each]
- Course project 45%
- Quality of class participation 15%
- Final exam 20%
- FINAL GRADE 100%

The readings for this class will be taken from contemporary literature; they will be available on reserve in the library and in the course packet which you may purchase.
Environmental Accounting (Accounting 380K) Lecture Schedule
Monday, Wednesday – 11:00 AM-12:30 PM – UTC 1.118

19 January (W) Introduction to environmental accounting; overview of class.
24 January (M) Financial accounting: The discovery and cleanup process at a hazardous waste site.
7 February (M) Financial accounting: Accounting for pollution permits.
14 February (M) Managerial accounting: Environmental compliance costs.
16 February (W) Managerial accounting: Environmental compliance costs (continued).
21 February (M) Managerial accounting: Pollution-prevention planning.
23 February (W) Managerial accounting: Regulatory requirements for pollution-prevention planning.
28 February (M) Tax accounting: Environmental taxes and environmental policy.
2 March (W) Tax accounting: U.S. environmental taxes.
7 March (M) Tax accounting: International environmental taxes.
9 March (W) Summary case: Accounting for environmental mitigation costs at Boeing’s Everett plant.
14-19 March SPRING BREAK
21 March (M) Environmental audits: Due-diligence audits.
23 March (W) Environmental audits: Compliance audits.
28 March (M) Environmental audits: Regulatory policy.
30 March (W) Environmental issues and financial institutions.
4 April (M) Environmental issues and insurance companies.
6 April (W) Environmental issues and chemical companies.
11 April (M) Environmental issues and the oil/gas industry.
18 April (M) Materials accounting: Life-cycle analysis.
27 April (W) Presentation of student cases.
2 May (M) Presentation of student cases.
4 May (W) Presentation of student cases.
11-17 May Final Exams
Readings for this class will be taken from two general sources: chapters in the assigned texts and individual papers. The individual papers either are part of the reading packet for this class or will be handed out in class.

**Recommended Texts: (available for purchase at the Co-op)**


**Recommended Texts: (to be handed out in class)**

The business costs associated with environmental regulations have increased rapidly in the past 10-15 years. Traditionally, these costs have not been traced to specific production processes, but have been assigned to general overhead and then allocated across all of a firm's production processes. In the past, this has been an acceptable way of accounting for these costs because (i) the information system costs of tracking environmentally-related costs were relatively high, and (ii) the environmentally-related expenses were relatively low. The economic cost of product production was not grossly distorted by this traditional allocation method.

However, these traditional cost allocation methods are less appropriate than they once were because many environmental regulations have become more expensive, more specific, and more time-consuming to comply with. As these compliance costs increase relative to other costs, it becomes more important in competitive business environments to accurately assign these costs. Furthermore, many new regulatory policies are designed to pass social costs of the environmental impacts of business activities directly to the businesses; however, if firms aren't tracing these costs in an appropriate fashion, the regulations won't work as designed.

Assignment: Working in groups of no more than 4 students, locate a firm that is willing to work with you on this project. Your assignment is (i) to document the environmental issues that affect this firm, (ii) to describe the costs and benefits associated with these issues, and (iii) to describe how the firm accounts for these costs. These environmental issues may include (but are not limited to) non-hazardous waste generation, hazardous waste generation, recycling requirements, air pollution regulations, and water pollution regulations. In examining how the firm accounts for these costs, you should consider (at the least) whether there are any costs that specifically arise from particular parts of the firm's operations, how these costs are treated in the firm's cost accounting system, and whether environmental costs affect employee compensation. Your final report should discuss how the observed accounting practices might be improved as well as what factors constrain the firm's ability to modify its accounting practices.

Course Project Due Dates:

31 January: Hand in list of group participants.
9 March: Hand in signed letter of understanding between your group members and liaison for project firm.
30 March: Hand in draft list of environmental costs that your project firm faces.
27 April, 2 May, and 4 May: In-class presentation of project results (order determined randomly).
4 May: Course Project writeup due at beginning of class
Environmental Accounting (Accounting 380K) Class Assignments
Monday, Wednesday -- 11:00 AM-12:30 PM – UTC 1.118

1. 19 January (W)  Introduction to environmental accounting: overview of class.
Objective: To provide an overview of the topics encompassed by environmental accounting.

Reading Assignment:

2. 24 January (M)  Financial accounting: The discovery and cleanup process at a hazardous waste site.

Objectives:
- Review Federal laws affecting hazardous waste-site cleanup: RCRA, CERCLA, and SARA.
- Understand process of (and associated problems with) identifying Superfund sites, establishing a cleanup plan, conducting site cleanup, and monitoring the site after cleanup.
- Understand how hazardous-waste site cleanup costs are generated.
- Review alternatives to current laws (and their potential problems).

Reading Assignment:

Discussion Questions:
- What are the major steps in an EPA-mandated cleanup of a hazardous waste site?
- What are the different costs that businesses potentially face in cleaning up hazardous waste sites?


Objectives: Understand contemporary GAAP disclosure requirements regarding environmental liabilities.
Understand probable changes in GAAP disclosure requirements regarding environmental liabilities.

Reading Assignment:
Based on Zuber and Berry (1992) and Surma and Vondra (1992), what environmental disclosures are required under GAAP? Where are these disclosures made?

Prepare answers to the Creative Crockery case.

What is the basis of Abelson's (1991) criticism of the actual disclosures?


Discussion Questions:

What factors would affect whether there is (e.g., Bailey 1992) or isn't (e.g., McMurray 1992) a change in stock price in response to an announcement of an anticipated environmental liability?

Blacconiere and Patten (1994) find a positive market reaction to voluntary environmental disclosures. Aeppel (1993) describes some additional voluntary disclosures. What factors encourage and discourage voluntary (i.e., non-mandated) disclosures?

What contingent environmental liabilities do Barth and McNichols (1994) find correlate with firms' market value? What are the implications of these results for standards-setting bodies such as FASB?

Objective: Review contemporary research on the effect of unreported environmental liabilities and voluntary disclosures on the market value of publicly-traded corporations.

Reading Assignment:


Discussion Questions:

What factors would affect whether there is (e.g., Bailey 1992) or isn't (e.g., McMurray 1992) a change in stock price in response to an announcement of an anticipated environmental liability?

Blacconiere and Patten (1994) find a positive market reaction to voluntary environmental disclosures. Aeppel (1993) describes some additional voluntary disclosures. What factors encourage and discourage voluntary (i.e., non-mandated) disclosures?

What contingent environmental liabilities do Barth and McNichols (1994) find correlate with firms' market value? What are the implications of these results for standards-setting bodies such as FASB?

Objective: Understand contemporary SEC disclosure requirements regarding environmental liabilities.

Reading Assignment:


Discussion Questions:

- Based on Zuber and Berry (1992), Surma and Vondra (1992), and the three SEC documents, what environmental disclosures are required by the SEC? Where are these disclosures made? What is the relationship between FASB requirements and SEC requirements?
- What business decisions are likely to be influenced by current GAAP and SEC requirements for disclosure of environmental assets and liabilities?
- Review the 1992 annual report for the Fortune 100 manufacturing company you were assigned. What disclosures related to environmental issues are made in this annual report? Where in the annual report are each of disclosures made? Which of these disclosures are required? (Hand in; not graded).

6. 7 February (M)  Financial accounting: Accounting for tradeable pollution permits.

Objectives:

- Understand the economic and regulatory rational for pollution permits.
- Understand the accounting treatment of pollution permits.

Reading Assignment:


Discussion Questions:

• What are tradeable pollution permits (Cairncross 1992, GAO 1992), who issues them (Anonymous 1993, Byrd and Zwirlein 1993, Johannes 1993, Taylor 1992), and how are they traded (Wald 1992)?

• How should firms account for these permits under GAAP (Ewer, Nance, and Hamlin 1992)? Will additional disclosure required by the SEC? How do regulatory bodies account for these permits (Klebnikov 1993)?

• What are the advantages and disadvantages of using pollution permits as regulatory tools (Cairncross 1992, Klebnikov 1993)? How does accounting treatment affect the business to sell or purchase tradable permits?


Objective: Begin to understand international financial accounting requirements for environmental issues.

Reading Assignment:


Written Assignment Due Noon 8 February:

• For the country that you are assigned, identify all external (i.e., financial accounting) reporting requirements associated with environmental accounting issues. Your analysis should include both the treatment of remediation costs and the recognition of environmental liabilities. A summary of all reports will be distributed in class on 9 February.

Discussion Questions:

• Be prepared to discuss the main results in the report you prepared on your assigned country.

• The two articles from the *Economist* illustrate that many countries have environmental problems. How are remediation and regulatory costs reflected in financial statements around the world?

• How do Canada’s financial reporting requirements differ from the U.S.’s?
8. 14 February (M) Managerial accounting: Environmental compliance costs.

Objectives:
- Understand the main environmental compliance costs that affect businesses.
- Understand costs and benefits associated with tracing these costs to their “source” process.

Reading Assignment:

Discussion Questions:
- What are the advantages of tracing environmental costs in the manner proposed in the articles by Todd (1992) and Spitzer (1992)? What factors do Spitzer (1992) and Hamner and Stinson (1993) suggest have kept companies from adopting these practices?
- Some countries currently require firms to take back and recycle their product packaging. Additionally, there are proposals to make businesses take back and recycle (or dispose of) worn-out products. From a managerial accounting perspective, how should these potential costs be treated? From a financial accounting perspective, how should these contingent liabilities be treated? What do companies do currently?

9. 16 February (W) Managerial accounting: Environmental compliance costs (continued).

Objectives: Evaluate how four different firms account for environmental compliance costs.

Reading Assignment:

Discussion Questions:
- What environmental compliance costs affect each of these four firms?
- When should costs arising from environmental regulations be traced to their “source” within the company and when should they be treated as part of general overhead?
- What similarities do you note across firms in how these costs are accounted for?
- What differences do you note across firms in how these costs are accounted for?
10. 21 February (M) Managerial accounting: Pollution-prevention planning.

Objectives:
- Understand the motivation for "pollution prevention".
- Understand how to financially evaluate pollution prevention opportunities.

Reading Assignment:

Discussion Questions:
- What is "pollution prevention"? Is all pollution prevented?
- What is total cost assessment (Chapter 3 in *Total Cost Assessment*)? Why might this be preferable to conventional cost assessment?
- Read the Lightolier case (Wittman 1991). Critique the analysis provided by the consultant.

11. 23 February (W) Managerial accounting: Regulatory requirements for pollution-prevention planning.

Objectives: Understand the main regulatory requirements for pollution-prevention planning.

Reading Assignment:

Discussion Questions:
- What federal *requirements* are there for pollution prevention?
- Hamner and Stinson (1994) describe some managerial accounting practices that must be reported in some states. What are the economic benefits of mandating certain managerial accounting practices? What are the economic costs of these requirements? How would you decide whether the regulation's costs were worth their potential benefit?
12. 28 February (M)  Tax accounting: Environmental taxes and environmental policy.

Objective: Understand the economic motivation for using taxes as a tool for implementing environmental policy.

Reading Assignment:

Discussion Questions:
  • How are taxes used to implement environmental policy (Cairncross 1992, Schmidheiny 1992)?
  • What are the economic effects of energy taxes (Perlis 1992, Stinson 1993)?


Objective: Understand the main federal taxes affecting environmental policy.

Reading Assignment:

Discussion Questions:
  • Does the current “Superfund” tax fairly tax those who are responsible for the U.S.’s hazardous waste problems?
  • How does the tax treatment of Superfund cleanup costs differ from the financial accounting treatment of those costs?

14. 7 March (M)  Tax accounting: International environmental taxes.

Objective: Begin to understand some of the tax policy options that have been implemented internationally.

Reading Assignment: No reading assignment; review lecture handout after class.

Written Assignment Due Noon 6 March:
  • For the country that you are assigned, identify all environmental taxes imposed by the federal government.

A summary of all reports will be distributed in class on 7 March.

Discussion Question:
  • Be prepared to discuss the main results in the report you prepared on your assigned country.
15. 9 March (W)  Summary case: Accounting for environmental mitigation costs at Boeing's Everett plant.

Objectives: Review financial, managerial, and tax accounting treatment of some environmental costs.

Reading Assignment:

Written Assignment Due at 11:00 AM in class:
- Study the Boeing case materials (Soderstrom and Stinson 1994). How should Boeing account for the mitigation costs imposed by the City of Everett? Where does Boeing have flexibility in their accounting decision, and where do regulators or accounting standards impose binding constraints? What management issues have to be considered with these accounting decisions? Justify your conclusions.

Discussion Questions:
- Be prepared to describe and defend the recommendations you make in your write-up.

Course Project Progress Report Due:
- Hand in signed letter of understanding between your group members and liaison for project firm.

14-19 March  SPRING BREAK

16. 21 March (M)  Environmental audits: Due-diligence audits.

Objectives:
- Understand the motivation for due-diligence audits.
- Understand some of the problems that arise during the course of due-diligence audits.

Reading Assignment:

Discussion Questions:
- What are the different kinds of environmental audits (CICA 1992, CH2M Hill 1993)?
- What is a due-diligence audit? How does a due-diligence (or "transactional") audit differ from compliance financial-statement audits?
• Although most people usually think of accountants as being responsible for audits, most transactional audits are undertaken by environmental engineers. Environmental engineers typically limit their liability (in the event of audit failure) to the cost of the transactional audit (Skellenger et al. 1992). CPAs may have unlimited liability if they fail to discover material mistakes in financial statements. How will this differential liability affect auditor behavior and user confidence in the different types of audits?

17. 23 March (W) Environmental audits: Compliance audits.

Objectives:

• Understand the motivation for compliance audits.
• Understand some of the problems that arise during the course of compliance audits.

Reading Assignment:


Discussion Questions:

• How does a compliance audit differ from a traditional audit?
• How does an operational audit differ from compliance or transactional audits? Who bears the cost of mistakes made in an operational audit?
• What environmental issues does Rousey (1992) suggest should be considered by an independent auditor when auditing a firm’s financial statements?

18. 28 March (M) Environmental audits: Regulatory policy.

Objectives:

• Understand U.S. and international regulatory policy regarding environmental audits.
• Understand some of the incentive problems created by these regulatory policies.

Reading Assignment:


**Discussion Questions:**

• What incentive problem associated with compliance audits is described by Moore (1992)? How have the EPA and the U.S. Department of Justice responded to this problem? Should they do more?

**Written Assignment Due at 11:00 AM in class:**

• In the next four classes, we will review how environmental issues affect financial institutions, insurance companies, chemical companies, and oil/gas companies. Prior to these classes, you are to choose one of these four industry groups and you will become relatively expert in how environmental issues and costs affect your chosen industry. Write a 2-5 page description (with references) of the major environmental issues, potential regulatory (and other) costs, and prospective benefits affecting your chosen industry both in the U.S. and in international markets.

19. **30 March (W)** Environmental issues and financial institutions.

**Objective:** Understand current and future environmental issues affecting financial institutions.

**Reading Assignment:**


**Discussion Questions:**

• What environmental issues and costs should proactive financial-institution managers be thinking about?

• If this was the industry group you chose for your 28 March written report, be prepared to discuss the main points in your report.

**Course Project Progress Report Due:** Hand in draft list of environmental costs that your project firm faces.

20. **4 April (M)** Environmental issues and insurance companies.

**Objective:** Understand current and future environmental issues affecting insurance companies.

**Reading Assignment:**


**Discussion Questions:**

• What environmental issues and costs should proactive insurance-company managers be thinking about?

• If this was the industry group you chose for your 28 March written report, be prepared to discuss the main points in your report.

21. 6 April (W)  
**Environmental issues and chemical companies.**

**Objective:** Understand current and future environmental issues affecting chemical companies.

**Reading Assignment:**


**Discussion Questions:**

• What environmental issues and costs should proactive chemical managers be thinking about?

• If this was the industry group you chose for your 28 March written report, be prepared to discuss the main points in your report.

22. 11 April (M)  
**Environmental issues and the oil/gas industry.**

**Objective:** Understand current and future environmental issues affecting the oil/gas industry.

**Reading Assignment:**


**Discussion Questions:**

• What environmental issues and costs should proactive oil/gas managers be thinking about?

• If this was the industry group you chose for your 28 March written report, be prepared to discuss the main points in your report.

23. 13 April (W)  
**Materials accounting: Introduction.**

**Objective:** Understand the motivation for materials accounting.

**Reading Assignment:**

Discussion Questions:

- What is materials accounting (NRC 1990)?
- From an accounting systems perspective, what problems and opportunities does materials accounting create?

24. 18 April (M) Materials accounting: Life-cycle analysis.

Objective: Understand the motivation and limitations of life-cycle analysis.

Reading Assignment:


Discussion Questions:

- What is life-cycle analysis? What role can a firm's accounting staff play in undertaking life-cycle analysis?
- BSO's president says the company won't repeat the exercise of extensive environmental disclosure (reviewed by Huizing and Dekker [1992]) because much of their environmental impact is "forced" on them by the companies from whom BSO buys products and supplies and, consequently, BSO's actual impact is overstated. What are the implications of this perspective for future disclosures of environmental impacts in corporate annual reports?


Objective: Understand some of the scientific and policy issues involved in assessing the impact of emissions.

Reading Assignment:


Discussion Question:

- Why might managers be interested in estimating the impact of their emissions rather than simply satisfying themselves (e.g., via compliance audits) that they are complying with current regulatory limits?


Objective: Understand the major federal requirements for materials accounting.

Reading Assignment: No reading assignment; review lecture notes after class.

Discussion Question:

- How do federal requirements for materials accounting affect the design of a firm's accounting systems?
27. 27 April (W) Presentation of Course Project results.

28. 2 May (M) Presentation of Course Project results.

29. 4 May (W) Presentation of Course Project results.

Written Assignment Due at 11:00 AM in class: Course Project writeup due.

Final Exam: Takehome final exam will be handed out at the end of class; this exam will be due in my office at the end of our regularly-scheduled exam time.

11-17 May Final Exams
Seminar on Environmental Accounting

Donald E. Stone
SOM 591A, Fall 1993
School of Management,
University of Massachusetts
SOM 591A*

SEMINAR ON ENVIRONMENTAL ACCOUNTING

FALL SEMESTER 1993

Mondays, 6:30 - 9:00 PM, SOM rm 102  Sch. No. 667925

COURSE DESCRIPTION:

Environmental accounting is concerned with the ways in which existing accounting theory and practice fail to adequately account for the increasing environmental concerns and crises which are attributed to the economic activities of nations, regional economies, and organizations (especially business and commercial organizations). Equally important, environmental accounting is also concerned with developing new and improved theory and practices that will contribute in positive and constructive ways to developing more ecologically sound and sustainable economic decisions and performance by governments and organizations.

This concern for the environmental implications of economic activity and decision making is often expressed under the term, sustainable development. Given credence and currency first by the United Nations World Commission on Economic Development (Brundtland) Report in 1987, and reinforced by "The Environmental Summit" in 1992, sustainable development has been defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." There have been many other definitions suggested, and the concept has been debated and challenged, but I believe it represents the most compelling and challenging problem facing this generation, and it is of paramount relevance to accounting and accountants.

There can be no meaningful definition or implementation of sustainable development without substantial modifications to existing accounting practice and the development of a wide range of new accounting concepts and techniques to support efforts of governments and organizations to achieve the goals of sustainable development.

Within the last five years, accounting for the environment has moved from being considered the most marginal and irrelevant of topics to its present position of occupying an increasingly central role in the deliberations of the worldwide accounting profession. There is a large and rapidly increasing body of literature in the accounting and business
journals covering a broad spectrum of issues and topics that are legitimately included under the heading, ENVIRONMENTAL ACCOUNTING. There is a steadily increasing amount of environmentally related reporting and disclosure in published corporate annual reports, and more explicit concern with such reporting taken by the accounting profession and regulatory agencies. Even reactionary and environmentally less sensitive businesses are acutely aware of the increasing environmental cost, risks and liabilities in their activities and decision-making, while more environmentally pro-active businesses are seeing environmental strategy and performance as a source of competitive advantage and profitability. These developments have led to modification of existing accounting practices and the creation of a variety of new techniques and practices that constitute a substantial and growing environmental accounting practice.

The purpose of this seminar will be to begin to explore this growing literature on environmental accounting and to learn about some of the successful (and unsuccessful) efforts and applications in environmental accounting practice. We will pursue this goal through a substantial reading program, centered around the recently published book by Rob Gray, ACCOUNTING FOR THE ENVIRONMENT, plus a number of journal articles and other readings assembled by the instructor (see attached partial reading list) and identified by the individual research efforts and interests of the seminar participants. We will also make use of published annual reports, case studies, and even plant visits to environmentally concerned organizations in the area. Indeed, one of the primary goals of this experimental seminar is to identify and develop suitable and effective materials and methods for learning more about environmental accounting.

In addition to the above activities, each seminar participant will be responsible for researching and presenting a written and oral report on some topic related to environmental accounting. Also, we may work some case studies together which could require written reports. No formal examinations are likely, but there will be some formal effort to secure accountability for each participant's efforts and accomplishments for the semester.

WHO SHOULD TAKE PART IN THIS SEMINAR?

This seminar is open to graduate students and advanced undergraduate (usually seniors) with a serious interest in and concern for environmental issues in management. It is not limited to accounting majors and may even be appropriate for non-SOM students. The seminar will surely be enriched by a multiple disciplinary participation since the environmental concerns and potential solutions are also clearly multi-disciplinary in nature.

Due to the accounting focus, however, it is expected that participants have at least a basic background in financial and managerial accounting (Accounting 221 and 222 for undergraduates, SOM 630 and 631 for graduate students) or the consent of the instructor.

Enrollment will be limited to a maximum of ten students. Participation by other faculty is welcome.
TIME AND PLACE:

The seminar will normally meet once a week, tentatively scheduled for Monday evenings, 6:30 - 9:00 PM. The meeting time is negotiable and will be reestablished to meet the needs and desires of the participants. Some field trips to local organizations are also to be arranged, and guest speakers will be invited as appropriate and available.

INSTRUCTOR:

Professor Donald E. Stone
201-E SOM Building 545-5685

Don Stone has been interested and concerned with environmental accounting issues for several years, and has recently written two working papers (see partial reading list) on environmental accounting which were presented at professional meetings over the past two years. He has also been invited to be an Associate and Visiting Research Fellow at the Center for Social and Environmental Accounting Research (CSEAR) at the University of Dundee, (SCOTLAND), a post he will fill on his sabbatical leave beginning January 1994.

TOPIC OUTLINE:

I. Introduction to the Issues
   A. Business and the Environment: The Challenge for Accounting and Finance
   B. Business and the Environment: Agenda, Attitudes, and Actions
   C. Sustainability and Sustainable Development
   D. Natural Capital: the Accounting Challenge

II. Ecological and Environmental Limitations of Traditional Accounting

III. Management Information and Accounting for Environment
   A. Greening the Organization: Getting Started
   B. Environmental Policy: Adoption, Establishment, and Implementation
   C. Environmental Audit: Assessment, Review, Management, and Attestation
   D. Accounting and the control of Energy Costs
   E. Accounting and controlling for the costs of waste, packaging, and recycling
   F. Total Environmental Quality Management and Accounting
   G. Investment, Budgeting, and Appraisal: Environment at the Heart of the Accounting and Financial System
   H. Life Cycle Analysis and Assessment
IV. External Reporting, Accountability and Disclosure for Environment
   A. The Greening of Finance: Bank Lending, Insurance and Ethical/Environmental Investment
   B. Environmental Legislation: Risks, Liabilities, and Disclosure
   C. External Reporting I: Reporting within the financial framework
   D. External Reporting II: Non-financial reporting.
   E. External "Social" Audits

V. Future Directions
   A. Accounting and reporting for a future: Sustainability, Accountability, and Transparency
   B. A change in paradigm? Is truly sustainable development possible?
PARTIAL READING LIST:


(This will be the principal text, available at the Textbook Annex. It contains a 26 page bibliography with over 600 entries. There is no shortage of published material, although some of it may be hard to find at the UMASS library)


Stone, Donald E., "Accounting and Sustainability" 1991

"Management Accounting and Sustainable Development" 1993


Goodland, Daly, El Serafy and von Droste, ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT: BUILDING ON BRUNDTLAND, UNESCO, 1991


ACCOUNTING, ORGANIZATIONS AND SOCIETY, Special issue on environmental accounting, Vol. 17, No. 5, 1992


Repetto, Robert, "Accounting for Environmental Assets", SCIENTIFIC AMERICAN, June 1992


WCED, OUR COMMON FUTURE (The Brundtland Report), 1987


Meadows, Meadows, and Randers, BEYOND THE LIMITS: Confronting Global Collapse, Envisioning a Sustainable Future, 1992

Buhr, Nola "Environmental Accounting Comes of Age", The Western Business School, University of Western Ontario Working Paper Series, No. 91-09 (1991)


(The above listing is intended to be suggestive, not exhaustive).
Seminar on Environmental Accounting

Mark A. White

*Commerce 470, Spring 1992
*McIntire School of Commerce,
*University of Virginia
The Four Laws of Ecology

1. Everything is connected to everything else.
2. Everything must go somewhere.
4. There is no such thing as a free lunch.

Barry Commoner
_The Closing Circle, 1971_

PROFESSOR: Mark A. White
211 Monroe Hall (212) 924-7365

CLASS HOURS: Tues Thurs 12:30 - 1:45 PM

OFFICE HOURS: Tues Wed Thurs 10:00 - 11:30 AM, and by appointment

COURSE OBJECTIVES: The management of environmental issues ranks as one of the leading concerns for businesspersons in the 1990s. A growing litany of problems (global warming, acid rain, ozone layer depletion, tropical rainforest destruction, air and water pollution, hazardous waste disposal and widespread species extinctions) is altering business practices throughout the world and will continue to influence them well into the next century. Increasingly, concerned individuals in the business sector are adding their voices to the chorus of consumers, government regulators and environmental activists demanding cleaner air, cleaner water, better management of non-renewable resources and less reliance on fossil fuels. This course will introduce students to a wide variety of environmental problems and discuss solutions advanced by the business community. By the end of this course, students should have gained a deeper understanding of the environmental challenges facing tomorrow’s managers and be better prepared to evaluate alternative methods for their resolution. Course pedagogy will consist of lectures, case studies, video presentations, field trips and talks by guest speakers. Participants are expected to take an active role in class discussions.


Various assigned readings on reserve in the Commerce Library
GRADING POLICIES: Grades will be assigned on a 'plus/minus' basis. The relative importance of assignments is as follows:

Midterm Exam: 30 percent
Final Exam: 30 percent
Paper/Presentation: 25 percent
Class Participation/Assignments: 15 percent

100 percent

Exams will consist of objective questions and short essays designed to test your understanding of concepts and factual material. No make-up exams will be given. Homework assignments and/or pop quizzes will be assigned as the need arises. Your performance on these instruments will be factored into the class participation portion of your final grade. As one small step towards putting the ideals of this course into practice, please submit all written assignments on previously-used paper.

The paper assignment is intended to allow you to explore a particular topic in environmental management in greater depth. In choosing a topic, you should focus on a specific business solution to a specific environmental problem. For instance, you may wish to discuss the pros and cons of degradable plastic as a solution to the growing problem of waste disposal, or the implications resulting from widespread adoption of "vampire" machines to recycle CFCs from automobile air conditioners. Do NOT spend a great amount of space discussing the dangers of a particular problem. Rather, concentrate your efforts on explaining how your solution works and why you think it will solve the problem. Look at your problem from all sides and be sensitive to Garrett Hardin’s literate, numerate and ecolate “reality filters” in crafting your arguments. Do not just hand in a book report containing a summary of the popular press’ views on your topic – take a stand and indicate why your solution is the best solution. Of course, your paper must be prepared in a professional manner with complete footnotes, bibliography, etc. See The MLA Handbook for Writers of Research Papers, 3rd. Ed. (New York: Modern Language Association of America, 1988) for recommended style sheets.

Each of you must present the gist of her or his paper to the class towards the end of the semester. Presentations are to last 5-7 minutes, with 3-5 minutes left for questions. This means that you must be EXTREMELY well-organized and should rehearse your performance to ensure you do not run over the time limit. You might consider giving a "poster talk," in which the main points of your arguments are summarized in panels on a large poster or flip-chart. The exact forum and amount of time devoted to each presentation may change, subject to class enrollment.

Tentative Schedule

Thurs  16 Jan 92  Introduction


VIDEO  “Spaceship Earth,” 1990, 25 minutes
Tues  21 Jan 92  History of the Environmental Movement


ASSIGNMENT  “Famous Figures in Environmentalism”

Tues  23 Jan 92  Limited Resources


VIDEO  “World Population,” 1990, 6 minutes


Thurs  28 Jan 92  Economics and the Environment


S92 Commerce 470

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M. A. White
**Thurs 30 Jan 92**  **Ethics and the Environment**


**SPEAKER**  Ed Freeman (Darden School)

**Tues 4 Feb 92**  **Corporate Environmental Responsibility**


**ROLE PLAY**  "Universal Widgets"

**Thurs 6 Feb 92**  **Waste Disposal**

Naar, Chapter 1 ("Garbage")

**Tues 11 Feb 92**  **Hazardous Waste**

Naar, Chapter 2 ("Bad Chemistry")

**VIDEO**  "The Rush to Burn," 1989, 35 minutes

**Thurs 13 Feb 92**  **Water Pollution**

Naar, Chapter 3 ("Troubled Waters")

**CASE**  BMP, "The Big Spill: Oil and Water Still Don't Mix," pp. 43-60.

**VIDEO**  "The Wrath of Grapes," 1987, 15 minutes

**Tues 18 Feb 92**  **Air Pollution and Acid Rain**

Naar, Chapter 4 ("Air Pollution")

Naar, Chapter 5 ("Acid Rain")

**Thurs 20 Feb 92**  **Deforestation and Loss of Species Diversity**

Naar, Chapter 6 ("Deforestation")


Wilson, Edward O. "Threats to Biodiversity," in *Managing Planet Earth*, pp. 49-60.

**CASE**  BMP, "The Amazon Rain Forest," pp. 8-25.

**VIDEO**  "Our Threatened Heritage," 1988, 19 minutes
Tues 25 Feb 92 Global Warming

Naar, Chapter 7 ("Global Warming")


Schneider, Stephen H. "Debating Gaia." Environment 32 (May 1990), pp. 5-9, 29-30, 32.

Thurs 27 Feb 92 Depletion of the Ozone Layer


VIDEO "Prophets and Loss," 1991, 49 minutes

Tues 3 Mar 92 Radiation and Nuclear Energy

Naar, Chapter 8 ("Radiation")


Thurs 5 Mar 92 Environmental Legislation

Naar, Chapter 10 ("Environmental Law")

CASE BMP, "The Forgotten Dumps," pp. 130-140.

SPEAKER Peter Glubiak (CEM Group)

MIDTERM EXAM (Take Home)

Tues 10 Mar 92 The Role of Environmental Organizations

Naar, Chapter 11 ("Eco-Action")


Thurs 12 Mar 92 Green Consumerism


SPEAKER David Hartmann (McIntire School of Commerce)

Tues 17 Mar 92 Spring Break

Thurs 19 Mar 92 Spring Break
Tues 24 Mar 92    Energy Use and Alternative Energy Sources
Naar, Chapter 9 ("Renewable Energy")

SPEAKER    David Roop (VEPCO) ... pending

Thurs 26 Mar 92    Waste Management and Recycling

Tues 31 Mar 92    Green Business - Overview

SPEAKER    Bruce Smart (World Resources Institute)

Thurs 2 Apr 92    Marketing and the Environment

Tues 7 Apr 92    Environmental Finance - Life Cycle Analysis and Lender Liability
Thurs 9 Apr 92  Environmental Finance - Green Investing


Tues 14 Apr 92  Accounting for the Environment


PAPERS DUE

Thurs 16 Apr 92  Paper Presentations
Tues 21 Apr 92  Paper Presentations
Thurs 23 Apr 92  Paper Presentations
Tues 28 Apr 92  Sustainable Development


SIMULATION  “Balance of the Planet”

FINAL EXAM (Take Home)