PUBP 8803: Sustainability and Environmental Policy
Bryan Norton, School of Public Policy

PUBP 8803 is a start-from-scratch examination of the literature and practices of sustainability. The course undertakes to *define* sustainability by analyzing alternative disciplinary definitions and approaches and by incorporating economic, ethical, and political approaches to sustainability into a comprehensive, adaptive management framework for policy process, and by introducing a broadly procedural approach to identifying and pursuing sustainability goals. The course has no prerequisites: it is designed for graduate students from any field at Georgia Tech who are interested in gaining a broad and well founded understanding of the theoretical and practical issues surrounding the sustainability movement. While no background in policy studies will be assumed, students will get a basic introduction to policy ideas and issues as they affect environmental sustainability policy. The take-home mid-term and final will involve applications of course ideas to real-world problems; a class project will provide opportunities to work in teams and to address specific sustainability issues of interest to students. For more information and a copy of last year's syllabus, e-mail bnorton@gatech.edu.

PUBP 8803: Sustainability and Environmental Policy

Instructor: Bryan Norton
Spring Term, 2009
Thursdays, 3:05-5:55
DM Smith, Room 303
Office: 300 DM Smith Building
Office Hours: T-Th, 1:45-2:45 and by appointment
bnorton@gatech.edu

PUBP 8803: Sustainability and Environmental Policy

COURSE TOPICS:

"Sustainability" has become both an over-used buzzword AND the name of an important new field of study. In this class, we will take the term seriously, and explore broadly—and in some cases, deeply—the *policy* dimensions of the field that might be called "sustainability studies." Sustainability, and one's view of it, turns out to be all tied up with one's idea of technology and the special roles of technology in economic development and also in environmental management. To put the question simply: Is advanced and rapidly changing technology the problem? Or, is it the solution? So, a central topic of the class must be to understand the potentials of technological development to respond to environmental problems.

An optimistic answer to these questions—viewing advancing technologies as solutions—is supported by a belief that resources of different types are readily *substituted* for other types; and such a view is often associated with understanding economic change as a matter of measuring effects on human welfare, and human welfare is assumed to track growth in Gross Domestic Product for a country. This view is held by many economists and many of their models assume substitutability among resources as unquestioned. Ecologists and some philosophers, on the other hand, argue that ecological systems are complex systems contain many "thresholds," parameters which if pushed too far will lead to irreversible change and deterioration of the flow of "services" from the environment to the society.

We will consider three basic approaches to defining "sustainability," to be referred to as (1) "weak" ("economic") sustainability, (2) "strong" or ("ecological") sustainability, and (3) "normative" sustainability. It will be argued that in order to understand sustainability as an integrated concept, one must draw on multiple disciplines and multiple methodologies, including natural sciences, social sciences, and understanding what we mean by "sustainability" cannot be separated from the ways we choose to *measure* it. So attention will turn to *methods of evaluation* and means of evaluating technological change.

True integration of environmental policy will require a *process* that encourages the incorporation of both scientific and evaluative information. In this class, we will attempt to articulate a *process-based, adaptive management model* that can illuminate both the goals and the tools available for societies to learn how to be more sustainable. Adaptive management begins with the assumption that the exact nature of sustainable

living is not known clearly at this time. Therefore, while we must act, we should act in ways that decrease uncertainty in future decisions.

COURSE OBJECTIVES:

Content Objectives:

A. to clarify what the term, *sustainability*, "means"—or, perhaps, what it "should mean" if it is to provide important guidance in environmental policy and management. In my view, the phrase "sustainable development" refers to a specific type of human development, that which can be sustained and, also, sustain a culture and civilization. We will discuss how to balance economic and sustainability goals, and how to find win-win ways forward; but the emphasis in this class will be on what we mean by the qualifier, "sustainability."

B. to clarify the relationships between the *multiple scientific disciplines* that bear upon sustainability, and to consider the role of social forces and social values in finding a course toward a sustainable society.

C. to introduce and develop the idea of *adaptive management* as a process-oriented system of thought and analysis capable of integrating scientific and normative, evaluative considerations in addressing environmental problems in a political context.

D. to examine the *scalar aspects* of environmental problems, including how to address environmental problems that do not "fit" spatially within political boundaries and which, temporally, extend across political cycles and even generations of time.

E. to introduce students to the literature and basic theories supporting public policy analysis as a discipline.

Skill Objectives:

Understanding sustainability will require that we look at the problem of sustainable living from multiple disciplinary perspectives. The course, then, can be thought of as an "interdisciplinary tour" through thinking about sustainable policies, by drawing on writers from environmental ethics, environmental economics, ecology, environmental policy, cultural studies of human behavior, and political science. As the following Units show, we will look at the subject of sustainability from the viewpoint of economics, ecology, ethics, and social sciences. While I can't hope that you'll become experts in all these areas, the goal is to acquaint you with the disciplinary resources that are out there.

The more practical aspects of the course will build on the work of Tim Clark, who is both an ecologist and a policy expert. Clark's book, The Policy Process, is a how-to book in being effective in working within a public policy framework. His account of how to affect policy balances the more theoretical content in my book, Sustainability, and

the two are tied together because both consider different aspects of the movement toward "Adaptive Ecosystem Management." Both of these are then enriched by a theoretical , ecological perspective based on the concept of "resilience," and explained in the book, "Resilience Thinking."

Finally, readings in the book, Environmental Values, will familiarize you with the varied approaches to "valuing" environmental changes. Again, a multi-disciplinary tour should give you enough background to understand the possibilities and tools available for studying and clarifying environmental values.

Course Requirements:

There will be four writing exercises for this class:

1. Mid-term essay, in class. Instructor will provide a "case study," together with a set of questions one week before the mid-term (distributed on Feb. 21) and on the day of the mid-term (Feb. 28), students will have one hour to write an in-class essay, without notes or prompts, on the case study, providing analysis and recommendations 20% of class grade)

2. Final Exam, written during exam period (Wednesday, April 30, 11:30am). Same process as Mid-Term with a more complex case study. (30% of grade)

Note: I am willing to discuss making the final essay a take-home essay, provided we have a deadline early in the exam period.

3. Book Review: Students will submit a 4-6 page book review of the book they choose to read for weeks 15 and 16. (10 % of grade) See Below

4. Class Project: We will form research groups to explore some environmental problem or case study, paying special attention to whether current practices are "sustainable", discussing what sustainability would look like with respect to the problem, and providing recommendations for moving policy toward sustainability. Exact problems, teams, and procedures will be worked out in class . (40 % of grade)

Books: AVAILABLE AT ENGINEERS' BOOKSTORE you

Bryan Norton, Sustainability: A Philosophy of Adaptive Ecosystem Management, University of Chicago Press.
Brian Walker and David Salt, Resilience Thinking: Sustaining Ecosystems and People in a Changing World. Island Press.
Tim Clark, The Policy Process: A Practical Guide for Natural Resource Professionals. Yale University Press.
Linda Kalof and Terre Satterfield, Editors, Environmental Values. Earthscan

Weekly Syllabus:

Unit I: Technology, Human Development, and Economic Values

Week 1: (Jan. 8) Attitudes, Values, and the Future

A. Western Attitudes toward Nature and Resources

- Genesis I, The Bible, Ch. 1&2 (distributed in class)
- Lynn White, Jr., "The Historical Roots of the Ecologic Crisis."

B. Cornucopians and Doomsdayers

- Robert Malthus, "An Essay on the Principle of Population."
- Julian Simon, "Can the Supply of Resources Be Infinite? Yes"
- The United Nations, World Population Prospects, Browse from: http://esa.un.org/unpp/index.asp?panel=6

(Especially, look at Panel 1, World Population projections, but browse this site—there's lots of interesting stuff here).

- IPCC, "Summary for Policymakers" at http://www.ipcc.ch/

Suggested:
Donella Meadows, Dennis Meadows, and Jorgen Randers, "Beyond the Limits,")

Week 2: (Jan. 15) History, Theory, and Definitions

- Brundtland, Our Common Future, excerpt
- Robert Solow, "Sustainability: An Economist's Perspective."
- Wilfred Beckerman, "Sustainable Development: Is It a Useful Concept?" Environmental Values, 1994. T-Square(suggested)
- Herman Daly, "On Wilfred Beckerman's Critique of Sustainable Development"Daly" T-Square (suggested)

Week 3: (Jan. 22) Economics and Environmental Valuation

- Myrick Freeman, "The Economic View of the Environment" T-Square
- Kalof and Satterfield, "Introduction," Chapters 1 (Carson), Ch. 3 (Spash), and Ch. 16 (Sagoff)

Week 4: (Jan. 29) Ecological Economics/Cognitive Science: New Approaches to Evaluation?

- Kalof and Satterfield, Chapter 2 (Farber, et.al.), Ch. 14 (Kahnemann and Knetsch) Ch. 17 (Gregory, et.al.),
- Norton, "Sustainability Indicators: Integrating Evaluation studies into Adaptive Management" T-Square
-

Unit II: Adaptive Management: Sustainability in Practice

Week 5: (February 5) Adaptive Management, I: Environmental Problem Formulation

- Norton, Sustainability, Ch. 1-2, Sec. 3.1-3.5
- Rittel and Webber, "Dilemmas in the General Theory of Planning," T-Square
- Norton, Sustainability, Ch. 4

Week 6: (Feb. 12) Adaptive Management, II: Theory

- Norton, Sustainability, Sec. 5.1-5.2, suggested
- Norton, Sustainability, Sec. 5.3-5.6, Ch. 6
- Kalof and Satterfield, Ch. 13 & 18

Week 7: (Feb. 19) Adaptive Management, III: Addressing Management Problems on the Ground

- Clark, The Policy Process, Chapter 1-5
- Norton, Ch. 7

Week 8: (Feb. 26)Adaptive Management, IV: Policy Analysis, Deliberation, and Social Learning

- Clark, The Policy Process, Ch. 6-8; Appendix (suggested)
- Torgerson, "Contextual Orientation in Policy Analysis: The Contribution of Harold D. Lasswell, " T-Square
- Lasswell, "The Emerging Conception of Policy Sciences," Policy Sciences (1970) 1: 3-14, (suggested). T-Square
- Norton and Hirsch, " Modeling Environmental Problems and Decisions Contextually: A Review T-Square
- Hajer, "Policy without Polity? Policy Analysis and the Institutional Void," Policy Sciences (2003) 36: 175-195. T-Square

Unit III: Sustainability

Week 9: (March 5) Resilence Theory, I: Ecology and Adaptive Management

- Norton, Sustainability, Sections 8.1-8.2
- Walker and Salt, Resilience Thinking (as much as possible--at least Ch. 1 and 2 + case studies 1 & 2).

Week 10: (March 12) Resilence Theory, II: Strong, Weak, and Normative Sustainability

- Walker and Salt, Resilience Thinking (remainder of book)
- Norton and Steinemann, "Environmental Values and Adaptive Management"
- Norton, Sustainability, Sections 8.4, 8.6,

Week 11: Spring Break, No classes

Unit IV: Sustainable Societies

Week 12: (March 26) Normative Sustainability

- Norton, Sustainability, Section 8.7; Chapter 9
- Norton, et. al., "Toward an Operational Theory of Sense of Place" T-Square
- O'Neill, Holland, and Light, Environmental Values (another book with same title as Kalof and Satterfield), Ch. 9 and 12 T-Square

Week 13: (April 2) Putting It All Together:

- Norton, Sustainability, Sections 10.1 & 10.5
- Norton, Sustainability, Sections 10.2-10.4 (suggested for those interested in decision analysis and risk analysis)
- Norton, Ch. 11 and 12

Week 14: (April 9) Climate Change Changes Everything

- IPCC, "Summary for Policymakers" at http://www.ipcc.ch/
- Timely readings on CC will be added as the week approaches

Note: For the last two weeks of class, I want to do something different. Here's what I suggest, but I want to leave you latitude to be creative with this time, so we will discuss whether to modify my idea. I suggest that we each choose a book from a list (I'll start the list and others can nominate books as well). The list will be divided into two classifications: A. Practices of Sustainability and B. Visions of Sustainability. Students can choose any book and its ok if several students choose the same book, but it'll work best if at least several viewpoints get expressed in each discussion. Students will familiarize themselves with the book they choose—if its short, you should read it, if its long, you should read enough to get some of the main ideas, and we will come to class and discuss—in week 15, the practical books about how to achieve sustainability—and in week 16, discuss books that create and extol a vision of sustainability. Students will then turn in a 3-page book review of the book they chose. See Class Requirements above.

The following is a list that is not meant to be restrictive but suggestive:
Week 15: (April 16) Practices of Sustainability

- Paul Hawken, Natural Capitalism
- William McDonough and Michael Braungart, Cradle to Cradle: Remaking the Way We Make Things
- Peggy Bartlett and Geoffrey Chase, Sustainability on Campus: Stories and Strategies for Change

Week 16: (April 23) Visions of Sustainability

- Lester Brown, Plan B 3.0: Mobilizing to Save Civilization
- Bruce Babbitt, Cities in the Wilderness
- Andres Edwards and David Orr, The Sustainability Revolution: Portrait of a Paradigm Shift
- Jare Diamond, Collapse