Political, Economic and Ecological Processes

SYLLABUS

Faculty

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Meeting Times and Locations

Tuesdays and Thursdays, 6:00 – 10:00 PM, Seminar II, Building C, as follows:

6:00 – 8:00 lecture period, C1105
8:00 – 10:00 Alison Styring's seminar, C3107
8:00 – 10:00 Ted Whitesell's seminar, C3109

Program Description

Political Economic and Ecological Processes is the first core requirement of the MES program. Its role is to provide students with a broad framework for understanding environmental issues. The focus of the class is twofold. One focus is on systems and processes, to build an understanding of how social and natural systems interact to produce environmental problems and affect solutions. The other focus is on environmental studies methodology, to lay the groundwork for first-year graduate students to make the transition from consumers of information to producers of knowledge about environmental problems and solutions. Our principal goal is to develop a contextual framework for analysis that allows for a deeper and more sophisticated understanding of the challenges of environmental problem solving.

To understand the complexity of environmental issues, we argue it is necessary to understand the following key matters within a transdisciplinary context:

1. what natural systems are, in terms of typical structural and functional characteristics;
2. principal ways in which natural systems are affected by predominant forms of human occupation and use of the environment;
3. the logic, value commitments, and effects of the capitalist economic system, including markets, property rights, and the distribution of power, costs, and benefits;
4. the value commitments and institutional frameworks of U.S. society, with emphasis on government institutions and public policy;
5. the epistemological basis and value commitments of the natural and social sciences relevant to environmental problem solving;
6. methodological options within environmental studies, drawing upon methodologies within natural science, social science, and the humanities;
7. the generation of scientific knowledge by scientists working within professional conventions and within specific organizations;
8. the uses of scientific expertise in environmental decision-making; and
9. the relationships between environmental problem solving and the scientific, social, political economic, ethical, and historical context of a given society.

Program Requirements and Expectations

Timely attendance is expected for all program activities. It is each student's responsibility to contact program faculty prior to any anticipated absences. Reading in advance and careful preparation for each seminar discussion are essential. Many of the assigned readings are difficult; they will require considerable work to fully understand. Late papers may be accepted at the discretion of faculty seminar leaders and should always be cleared in advance with faculty. A persistent pattern of poor attendance and late work is grounds for awarding No Credit for the course. At the end of the fall quarter, each student will participate in an evaluation conference with her or his seminar leader. All students must come with written evaluations of the faculty and written self-evaluations. Students will be evaluated by their seminar leader, based upon their performance in all assignments, their preparation for lecture and seminar, their participation in seminar discussions, the substance and style of their writing, and their potential as graduate students in the MES program. Credit is awarded on an all-or-nothing basis; there is no provision for partial credit.

Students will write a two-page (double-spaced) paper on four required books, critically analyzing a core argument of each book. These papers are intended to develop skill in analytical thinking and writing, as preparation for the candidacy papers required in the winter quarter. Therefore, they should be carefully crafted, with in-text citations and proper bibliographic formatting. Other assignments will include an annotated bibliography, for practicing research skills, and a synthetic essay to knit together the main themes in PEEP.

We highly recommend that all students keep a class journal. This should be brought to class and used to note important information and key terminology you want to remember, along with citations for important articles, names of authors to become more familiar with, and other important sources of information. The purpose of this journal is to begin the process of building a cumulative body of knowledge throughout your graduate education.

Required Readings

Students should complete all assigned readings including all of the following books, plus handouts and digitally posted articles and book chapters. Digitally posted readings (in PDF format) will be accessible only to registered PEEP students, at the following site: http://www2.evergreen.edu/moodle/ (look under "2007: PEEP"). Supplemental, recommended (i.e., optional) materials will also be provided from time to time.

Reading and Understanding Research, by Lawrence F. Locke, Stephen J. Silverman, & Waneen Wyrick Spirduso. Sage (2004). ISBN: 978-0761927686.

Nature's Economy: A History of Ecological Ideas, by Donald Worster. Cambridge University Press; 2 edition (1994). ISBN: 0521468345.

Foundations of Ecology: Classic Papers with Commentaries, ed. by Leslie A. Real & James H. Brown. University of Chicago Press (1991). ISBN: 978-0226705941.

Political Ecology: A Critical Introduction, by Paul Robbins. Blackwell (2004). ISBN: 1405102667.

Sacred Ecology: Traditional Ecological Knowledge and Resource Management, by Fikret Berkes. Taylor & Francis (1999). ISBN: 1-56032-695-6.

Environmentalism: A Global History, by Ramachandra Guha. Longman (2000). ISBN: 0-321-01169-4.

Optional - *Field and Laboratory Methods for General Ecology,* by James E. Brower, Jerrold H. Zar, and Carl N. von Ende. McGraw-Hill (1998). ISBN: 0-697-24358-3.

Optional – *A Dictionary of Ecology, Evolution, and Systematics*, by Roger Lincoln, Geoff Boxshall, and Paul Clark (1998). ISBN: 0-521-59139-2.

SCHEDULE

Week 1

Tuesday, 9/25

Lecture: Introductory remarks and discussion of environmental studies (Alison & Ted)
Student introductions
Overview of PEEP
"The creation of knowledge" (Ted)

- Workshop on how to moodle (GC2 Solarium, Computer Center, L2617, 7:00 – 8:00 PM)

Readings:

- "Practicing interdisciplinarity" (Lélé & Norgaard)
- "What is environmental studies?" (Soulé & Press)
- "The sky is not falling" (Maniates & Whissel)
- *Reading and Understanding Research*, chapter 6, "Types of research"

Seminar: Getting acquainted, seminar process, and discussion of readings

Thursday, 9/27

Lecture: "Library resources for graduate research" (Liza Rognas, Faculty Librarian)

Readings:

- *Nature's Economy*
- *Reading and Understanding Research*, through p. 76

Seminar: Discussion of *Nature's Economy*
Due: Essay on the field of environmental studies

Week 2

Tuesday, 10/2

Workshop: Excel spreadsheets. (GC2 Solarium, Computer Center, L2617, 6:00 – 8:00 PM)

- Readings: *Reading and Understanding Research,* Appendix C, and selections from *Field and Laboratory Methods for General Ecology* (available on the Moodle site) pp. 1-6 "Collecting, Analyzing, and Reporting Ecological Data", pp. 27 – 28 "Analysis of Habitats", pp 29 – 39 "Macrohabitat Analysis", pp. 46 – 53 "Substrate Analysis", pp. 77 – 85 "Habitat Assessment", pp. 87 – 89 "Biotic Sampling Methods", pp. 97 – 102 "Transect Sampling", and pp. 110-113 "Terrestrial Invertebrate Sampling"

Lecture: "Introduction to ecological methods" (8:00 – 10:00, Alison)

Thursday, 10/4

Fieldwork: Campus-based field data collection (6:00 – 8:00 PM)

Lab work: Field data entry (remainder of class time)

- Readings: Selections from *Field and Laboratory Methods for General Ecology* (available on the Moodle site) pp. 7-21 "Data Description and Analysis", and pp. 22 – 29 "Research Report Writing"

Week 3

Tuesday, 10/9

Lecture: "Population biology and population ecology" (Alison)

Readings:

- Selections from *Foundations of Ecology,* pp. 225 – 237 "Concluding Remarks" by G. E. Hutchinson, and pp. 283 – 285 "Fluctuations in the Abundance of a Species Considered Mathematically" by V. Volterra
- Posted reading on population estimations, "Viability Analysis in Biological Evaluations: Concepts of Population Viability Analysis, Biological Population, and Ecological Scale" by L. F. Ruggiero, G. D. Hayward, and J. R. Squires. *Conservation Biology*, Vol. 8, No. 2. (Jun., 1994), pp. 364-372.
- *Reading and Understanding Research*, chapters 5 & 7

Seminar: Discussion of selections from *Foundations of Ecology* and posted reading

Due: Spreadsheets from week 2 data collection

Thursday, 10/11

Lecture: "Human population dynamics" (Ted)

Readings:

- *Reading and Understanding Research*, chapter 8, "Reading reports of qualitative research – critically"
- Potts M. 2007. Population and environment in the twenty-first century. *Population and Environment* 28(4-5):204-211.
- Ratner B.D. 2004. Equity, efficiency, and identity: grounding the debate over population and sustainability. *Population Research and Policy Review* 23(1):55-71.
- Cammack M.; Heaton T.B. 2001. Regional variation in acceptance of Indonesia's family planning program. *Population Research and Policy Review* 20(6):565-585.
- Kennedy D.P. 2004. Cognitive models of fertility decline in Oaxaca City, Mexico. *Population and Environment* 25(3):243-274.

Seminar: Human population readings

Due: Population estimation report

Week 4

Tuesday, 10/16

Lecture: "Main models from disciplines relevant to environmental studies – Island Biogeography" (Alison)

Readings:

- Selection from *Foundations of Ecology,* pp. 861-904 "Experimental Zoogeography of Islands: The Colonization of Empty Islands" by D. S. Simberloff and E. O. Wilson

- *The Theory of Island Biogeography*, Preface and Ch. 1 "The Importance of Islands," by R. H. MacArthur and E. O. Wilson, 1967, Princeton University Press, Princeton, New Jersey. (on moodle)
- Powledge, F. 2003. Island Biogeography's lasting impact. *BioScience* 53:1032-1038. (on moodle)
- Gorresen, P. M. and M. R. Willig. 2004. Landscape responses of bats to habitat fragmentation in Atlantic Forest of Paraguay. *Journal of Mammalogy* 85:688-697. (on moodle)

Seminar: seminar on assigned readings
Due: Annotated bibliography

Thursday, 10/18

Lecture: "Social science approaches to environmental research" (Ted)

Readings:

- Bradshaw, G.A. and M. Bekoff. 2001. Ecology and social responsibility: the re-embodiment of science. *Trends in Ecology & Evolution* 16:460-65.
- Buttel, F.H. 2002. Environmental sociology and sociology of natural resources: institutional histories and intellectual legacies. *Society and Natural Resources* 15:205-11.
- Belsky, J.M. 2002. Beyond the natural resource and environmental sociology divide: insights from a transdisciplinary perspective. *Society and Natural Resources* 15:269-80.
- Gibson, C.C., E. Ostrom and T.K. Ahn. 2000. The concept of scale and the human dimensions of global change: a survey. *Ecological Economics* 32:217-39.

Seminar: assigned readings

<u>Week 5</u>

Tuesday, 10/23

Lecture: "Political ecology" (Ted) and "How to give a presentation" (Ted)

Readings: *Political Ecology*, introduction and parts I & II

Workshop: Extended case study in political ecology (Sem II C1107)

Thursday, 10/25

Lecture: "Amazonian political ecology" (Ted)

Readings: *Political Ecology*, remainder plus *Geographical Review* article by Whitesell

Seminar: *Political Ecology* & *Geographical Review* article by Whitesell
Due: Seminar paper on *Political Ecology*

<u>Week 6</u>

Tuesday, 10/30

Lecture: "Community ecology" (Alison)

Readings:

- *Foundations of Ecology* pp. 59-97 "Nature and the structure of climax" by F. E. Clements, and pp. 98-117 "The individualistic concept of the plant association*" by H. A. Gleason

Seminar:

- *Foundations of Ecology* pp. 357-361 "Community structure, population control, and competition" by N.G. Hairston, F. E. Smith, and L. B. Slobodkin, pp. 686-706 "Population ecology of some warblers of Northeastern coniferous forests" by R. H. MacArthur, and pp. 850-860 "Food web complexity and species diversity" by R. T. Paine
- J. H. Connell. 1978. Diversity in tropical rainforests and coral reefs. *Science* 199:1302-1310 (available on the moodle site)

Thursday, 11/1

Lecture/Computer workshop: "Community ecology" (Alison) **CAL**

Readings:

- *Foundations of Ecology,* pp. 571-595 "An ordination of the upland forest communities of southern Wisconsin" by J.R. Bray and J. T. Curtis
- *Field & Laboratory Methods* for General Ecology (available on the moodle site) pp. 177-187 "Species Diversity" and pp. 188-193 "Community Similarity"

Seminar: Presentations by case study teams (on political ecology)

Week 7

Tuesday, 11/6

Lecture: "Traditional ecological knowledge" (guest speaker Linda Moon Stumpff)
Readings: *Sacred Ecology*, Parts I & II
Seminar: *Sacred Ecology*, Parts I & II

Thursday, 11/8

Lecture: "Restoration ecology" (Alison)
Readings: *Sacred Ecology*, Part III
Seminar: *Sacred Ecology*
Due: Seminar paper on *Sacred Ecology*

Week 8

Tuesday, 11/13

Lecture: "Cultural landscapes" (Ted)
Readings: Selections on Moodle site from *Landscape Interfaces: Cultural Heritage in Changing Landscapes*, Hannes Palang and Gary Fry, eds. (Dordrecht & Boston: Kluwer Academic Publishers, 2003).
Seminar: assigned readings

Thursday, 11/15

Lecture: "Landscape ecology" (Alison)

Readings/Seminar: Journal papers available on Moodle site.

- Wu, Y., F. H. Sklar, and K. Rutchey. 1997. Analysis and simulations of fragmentation patterns in the Everglades. *Ecological Applications* 7:268–276.
- Hale, C. M., L. E. Frelich, and P. B. Reich. 2006. Changes in hardwood forest understory plant communities in response to European earthworm invasions. *Ecology* 87:1637–1649.

- Haskell, D. G., J. P. Evans, and N. W. Pelkey. 2006. Depauperate avifauna in plantations compared to forests and exurban areas. PLoS ONE 1:e63.
  Due: Community analysis and report

Thanksgiving Break, 11/19 – 23

Week 9

Tuesday, 11/27
Lecture: "Political economy and the environment" (Ted)
Readings: Selections on Moodle site from *Environmental Problems, Grassroots Solutions: The Politics of Grassroots Environmental Conflict*, Sherry & Charles Cable (New York: St. Martin's Press, 1995); and from *Nature, Production, Power: Towards an Ecological Political Economy*, Fred P. Gale & R. Michael M'Gonigle, eds. (Cheltenham, UK & Northhampton, MA: Edward Elgar, 2000.)
Seminar: assigned readings

Thursday 11/29
Lecture: "Environmental advocacy" (Ted)
Readings: *Environmentalism: A Global History*
Seminar: *Environmentalism: A Global History*
Due: Synthesis paper

Week 10

Tuesday, 12/4
Lecture period: FINAL EXAM
Seminar: Poems posted on Moodle site.

Thursday, 12/6
Lecture: Summary and wrap-up
Potluck **in Longhouse**

Evaluation Week, 12/10 – 14