



UNIVERSITY OF KENTUCKY

Research and Graduate Studies

*The Graduate School
Patterson Office Tower
Lexington, KY 40506-0027
(859) 257-8142
Fax: (859) 323-1928
www.rgs.uky.edu/gsf/*

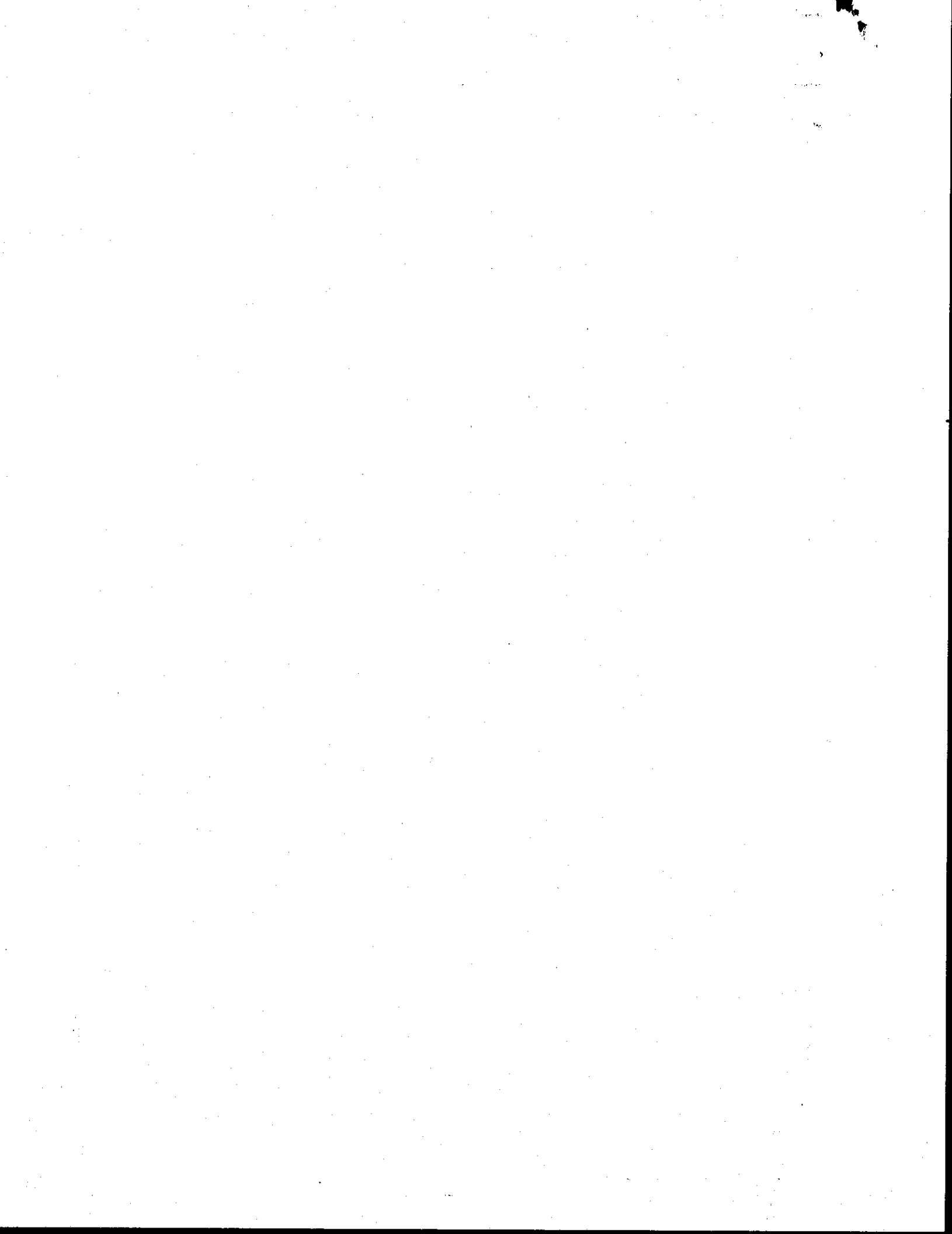
TRANSMITTAL

DATE: October 3, 2001
TO: Cindy Todd
Senate Council
FROM: Becky Fister
Graduate Council

The following proposal was approved by the Graduate Council April 10, 2001:

Re-authorization for the Graduate Certificate in Environmental Systems

The Graduate Certificate in Environmental Systems has been delivered and favorably received for the past 12 years. The certificate curriculum has been renewed for a period of six years.



ENVIRONMENTAL SYSTEMS GRADUATE CERTIFICATE

PURPOSE: To Gain Understanding of the Contributions of the Many Environmental Sciences to the Management of Environmental Systems and to Development of Solutions to Environmental Problems.

PHYSICAL SCIENCE AND ENGINEERING IN ENVIRONMENTAL SYSTEMS (ES 610, F)

- Overview of Environmental Issues
- Geology and the Human Environment
- Water Supply and Wastewater Treatment
- Urban and Wild Environments

NATURAL, BIOLOGICAL, AND MEDICAL SCIENCES IN ENVIRONMENTAL SYSTEMS (ES 620, F)

- Introduction to Environmental Systems
- Scope of Ecology
- Applied Ecology
- Ecotoxicology
- Introduction to Toxicology
- Chemical Carcinogenesis
- Occupational and Environmental Epidemiology
- Human Health and Environmental Safety
- Health Risk Assessment

LAW, SOCIAL SCIENCE, AND ENVIRONMENTAL SYSTEMS (ES 630, S)

- Law: Clean Air Act
Clean Water Act
Resource Conservation & Recovery Act (RCRA)
Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)
National Environmental Policy Act (NEPA)
- Socio-Cultural Aspects of Environmental Systems
- Policy: Stakeholder Involvement in Environmental Policy
Current Issues in Environmental Policy
Conflict Resolution in Environmental Issues
- Economics: Benefit-Cost Analysis

ENVIRONMENTAL SYSTEMS SEMINARS (ES 600, Every Semester)

Requirements: Two of the Core Courses outside your primary discipline; Two of the Environmental Systems Seminars; One additional environmental course.

Award: Appears on your transcript as Environmental Systems Graduate Certificate.



The Many Lives of the Kentucky River

A two-semester public seminar series sponsored by the Tracy Farmer Center for the Environment and the Environmental Systems Certificate Program of the Graduate School. The seminar series may also be taken for graduate credit as ES 600.

Tuesdays, 4:30 to 5:30 PM, at 102 Mining and Mineral Resources Building, Rose Street. For additional information, call 859-257-1299.

Please note that the speakers for October 9 and October 23 have been switched since our original announcement. The [seminar brochure](#) is available as a PDF file (you will need Adobe Acrobat to open it).

Fall Semester

1. The Kentucky River: Its Important Role in our Lives, Yesterday, Today, and Tomorrow

- Aug. 28 - The Kentucky River basin: a river flows through it
Eric Christianson, UK History Dept.
- Sept. 4 - Physical landscapes of the Kentucky River basin: our geologic inheritance
James Dinger, Kentucky Geological Survey
- Sept. 11 - Biological ecosystems of the Kentucky River basin: our stewardship responsibility
Greg Pond, Kentucky Division of Water
- Sept. 18 - Man-made impacts in the Kentucky River basin: our management responsibility
Lindell Ormsbee, Tracy Farmer Center for the Environment
- Sept. 25 - Public discussion

2. Water Quality Policy

- Oct. 2 - The Clean Water Act: how it's supposed to work
Hank Graddy, Kentucky Watershed Watch
- Oct. 9 - TMDLs: an agricultural perspective
Rebeckah Freeman, Director of Natural Resources, Kentucky Farm Bureau

- Oct. 16 - TMDLs: a scientific perspective
Ken Reckhow, Water Resources Research Institute of the Univ. of N. Carolina
- Oct. 23 - The Clean Water Act: the role of the state government
Bob Ware, Kentucky Division of Water
- Oct. 30 - Public discussion

3. Water Quality Management

- Nov. 6 - The impact of water quality on regional water supply: the central Kentucky experience
Lindell Ormsbee, Tracy Farmer Center for the Environment
- Nov. 13 - Urban water quality: the Lexington experience
David Gabbard, Lexington-Fayette Urban County Government
- Nov. 20 - Open house in Lexington's treatment plants
- Nov. 27 - Rural water quality
Dave Harmon, Kentucky Division of Water
- Dec. 4 - Public discussion

Spring Semester

4. Know Your Water

- Jan. 15 - Making sense of weather data
Tom Priddy, UK Ag Weather Center
- Jan. 22 - Public health and the environment: real-life examples
Rice Leach, Commissioner for Public Health in Kentucky
- Jan. 29 - The role of the press in water issues
- Feb. 5 - New tools for the 21st century
Sylvia Daunert, UK Chemistry Dept.
- Feb. 12 - Public discussion

5. Community Actions: Local Ways to Get Involved

- Feb. 19 - Watershed action!
Greg Epp, Kentucky Water Resources Research Institute, and Ken Cooke, Kentucky Division of Water
- Feb. 26 - Eastern Kentucky PRIDE

Karen Engle, Executive Director of Eastern Kentucky PRIDE

- Mar. 5 - Town Branch: the forgotten heart of Lexington
Zina Merkin, Town Branch Trail
- Mar. 12 - *Spring Break*
- Mar. 19 - Public discussion

6. Kentucky's Water Future

- Mar. 26 - Go seafood: aqua-farming in Kentucky
J. Tidwell, Kentucky State University
- Apr. 2 - Open house at the aquaculture facilities at KSU
- Apr. 9 - Water works wonders: recreational fisheries in Kentucky
Benjy Kinman, Kentucky Dept. of Fish and Wildlife Resources
- Apr. 16 - Public discussion

Summary

- Apr. 23 - Water in Kentucky: challenges and solutions for the future. A round-table discussion

University of Kentucky Links

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ES 610 - 401
Physical Science and Engineering in Environmental Systems
Fall 2001

Credit Hours: 3

Instructors:

Dan Carey, 314 Mining and Mineral Resources Bldg., 257-5500, carey@kgs.mm.uky.edu
Jim Dinger, 302 Mining and Mineral Resources Bldg., 257-5500, dinger@kgs.mm.uky.edu
Ed Wang, 365 Oliver Raymond Building, 257-5937, ywang@engr.uky.edu

Course Description: Environmental issues and rational decision-making. An introduction to the fundamental scientific principles needed to analyze and understand the environmental impacts of natural and human processes; the role of water systems on the earth including surface water systems, groundwater systems, and water quality and contamination systems; growth and resource consumption; atmospheric systems, global climate change. A significant part of the course will involve the preparation of a investigative paper by the student(s) on a local or global environmental issue of his/her/their choice. Cross-discipline collaboration is encouraged.

Lecture Time and Place: Mon 6:00-8:30 p.m., Mining and Mineral Resources Bldg, Room 112

Text: Environmental Science, 3rd Ed., Daniel B. Botkin, Edward A. Keller, John Wiley & Sons, 2000.

Maps: Princeton West topographic (7.5'), Princeton West geological (7.5'), Harrodsburg 30' x 60' geological map: These will be available at KGS Publications before October 1 class (see Dr. Dinger for more information). Cost is \$10 including tax (\$9.43 + \$0.57 tax).

Course Contents:

Week

ENVIRONMENTAL ISSUES - Carey

1. Introduction - Carey

August 27

- Course overview
- Internet Resources
- Geographic Information Systems

Assignment: Read Botkin, ch. 1-3 , Carey, Hardin, outline issue

2. Discussion of issues - Carey

September 10

Urban, water, atmospheric, energy, food, carrying capacity, economics

Assignment: Botkin, ch. 5, 8, 10, biocrops, Hardin77, Daily-Ehrlich, sustain

3. Fundamental principles - Carey

September 17

- Growth and carrying capacity

- Conservation laws
- Thermodynamics and energy
- Examples

Assignment: Botkin, ch. 15-18, foodenergy

4. Food and Energy

September 24

Assignment: Botkin, ch. 12, 25, 26, extinction.htm, Mumford, cities, economics, commons before Nov 26 class.

Proposal for paper on environmental issue due

GEOLOGY AND THE HUMAN ENVIRONMENT - Dinger

5. Geologic and hydrologic cycles- Dinger (**bring your 3 maps**) October 1
Assignment before class: Botkin, ch 4, Appendix D, **Quiz** at beginning of class on readings

6. Mineral and Energy Resources - Dinger (**bring your 3 maps**) October 8
Assignment before class: Botkin, ch. 15 – 18, 28, **Quiz** at beginning of class on readings

7. Water Resources and Waste Management - Dinger October 15
Assignment before class: Botkin, ch 19, 11,27 **Quiz** at beginning of class on readings

8. Geologic Hazards and Planning - Dinger (**bring Harrodsburg 30 X 60' map**) October 22
Assignment before class: Botkin, ch 26, 29, **Quiz** at beginning of class on readings

Design exercise due October 29

WATER SUPPLY AND WASTEWATER TREATMENT - Wang

Botkin chs. 14, 19, 20

Field Trip, Kentucky-American Water

9. Water quality standards - Wang October 29

10. Water supply and waste treatment (cont.) - Wang November 5

11. Water supply and waste treatment (cont.) - Wang November 12

12. Water supply and waste treatment (cont.) - Wang November 19

Exam #2 over water supply and waste treatment due in one week.

13. Urban and Wild environments - Carey November 26

Draft research paper due



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Dr. Thomas R. Greider, Director
Graduate Certificate in Environmental Systems
College of Agriculture
Rural Sociology
708 Garrigus Building
University of Kentucky
Lexington, KY 40546-0215

Dear Tom:

Thank you for the thorough review of the Graduate Certificate in Environmental Systems that you prepared. It was a pleasure to read. It is clear to me that this Certificate continues to be a viable and important facet of the University's overall offerings in graduate programming.

Therefore, on the bases of (a) the accomplishments of the Certificate curriculum since its inception; (b) its continued importance, quality, and productivity; and (c) the fine review that you have prepared stating the case for the Certificate, the Graduate School will reauthorize the Graduate Certificate in Gerontology for an additional six-year period – July 1, 2001, through June 30, 2007. Please extend the Graduate School's and my personal congratulations to your affiliated faculty for their contributions to this Certificate curriculum. In particular, we appreciate your careful record keeping, which will permit us to back-fill our database of students who have been awarded graduate certificates.

Again, I am pleased to be able to reauthorize the Graduate Certificate in Environmental Systems for an additional six years. You have my best wishes for the continued success of this certificate curriculum in the coming years.

Best regards,

Michael T. Nietzel
Dean

c: D. Kalika, J. O'Reilly, Jim Kipp, Lindell Ormsbee

\\Grad Certif\Envir Sys Cert Rev resp.doc



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\\Grad Certif\Envir Sys Cert Rev resp.doc

- | | |
|---|--------------------|
| 14. Presentation and discussion of investigative papers - Class | December 3 |
| 15. Presentation of investigative papers (cont.) - Class | December 10 |
| Last day to turn in investigative papers | December 16 |

Student Evaluation Methodology:

Geology and the Human Environment--Dinger	25% (10% quizzes, 15% design exercise)
Water Supply and Wastewater Treatment--Wang	25%
Environmental Issues--Carey	50% (40% paper, 10% class activities)

Class attendance policy:

Your attendance of the lectures and participation in the class is computed into the final grade for the course. There is a strong association between attendance frequency and grades. If you arrive to class after the lecture has started, please enter quietly so as not to disturb others in the room. Please keep in mind that all students are entitled to an excused absence for the purpose of observing their major religious holidays.

Grading Scale:

90.0 - 100 = A	A = excellent
80.0 - 89.9 = B	B = above average
70.0 - 79.9 = C	C = average
60.0 - 69.9 = D	D = below average
< 60.0 = F	F = unacceptable performance

The grade ranges presented above are firm. For example, an "89.3%" is a "B+". It is your responsibility to follow your personal academic progress throughout the semester.

Cheating and Plagiarism:

In cases where cheating or plagiarism occur, the student will be referred to the Student Ombudsman. The **minimum** punishment for either of these offenses is an "F" in the course.

Plagiarism is often committed in many cases because a student does not understand fully the nature of this term. In cases where a sentence, or sentences, is copied word-for-word from a published document, proper citation of the source of the material should be provided in the student's text. When in doubt, please check with the instructor.

The Natural, Biological, and Medical Sciences in Environmental Systems

ES 620 - Fall 2001

Where & When

Tuesdays
6pm - 9pm
102 Minerals & Mining Bldg

Coordinator

Dr. Gabriele Ludewig
208 Funkhouser Bldg.
Phone: 257-3046
Fax: 257-3707
E-mail: glude01@uky.edu

Welcome to "The Natural, Biological, and Medical Sciences in Environmental Systems". A brief description of the course and a list of course requirements follows. A course outline of speakers, topics and dates is provided. Your interest is appreciated and your **active participation** is strongly encouraged.

Course Objectives:

1. Expose the student to the basic principles of biology, ecology, toxicology, and environmental health.
2. Provide an understanding of the integrative nature of environmental studies.
3. Enable the student to approach environmental problems from a systems (multidisciplinary) perspective.

Requirements:

1. Regular attendance is essential.
2. Students are expected to participate during lectures with questions and presentations.
3. Homework will be assigned and is due the following week (unless otherwise stated).

Grading:

Each lecture is worth 100 points. Homework and class participation will be evaluated. The last lecture will be graded wholly on the basis of class involvement. Grading for each section is done by the lecturer. There will be no final examination.

Course Coordinator:

Dr. Ludewig may be reached at her office in 208 Funkhouser Building or by phone or e-mail (see above).

ES 620 - Fall 2001

Course Outline

Introduction to the course (Dr. Gabriele Ludewig)

Ecology and the Environment

Introduction to Environmental Systems (Dr. Barbara Ramey)

1. Concepts of the Environment
2. Climate
3. Climate and the Distribution of Biomes
4. Temperate Deciduous Forest Biome
 1. Components-ecosystems, communities, and populations
 2. Energy flow - food webs and trophic levels
 3. Biogeochemical cycles and soil formation
 4. Population growth
 5. Community interactions - predation, parasitism, competition, commensalism, mutualism
 6. Succession
5. Other Terrestrial Biomes
6. Aquatic Ecosystems
 1. Comparison of streams, lakes, estuaries, oceans
 2. Streams - food chain
 3. Coral reefs
7. Human Effects on Ecosystems (Student Presentations !)
 1. Biogeochemical Cycles
 2. Climate
 3. Energy Flow
 4. Population Growth
 5. Loss of Diversity

Scope of Ecology (Dr. James Krupa)

1. Ecology at the Organismal Level
 1. Evolution by natural selection
 2. Steps of natural selection
2. Population Biology
 1. Single species population dynamics
 2. Population regulation
 3. Human Population Ecology
 4. Selfishness and altruism, spite and mutualism
 5. Evolutionary Medicine

Applied Ecology (Dr. James Wagner)

1. Community Ecology
 1. Abundance and diversity

- 2. Resilience and stability
- 3. Edges and boundaries

- 2. Biological Resources
 - 1. Destruction
 - 2. Restoration
 - 3. Conservation
- 3. Land use - Forests
 - 1. Energy flow
 - 2. Succession
 - 3. World Forests
 - a. Tropical Forests
 - b. Temperate Forests

Ecotoxicology (Dr. Barbara Ramey)

- 1. Environmental Characteristics of Toxicants
- 2. Transport and Fate of Toxicants
- 3. Structure-Activity Relationship
- 4. Testing and Screening
 - 1. Acute, subchronic, chronic procedures
 - 2. Tiered testing approach
 - 3. Test application
 - 4. Major testing programs
- 5. Environmental Legislation
- 6. Impact of Environmental Contamination on Stream Ecosystems
- 7. Case Studies

Toxicology, Environmental Safety, and Human Health

Introduction to Toxicology (Dr. Gabriele Ludewig)

- 1. History and Scope of Toxicology
- 2. Review of Basic Mechanisms and Concepts
- 3. Dose-Response Relationships
- 4. Uptake and Transport of Compounds across Membranes
- 5. Metabolism of Organic Compounds
- 6. Excretion of Foreign Compounds

Chemical Carcinogenesis (Dr. G. Ludewig)

Cancer:

- Mechanisms of Cancer Induction
- Carcinogens
- Environmental Cancers
- Test Systems to Detect Carcinogens

Poisoned: A Case Study

Occupational and Environmental Epidemiology (Dr. Claudia Hopenhayn-Rich)

1. Scope of Epidemiological Studies
2. Environmental and Occupational Epidemiology
 1. Conceptual Models
 2. Study Design
3. Cohort Mortality Studies
 1. Job exposure matrices in occupational studies
 2. Mortality follow-up
 3. Data analysis techniques
4. Case Study:

Human Health and Environmental Safety (Dr. Toni Horstman)

1. Environments
 1. Workplace
 2. Home
 3. Ambient
2. Health Issues
 1. Types of Diseases
 2. Concept of Dose Response
 3. Epidemiology
3. Case Studies
4. Anticipated Future Problems
5. Current Solutions and Health Monitoring
6. Societal Interpretations

Health Risk Assessment (Dr. Harry Enoch)

Risk Assessment Methodology

1. Hazard Identification
2. Dose-Response Assessment
3. Exposure Assessment
4. Risk Characterization
5. Case Studies

LAW, SOCIAL SCIENCES, AND ENVIRONMENTAL SYSTEMS

*Legal, Political, Economic, and Social Aspects
of Environmental Systems*

Spring 2001

ES 630; Tuesday 6:00-8:30pm; Garrigus 108

COURSE COORDINATOR: Tom Greider, Community and Natural Resource Sociologist
Rural Sociology, College of Agriculture
708 Garrigus Building (Ag. Science South)
Phone: 257-3275
E-mail: greider@pop.uky.edu
Fax: 257-4354
Hours: Anytime, but please call first

READINGS: Readings, if they are not on the WWW, will be distributed at least one week in advance of assigned date.

COURSE DESCRIPTION: This course is one of three core courses in the Environmental Systems Graduate Certificate, which is a interdisciplinary curriculum that integrates the physical, social, biological, economic and legal sciences to address crucial environmental issues facing Kentucky and the nation. This course is designed for professionals who are pursuing the Environmental Systems Graduate Certificate and for students inside and outside of the social sciences. This course has no specific course prerequisites.

The four sections of the course are environmental law, environmental policy, environmental economics (benefit-cost analysis), and social/cultural issues related to the management of environmental systems.

GRADES: Grades will be based on short, take-home essay exams (15 percent for each of the four sections), and a case study (40 percent of total grade) in which all team members receive the same grade. An A will be awarded for 93-100%; B for 85-92%; C for 77-84%; E for less than 77 %. For purposes of rounding, a .5 will be rounded up and a .4 down.

Each of the four sections of the course will have a set of questions that will be worth 15 percent of the total grade, and the responses to which will be due one week after you receive the questions. The essays should be 1-2 pages per question. These essays must be written individually, although you may discuss the questions with other members of the class or with your team. Grading of section essays is the responsibility of the instructor for the section.

The case study will be done in a team on a topic that is approved by the course coordinator with the advice of section instructors. The case study will be presented in class (approximately 30 minutes, with an additional 15 minutes for questions) at the end of the course and the case-study paper (25 pages double-spaced maximum, including tables, figures, and references) will be submitted to the course coordinator in lieu of a final exam on or before noon on Friday April 27. No papers will be accepted after noon on April 27. The presentations and papers will be graded

jointly by the four instructors. Each team will designate a Team Coordinator by February 13. The Team Coordinator will be responsible for discussing progress on the case study with the Course Coordinator *every week*.

A brief abstract of your case study is due at the end of class on February 20.

PLAGIARISM: It is your responsibility to know what constitutes cheating and plagiarism and the policies associated with such, as it is stated in the Student Rights and Responsibilities Handbook: see <http://www.uky.edu/StudentAffairs/Code/part2.html> Section 6.3.1-ff. Quite simply, plagiarism is theft. If you have any doubt about whether the action you are thinking about taking might be plagiarism, ask me. There are no penalties for asking whether some action would be plagiaristic. There are severe penalties for engaging in plagiarism. Every act of cheating or plagiarism will result in the following: a complete investigation, and, if the student is found guilty upon appeal (at the option of the student), a grade of an irrevocable E for the course.

Schedule

Jan 16: Introductions and Class Overview (Greider only)
Jan 23: Law (Healy)
Jan 30: Law (Healy)
Feb 6: Law (Healy)
Feb 13: NEPA (Greider)
Feb 20: Social/Cultural (Greider)
Feb 27: Open
Mar 6: Policy (Konkel)
Mar 20: Policy (Konkel)
Mar 27: Policy (Konkel)
Apr 3: Economics (Fleming)
Apr 10: Economics (Fleming)
Apr 17: Economics (Fleming)
Apr 24: Team presentations

INTRODUCTIONS AND ORGANIZATION Jan 16

All readings must be done prior to the session they will be discussed.

LEGAL ASPECTS OF ENVIRONMENTAL SYSTEMS Jan 23, Jan 30, Feb 6, Feb 13

Instructors: Michael P. Healy (Jan 23, Jan 30, Feb 6)
College of Law
258 Law Building 00481
257-3636
healym@pop.uky.edu

Tom Greider (Feb 13)
College of Agriculture
708 Garrigus
257-3275
greider@pop.uky.edu

Topics: This portion of the course provides a brief introduction to the role that law plays in protecting the environment. During this four-week section of the course, we will study the following federal environmental statutes: the Clean Air Act (CAA); the Clean Water Act (CWA); the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); and the National Environmental Policy Act (NEPA). We will have an opportunity to compare and contrast the approaches that these statutes take to ensuring environmental quality and we will consider generally the problem of regulating toxic chemicals.

The reading assignments for the course can be found on the world-wide web, especially through the Lexis-Nexus database, which may be accessed through the University of Kentucky library at <http://www.ca.uky.edu/AIC/> To use many databases, you must be on campus or access via proxy server.

> <http://web.lexis-nexis.com/universe/>

JAN. 23 **PROTECTING THE AIR RESOURCE: THE CLEAN AIR ACT**

Statutory Provisions: 42 U.S.C. §§ 7407 - 7412; 7470 - 7472; 7501 - 7503; 7511 - 7511d; 7603 - 7604.

[Http://web.lexis-nexis.com/universe](http://web.lexis-nexis.com/universe) >Legal Research >Federal Code >Keyword: 42 USCS
>Narrow: 7407
 7408
 7409
 Etc.

Cases: Lead Industries Ass'n v. EPA, 647 F.2d 1130 (D.C. Cir. 1980).
>Legal Research >Get a Case >Citation 647 F.2d 1130
State of Ohio v. Ruckelshaus, 776 F.2d 1333 (6th Cir. 1985).
Union Electric Co. v. EPA, 427 U.S. 246 (1976).
Citizens Against the Refinery's Effects, Inc. v. EPA, 643 F.2d 83 (4th Cir. 1981).
[I can not find this case]

JAN 30 **PROTECTING THE WATER RESOURCE: THE CLEAN WATER ACT**

Statutory Provisions: 33 U.S.C. §§ 1311 - 1317; 1341 - 1342; 1364 - 1365.

[Http://web.lexis-nexis.com/universe](http://web.lexis-nexis.com/universe) >Legal Research >Federal Code >Keyword: 33 USCS
>Narrow: 1311
 1312
 1313
 Etc.

Cases: United States v. Riverside Bayview Homes, Inc. 474 U.S. 121 (1985).
>Legal Research >Get a Case >Citation 474 U.S. 121
E.I. DuPont De Nemours and Co. v. Train, 430 U.S. 112 (1977).
Natural Resources Defense Council v. EPA, 16 F.3d 1395 (4th Cir. 1993).
Arkansas v. Oklahoma, 503 U.S. 91 (1992).

FEB. 6 **CONTROLLING TOXIC AND HAZARDOUS SUBSTANCES: RISK ANALYSIS; THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA); AND THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA)**

Statutory Provisions: 42 U.S.C. §§ 6921 - 6925; 6972 - 6973 (RCRA).

[Http://web.lexis-nexis.com/universe](http://web.lexis-nexis.com/universe) >Legal Research >Federal Code >Keyword: 42 USCS
>Narrow: 6921
6922
Etc.

Statutory Provisions: 42 U.S.C. §§ 9601 - 9613; 9621 - 9622 (CERCLA)

[Http://web.lexis-nexis.com/universe](http://web.lexis-nexis.com/universe) >Legal Research >Federal Code >Keyword: 42 USCS
>Narrow: 9601
9602
Etc.

Cases: American Mining Congress v. USEPA, 907 F.2d 1179 (D.C. Cir. 1990).
>Legal Research >Get a Case >Citation 907 F.2d 1179
Hazardous Waste Treatment Council v. EPA, 886 F.2d 355 (D.C. Cir. 1989).
Inland Steel Co. v. EPA, 901 F.2d 1419 (7th Cir. 1990).
Eagle-Picher Industries, Inc. v. EPA, 759 F.2d 905 (D.C. Cir. 1985).
New York v. Shore Realty Corp., 759 F.2d 1032 (2d Cir. 1985).
United States v. Bestfoods, 118 S.Ct. 1876 (1998).

FEB 13 **THE NATIONAL ENVIRONMENTAL POLICY ACT**

<http://es.epa.gov/oeca/ofa/nepa.html> (NEPA)
http://ceq.eh.doe.gov/nepa/reggs/ceq/toc_ceq.htm (CEQ Implementing Regs)

FEB 20 **SOCIOCULTURAL ASPECTS OF ENVIRONMENTAL SYSTEMS**

Readings to be provided

FEB 27 **OPEN**

March 6 **Policy:** Stakeholder Involvement in Environmental Policy
Readings to be provided
March 20 **Policy:** Current Issues in Environmental Policy
Readings to be provided
March 27 **Policy** Conflict Resolution in Environmental Issues
Readings to be provided
April 3-20 **Benefit-Cost Analysis** in Environmental Systems Management
Readings to be provided
April 27 Team Presentations