Biology 111
Environmental Science
Spring 2002
T.R. Wade
Proposed Lecture Schedule

Date		Topic	Chapter
Jan.	17	Science as a way of Knowing	3
	22	Tragedy of the Commons	1
	24	Ecosystem Structure	4
	29	Ecosystem Function	4
	31	Ecological Pyramids	4
Feb.	5	Biogeochemical cycles	4
	7	Natural capital & Ecosystem services	2
	12	What is a species? How did they evolve?	5
	14	**Test I (Includes lecture and laboratory material.)**	
	19	Biodiversity and Endangered Species	5,18
	21	Alien, Indicator and Keystone Species **Outline and 3 Primary articles due**	5, 18
	26	Population Interactions	7
	28	Human Population: Dynamics	9
March	5	Water Resources	12
	7	**Test II (Includes lecture and laboratory material.)**	
	12	**Spring Break no classes!!!!!**	
	14	**Spring Break no classes!!!!!**	
	19	The Chattahoochee: Sediment, Sewage and Pathogens	12
	21	The Chattahoochee: Pesticides, Herbicides and POPs	16,8
	26	Atmospheric Resources and Pollution	10
	28	**Student Presentations (1-5) and at 2:30 (6-12)**	
April	2	Global Climate Change and the Kyoto Protocol	11
	4	**TEST III (Includes lecture and laboratory material.)**	
	9	Ozone thinning and the Montreal Protocol	11
	11	**Student Presentations (13-17)**	

16	Sustainable Energy: Choices for the future	20
18	**Student Presentations (18-21)**	
23	Sustainable Agriculture & Conventional Farming	15
25	Frankenfoods	p. 395-398
30	Catch-up and Wrap-up Day	

FINAL EXAM - Friday, May 3, 2002 - 9:00 p.m. - 12:00 p.m. (Test 4 and Cumulative Section)

Goals: "A mind, once stretched by a new idea, never regains its original dimensions."
Oliver Wendell Holmes

Environmental Science is an interdisciplinary study combining thoughts from many areas including biology, chemistry, geology, economics, politics, ethics, etc. In this course students begin with a study of natural ecological systems and principles in order to understand the complex interconnected workings of our world. Students then apply these ecological principles to local and global environmental problems as we study the human impact. Students will be stretched by many new thoughts and ideas as we wrestle with various environmental issues, ultimately becoming better stewards of our earth as a result.

Text: Environmental Science, Miller, 8th edition

Lecture: Pierce 101, 10:00 a.m. - Tuesday/Thursday

Laboratory: Pierce 101, 2:30 - 5:30 Thursday

Evaluation:

Tests	300 points
Lab Assignments, Critiques and other Writing Assignments	85 points
Environmental Issue Paper & Presentation	65 points
Final Exam	150 - 175 points
*Total Points	600- 625 points

*Total points may vary based on possible changes in certain assignments over the semester. Grades are assigned on a plus-minus scale.

HONOR CODE: The Honor Code of Oxford College applies to all work submitted for credit in this course. All such work will be pledged to be yours and yours alone. This is the case when you place your name on any work (tests, papers, lab reports, etc.) submitted.

Office Hours: Wed./Fri. 9:00 a.m. - 11:00 a.m. or by appointment (4-8395).

Proposed Lab Schedule
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Lab meets 2:30-5:30 Thursday afternoons in Pierce 101. There is no Lab Manual, handouts will be given for various labs.

Jan. 3	First Day of class- no lab
Jan. 24	*****Scientific Investigation- EXCEL
Jan. 31	*****Terrestrial Investigation- Oxhouse Science Center
Feb. 7	Sampling Exercise- Classroom and Multimedia
Feb. 14	Soil Investigation/Introduction to the Scientific Literature – Multi Media
Feb. 21	*****Sampling at Oxhouse
Feb. 28	Student Conferences
March 7	Pond Simulation
March 14	Spring Break- No Lab
March 21	Introduction to Wetlands
March 28	Student Presentations (6-12)
April 4	Wetland Investigation
April 11	Stream Sampling
April 18	*****Stream Data
April 25	Rock Outcrop- Davison Arabia Mt.- DeKalb Co.

Lab schedule is subject to change based on any number of uncontrolled factors.
* Denotes investigations for which Lab Reports will be written.

Writing Component
of
Bio 111
Environmental Science

Biology 111, Environmental Science, has been approved as a writing Intensive Course by the Writing Committee for this semester. Students will be submitting various types of writing including **critiques**, **responses**, **lab reports** and one **major research paper**. Writing assignments will account for about one forth of the final grade. All writing assignments should be double spaced and font size 12.

Ecologists write for several purposes. One of which is to communicate the results of one's research for other scientists to review. This original research published in scientific journals such as *Ecology*, *Journal of Freshwater Ecology*, *Journal of Mammalogy*, etc. constitutes the primary scientific literature. It is here that you will actually encounter the raw data collected by other scientists and be able to scrutinize their interpretation of the data. You will also have an opportunity to submit your own primary literature in the form of lab reports for various investigations we will pursue this semester.

Secondary scientific literature gives someone else's interpretation and evaluation of the primary literature. In your writing assignments (critiques, responses, etc) you will be reading and evaluating secondary as well as primary literature.

Major Research Paper:

The **major research paper** (9-10 pages) will be a chance for you to review much information about a particular environmental issue that interests you. This writing is an opportunity to explore one facet of environmental science and then to share that with fellow classmates through your in-class presentation.

1. Papers are to be at least 9 pages and no more than 10 pages long (not including the **Works Cited** and **References** sections).
2. At least **7 sources** should be cited in your paper,one of which will be a primary literature article. The other sources should come from a **variety of sources** such as books, scientific journals, newspaper articles, etc. **Web resources are limited to one** of the 7 sources unless the web resource is actually an electronic journal. The 7 required sources must be cited in your paper by author's name and page number (Miller 242) in addition to being referenced in the Works Cited section. You may also include a list of References, sources read in preparation for you paper but not actually cited. **The 7 sources listed as Works Cited should not include personal interviews, dictionaries, encyclopedias or your textbook**. If used, these sources could be extra Works Cited or listed as References.
3. Use the **MLA system** of documentation to document your sources in the paper and the Works Cited and References section. When writing for a scientific journal, you would receive a set of their particular rules for citing works,

formatting, etc. and each journal would have a different set of requirements. To be consistent, we will use the MLA system. I use The Bedford Handbook for Writers, 4th edition. Papers should be double spaced and font size 12.

4. A detailed **outline** will be due in class on **Thurs. Feb. 21**. The outline will be returned to you during a conference with me the following week. Along with your outline, you will need to submit **3 primary articles** which you could use in your paper. **Rough drafts** will be due at the time of your presentation. They will be returned to you the following Tuesday and you will then have one week to turn in the **Final Draft, Rough Drafts, and Primary article** used in the paper. Late penalty for tardy papers will be 3 points per day (that includes Sat. and Sun.). Outlines, Rough Drafts and Papers are worth 50 points.

Presentations:

Be thinking about how you want to present your environmental issue to the class. You will have 10 minutes with about 3 minutes for questions after. You will not be reading your paper. This is your opportunity to enlighten the class about this particular environmental issue. This is your teaching moment. Be creative, use the overhead, computer, power point, slides, posters, maps,etc. I can help you with any of this. You may want to get in touch with agencies to send things to you as soon as possible or use Spring Break to collect materials, pictures, etc. Take a look at the **Presentations message** to see exactly what I'll be looking for and the kinds of things you ought to include in your papers as well as your presentations.

How to begin:

Choose your topic. Search through your textbook, environmental magazines and the What's in the News folder in our class conference. Make a list of questions you have about this environmental issue. Gather research information from primary and secondary sources. As you read through this material you will be able to focus or broaden your topic based on the availability of information. Look for at least 3 primary literature articles pertaining to your topic. Work on your thesis statement. Then begin to outline your paper so you will know where you are headed and what information will help you develop your argument. Begin with a general outline (Introduction, Body and Conclusion) and then detail each of the general areas of your paper. Now you are ready to write.

How is this Environmental Paper different from an English paper, History paper, etc.?

It will be very similar but my expectations are that you must use **data, data, data(numbers**)as well as facts to support your argument that this is indeed an environmental problem and then use that same kind of information to show what the historical, current and future perspectives of this issue are.