Environmental Science
SCI 4327 & SCI 4328
Co registered @ Ball State University
NREM 101

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Lecture: MWF 2-3
Lab: T 10-12
Room B211

1.5 Credits per semester Autumn &Spring

TEXT	**Environmental Science a Global Concern: Cunningham and Cuinningham**
LAB	**Accompanying Book Environmental Science by Friedland & Relyea**
ADDITIONAL	**The Cartoon Guide to the Environment: Gonick & Outwater** **American Environmentalism, 3rd Edition** **Additional Assigned Readings**

Course Description:

This course will systematically cover the study of the environment and our proper place in it. Environmental Science is highly interdisciplinary integrating the natural sciences, social sciences, and humanities in a holistic study of our world. The course will help prepare the student in the field of Environmental Science. The course is intended to be a "field course" in environmental testing, sustainability and resource management. The student will be instructed in current field techniques for the study of organisms and the environment. The quantification and interpretation of data will be emphasized. Students will be expected to undertake an independent project and participate in several group projects that relate to different aspects of environmental science. These will include environmental monitoring environmental advocacy, environmental education and environmental planning. Course material will encompass a variety of disciplines including geology, biogeography, soils, forestry, wildlife biology, sustainability, energy, aquatic biology and resource management. This is a rigorous course that will cover topical areas in roughly the following distribution: Earth Systems and Resources 10-15%, The Living World-Ecosystems 5-7%, The living World-Biodiversity 5-7%, Population Demographics 10-12%, Earth Systems and Resources 10-12%, Land and Water Use 10-12%, Energy Resources and Consumption 10-12%, Atmospheric Pollution 7-9%, Terrestrial & Aquatic Pollution 7-9% and Issues of Global Environmental Change 18-20%. Course material will be supplemented with interactive computer programs, supplemental reading, video's and handouts. This is a course that is extensively "hands on" and will require a commitment of both time and interest. We will spend as much time in lab, as possible, learning by doing science. This course is co-registered with the University as Natural Resources Department NREM 101. Students are encouraged to register in Spring semester for university credit to be earned concurrently.

Attendance and Late Work:

You are expected to be in class every day. The lecture and lab will be held in B211 (with a few announced exceptions). I am making every effort to provide a cohesive course that integrates laboratory and lecture experiences. Laboratory participation is mandatory. Because of the preparation and set up time you may not be able to make up a missed laboratory experience. A portion of your grade in the course is determined by participation. **Failure to turn in more than three laboratory reports automatically results in a failing grade in the class.** If you should miss a lecture or laboratory period **IT IS YOUR RESPONSIBILITY** to get notes and any other information from your fellow students or me. I will be glad to provide you with any handouts. I expect to be notified by phone, e-mail, or by note attached to my office door of any possible absences PRIOR TO THEIR OCCURRENCE. In order to have an absence excused you must follow the procedures for an absence in the student handbook.

All work is expected on the due date, however, in the case of an emergency or other significant event, work may be turned in late **only** with the permission of the instructor. Prior notice and approval of the instructor is required. Otherwise, late work will be discounted significantly or not counted at all. Make-up work for unexcused absences may be permitted in some exceptional circumstances at the discretion of the instructor.

Grading:

There will be three lecture/lab exams given during the course of the term. The approximate dates are given in the lecture/lab schedule. Each exam will be of equal weight (100 points). There will be no official "mid-term" exam. During finals, students will take a comprehensive test worth fifty points in addition to the fourth exam. There will be quizzes and your lab book worth approximately 100 points during the term. There will be reports, both oral and written, worth approximately 100 points. Lecture and laboratory participation is expected and will help you throughout the semester. Formal lab write-ups will constitute 100 points towards the grade. I will attempt to provide a variety of educational experiences and assessments for this course. I will be glad to provide or assist in developing extra work/experiences for anyone wishing to go beyond the limits of our introductory course. I do not accord points towards the grade for extra work.

3 lecture exams @ 100 points		300 points
1 comprehensive exam @# 150 points		150 points
Quizzes/lab notebook/workbook		100 points
Reports and presentations		100 points
Lab write-ups		100 points
Environmental advocacy		50 points
	TOTAL	800 points

Your grade will be determined as a percentage of total possible points on the following scale:

A	**90-100%**
B	**80-89**
C	**70-79**
D*	**<70%**

I reserve the right to "curve" individual examinations based on my professional judgment of the material covered. The final grades will not be curved. Your scores will be recorded in the **PowerSchool** grade book. A copy of your current standing in the course is available to you at any time during the course at your request. It is your responsibility to make sure that all entries in the electronic grade book are correct. It is your "right" to challenge a grade that you feel is undeserved. If you wish to officially challenge a grade, come and see me and I will assist you in instituting the proper procedures.

Assessment of the Course:

Every member of the class will have the opportunity to evaluate the course lecture, laboratory, material and instructor. The evaluation will be administered towards the end of the term and will be anonymous. The results of the evaluation will not be made available to the instructor until after the end of the term. Course evaluations are used to strengthen the quality of the course and to make merit and retention decisions regarding the instructor.

Academic Integrity:

Students will be expected to cite sources and references for all materials (either MLA or APA are acceptable) used to develop course projects and homework. Plagiarism and other forms of **academic dishonesty will not be tolerated.** If you are unsure of what constitutes academic dishonesty or when you can share duties in an assignment, please ask me or refer to the student handbook for clarification. Papers will be scanned electronically for plagiarism and all plagiarism will be reported.

Computer use:

Laptop computers are an enhancement to our learning environment. They can be useful in class for note taking and looking up information during lecture. They should not be used for I.M., Facebook or other personal entertainment purposes during class time. If you are found to using your computer inappropriately I will ask you to leave it at the front desk when you enter the class. Persistent problems will result in my request that you withdraw from the course.

Office Hours/Assistance:

I will be posting office hours the first week of the term. I will be available to assist you with any course or non-course related matters at those times. When I am in, my office door is always open; please make use of it. Assistance is available to help with this course to accommodate all learning styles and issues. It is your responsibility to request assistance if you need it. I can usually be found either in my office (WA147) or lab (B211). My phone is 765 285-7407: my email is mmayfiel@bsu.edu. If you need help, it is your responsibility to contact me. Please share this syllabus with your parent(s). It is important that we all work together to insure your success and satisfaction. It will also save paper.

Diversity Statement:

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff and student body. We are committed to ensuring that all members of the community are welcome through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge. For Bias Incident Response information, please click here or e-mail *reportbias@bsu.edu.*

This syllabus is a tentative schedule/outline and may be subject to change.

TENTATIVE SCHEDULE AUTUMN

WEEK	TOPIC	LAB	READING
1	Scope of Environ. Science Environ. Problem-Solving Environmental issues	Tree Identification	Ch 1, Am. Enviro. Assign 1
2	Enviro. Ethics Ecology Basics Ecology Basics	Trees and Forestry	Ch 2 Am. Enviro. Assign 2
3	Ecology Basics History History II	Woodland Ecosystems Microclimate	Ch 3 Am Enviro Assign 3
4	Forestry & Rangelands Forestry Examination I	Quadrat studies	Ch 14
5	Communities Communities Wetlands	Evergreens & Populations	Ch 4
6	Biomes Biodiversity Open	Biome Presentations	Ch 5
7	Rarity Endangered Species Endangered II	"Anima Mundi"	Ch 13 Handouts
8	Parks & Preservation	Rails to Trail	Ch 15

	Federal Lands Open		Am Enviro. Assign IV
9	State of Indiana Lands Indiana preserves Examination II	Deer Population	Handouts
10	Populations I Populations II Life Tables	Mark Recapture	Ch 6
11	Population Growth Population dynamics Census	Duckweed lab	Ch 7
12	Wildlife Pop. Wildlife Pop. "Cane Toads"	Cemetery Demography	Ch 7 Handouts
13	Ecological Economics Global Economic Issues Exam III	Human Populations	Ch 8 Handouts
14	Laws I Laws II Open	Environmental Laws debate	Ch 9 Am Enviro. Assign V
15	Invasive Species Invasive Species "Kudzu"	Invasive Species Presentations	Ch 10
16	Pest Control IPM groups Superfund Sites	OPEN	Ch 12
17	Urban Ecology Environ. Review Planning for the future	IPM Activity	Cartoon Guide
18	Final Examinations		

This schedule is subject to change due to weather and the judgment of the instructor

TENTATIVE SCHEDULE SPRING

WEEK	TOPIC	LAB	READING
1	Scope of Environ. Science Indiana Geology Handout Historical Geology	Maps Geology Tectonics	Ch 16
2	Martin Luther King Day Geological processes Geological processes	Rock Types	Handout Indiana Geology
3	North America Geomorphology Soils I	Soils Texture Physical Properties	Ch 11 Handouts
4	Soils II Soils/Agriculture "Corn"	Soils Nutrients Soil Survey	Handouts
5	Agriculture II Agriculture III GMO's	"Food Inc"	Handouts CAFO
6	Examination I Atmospheric Processes Weather I	Climatology	Ch 17
7	Weather II Air Resources Clean Air Act	Tree Ring Analysis	Ch 18 Handout
8	Air Resources II	Air Quality	EPA Radon

	Global Air Issues Indoor Air/Global Issues	Testing	Handout
9	Spring Break		
10	Solid Waste I Solid Waste II Examination II	Radon Testing	Ch 23
11	Energy Generation Environ. Energy Problems Energy	Insulation Lab	Ch 21 & 22
12	Energy Generation II Sustainable Energy Energy Issues	Energy Activity	Ch 24
13	Urban Ecology Sustainability Sustainability II	Energy Presentations	Ch 19
14	Hydrologic Resources Ground Water Open	Water Quality I Chemical Testing	Ch 19
15	Rivers Lakes I Lakes II	Water Quality II White River	Ch 20
16	Water Issues I Water Issues II Exam III	Water Quality III Benthic Macroinvertebrates	Handouts
17	Environmental Laws Review Resource Issues Review Environmental Advocacy	Wildflowers	Ch 25 Handouts
18	Final Examinations	APES Exam May 2, 2022	