Conservation and Sustainability
ENVI 460

Semester:	Spring 2013
Room Number:	Science 176
Class Time:	Tuesday and Thursday 12:30-1:45pm
Instructor:	Dr. James H. Speer
Required Books:	Rachel Carson. 2002. Silent Spring with an introduction by Linda Lear and afterward Edward O. Wilson. Anniversary edition (October 22, 2002). Houghton-Mifflin. 378pp. ISBN-10: 0618249060.
	Aldo Leopold. 1987. A Sand County Almanac Special Commemorative Edition. 228pp. Publisher: Oxford University Press; Special Commemorative Edition edition (1987) ASIN: B00161H1G8.
	Thomas Friedman. 2008. Hot, Flat, and Crowded: Why we need a Green Revolution – And how it can renew America. Farrar, Straus, and Giroux. 438pp. ISBN-10: 0-374-16685-4.
Suggested Text:	G. Tyler Miller and Scott Spoolman. 2011. Living in the Environment: Principles, Connections, and Solutions. 17th edition. Brooks Cole. 800pp. ISBN-10: 0538735341.
Office:	Science 159e or Science 108
Office Hours:	Tues and Thurs 11am-Noon
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Purpose of this course:
Conservation is an issue that we deal with everyday and the choices that we make will affect the lives of our children and future generations. In this course, you will learn to recognize the daily choices that we make that change the ecosystem in which we live. You will learn the ecology, economics, and social patterns that control our influence on the environment. Finally, I hope that you will understand the changes that can be made to perpetuate a sustainable society. During this course you will work to find solutions to real community problems such as moving ISU towards carbon neutrality and preserving the Wabashiki Fish and Wildlife Area.

Code of Student Conduct:
Academic dishonesty, which includes cheating, plagiarism, and other forms of dishonest or unethical behavior is prohibited. If a student is suspected of academic dishonesty, he/she will be required to meet with the chair of the department and their own academic advisor to determine further action. Please review the University's Academic Dishonesty Policy found in the Student Code of Conduct at http://web.indstate.edu/sjp/docs/code.pdf

Attendance:
Attendance to this course is mandatory. If you must miss a class, see me before you miss it and we will make arrangements. If you miss a class because of an emergency you will need to bring a note from your doctor or other responsible person to be able to make up that day's work.

Academic Freedom:
Academic Freedom assures that teachers and students can have free expression, fair procedures and equality of treatment. Students and teachers alike will behave in a responsible manner in the classroom. For more information please refer to http://debs.indstate.edu/a505a24_1952.pdf

Students with Disabilities:
The University makes every effort to provide reasonable accommodations, for help or further information please refer to Student Academic Services Center www.indstate.edu/sasc

Laptop Usage:
> "For the purposes of this course, it will be assumed that you are in compliance with the mandatory laptop policy of the University. You will be expected to bring your laptop and be ready to use it for every class period. Usage of the laptop must conform to the provisions of this course as laid out in this syllabus as well as the Code of Student Conduct."

Other Electronic Devices:
Please turn off your cell phone and do not have it in sight during class time and remove earphones and headsets. Texting, playing games, listening to music, etc will result in dismissal from class. Students who are repeat offenders will be required to meet with the chair of the department and their own academic advisor to determine further action. Please speak with me if you have special circumstances for using electronic devices in class.

Guest Speakers:
We will have guest speakers from the County Parks Department and Facilities Management on campus. Many faculty on campus conduct research into different aspects of sustainability. I will occasionally have you attend some of these talks by other faculty on campus during class time.

Discussion:
A large part of your grade will be based on classroom discussion. Conservation and sustainability are issues that we all deal with and on which we all have a different perspective. This course is designed to challenge you and allow you to experience the subject in the field. We will hold discussions in the classroom and in the field in which you are expected to participate. Also, it is important to have completed the reading for each day so that you can intelligently participate in the discussions. I expect each of you to have some contribution to the discussion every class period.

Journal:
You are required to keep a journal when you are completing your 20 service hours. You need to write in it during each visit noting the time, location, what you have learned, and your own experiences and feelings.

Reference Style:
For citations on your group projects, I prefer that you use the *Ecology* style of references. Examples are given below for journal, book, and website respectively.

Braithwaite, R.J. and Zhang, Y. 2000. Relationship between interannual variability of glacier mass balance and climate. Journal of Glaciology 45(1): 456-462.

Speer, J.H. 2009. The last 1,000 years of Indiana's Climate. In: Oliver, J.E. (ed.) *Indiana's Weather and Climate.* Quarry Books. pp: 134-137.
USDA. 2009. Plants Profile: Ponderosa Pine. http://plants.usda.gov/java/profile?symbol=PIPO. Downloaded February 14th, 2009.

Examinations:
There will be two exams during the class, one midterm and one final. These exams will be comprehensive covering information from the whole summer term including issues that we discuss and objects that we observe in the field. You can expect mostly short answer and essay questions on the exam.

Wabashiki Fish and Wildlife Area:
The Wabashiki Fish and Wildlife Area is a joint effort with the Vigo County Parks Department, the City of Terre Haute, Department of Natural Resources, and Indiana State University. It is a wetland and floodplain site that incorporates conservation zones that are managed by County parks and the State. Preservation and use of the Wabashiki Fish and Wildlife Area will be one aspect that will be examined in this course and some volunteer time will be possible at the Wabashiki Fish and Wildlife Area.

Purpose of Foundational Studies:
This course serves as an Integrative and Upper Division Elective in the Foundational Studies 2010 program. In filling that role this course will look at the natural resources and sustainability issues associated with Indiana State University. You will develop critical thinking skills, be able to gather and analyze original data, and in the process come to conclusions and make recommendations that are likely to affect how ISU operates. As an Integrative and Upper Division Elective, this class will take what you have learned throughout your prior years at ISU and integrate that knowledge and focus your skills at solving issues that are important to the ISU community. This course will use the ways of knowing that have been developed in the natural sciences, mathematics, and history to examine real-world problems.

By the time that students complete the Foundational Studies program at ISU, you will have met all of the following objectives. The learning objectives that this course will focus on are noted in bold.
Students will:

FS-1: Locate, critically read, and evaluate information to solve problems;
Students will be reading original peer-reviewed articles to discover the background and history of important sustainability issues associated with ISU. During **Exercises 1-4**, students will be reading the ISU Carbon Footprint Analysis, the ISU Strategic Plan, and the ISU master plan. They will then research and analyze two action plans from different universities that have signed on to the President's Climate Commitment. The students will then make recommendations for how ISU can approach carbon neutrality.

FS-2: Critically evaluate the ideas of others;
In **Exercise 4** student will examine the Climate Action Plans from two universities that have signed on to the President's Climate Commitment. Student will need to critically analyze the ideas in those reports with the goal of obtaining carbon neutrality.

FS-3: Apply knowledge and skills within and across the fundamental ways of knowing (natural sciences, social and behavioral sciences, arts and humanities, mathematics, and history);

Students in this class will be obtaining information on the environment from many sources. They will examine the history of energy and resource use at ISU in **Exercises 1-4.** They will read about other analyses of environmental issues in the **discussion of the three books** assigned for this class. Student will also be collecting natural science information of their own when they visit the Riverscape as an **organized class fieldtrip**.

FS-4: Demonstrate an appreciation of human expression through literature and fine and performing arts;

FS-5: Demonstrate the skills for effective citizenship and stewardship;

Students will conduct soil and water analysis at the Riverscape during their **field trips** to this location which will help out the Vigo County Park during the time that this nascent park is being established. Students will also have **extra credit opportunities** to help to clean up the trash in this park and also to work on invasive species removal.

FS-6: Demonstrate an understanding of diverse cultures within and across societies;

FS-7: Demonstrate the skills to place their current and local experience in a global, cultural, and historical context;

Conservation and Sustainability issues are important cultural and global issues that will be **discussed as part of the readings** for this class. Also **class discussion** will include an analysis of the historical context of environmental issues in the United States with our **readings** from books published in 1948 and 1962 as well as our modern readings.

FS-8: Demonstrate an understanding of the ethical implications of decisions and actions;

The book the A Sand County Almanac lays out the Land Ethic in the context of our original Frontier Ethic as Euro-Americans spread across North America. **Readings and discussions** from this book will focus on these ethical implications.

FS-9: Apply principles of physical and emotional health to wellness;

FS-10: Express themselves effectively, professionally, and persuasively both orally and in writing.

A large part of this class is **group discussion** on the readings. Student will also be conducting a **personal assignment (Exercise 4)** where they look more deeply into a specific area of concern for sustainability at ISU. The students will present their findings to the class. They will also work in groups on a larger class project (**Research Project**) that they will present at the end of the semester in this class as well as in others class rooms around campus.

Learning objectives:

LO-1: Use a thematic approach to a particular topic or issue that integrates multiple ways of knowing;

Students will be examining conservation and sustainability throughout this class, but will be drawing on the natural sciences for a basic understanding of the natural systems that they study. They will be using tools form social and behavioral sciences to understand the human dimension of the issues that ISU faces. Finally, they will became aware of the history of ISU and how that places us in a unique place to reach carbon neutrality compared to other schools and countries around the world.

LO-2: Engage in a project or conduct research that makes use of multiple ways of knowing to address a particular topic or issue;

Students will complete a personal assignment as well as a group research project on conservation and sustainability.

LO-3: Analyze and write at an advanced level.

Students will have to analyze original data as they examine sustainability at ISU. They will also write a final report and present that report to the class and other classrooms around campus.

Skill applied learning requirements:

SAL-1: Explicitly demonstrate how the curriculum will develop critical thinking skills.

Students are instructed to acquire original research information, analyze that information, evaluate what other universities are doing around the country, and finally make recommendations about what ISU should be doing (**Research Project**). All of these tasks will develop critical thinking skills around important environmental issues for the ISU community.

SAL-2: Explicitly demonstrate how the curriculum will develop information literacy skills.

Students will need to gather information from the library and from certified websites about sustainability at ISU and other institutions around the US for the **personal assignment (Exercise 4)** and for the **Research Project**.

SAL-3: Include a graded writing component, which whenever possible is developmental.

Students will be developing an original **research project**. For this project they will turn in a proposal, a first draft of their findings, and then a final draft and presentation of their findings.

SAL-4: Must incorporate opportunities for students to critically read and analyze sophisticated, complex text, and to write intensively.

Students will be reading climate action plans from multiple universities and evaluating those plans in **Exercise 4**.

SAL-5: Must include assignments that apply information from within and across various "ways of knowing".

Students will be reading classic literature in the environmental sciences, collecting original research data, analyzing that data, and examining historical records for energy use at ISU (**Exercises 1-4, Discussion of the three assigned books**).

Grading:
The grading will be on a straight scale.

Assignment	**Points**	**Objectives**
Journal	100	FS 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3
Personal Project	100	FS 1, 2, 3, 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3, 4, 5
Group Research Project	100	FS 1, 2, 3, 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3, 4, 5
Midterm Exam	50	FS 1, 3, 7, and 10; LO 1; SAL 1, 2, 4, 5
Final Exam	50	FS 1, 3, 7, and 10; LO 1; SAL 1, 2, 4, 5
Discuss Silent Spring	25	FS 1, 2, 3, 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3, 4, 5
Discuss Sand County	25	FS 1, 2, 3, 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3, 4, 5
Discuss Hot, Flat, and …	25	FS 1, 2, 3, 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3, 4, 5
Other Class Discussion	25	FS 1, 2, 3, 5, 7, 8, and 10; LO 1, 2, 3; SAL 1, 2, 3, 4, 5
Total	**500**	

Letter grades will be based on the following percentage system

Grade	Percentage
A+	98-100%
A	92-98%
A-	90-91%
B+	88-89%
B	82-87%
B-	80-81%
C+	78-79%
C	72-77%
C-	70-71%
D+	68-69%
D	62-67%
D-	60-61%
F	<60%

Web Information:
This class is interfaced with a Blackboard site where you can find resources for this class so check Blackboard frequently.

Course Schedule:

Week	Subject	Required Reading
January 8	Introduction	
January 10	Discussion	ISU Carbon Footprint Analysis, ISU Env Survey
January 15	Discussion – Discuss Personal Projects	*A Sand County Almanac* (xv-xxviii, 3-17, 117-136, 165-226)
January 17	Discussion – Project Proposal Due	ISU Master Plan
January 22	Discussion	*Silent Spring* (introduction by Linda Lear x-xix; 1-13, 129-152, 277-297, and 357-363)
January 24	Discussion	ISU Climate Action Plan
January 29	Discussion	*Hot, Flat, and Crowded* Chapters 1, 2, 5, 8, 9, 12, and 17
January 31	***Midterm Exam***	
February 5	Work on Personal Projects	
February 7	Library Skills – Steve Hardin	
February 12	Work on Personal Projects	
February 14	Guest Speaker	
February 19	Work on Personal Projects	
February 21	Guest Speaker	
February 26	Work on Personal Research Project	
February 28	Present Personal Projects	Person Project Papers Due
March 5	Present Personal Projects	
March 7	Present Personal Projects	
March 12	**Spring Break – No Class**	
March 14	**Spring Break – No Class**	
March 19	Present Personal Projects	
March 21	Work on Group Project Proposals	
March 26	Guest Speaker	Group Project Proposals Due
March 28	Work on Group Projects	
April 2	Guest Speaker	
April 4	Work on Group Projects	
April 9	Draft Paper Due	
April 10 Wed	**Earth Day – Poster Presentations**	**10am – 3pm**
April 11	Work on Group Projects	
April 16	Work on Group Projects	
April 18	Work on Group Projects	
April 23	Work on Group Projects	
April 25	Group Presentations	Final Paper Due
April 30 Tues	**Final Exam**	**1pm**

Sample Projects

Community Research –

1) Greening Clabber Girl's Supply Chain
2) Union Hospital Commuter Survey
3) Parke County Quality of Life Surveys
4) Sustainability Plan for the Wabash Valley
    a. Quantify carbon footprint
    b. Gather information on energy use for the Wabash Valley
    c. Survey the Chamber of Commerce for economic growth related to sustainable issues

Indiana State University –

1) Analysis of Energy Use on campus
2) Examine the Facilities Compost System.
3) Cost-Benefit-Analysis on Paper Towels vs Air Hand Drier
4) Report on one aspect that would improve carbon emissions/sequestration at ISU that has worked at another university
5) Garbology Project - Quantify the waste coming from the front part of HMSU versus the kitchen waste behind the scenes.
6) Quantify the waste being produced and sorted in the dorms.
7) Study of the ISU Wind Turbine.