

BIO 103 – SAVING PLANET EARTH – FALL 2015

Instructor: Dr. Alycia Lackey
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Office hours: TR 10 - 11am, 1 - 3pm, or by appointment
Class: TR 11am - 12:15pm, Blackburn 249
Textbook: Raven, P. H. et al. 2012. *Environment*. 8th ed. John Wiley & Sons, N.J. Ebook edition available.

Course Description and Objectives:

Through this course, students will understand the fundamental problems of human existence on Earth, the ways in which such problems can be solved, and how this understanding can lead to ways in which you can assist in the preservation and restoration of the planet. Some of the problems we will discuss include human population growth, over-exploitation of natural resources, habitat destruction, climate change, and extinction. We will discuss the scientific, philosophical, and ethical basis of these problems and their solutions. The course will also explore the potential for humans to live in a sustainable fashion on the planet and emphasize the social responsibility and civic engagement required to do so. Through this course, students will develop a new world view, allowing you to make better decisions in your daily lives about your own personal influence on the Earth's future, and to potentially lead and influence others in this regard.

To understand these problems, students will also develop scientific literacy -- understanding scientific concepts and processes needed to make decisions personally and as a member of society. You will strengthen your abilities to read and understand popular press science articles; identify scientific issues that underlie local, national, and global decisions; evaluate the quality of scientific evidence based on the source of methods used to generate it; and develop and critically evaluate arguments based on scientific evidence.

Course Structure:

Before each class, you should complete the readings and assignments. In class, we will build on this understanding of the content using brief lectures, instructor- and student-led discussions in small and large groups, case studies, movies, and problem solving. One group presentation (described more below) will allow you to bring up-to-date, relevant content into class and discuss it with your peers.

Grading:	3 Lecture Exams (50pts each)	150 points
	Comprehensive Final Exam	100 points
	In-class discussions (5pts each)	~50 points
	Individual assignments (submit to Canvas, 10pts each)	~100 points
	Movie worksheets (submit in class, 5pts each)	35 points
	Group presentation	25 points
	<u>Report: Book or Service Learning</u>	<u>50 points</u>
	TOTAL	510 points

Exams will be a combination of multiple choice, short answer, fill in the blank, and draw a graph/diagram. You will be assessed at many levels, including knowledge, comprehension, application, analysis, synthesis and evaluation.

Grades will be assigned as follows: A (90+), B (80-89), C (70-79), D (60-69), E (<60).

Rounding up to the next letter grade is at the discretion of the instructor based on the student's attendance, active participation in class activities, and respectful behavior during lecture and discussion.

In-class Discussions:

In every class session, we will engage in discussion in small groups and/or as a class. The content of these discussions can be on the exams, so you are encouraged to take notes. For graded group discussions, one person should act as the 'recorder', and another person will be the 'reporter' to share your main points with the class. You should rotate these roles, and you are encouraged to work with different people in class throughout the semester. Each group member will sign these notes and submit the notes in class. Approximately 10 of these group discussions will be graded.

In this class, we will discuss both facts and opinions as a way to build our understanding of concepts and their scientific, social, and political underpinnings. Everyone is encouraged to contribute and expected to treat others' contributions respectfully, allowing time for others to voice their thoughts and responding constructively and considerately.

Assignments (on Canvas):

Assignments should be submitted on Canvas by 11:59pm *the day before* they are listed on the syllabus. These assignments prepare you for class and give you greater insight to the topics we will cover. There will be approximately 10 assignments. Your single lowest assignment grade will count as extra credit.

Movie Worksheets (in class):

The movies we watch in class give us the opportunity to explore the scientific, social, and political aspects of the topics we will cover in class. Movie content will be part of our class discussions and will be covered on exams. To help you focus on the key issues, you will fill out a worksheet during the movie and turn it in at the end of class for a grade.

Group Presentation:

During the second week of class, you will select a topic from a list of topics that we will cover in class. Groups of three students that all chose the same topic will work together to select a popular press article (news or magazine) from a credible source that is relevant to your topic. Check the syllabus for the day of your topic's presentations. Also check Canvas for more details on this assignment and grading criteria. Before your presentation, you will need to submit your article for approval. After your presentation, you will provide a report of each member's contribution to the group. I will model how you may give your presentation at the end of the Ecological Principles section. The content of group presentations can be on the exam, so you are encouraged to participate in the discussion and take notes.

On the day of your presentation, prepare to spend 10-15 minutes on the following:

- (1) Summarizing the article (issue, controversy, opinions, evidence provided) (~3-5min),
- (2) Explaining the connection between this article and the content we have covered in class so far (~3-5min),
- (3) Facilitating discussion (~5-8min) of the article and related issues with the class.

You may wish to assign one task above (1-3) to each group member to allocate the work.

Report: Book or Service Learning (your choice):

To help you develop a personal connection to the content of this course, you will either (1) read a book from the list below or (2) complete at least 10 hours of service learning. For either choice, you will submit a 3-5 page report with a focus on what you learned.

Book List (choose 1 and purchase/borrow on your own):

Animal, Vegetable, Miracle by Barbara Kingsolver
Global Spin by Sharon Beder
Ishmael by Daniel Quinn
No Impact Man by Colin Beavan
Omnivore's Dilemma by Michael Pollan
The Sixth Extinction by Elizabeth Kolbert
Water by Alice Outwater

Book Report (due Dec. 2 by 11:59pm on Canvas)

Your 3-5 page report (all inclusive) should address the following:

- 1) Describe the general topic and goals of the book.
- 2) What are the major points or examples from the book that were interesting or important to you?
- 3) As possible, relate these points and examples from the book to content covered in class lectures, discussions, readings, and/or assignments.
- 4) In what ways could the content of the book change the way you or others live their lives?

See Canvas for more details on this assignment and grading criteria. Although you may discuss this book with the instructor or your classmates, you will write your report individually. Reports will be checked for plagiarism (of internet, book, and other sources including your peers). *Plagiarized or dishonest reports may receive a lower grade or a zero on the assignment, or even a failing grade in the course. See the Academic Honesty Policy for more information.*

Service learning

This is defined as any educational experience that involves volunteering and service toward society. As part of this course, you may choose to conduct a service learning project that helps save Planet Earth. You will work in this project for **at least 10 hours** during the semester.

Possible service learning projects include (contacts are available on Canvas):

- MSU's recycle days (first Saturday morning each month)
- MSU's Pullen Farm
- Murray Environmental Student Society (MESS)
- Land Between the Lakes' Nature Station, Elk and Bison Prairie, etc.

You may choose from the above opportunities or find your own. You can also mix activities from multiple sources to complete your 10 hours. All costs and safety issues are the sole responsibility of the student.

You must submit your service learning plan on Canvas by September 3 and receive approval from Dr. Lackey. In your service learning plan, name your selected activities and the approximate dates you will volunteer. List the contact information for your activities. You should plan to make initial contact to arrange volunteering before Sept. 10.

Service learning report (due Dec. 2 by 11:59pm on Canvas)

Your 3-5 page report (all inclusive) should include:

- 1) What you did, when you did it, and how many hours you spent.
- 2) What specific activities you did and how these activities benefited the environment.
- 3) What you gained and what you can change about the way you live based on your experience.
- 4) Photos that document your activities.

See Canvas for more details on this assignment and grading criteria. Although you may volunteer in groups and share photos and ideas, you will write your report individually. Reports will be checked for plagiarism (of internet, book, and other sources including your peers). *Plagiarized or dishonest reports may receive a lower grade or a zero on the assignment, or even a failing grade in the course. See the Academic Honesty Policy for more information.*

Academic Honesty Policy:

Please read the entire Academic Honesty Policy here:

http://www.murraystate.edu/Libraries/COB_Documents/Academic_Honesty_Policy.sflb.ashx

Examples of dishonesty include cheating, fabrication, falsification, and plagiarism. You should never have your phone, notes, or other material that could be used as an aid out during an exam.

Disciplinary action can include requiring the student to complete additional work, lowering the grade or failing the student on a particular exercise, or lowering the grade or failing the student in the course.

Attendance and Absences:

I expect you to be present for the entirety of each class, and you cannot earn credit for in-class discussions, worksheets or activities if you are not present in class.

You must notify the instructor in advance in the case of a known absence or as soon as possible in the case of illness. Make-up exams or assignments are at the discretion of the instructor and depend on presenting a verified excuse (e.g., note from a physician, university approved absence paperwork).

See the University attendance policy for more information:

<http://www.murraystate.edu/provost/catalogs/01university.html#Policies>

No late assignments will be accepted without an excused absence.

Tentative schedule

Date (day of week)	Topic	Assignments (*submit to Canvas day BEFORE class by 11:59pm) <i>-Presentations in class-</i>	Reading (Chp in Raven et al. book)
Aug 18 (T)	Introduction		1
Part 1: How the World Works (and Doesn't Work)			
Aug 20 (Th)	Ecological Principles	10 Myths of Sustainability*	3 & 5, skim 4 & 6
Aug 25 (T)	Ecological Principles	Student Initial Survey*	3 & 5, skim 4 & 6
Aug 27 (Th)	Ecological Principles		3 & 5, skim 4 & 6
Sept 1 (T)	Population Issues	Ecological Footprint*	8
Sept 3 (Th)	(Movie: The People Paradox)		8
Sept 8 (T)	(Movie: China Revs Up)		8
Sept 10 (Th)	Population Issues	<i>-Group presentations-</i>	8
Sept 15 (T)	EXAM 1		
Part 2: Resource Use, Misuse and Solutions			
Sept 17 (Th)	Biological Diversity		16
Sept 22 (T)	(Movie: Planet Earth)	<i>-Group presentations-</i>	16
Sept 24 (Th)	Food	Food Issues Part 1*	18
Sept 29 (T)	Food	Food Issues Part 2* <i>-Group presentations-</i>	18
Oct 1 (Th)	NO CLASS – FALL BREAK		
Oct 6 (T)	Water		13
Oct 8 (Th)	(Movie: Flow)		13
Oct 13 (T)	Water	<i>-Group presentations-</i>	13
Oct 15 (Th)	Energy	Energy*	10-12
Oct 20 (T)	(Movie: Power Surge)		10-12
Oct 22 (Th)	Energy	<i>-Group presentations-</i>	10-12
Oct 27 (T)	EXAM 2		
Part 3: Pollution and Solutions			
Oct 29 (Th)	Air pollution	<i>-Group presentations-</i>	19
Nov 3 (T)	Climate change	Climate change*	20
Nov 5 (Th)	(Movie: Climate of Doubt)		20
Nov 10 (T)	Climate change	<i>-Group presentations-</i>	20
Nov 12 (Th)	Water Pollution, Pesticides & Solid Wastes	<i>-Group presentations-</i>	21, 22, skim 23, 7
Nov 17 (T)	(Movie: Strange Days)		21, 22, skim 23, 7
Nov 19 (Th)	EXAM 3		
Part 4: Sustainable Living			
Nov 24 (T)	Environmental Ethics	Environmental Activism* <i>-Group presentations-</i>	2
Nov 26 (Th)	NO CLASS - THANKSGIVING		
Dec 1 (T)	Sustainable Living	Sustainable Choices* <i>-Group presentations-</i>	24
Dec 3 (Th)	Putting It All Together & Discuss Final Reports	Book/Service Learning Report* Student Final Survey*	
Dec 7 (M)	FINAL EXAM, 10:30AM		