Sample Syllabus
EVR 1001 U01 Introduction to Environmental Science & Sustainability

Course Meeting Times: Tuesdays and Thursdays from 9:30 am to 10:45 am in RB 120

Instructor: Prof. Patricia Houle, M.S.

Office Hours: Tuesdays 1 pm – 3 pm in PC327a

Email: Contact through Blackboard Learn 9 Message utility only

Course Description:

Concerns about environmental degradation and its impact on human well-being are increasingly the topic of discussion and debate. The issues are global in scope and complex in nature, involving the functioning of both Earth’s natural systems and human societies. It is critical that we understand the function and importance of the natural services provided by planet Earth so that we can find ways to address the looming problems of climate change, pollution, desertification, declining water resources and loss of biodiversity. Environmental science is a necessary foundation for that understanding. This course will emphasize the scientific knowledge of the environment in a global context that will be needed for local, global, international and intercultural environmental problem solving in the coming decades.

Course Designation:

This course is a Global Foundations Course. It also satisfies the requirement for the University Core Curriculum Natural Sciences category – Physical Sciences sub-category when taken with the lab course, EVR 1001L.

Essential Questions

- What is scientific knowledge and how does it differ from other kinds of knowledge about the environment?
- How does science explain the functioning of Earth’s natural systems and how do different human societies interact with and depend on those systems?
- How do human societies need to change their interrelationship with Earth’s natural systems to halt environmental degradation and use natural resources and services sustainably?

Global Learning Outcomes and Assessments

Students will be assessed for the following Global Learning Outcomes with specific course outcomes listed below them:

- Global Awareness – Students will be able to demonstrate an understanding of the scientific information and key concepts that underlie the functioning of natural systems with an emphasis on the interrelatedness of these systems with each other and human societies, as well as the negative impacts of environmental degradation on both.
  - An understanding of the scientific foundation and key concepts that describe the patterns and processes of Earth’s natural systems.
Awareness of the interrelationship of human activities and natural systems.
Ability to use scientific knowledge together with prior knowledge to engage in critical thinking about environmental issues arising from the interrelationship between human societies and natural systems.

Assessments for Global Awareness will include a computer based formative assessment activity and in-class exams.

- Global Perspective – Students will be able to examine environmental issues within a transdisciplinary and multi-perspective framework that supports creative ideas to promote environmental sustainability.
  - Comprehension of the many interrelated technical, social and cultural contributions responsible for the complexity of environmental issues.
  - The ability to examine environmental issues from the perspectives of multiple stakeholders.
  - Develop an understanding of how environmental degradation may impact both natural systems and human societies in the future.

Assessment for Global Perspective will take the form of group-based debates on environmental topics where groups will represent the positions of different stakeholders. Students from groups that are not participating on a panel for that session’s debate will provide input on the performance of the groups. Groups will also submit a position paper on their topic. Grading for these activities will be done using the appropriate rubrics that will be provided to students.

- Global Engagement – Students will demonstrate a willingness to reflect on their own relationship to the environment and take responsibility to reduce their own ecological footprint as well as engaging in local, global and intercultural environmental problem solving.
  - Students will evaluate and reflect on their ecological footprint through its calculation using an on-line ecological footprint calculator.
  - Students will experience and appreciate the challenges facing human communities in their efforts to achieve the sustainable use of natural resources and services.

Assessment for Global Engagement will take the form of a reflection posting to the course discussion forum regarding their personal ecological footprint. In addition, students will participate in a community service/co-curricular activity designed to reduce environmental degradation and promote the health of the community. Students will describe their experience in a posting to the course discussion forum. Both postings will be evaluated using the appropriate rubrics that will be provided to students.

Required Text and On-line access:

Environmental Science for a Changing World with Extended Coverage by Karr, Houtman, Interlandi, W.H. Freeman, 2013. The text is an e-book packaged with access to the Enviroportal website where additional class activities are located. If students prefer a paper textbook, the loose-leaf version with Enviroportal access can also be purchased; however, the e-book/website purchase is more cost effective.

Additional on-line readings, short videos, documentary films and talks will be assigned to offer other perspectives on the environmental topics under discussion. A detailed list will be provided in class. *This is a blended class with both in-class and on-line learning activities.* Frequent reliable access to either the learning management system Blackboard Learn 9 and to the Enviroportal is required for this class. Many class activities with deadlines will be carried out on these systems. *Lack of Internet access will not be an excuse for missed assignments. Plan ahead.*

Responsibilities

As the Instructor, it is my responsibility to organize, prepare and provide the content for this course. I will clearly state the guidelines for the course in this syllabus and put my best effort into completing grading and responding to inquiries in a timely manner. I will promote a culture of courtesy and respect in the classroom that offers each student an opportunity to question, discuss and learn within the limitations of a large class.

Students have the responsibility to:

- Arrive at class on-time and remain until the end of class, out of consideration to the Instructor and the other students
- Complete class preparations, readings and assignments when due, following the syllabus and announcements in class
- Participate in class discussions and other activities, ask questions and reflect on the topics under consideration
- Follow classroom policies for electronic devices and refrain from private conversations in class
- Learn from the diverse group of people in this class by listening and considering what each person says and writes. You may disagree, but it must be in a way that shows respect and values each person.

Laptop Computer/Tablet/cellphone Usage:

Technology is a great tool to facilitate learning in the classroom; however, it can also be a distraction to both the Instructor and other students. If your computer usage disrupts the class, you will lose your computer privileges. Students are not allowed to use their cellphones in class. They must be put away and set on vibrate mode. Students violating this policy will be asked to leave the class.

Turn-it-In

To verify the originality of the work, certain assignments may be submitted for grading to [www.turnitin.com](http://www.turnitin.com) by way of a link in Blackboard Learn. Such assignments must be your original individual effort, and any sources used must be cited. **No credit** will be given if the assignment has not been submitted to Turnitin, it lacks sources or there is evidence of a lack of originality. Assignments will be archived at the Turnitin website. Additional details will be provided in class.

Cheating, plagiarism and other forms of academic dishonesty are very serious forms of academic misconduct and will not be tolerated. University policies for academic misconduct are very strict, and the results of cheating and/or plagiarism can be a failing grade or ultimately expulsion from the University.
Notice: If a student has a disability and needs assistance with class, please contact the Disability Resource Center (GC 190; 305-348-3532). It is the responsibility of each student to work with the Center and Instructor to make arrangements as needed for their accommodations.

Course Activities:

Exams – 40% of grade

There will be 2 in-class exams each covering about 1/2 of the course material. Exams can consist of multiple-choice, short answer or essay questions, and topics included in exams will be announced in class. Students must attend the exams at the scheduled times. If a student cannot attend, the student must contact the Instructor in advance to take the exam at the different time. If a student supplies proof that he/she could not attend the regular exam due to a serious personal emergency at the time (note from physician, court, death certificate, military orders), that student may be allowed to take a makeup exam. Family vacations, work schedule, oversleeping, forgetting about the exam and similar occurrences do not constitute a personal emergency. All exams not taken during the regular exam time will be essay exams with a high degree of difficulty. The Instructor will make the final decision about eligibility for a makeup exam. A missed exam will receive a 0 grade.

Group Activities – 20% of grade

Group activities will consist of a series of debates with peer review and the preparation of a position paper. At the beginning of the semester, students will be placed into groups of 6-8 students each. Groups will participate in debates representing the perspectives and interests of various stakeholders concerned with an environmental topic that is being covered in the course. The number of debates and the distribution of groups within a debate session will be determined at the beginning of the semester when the class size is known. Groups will have two weeks of preparation time for their debate session. Assessment of a debate will include three parts: an evaluation of the effectiveness of the debate by the instructor and students in the audience, a peer evaluation of the level of participation by each team member by their fellow team members, and the grading of a five page position paper submitted by the group. The five page position paper will be submitted through a Turnitin assignment link in Blackboard Learn 9. A complete description of the guidelines for the debates, a schedule and grading rubrics will be provided at the beginning of the course.

Individual Activities – 20% of grade

A formative assessment will be required for assigned chapters of the textbook using the Learning Curve tool within the Enviroportal. To receive full credit, students must complete 80% of the assigned assessments on-time. These assessments are designed to allow students to progress through the chapter contents at their own pace with opportunities for review of the material, and they offer good preparation for the course exams.

Community Service/Co-Curricular Activities – 10% of grade

Each student is required to participate in on-campus or off-campus activity during the semester. This must be an activity related to environmental issues or sustainability. Active engagement in a community activity (e.g. beach cleanup) is preferred; however attending and participating in a workshop, lecture, film viewing or public environmental education is acceptable. Students will provide proof of their service, and will post a reflection on the Community Service Discussion Forum. Students will also be asked to
provide a thoughtful reply to other students posted in the forum. Community service opportunities will be posted during the first couple weeks of the semester and as they become available.

The second activity concerns the calculation of the personal ecological footprint using a website footprint calculator and a reflection posted to the Ecological Footprint Discussion Forum. Students will be asked to reply to postings with a thoughtful consideration of the steps that could be taken to reduce an individual’s ecological footprint.

**Participation – 10% of grade**

Everyone is expected to attend class and prepare for class in advance. Attendance is mandatory, and will be taken every class. If students miss more than three classes, they must make an appointment for a conference with the Instructor. Missing more than four classes will result in a 0 grade for Participation. The instructor is not responsible for removing students from the class roster. If anyone wishes to drop the class, they must do so through Panthersoft prior to the drop deadline. Students showing a lack of courtesy and consideration for the Instructor and other students will be asked to leave the classroom and will be marked absent for that session.

**Extra Credit – 3% added to final grade**


Geologist James Powell has written a book made up of a series of vignettes that describes his vision of the future under climate change in areas across the globe (Pakistan, Bangladesh, Canada, USA, Tuvalu). John Cook at www.skepticalscience.com (21 June 2011) says, “Powell takes what science is currently telling us about future climate impacts and translates it into real life, tangible human impacts…He has taken peer-reviewed science and humanizes it”.

To receive the extra credit, read the book and offer a five page reflection (12 pt Times New Roman font, 1 inch margins) that considers the following points:

1) Where is the narrator located and what is the perspective of the narrator in each vignette?
2) Summarize the consequences of climate change in various parts of the world? Who were the “winners” and the “losers”?
3) Do you think this book effectively communicates the potential effects of climate change? Why or why not?
4) What part of the book made the greatest impression on you? Has it influenced your viewpoint about climate change?

The extra credit paper will be submitted to turnitin via an assignment link in Blackboard Learn 9. It is due the Monday of the last week of the semester.

**Course Grading**

Grades earned for each activity will be posted as percentages. To determine final grades, first calculate the average percentage for each activity, then apply the formula below:
Exam Ave*0.4+Group Activities Ave*0.2+Individual Activities Ave*0.2+
Comm. Service*0.1+Participation*0.1 = Final Percentage (+ 3% extra credit)

Corresponding letter grades for final percentages are:
A=90-100%; B=80-89%; C=70-79%; D=60-69%; F<60%

No Incomplete grades will be issued.

**Sample Course Schedule for EVR 1001 (Detailed)**

*Note: This syllabus and course schedule may be updated, if needed. An announcement of changes will be made in class and in Blackboard Learn 9.*

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/Activity</th>
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| 1    | Introduction to course, Syllabus & Overview  
Ch. 1: Environmental Literacy  
Case Study: What lessons can be learned from a vanished Viking society? |
| 2    | Ch. 2: Science Literacy and the Process of Science  
Case Study: Solving the mystery of the disappearing ozone  
Ch. 3: Information Literacy  
Case Study: Chemicals in our everyday lives |
| 3    | Ch. 5: Human Populations  
Case Study: One-Child China Grows up  
Additional material: TED Talk – Hans Rosling, PBS – the Population Paradox  
Ch. 6: Environmental Health  
Case Study: Eradicating a parasitic nightmare (Nigeria)  
Additional material: TED Talk – Nathan Wolfe |
|      | First debate topic: Using fiction to inform about environmental issues  
Community Service opportunities posted |
| 4    | Ch. 7: Ecosystems and Nutrient Cycling  
Case Study: Biosphere 2  
Additional material: The Global Carbon Cycle (NASA)  
Ch. 8: Population Ecology  
Case Study: The gray wolf  
Additional material: Radioactive Wolves (PBS) |
| 5    | Ch. 9: Community Ecology  
Case Study: The stork in the Everglades  
Ch. 10: Biodiversity  
Case Study: Cure for cancer in bark of Samoan tree |
|      | Second debate topic: Cosmetics and consumer protection |
Ch. 12: Evolution and Extinction
Case Study: The missing birds of Guam
Ch. 13: Forests
Case Study: Returning the forests to Haiti
Additional Material: Wangaari Mathai and the Greenbelt Movement (Kenya)

Ch. 14: The Grasslands
Case Study: Restoring the Range
Additional Material: The Dust Bowl (PBS)
Ch. 15: Marine Ecosystems
Case Study: Science under the Sea (Aquarius Lab – Key Largo, FL)

Third debate topic: Should we vaccinate our children?

Midterm Exam
Ch. 16: Fisheries and Aquaculture
Case Study: Fish farming in a warehouse

Ch. 17: Freshwater resources
Case Study: Using treated wastewater for drinking water
Ch. 18: Water Pollution
Case Study: Chesapeake Bay
Additional Material: Poisoned Waters (PBS)

Fourth debate topic: Farmers vs. pastoralists

Ch. 19: Mineral Resources
Case Study: Hi-Tech demand for rare minerals
Additional Material: Reading: The environmental & social costs of gold mining

Fifth debate topic: Our coastal areas – mangroves or development?

Ecological Footprint Activity completed

Deadline to drop class
Ch. 20: Feeding the World
Case Study: Can GM crops end world hunger?
Additional Material: Short Video – Vandana Shiva (India) and global agriculture
Ch. 21: Agriculture – Raising Livestock
Case Study: Disease, pollution and the true cost of meat
Additional Material: In class video – Food, Inc.

Ch. 22: Agriculture – Raising Crops
Case Study: Sustainable agricultural systems – ducks & rice paddies
Additional Material: Video – Sepp Holzer and permaculture in the Austrian Alps
Ch. 23: Coal
Case Study: Mountaintop removal (includes video)
Sixth debate topic: Is the future industrial or sustainable agriculture?
Ch. 24: Petroleum
Case Study: Gulf Oil Spill
Ch. 25: Air Pollution
Case Study: Children and Asthma

Ch. 26: Climate Change
Case Study: Loss of forests to heat, drought and fire
Additional Material: Updated climate change summaries from IPCC, U.S. government and other international sources
Ch. 27: Nuclear Power
Case Study: Fukushima

Seventh debate topic: Global climate change – who should act?

Ch. 28: Sun, Wind and Water energy
Case Study: Renewable Energy in Denmark
Ch. 29: Biofuels
Case Study: Grass as auto fuel
Additional Material: video PowerSurge (PBS)

Eighth debate topic: Does the energy future include nuclear power?

Final Exam
Community Service Activity Completed
Extra Credit paper due