

January 13, 2010/Bvk

# Syllabus

Name of Course: BIO 170 (Environmental Alternatives)  
Time of Course: M/F: 9.30-10.20 am  
W: 9.30-11.20 am  
Room: HS 223 (M/F)  
HS G32 (W)

## Contact info

The best way to reach me is to email in advance to set up an appointment.

Email: [birthe.kjellerup@goucher.edu](mailto:birthe.kjellerup@goucher.edu)  
Office Phone: 410-337-3019  
Cell Phone: 443-850-2674

## Office hours

Monday: 10.30-11.30 am  
Tuesday: 11.15 am -12.15 pm  
Wednesday: 11.30 am – 12.30 pm  
Thursday: 11.15 am-12.15 pm  
Friday: 10.30-11.30 am

## Text Book

Environmental Science – A global concern  
William B. Cunningham and Mary Ann Cunningham  
Eleventh edition  
McGraw Hill  
ISBN: 978-0-07-338321-7

## Course Description

This course introduces topics of pressing environmental issues. Topics include: Population growth, biodiversity, climate change, toxic waste, and renewable energy. Special emphasis will be on how these problems affect our local/regional surroundings and what you can do.

## Course Objectives

This course will make you capable of:

- A. Identifying local, regional and global environmental issues. What is the historical, political and scientific background?
- B. Evaluation of current and pressing environmental issues by examining conflicting views including alternative solutions within the context of economic, cultural, scientific and political factors.
- C. Data collection, analysis and critical evaluation. How does collection of scientific data and subsequent data analysis influence how problems are presented and solutions discussed?
- D. Identifying and potentially solving environmental problems present in your local or regional surroundings.

## Lecture schedule

Lect. #	Date	Topic	Reading
1	Jan 27	Class is cancelled	None
<b>Introduction – Understanding our environment</b>			
2	Jan 29	Understanding our environment	Ch 1, Section 1.1, 1.2, 1.4, Conclusion, Review
3	Feb 1	Environmental health and toxicology	Ch 8, Section 8.1, page 167, 8.3, 8.4, Conclusion, Review
<b>Energy and climate change</b>			
<b>4</b>	<b>Feb 3*</b>	<b>Temperature logging</b>	Lab report 1
Extra	Feb 4	Seminar 1	One of the seminars is mandatory + abstract
5	Feb 5	Conventional energy	Ch 19, Section 19.1-19.4
6	Feb 8	Conventional energy	Ch 19, Section 19.5 and on
<b>7</b>	<b>Feb 10*</b>	<b>Energy resources lab</b>	Article: Putting your home on a n energy diet (pdf)
Extra	Feb 11	Seminar 2	One of the seminars is mandatory + abstract
8	Feb 12	Sustainable energy	Ch 20, Section 20.1-20.4
9	Feb 15	Sustainable energy	Ch 20, Section 20.5- and on
<b>10</b>	<b>Feb 17*</b>	<b>Green buildings</b>	Lab report 2
11	Feb 19	Air, water and climate	Ch 15, Section 15.1-15.4
12	Feb 22	Air, water and climate	Ch 15, Section 15.5 and on
<b>13</b>	<b>Feb 24*</b>	<b>Climate change lab I</b>	
14	Feb 26	Air, water and climate	Article: The rise of renewable energy (pdf)
15	Mar 1	Exam 1	None
<b>16</b>	<b>Mar 3*</b>	<b>Climate change lab II</b>	Lab report 3
<b>What can we do?</b>			
17	Mar 5	Life Cycle Assessment	Why Take A Life Cycle Approach? Page 8-20 (pdf)
18	Mar 8	Life Cycle Assessment	EPA material Chapter 1 (pdf)
<b>19</b>	<b>Mar 10*</b>	<b>Life Cycle Assessment I</b>	EPA material Chapter 3 (pdf)
20	Mar 12	Life Cycle assessment	Ch 25: Section 25.3 and on
SPRING BREAK – No Classes			
21	Mar 22	Exam 2: Take home	
<b>22</b>	<b>Mar 24*</b>	<b>Life Cycle Assessment II</b>	Lab report 4
23	Mar 26	“Improve your community” project	
	Mar 27	Field trip: Back River Waste water treatment plant (Mandatory)	
24	Mar 29	“Improve your community” project	
<b>25</b>	<b>Mar 31*</b>	<b>Presentations: “Improve your community” (Mandatory)</b>	
26	Apr 2	<b>Presentations: “Improve your community” (Mandatory)</b>	
<b>Physical Resources</b>			
27	Apr 5	Water pollution	Ch 18, Section 18.1 & 18.2
<b>28</b>	<b>Apr 7*</b>	<b>Waste water Lab</b>	
29	Apr 9	Water pollution	Ch 18, Section 18.3, 18.4, Conclusion, Review
30	Apr 12	Water pollution	Article: Landfill-on-sea (pdf)
<b>31</b>	<b>Apr 14*</b>	<b>Pond Water Quality</b>	Lab report 5
32	Apr 16	Water quality	Article: How much is clean water worth? (Pdf)
33	Apr 19	Solid, toxic and hazardous waste	Ch 21, Section 21.1, 21.2, 21.3
<b>34</b>	<b>Apr 21*</b>	<b>Toxicity</b>	
35	Apr 23	Solid, toxic and hazardous waste	Ch 21, Section 21.4 and on
36	Apr 26	Biodiversity	Ch 11, Section 11.1, 11.2, 11.3
<b>37</b>	<b>Apr 28*</b>	<b>Biodiversity</b>	
38	Apr 30	Exam 3	None
39	May 3	Biodiversity	Ch 11, Section 11.4 and on
<b>40</b>	<b>May 5*</b>	<b>Biodiversity &amp; Evaluation</b>	Lab report 6

\* Wednesdays = Lab days.

**Class Participation:** All class members are requested to read the assigned chapters and articles before every class and actively participate in the class discussion. Participation in discussion is an important component of your final grade.

**Attendance:** Regular attendance is expected and is to your advantage, as participation in class discussions and student presentations is required.

### **Field trips:**

Field trips are **mandatory** and count towards your final grade instead of a final exam. After the field trip a two page report must be submitted.

- Tour of the Back River wastewater treatment plant, Baltimore: **March 27, 2010: 11 am to 3 pm.**
- Tour of the Recirculating Marine Aquaculture system at Center of Marine Biotechnology, Baltimore: **Date to be confirmed.**

### **Laboratory exercises:**

There will be a laboratory exercise every Wednesday from 9.30 – 11.20 am in G32. The protocol will be available either as handout or copy a week prior to the lab class.

## **Grading**

- |   |     |
|---|-----|
| • Effort (Attendance and participation):      | 10% |
| • Lab assignments (6 in total, each 5%)       | 30% |
| • Project: Student presentation and work plan | 20% |
| • 1 <sup>st</sup> exam                        | 10% |
| • 2 <sup>nd</sup> exam                        | 15% |
| • 3 <sup>rd</sup> exam                        | 15% |

## **Course Policies**

### **Attendance**

Since your effort (attendance and participation) counts as a part of your grade and the questions on the exams will reflect the topics covered in class but not necessarily shown on the power point handouts (available at Blackboard) you are highly encouraged to attend all lectures and labs. Attendance will be taken and repeated absences are taken into consideration for border line grades and professionalism points.

Normal lecture days: If you are sick, please contact me via email before class starts. Otherwise you will be counted as “absent without reason”.

Exam days: If you are sick, please contact me via phone or email as soon as possible AND prior to the exam, so we can find a solution. Otherwise you will be noted as “absent without reason” and receive a 0% on the test.

### **Electronic devices**

All electronic devices must be turned off during lectures and put away. They are not to be placed on the desk.

### **Late work**

If you experience a high work load or other issues come up during the semester, please contact me as soon as this occurs, so we can make a plan avoiding late assignments. The grade for late assignments will be reduced. Also, late assignments will not be accepted after the assignments have been returned.

**Exams and presentations**

The dates for exams, presentations and other assignments are listed in the syllabus and will be held on those dates. Please do not schedule appointments or commit to other obligations during these times. Exams cannot be made up unless I grant you an excused absence due to a medical emergency or some other major unforeseen catastrophe.

In the event that the college is closed, due to bad weather or some other major problem, the scheduled exam will be given during the first lecture class that we meet after the college reopens.

We will be communicating via email throughout long periods of college close-downs, so please check your email regularly in order to receive information on assignments etc., since the plans might change.

**Academic Honor Code**

Reminder: All students are bound by the standards of the Academic Honor Code, found at [www.goucher.edu/documents/General/AcademicHonorCode.pdf](http://www.goucher.edu/documents/General/AcademicHonorCode.pdf)