Biology 49: PEOPLE and the ENVIRONMENT

This non-majors general education class is a three credit non-lab course meeting three times per week for one hour each class. The course is designed to facilitate understanding of human interdependence with the environment and responsibility for environmental quality. Fundamental concepts of environmental science, ecology, biodiversity and sustainability will be emphasized. Lectures will be PowerPoint based interspersed with class discussions, writing activities, multi-media components, group activities, field trips and student presentations.

This course is certified for Civic Engagement through participation in class discussion and EcoFestival.

ATTENDANCE: Attendance will be taken at the start of class. Any student not present at that time will be marked absent. Any student arriving after attendance has been taken will be marked late. Being late twice constitutes one absence. Attendance and active class participation are mandatory. Any student who misses more than 6 class sessions will get an automatic WU. There will be no make up classes.

ETIQUETTE: Please maintain a respectful and collaborative learning environment at all times. No eating, drinking, or smoking in class. All cell phones must be off or mute during class. Plagiarism will not be tolerated. (e.g. copying text as though it is your own or without proper citation or credit to the correct author) Any student who submits work without proper citation, will be given a zero for that assignment and risks further disciplinary action. Cheating of any kind will not be tolerated. Use of electronic devices during tests is considered cheating.

CIVILITY: Kingsborough is committed to the highest standards of academic and ethical integrity. Civility in the classroom and respect for the opinions of others is essential in an academic environment. Even if you do not agree with things discussed in class, courteous behavior and respectful responses are expected.

TIPS FOR SUCCESS:
Come to class ready to learn (not sleep, text, gossip etc.)
Be on time and complete all assignments on time. All assignments are due at the start of class.
Read each Week’s chapter before class! You will be expected to know the material during class.
Ask questions if you do not understand a concept, or have an opinion you want to share.
Share information on any pertinent books, lectures, articles or news items you encounter.
Sit in the front, make eye contact, take notes, and bring the text to class.

TEXT: Essential Environment 4th Edition by J. Withgott and S. Brennan (3rd edition can be used)

GRADE BREAKDOWN:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Participation and Attendance</td>
<td>10%</td>
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<tr>
<td>Term paper (5 pages plus bibliography)</td>
<td>10%</td>
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<td>PowerPoint Presentation (5 minute verbal)</td>
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<td>Homework (due at the start of each class)</td>
<td>5%</td>
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<td>Unit tests (3)15% each</td>
<td>45%</td>
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<td>Cumulative final exam</td>
<td>20%</td>
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<td>TOTAL:</td>
<td>100%</td>
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**BIO 49 TOPICS COVERED EACH WEEK**

**Week 1 – Chapter 1: Science and Sustainability**
- March 3rd - Class discussion: *Who are you and why are you here?*
- March 4th - Class discussion: *What is environmental science and how is it done?*
- March 6th - Class discussion: *What do environmental ethics mean to you?*

**Week 2 – Chapter 2: Environmental Systems: Matter Energy and Ecosystems**
- March 11th - Class discussion: *What is energy and why does it matter to you?*
- March 12th - Class discussion: *What's the matter with the matter?*
- March 14th - Class discussion: *What are the impacts associated with disruption of natural cycles?*

**Week 3 – Chapters 4: Evolution, Biodiversity and Population Ecology**
- March 17th - Class discussion: *If you explain to your grandmother, will she understand or agree?*
- March 18th - Class discussion: *How do we define a species? How do we classify biodiversity?*
- March 20th - VISIT KCC AQUARIUM *How would you go about studying your chosen species?*

**Week 4 – Chapter 5: Species Interactions and Community Ecology**
- March 24th – UNIT 1 TEST (chapters 1, 2, 3)
- March 25th – Class discussion: *What is your species’ trophic role and how is adapted for that?*
- March 27th TERM PAPER OUTLINE DUE (based on your local species)

**Week 5 – Chapter 6: Human Populations**
- March 31st - *How can we insure a prosperous and sustainable world for future generations?*
- April 1st - TERM PAPER WEBSITE PAGES DUE (print, hi-light, 1 paragraph summary)
- April 3rd - TERM PAPER POPULAR ARTICLES DUE (print, hi-light, 1 par summary)

**Week 6 – Chapter 7: Soil, Agriculture and the Future of Food**
- April 7th TERM PAPER 1st SCIENTIFIC JOURNAL ARTICLE DUE (hi-light w/ summary)
- April 8th – 2nd SCIENTIFIC JOURNAL ARTICLE DUE (hi-light, w/ summary)
- April 10th - UNIT 2 TEST (chapters 4,5,7)

**Week 7 – April 14th – 22nd – SPRING BREAK – NO CLASS**

**Week 8 – Chapter 8: Biodiversity and Conservation Biology**
- April 24th – Class discussion: *Can species conservation save biodiversity?*

**Week 9 – Chapter 12: Fresh Water, Oceans and Coasts**
- April 28th - Class discussion: *What is the most important coastal ecosystem near campus? Why?*
- April 29th – OUTDOOR CLASS – KBCC Marina/Docks to observe Horseshoe Crabs
- April 30th – EcoFestival - CLASS WILL MEET IN MAC ROTUNDA

**Week 10 – Chapter 14: Global Climate Change**
- May 5th – Class discussion: *What are the main causes of climate change and how sure are we?*
- May 6th - TERM PAPER DUE
- May 8th – Class discussion: *What should be done to reduce/combat climate change and how?*

**Week 11 – Chapter 15: Nonrenewable Energy**
- May 12th - UNIT 3 TEST (chapters 8,12,14)
- May 13th – Class discussion: *What is the most destructive non-renewable energy form and why?*
- May 15th – Class discussion: *What can you do to be part of the solution instead of the problem?*

**Week 12 – Chapter 16: Renewable Energy**
- May 19th – Class discussion: *Can we switch to renewable energy in our lifetimes and how?*
- May 20th – Class discussion: *What is the most promising renewable energy source and why?*
- May 22nd - OUTDOOR CLASS – Visit to KBCC sustainable farm

**Week 13 – May 26th – June 4th - STUDENT PRESENTATIONS and REVIEW**
STUDENT ASSESSMENT: Tests will be multiple choice (unless otherwise indicated). NO makeup test will be given. The final exam is cumulative, meaning it will include all material covered throughout the semester. If any student is suspected or observed to be cheating, their test will be confiscated.

COURSE ASSESSMENT: Students will be required to participate in several assessment activities during the course. These will focus on one or more of the key learning goals and are intended to ensure the instructor and method of instruction are adequately addressing the course learning goals.

EXTRA CREDIT: One point of extra credit up to a maximum of 5 points (5% of the final grade) will be given for each EcoFestival 2014 event, talk or field trip attended and summarized. For students who are not able to get extra credit in this manner, volunteering on a Citizen Science project for a minimum of two hours and writes up a paragraph on their experience will be given a point of extra credit.

CIVIC ENGAGEMENT: Active participation in EcoFestival 2014 during class and semester long discussion of local environmental issues will ensure that this class qualifies as a Civic Engagement class.

TERM PAPER A 5 page research report on a LOCAL species that is either rare, declining, commercially important, environmentally vital or invasive. All topics must be approved by the professor. Reports must include all of the following sections with clearly marked headings:
1. Physical Description (one paragraph describing the organism’s appearance)
2. Habitat (one paragraph describing the habitat, original and current range, and adaptations to live here)
3. Trophic Role (one paragraph describing the adaptations the organism has to occupy this niche)
4. Taxonomy (one paragraph describing the classification and family tree of this species)
5. Human Impacts (one paragraph describing the main impacts this species has on human)
6. Impacts on Humans (one paragraph describing how this species impacts humans)
7. Laws and Policies (one paragraph describing any laws, treaties, or bans impacting this species)
8. Current Research (two paragraphs – one for each study you read about – summarizing current research on this species including what these studies mean and what else needs to be done)
9. My Impacts (one paragraph on how this species impacts you and how you can make a difference)
10. A bibliography of your sources including author(s), date, title and page numbers. Eg:


This report will count for 10% of your grade, and must be typed, on 8.5 x 11 paper, in 12 point font. All topics must be approved by the professor. Literature sources must be submitted and approved. This report must include 4 valid sources along with a Xeroxed copy or PDF of each article. At least two must be peer reviewed scientific journal articles (Journal of Tropical Ecology, Journal of Mammalogy, Nature, Science etc.), one from a reputable magazine or newspaper (NYTimes National Geographic, LIFE, etc.) and one from a reputable web source (.org, .gov, .edu).

ORAL POWERPOINT PRESENTATION A 5 minute, 6 slide PowerPoint presentation based on the written assignment will be made by each student in class during the last week of class. This assignment will count as 10% of the final grades and must be submitted as an attachment to an email as well as on a thumb drive for presentation to the class. Presentations must have:
1. A title page with: title of presentation, name of presenter, and scientific name of the species
2. A relevant title for each slide introducing the specific topic for that slide
3. Use 24 point font with high contrast to the background color and minimal bells and whistles
4. Brief bulleted talking points including at least one image, map, graph and/or chart per slide
5. A conclusion slide that sums up the presentation including your opinion of the best solution
MEASURABLE LEARNING OUTCOMES

1. Demonstrate an understanding of the scientific process by collecting and reporting on scientific data
2. Demonstrate proficiency in quantitative reasoning by creating and analyzing data charts
3. Demonstrate understanding of the relationship between biological form and function by observing adaptations for survival among various living organisms.

LEARNING COMPETENCIES  ACTIONS TAKEN TO MEET THESE COMPETENCIES

Understand the scientific method*  Conduct a research investigation
Develop observation skills*  Observe organism in your own environment
Develop inquiry skills*  Ask scientific questions about organism and interactions
Understand environmental issues*  Conduct a research paper on local species
Explore local ecosystems  Explore species and habitats around KBCC
Understand basics of ecology  Examine topics through lectures, readings and discussions
Comprehend human nature interactions  Examine topics through lectures, reading and discussions
Appreciate biodiversity and ecosystem services  Conduct a local biodiversity survey
Develop public speaking skills*  Present to a group of peers in the classroom
Develop library research skills  Locate and review appropriate publications
Develop critical thinking skills*  Review selected media pieces for content and quality
Become proficient at PowerPoint*  Prepare and deliver a presentation using PowerPoint
Become proficient at MS Word*  Create written report using Microsoft Word