

Biology 4900: PEOPLE and the ENVIRONMENT

This non-majors general education class is a three credit, non-lab course. 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, multi-media components, outdoor activities, and student presentations.

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 2 weeks of class will get an automatic WU. There will be no make-up classes. **YOU MUST TAKE NOTES FOR EVERY CLASS. I WILL REVIEW THESE EACH DAY!**

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 muted during class and trips.

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:

Be prepared. Come to class ready to learn. Be an active participant in class and on trips.

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.

TEXT: Free PDF textbook **Essentials of Ecology** 5th Edition (2009) Miller and Spoolman

GRADE BREAKDOWN:

Participation and attendance	10%
Term Paper (4 pages plus bibliography)	20%
PowerPoint presentation (7 minute verbal)	15%
Inquiry projects and homeworks	5%
Unit tests (Best 2)15% each	30%
Cumulative final exam	20%
TOTAL:	100%

BIO 49 TOPICS COVERED EACH WEEK

- Week 1** – Chapter 1: Science and Sustainability **Video** *Crash: A Tale of Two Species*
SELECT A SPECIES found in New York City. You will write a report about it.
(9/10, 9/12)
- Week 2** – Chapter 2: Environmental Systems: Matter Energy and Ecosystems **Visit KCC Beach?**
TERM PAPER OUTLINE DUE Include a sentence on each section of the term paper (see below).
Attach an **article** (no websites!) that describes the specie's **Morphology** and **Adaptations**
(9/16, 9/17, 9/19)
- Week 3** – Chapter 5/4: Species Interactions and Community Ecology **Campus Exploration**
PEER REVIEWED SCIENTIFIC ARTICLE #1 DUE It must be on the **Diet** of your chosen species. Bring 1st page including the ABSTRACT. Circle author's last name, journal, and year.
Highlight abstract key findings. Summarize briefly in the margins in your own words.
(9/23, 9/24, 9/26)
- Week 4 - UNIT 1 TEST (Chapters 1, 2 5/4) 10/3**
(9/30, 10/1 NO CLASSES)
- Week 5-** Chapter 7: Soil, Agriculture and the Future of Food **VISIT KCC FARM?**
PEER REVIEWED SCIENTIFIC ARTICLE #2 DUE It must be on the **Habitat** of your chosen species. Highlight, circle and summarize as instructed above.
(10/7, 10/10) (10/8 NO CLASSES)
- Week 6 - Chapters 4/3: Evolution, Biodiversity and Population Ecology** **Video** *Meet the Coywolf*
PEER REVIEWED SCIENTIFIC ARTICLE #3 DUE It must be on the **Evolution** of your chosen species. Highlight, circle and summarize as instructed above. (Use Wikipedia to get its Taxonomy)
(10/14, 10/15, 10/17)
- Week 7** – Chapter 6: Human Populations **Video** *The Story of Stuff*
PEER REVIEWED SCIENTIFIC ARTICLE #4 DUE This must be on your species **Human Impacts** (conflict, harvest, use, threats, etc). Highlight summarize as above.
(10/21,10/22,10/24)
- Week 8** – Chapter 12: Fresh Water, Oceans and Coasts **Tour KCC Marina?/RV CUNY 1**
Conservation Status of your species DUE Go to www.iucnredlist.org. Search for your species scientific name. Print the 1st page. Highlight and summarize its status and key issues.
(10/28, 10/29, 10/31)
- Week 9** – Chapter 14: Global Climate Change **Video clip** *An Inconvenient Sequel* (11/5, 11/7)
UNIT 2 TEST (Chapter 12, 3/4, 6 and 7) (11/4)
- Week 10 - Chapter 8: Biodiversity and Conservation Biology** (11/11, 11/12,11/14) **Video clip: Palm Oil**

Process Gotham Coyote flash drive data as alternate activity?

TERM PAPER DUE THURSDAY (11/14) (attach approved outline, articles and completed rubric) (

Week 11- Chapter 15 Nonrenewable Energy Video clips: *Plastic Paradise, Gasland*
(11/18, 11/19, 11/21)

Week 12- Chapter 16 Renewable Energy Video clip: *Energy Future*
(11/25, 11/26) (11/28- NO CLASSES)

Week 13 UNIT TEST 3 (Chapters 8, 14, 15,16) (12/2)

STUDENT PRESENTATIONS (12/3, 12/5,12/9, 12/10)

STUDENT PRESENTATIONS Attendance to all sessions is mandatory.

STUDENT ASSESSMENT: Tests will be short answers and true/false. 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.

TERM PAPER A 4 page research report (**two sheets, double side printing**) on your chosen species. All topics must be approved by the professor. The descriptive **title** must include the species common and scientific names and a key fact. Reports must include the following sections with clearly marked headings. Each section must be one paragraph and must **cite** the source used in APA format eg. (*Colon et al,2004*).

1. **Morphology and Adaptations** (a paragraph describing the organism's appearance, and adaptations)
2. **Diet** (a paragraph describing the organism's diet, predators and position in a trophic pyramid)
3. **Habitat** (a paragraph describing the native habitat, as well as its past and current geographic range)
4. **Taxonomy** (a paragraph describing the classification and closest kin of this species)
5. **Human Impacts** (a paragraph describing impacts/uses/conflicts this species has **on or by** humans)
6. **Conservation Status** (a paragraph describing the IUCN status, laws, treaties, or bans on this species)
7. **Research Methods** (a paragraph describing how scientists study this species and what they learned)
8. **References** All sources must be listed here including author(s), date, title, and name of journal:
Colon, C.P. and A. Campos-Arciez (2013) The Impact of Gut Passage by Binturongs (*Arctictis binturong*) in Seed Germination. *Raffles Bulletin of Zoology* 61(1): 389-393.

This report will count for 20% of your grade. It must be typed, on 8.5 x 11 paper, 12 point font double sided, single line spacing, 1 inch margins, and page numbers. No fewer than 5 literature sources must be submitted and approved before using. A Xerox copy of the first page of each article must be included with the final report.

To find peer reviewed scientific articles, type the word **scholar** into Google, then search within Google Scholar using a **keyword** and the **scientific name** of your species (eg taxonomy + *Canis lupus*). Read the titles to find articles that seem relevant and readable (avoid ones with too many big words!) Articles with a PDF symbol can be printed in full, the rest will only provide the abstract page (which is sufficient for our purposes). These are all FREE, but you get better results on a campus computer or at a library.

ORAL POWERPOINT PRESENTATION A 7 minute, 7 slide PowerPoint presentation based on the written assignment will be made by each student in class during the last week. This assignment will count as 15% of the final grades and must be submitted as an attachment to an email as well as on a flash drive for presentation to the class. Each slide will focus on one paragraph/section of your term paper. It must also have

1. A title slide with: title of presentation, name of presenter, and scientific name of the species
2. A *relevant* title for each slide describing each section of your report (see list above)
3. Use of **24 point** dark 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

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.
4. Articulate and evaluate the empirical evidence supporting a scientific theory or hypothesis.

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	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