

Biology 4900: PEOPLE and the ENVIRONMENT

This **non-majors** general education class is a three credit, non-lab **Writing and Reading Intensive** course. The course will help you understand human interdependence with the environment and responsibility for environmental quality. Fundamental concepts of environmental science, ecology, biodiversity and sustainability are emphasized. Lectures are pre-recorded and based on specific chapters from textbook which can be purchased as a PDF or hard copy for under \$20. Weekly hand written lecture notes must be submitted online along with weekly audio recorded class discussion describing the summary of an article selected by the student about their chosen species for a final report. All tests are multiple choice and online and students can take each unit test twice if they wish to get a higher grade.

ATTENDANCE: Attendance is based on timely submission of notes and discussion posts each week. These writing and reading assignments are mandatory. Any student who misses more than 2 weeks of unexcused class work (or does not log in) will get an automatic WU. There are no make-up tests.

ETIQUETTE: Please maintain a respectful and collaborative learning environment at all times.

Plagiarism or use of AI will not be tolerated. (e.g. copying or generating 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, sharing or offering to share answers, requesting answers or screenshotting answers are all considered cheating.

CIVILITY: Kingsborough is committed to the highest standards of academic and ethical integrity. Civility and respect for the opinions of others is essential in an academic environment, even if you do not agree.

TIPS FOR SUCCESS:

Be prepared. Approach this course ready to learn. Be an active participant.

Complete all assignments on time. Late work may not be accepted and will always earn a penalty.

Read each week's assignments and chapter. Listen to the lecture! You are expected to summarize these.

Ask for clarification, reach out to me, or work with a tutor as needed.

LECTURES: In the interest of simplicity, I am using YouTube videos that 100% track the chapters and content of the course. These are clear and accessible from any device. A link to each lecture is provided in the weekly folders. Please listen to each several times to fully absorb the content and concepts therein.

TEXT: Essential Environment The Science Behind the stories Withgott and Laposata 5th Edition
This is provided FREE as PDF's posted in each week's folder. Or, buy a used hard copy for under \$10. Or a PDF for \$20. <https://educationaltextbookhome.com/checkout/> A few are on reserve in KBCC library.

GRADE BREAKDOWN:

Weekly discussion video posts	20%
Weekly hand written lecture notes	20%
Student narrated final presentation	10%
Unit tests (3)10% each	30%
Cumulative final exam	20%
TOTAL:	100%

BIO 49 TOPICS COVERED EACH WEEK

Week 1 9/9	<u>Chapter 1: Intro to Science and Sustainability</u> https://www.youtube.com/watch?v=bvXrL5shxO4&t=11s (1hr, 6min)
Week 2 9/16	<u>Chapter 2: Environmental Systems: Matter Energy and Ecosystems</u> https://www.youtube.com/watch?v=QezpjSXq15Q (1hr, 21min)
Week 3 9/23	<u>Chapter 4: Species Interactions and Community Ecology</u> https://www.youtube.com/watch?v=edpns-pbIXY&t=603s (54min)
Week 4 9/30	<u>Chapter 7: Soil, Agriculture and the Future of Food</u> https://www.youtube.com/watch?v=AlAxY6nQmQk (58min) UNIT 1 TEST (Chapters 1, 2 4) Thurs - Sat
Week 5 10/7	<u>Chapters 3: Evolution, Biodiversity and Population Ecology</u> https://www.youtube.com/watch?v=QnizXzDHoR0 (58min)
Week 6 10/14	<u>Chapter 6: Human Populations</u> https://www.youtube.com/watch?v=Hfysz1L25JM&t=136s (42min)
Week 7 10/21	<u>Chapter 12: Fresh Water, Oceans and Coasts</u> https://www.youtube.com/watch?v=tGBoL97prSI (1hr 10min)
Week 8 10/28	<u>Chapter 14: Global Climate Change</u> https://www.youtube.com/watch?v=do9XMGrVJYI&t=2295s (58min) UNIT 2 TEST (Chapters 7, 3, 6, 12)
Week 9 11/4	<u>Chapter 8: Biodiversity and Conservation Biology</u> https://www.youtube.com/watch?v=4P-_q32V5LY (50min)
Week 10 11/12	<u>Chapter 15 Nonrenewable Energy</u> https://www.youtube.com/watch?v=ZWLA8ehF9-A (1hr, 1min)
Week 11 11/18	<u>Chapter 16 Renewable Energy</u> https://www.youtube.com/watch?v=De7Y0HTLJc4 (33min) UNIT 3 TEST (Chapters 8, 14, and 15)
11/25	Thanksgiving Break!
Week 12 12/2	<u>STUDENT narrated PowerPoint PRESENTATIONS</u> CUMULATIVE FINAL EXAM -

WEEKLY ASSIGNMENTS

Each student must create one page of 12 point font, typed original summary notes of each week's chapter/lecture. All new vocabulary/terms/concepts must be **underlined** and defined. **Bold** all concepts you feel you do not **understand** and/or that you feel you need to **review**.

WEEKLY DISCUSSION POSTS

1. **Introduction.** What is your **favorite fruit**? Add a profile photo and a 2min video about you.
2. **Environmental impact** of (your fruit) industry. Summarize the key finding of a scholarly article (eg by scientists/from **Google Scholar**). List any **positive** as well as **negative** impacts identified by the authors. **Always** start with "*A (year of publication) study by (1st author) and (2nd author) found that...*"
3. **Invasive parasites or predators** of (your fruit) species. Summarize a scholarly article. How did the pest arrive? Where is it from? How is it being controlled? How bad are the losses?
4. **Sustainable practices** of the (your fruit) industry. Summarize a scholarly article. Are these new methods or traditional approaches? Do these reduce or increase yield? Profit? Cost?
5. **Evolution and biodiversity** of (your fruit). Summarize a scholarly article. How old is this lineage? Where is its origin? How diverse is its genome? How many varieties exist?
6. **Human domestication** of (your fruit). Summarize a scholarly article. Where and by whom did domestication occur? What cultural, medicinal or value did it used to have?
7. **Water needs and drought tolerance** of (your fruit). Summarize a scholarly article. Are these new varieties? GMO? Post a graph/chart showing their water use compared to regular varieties.
8. **Climate change impacts** on (your fruit). Summarize a scholarly article. What are the long and short term impacts and what can be or has been done to combat this?
9. **Extinction threats and conservation** of (your fruit). Use any source you like as long as you source it. Are these emerging threats or long standing? What are the causes? What solutions are proposed?
10. **Ecological footprint** calculation. What changes can you make to lower your Carbon footprint?
11. **No discussion** required, but feel free to ask **questions** about the final assignment or tests!
12. **Reflections** on the **course**. List the most important thing you learned and what you wish you learned.

STUDENT ASSESSMENT: Tests will be multiple choice and can be taken twice for the higher grade. NO makeup tests are given. The final exam is **cumulative**, meaning it will include all material covered throughout the semester.

EXTRA CREDIT

Two points of EC toward your **final grade** will be granted for up to **two** targeted visit, walk, volunteer experience, beach cleanup or in person lecture through any of the following during the semester. **Proof** of attendance in the form of a ticket or registration confirmation, **PLUS** a **photo** of you at the event **PLUS** a one page narrative relating the experience/exhibits to at least **two topics** addressed in class.

Free and reduced admission for NY NJ, CT residents are available for the following agencies:

- New York or Brooklyn Botanic Garden
- American Museum of Natural History
- Bronx or Central Park Zoo
- Gotham Whale
- NYC Audubon
- Linnean Society
- NYC H2O
- Coney Island Aquarium

NARRATED POWERPOINT PRESENTATION

A 10 minute, 10 slide original PowerPoint presentation will be submitted by each student. This will count as 10% of the final grades and must be submitted as a PowerPoint with **recorded narration** by the student. It must include the following slides with these headings. Slides # 2 thru 9 must summarize a **peer reviewed, scientific journal article** from **Google Scholar** about the fruit species you chose at the start of the term. Each slide must include the URL, lead author/s and year of the publication being summarized (e.g. *Colon et al, (2004) conducted a study of..... They found.....*).

1. **Descriptive title** must include your name, the fruit species common and correct scientific binomial name, translation of the Latin or Greek name, and a copyright free **image** of the fruit from iNaturalist.
2. **Environmental impact** of your fruit's industry. Be sure to list the good and the bad impacts.
3. **Invasive parasites or predators** of your fruit species.
4. **Sustainable practices** of the your fruit's industry.
5. **Evolution and biodiversity** of your fruit.
6. **Human domestication** of your fruit.
7. **Water needs and drought tolerance** of your fruit.
8. **Climate change impacts** on your fruit.
9. **Extinction threats and conservation** of your fruit.
10. **References** All sources referenced in the report must be listed alphabetically by lead author's last name. These citations must include all author(s), year of publication, title of the article name of journal, Issue, Volume, Page #s For example: 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.

To find peer reviewed scientific articles search **Google Scholar** using the **above specified keywords** and the **scientific name** of your species. 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 downloaded, others only provide the abstract which is NOT sufficient for our purposes. Do NOT PAY for any articles! Its easier to just use a different article, or you can email the lead author and request a copy, or log in to the KBCC Library website and sign up for interlibrary loan. But really, its easier to just use a different article. There should be plenty to choose from.

MEASURABLE LEARNING OUTCOMES

1. Demonstrate **understanding** of the **scientific process** by reading **peer reviewed** scientific **papers**.
2. Demonstrate **proficiency** in quantitative reasoning by analyzing data findings of researchers.
3. Demonstrate **understanding** of the relationship between **living organisms** and **human impacts**.
4. **Articulate** and **evaluate** the empirical evidence supporting scientific research.

LEARNING COMPETENCIES

ACTIONS TAKEN TO MEET THESE COMPETENCIES

Understand the scientific method	Conduct a research investigation using primary sources
Understand environmental issues	Research the literature on an ecologically important species
Understand basics of biology	Examine topics through lectures, readings and discussions
Comprehend human nature interactions	Examine topics through lectures, reading and discussions
Develop public speaking skills	Present to a group of peers in a narrated PowerPoint
Develop online research skills	Locate appropriate publications in Google Scholar
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 narratives using Microsoft Word