

Tentative Syllabus for BIOL 543: Environmental Science Concepts

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Course Meeting: Web based

Course Catalog Statement

Explores the inter-relationship among the science and technical disciplines that contribute to our understanding of the environment as a whole. Introduces research methods and core environmental concepts. Prepares students to examine environmental science questions with an interdisciplinary outlook.

Addendum: This course will focus on environmental science issues and their mitigation through scientific, economic, political, social, and technological viewpoints and collaborations.

Learning Outcomes: from this class students should be able to

- explain the major biological features involved in understanding the cause, result, and potential solutions for environmental problems
- recognize the roles of research, education, activism, and policy in understanding the problems and deriving environmental solutions
- demonstrate ability to use biological information to connect local issues to global problems and potential solutions
- discuss & write critically about the biological basis of problems and solutions

Books (required and optional)

E.O. Wilson (2016) *Half-Earth: Our Planet's Fight for Life*. Norton & Co. {required}

Christensen and Leege second edition (2016) *The Environment and You*. Pearson Publishing or another introductory text is optional. Such a text provides basic background on the subject.

Readings will come from the primary and secondary literature.

Examples of relevant journals

American Scientist

Biological Conservation

Biological Invasions

BioScience

Conservation Biology

Current Biology

Ecological Economics

Ecotoxicology

Environmental Change

Environmental Research Letters

Journal of Environmental Biology

Marine Policy

Marine Pollution Bulletin

Nature

Risk Analysis

Science

The Anthropocene Review

Trends in Ecology and Evolution

Examples of relevant primary literature or book / book chapters

- Barnosky AD, Hadly EA, Dirzo, Fortelius RM, and Stenseth NC. 2014. Translating science for decision makers to help navigate the Anthropocene. *The Anthropocene Review* 1, 160-170.
- Dalerum, F. 2014. Identifying the role of conservation biology for solving the environmental crisis. *AMBIO* 43, 839-846. Doi:10.1007/s13280-014-0546-3.
- Evans GW, Otto S, and Kaiser FG. 2018. Childhood origins of young adult environmental behavior. *Psychological Science* 1-9 doi.org/10.1177/0956797617741894 s
- Klare MT. 2012. *The race for what's left: The global scramble for the world's last resources*. New York City: Metropolitan Books.
- Landry N, Gifford R, Milfont TL, Weeks A, and Arnocky S. 2018. Learned helplessness moderates the relationship between environmental concern and behavior. *Journal of Environmental Psychology* 55, 18-22.
- Laurance WF. 2015. Emerging threats to tropical forests. *Annals of the Missouri Botanical Garden* 100, 159-169.
- Oreskes N. 2018. The scientific consensus on climate change: How do we know we're not wrong? *Climate Change: What It Means for Us, Our Children, and Our Grandchildren*, edited by Joseph F. C. DiMento and Pamela Doughman, MIT Press, pp. 65-99.
- Williams KC, Page RA, and Petrosky AR. 2014. Green sustainability and new social media. *Journal of Strategic Innovation and Sustainability* 9, 11-33.

Tentative Grading Scheme and Topics – Subject to Modification

Grading: 90.0 to 100% A; 80.0 to 89.9% B; 70.0 to 79.9% C; 60.0 to 69.9% D; <60.0% F

A. Assignments, Exams, Quizzes & Discussions	70%
B. Digital & Written Project	30%

Topics

1. Science & the Environment & Biodiversity
2. Methods - to uncover, examine, and mitigate environmental issues
3. Biologically Based Problems & Climate Change
4. Environmental Activism, Policy, Management, & Sustainability - the role of biological data
5. Ecological Economics & Conservation – ecosystem functions & services

Digital Project

Each student will investigate an environmental issue and produce a digital video product. This will be ca. a 5 five minutes long multi-media narrative with such features as images, animations, video, and music to create an educational product. Factors to be considered for assessment include the following: importance of idea, quality and depth of information, organization, synthesis and flow, quality of digital storybook (images, audio), and copyright acknowledgement.

Written Components of Project

Each student will develop expertise in the biological area of the digital project and write a research paper on this topic. A complete draft of the paper will be due before the digital storybook is due. Due dates for components of the project will be due in advance of the full draft (i.e., one paragraph proposal with five references; annotated bibliography of 10 references; outline of paper with location of references and reference list).

Both the digital and written components of the project should include the following:

- Clear local to global aspects of the problem-to-solution set components
- Justification on the critical nature of the problem
- Veracity of the evidence compiled to support the problem-to-solution set components
- Path of enactment for the solution set (and when necessary on clarification of the problem)
- Evaluation on the realistic implementation of the solution set
- The role of the biological sciences in problem evaluation and solution sets

POLICIES

General: The general policies are simple and based on respect. This involves:

- Stay up with the material, be involved, ask questions, be a source not just a sink of information and ideas!

Academic Integrity and Misconduct: Please see the [Student Code of Conduct](#): Do not cheat or plagiarize. Cheating is not only disrespectful (violating general policies) but it is also dishonest. Cheating on exams or assignments will result in a failing grade for the course and could result in expulsion from the university. It is not worth it. Do your own work.

Attendance: Experience has shown that poor attendance in the online format leads to getting behind and not performing well. We also lose you as an input component to the subject material. Per the Student Conduct Code, attendance in class is expected and for online, this means participation and timely submission of materials!

Deadlines: WKU sets deadlines for [withdrawal from a class or the university](#). Credit for the course will not be changed to an audit after the university designated time due to a poor grade in the class. Please make note of these dates. Dropping the class after the university deadline requires a written explanation by you and signatures from the instructor, department head and the dean of Ogden College. These exceptions are only granted in extreme circumstances. So, ABIDE by the deadlines! [Ceasing to attend or participate in class does not drop you from the class. If circumstances arise that keep you from attending / participating, then go through the proper channels to withdraw.]

End of Semester:

- There is no “extra credit” for the course. Study hard, do well on the tests and quizzes.
- Final grades are posted in TOPNET {the grading scale is posted on this syllabus}.
- There is no “making up” missed homework assignments.

Extra Help: If you are having difficulty in the course, please speak with the instructor. Be responsible - it is your responsibility to look up dates and pay attention to announcements discussed in class. Free assistance may be available through [the Learning Center](#): Call 745-5065 for more information.

Family Educational Rights and Privacy Act: Be familiar with your rights according to this Act.

Plagiarism is another form of misconduct. The university’s definition of plagiarism is: “To represent written work taken from another source as one’s own is plagiarism. Plagiarism is a serious offense. The academic work of a student must be his/her own. One must give any author credit for source material borrowed from him/her. To lift content directly from a source without giving credit is a flagrant act. To present a borrowed passage without reference to the source after having changed a few words is also plagiarism.”

Student Disability Services: In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services in DUC A-200 of the Student Success Center in Downing University Center. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Service.

WKU Library Services

- WKU Libraries has subject specialist faculty members who can meet with you virtually – contact the library
- Be aware of the ILL service for obtaining pdf copies of literature