

Course Objectives and Assessment

Instructor: Professor Rachael Winfree, ENR room 128, rwinfree@rutgers.edu

Office Hours: By appointment

Class meeting time: Wednesday 9:15-12:15 in ENR room 123

Pre-requisite: Gen Bio 115/116

Course Objectives

1. To gain an understanding of the effects of technology and human population growth on species, ecosystems, and human communities.
2. To understand the environmental impact of agricultural and industrial systems on animal, plant and human communities.
3. To learn and understand the biological and social underpinnings of conservation through extensive scientific and non-scientific readings.
 - 3a. To be able to follow and critique complex ecological arguments regardless of whether they were from a research article in *Science* or a play by Ibsen ADD THIS BACK OR TAKE IT OUT. To be able to detect the main points of the readings, to identify their main strengths and weaknesses, to give concise evaluations of each reading, and to understand why each reading was assigned.
4. To write clear, concise weekly short reports on the readings, explaining the points listed in 3a; critically analyze scientific articles in writing an informed and coherent longer paper.
5. To learn and be able to write in the scientific language appropriate for Conservation Ecology and for general Ecology/Evolution journals.
6. To be able to join creatively in articulate, informed class discussions of the readings.

Course Learning Goals

1. To become familiar with the major environmental challenges of our time, and their interactions: species extinctions, terrestrial and marine habitat destruction, climate change, invasive species, and environmental consequences of food and energy systems, among others. To be able to use scientific and technological information to evaluate the potential effectiveness of proposed responses to the challenges. To understand and evaluate the often opposing opinions that each challenge generates.
2. To use the corrective feedback acquired in class discussions to improve the students' ability to evaluate and discuss novel problems.
3. To be able to write in scientific language appropriate to the field of Conservation Ecology and to be able to evaluate peer-reviewed scientific articles for their scientific merit and be able to summarize conclusions effectively.
4. To be able to cite references appropriately.

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Grading policy

Grades will be assigned according to the following thresholds: 90% of possible points is an A, 80% B, 70% C, 60% D, 50% F. Two types of assignments are due in class each week. Starting at 9:15am there will be an in-class quiz on the readings for that class; quizzes are graded out of 10 points. A weekly writing assignment based on the reading, typed and **printed** on 1 page of paper, is due each week and is graded out of 25 points. Students who are not in class at the time these assignments are collected receive no credit. Two types of assignments are turned in online. The midterm paper is graded out of 50 points, and the research paper out of 100 points. Papers turned in late immediately lose one letter grade and continue to lose one letter grade per day thereafter. 'Late' is defined as after the Sakai Assignments site closes for that assignment; even one minute late means the assignment can no longer be uploaded. No extensions on any assignment unless requested by a Dean (longer-term medical or family reasons) or by a written note from a doctor (short-term illness).

Absence policy

Attendance is mandatory. Students will receive no credit for work (quiz, weekly writing assignment) that was due on the day they were absent. Absences can only be excused by a Dean (longer-term medical or family reasons) or by a written note from a doctor (short-term illness).

Assessment of performance on assignments

1. **Quizzes** will be assessed on:

- multiple choice, assessed as a percentage correct

2. **Weekly writing assignments** will be assessed on:

- succinctness and clarity in summarizing the readings
- ability of the student to clearly evaluate the scientific merit of the paper
- ability to evaluate the paper's relevance to the scientific and public communities
- use of appropriate vocabulary and language
- spelling and grammar

3. **Midterm paper** will be assessed on:

- succinctness and clarity in identifying the main points of the book
- logical progression (i.e., intellectual organization) and originality of ideas
- higher-order thinking: synthesis, analysis, insight, drawing connections among disparate sources
- spelling, grammar, vocabulary, and language

4. **Research Paper** will be assessed on:

- logical progression (i.e., intellectual organization) and originality of ideas
- higher-order thinking: synthesis, analysis, insight, drawing connections among disparate sources
- relevance of paper to one or more central themes of the course
- succinctness and clarity in identifying the main issues the paper addresses
- ability to evaluate scientific merit and credibility of sources
- the number and quality of references used
- spelling, grammar, vocabulary, and language

Required readings

Students are required to purchase **either** David Quammen 1996, *The Song of the Dodo: Island Biogeography in the Age of Extinction* (Scribners, 647 pages), or Elizabeth Kolbert 2014, *The Sixth Extinction: An Unnatural History* (Henry Holt, 294 pages). Books are not at the bookstore; either can be purchased for about \$10 from various online sources (e.g., amazon). All other required readings for the course will be made available on the course Sakai site as pdfs in the Resources folder. The following book is highly recommended for all writing assignments in the course, but is not required reading: Bryan A. Garner 2009, *Garner's Modern American Usage: The authority on grammar, usage, and style* (third edition), Oxford University Press. Copies are available for 1-week borrowing from Dr. Winfree.

Academic Integrity

All students are expected to follow University policies on academic integrity: <http://academicintegrity.rutgers.edu/>. Selections from this guide are copied and pasted below.

II. Violations of Academic Integrity and Recommended Sanctions

A. Types of Violations

This section describes various ways in which the principles of academic integrity can be violated. Examples of each type of violation are given but neither the types of violations nor the lists of examples are exhaustive.

Plagiarism: Plagiarism is the use of another person's words, ideas, or results without giving that person appropriate credit. To avoid plagiarism, every direct quotation must be identified by quotation marks or appropriate indentation and both direct quotation and paraphrasing must be cited properly according to the accepted format for the particular discipline or as required by the instructor in a course. Some common examples of plagiarism are:

- Copying word for word (i.e. quoting directly) from an oral, printed, or electronic source without proper attribution.
- Paraphrasing without proper attribution, i.e., presenting in one's own words another person's written words or ideas as if they were one's own.
- Submitting a purchased or downloaded term paper or other materials to satisfy a course requirement.
- Incorporating into one's work graphs, drawings, photographs, diagrams, tables, spreadsheets, computer programs, or other nontextual material from other sources without proper attribution.

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Cheating: Cheating is the use of inappropriate or prohibited materials, information, sources, or aids in any academic exercise. Cheating also includes submitting papers, research results and reports, analyses, etc. as one's own work when they were, in fact, prepared by others. Some common examples are:

- Receiving research, programming, data collection, or analytical assistance from others or working with another student on an assignment where such help is not permitted.
- Copying another student's work or answers on a quiz or examination.
- Using or possessing books, notes, calculators, cell phones, or other prohibited devices or materials during a quiz or examination.
- Submitting the same work or major portions thereof to satisfy the requirements of more than one course without permission from the instructors involved.
- Preprogramming a calculator or other electronic device to contain answers, formulas, or other unauthorized information for use during a quiz or examination.
- Acquiring a copy of an examination from an unauthorized source prior to the examination.
- Having a substitute take an examination in one's place.
- Submitting as one's own work a term paper or other assignment prepared by someone else.

Fabrication: Fabrication is the invention or falsification of sources, citations, data, or results, and recording or reporting them in any academic exercise. Some examples are:

- Citing a source that does not exist.
- Making up or falsifying evidence or data or other source materials.
- Falsifying research papers or reports by selectively omitting or altering data that do not support one's conclusions or claimed experimental precision.

SEBS/SAS CORE CURRICULUM LEARNING GOALS

21st CENTURY CHALLENGES

c. Analyze the relationship that science and technology have to contemporary social issues.

Global climate change, global food supply, consequences of overuse of agrochemicals / pharmaceuticals / antibiotics for the environment and human health, energy use, and genetic engineering, are among the many social issues dealt with in this course from a scientific and technological perspective.

COGNITIVE SKILLS AND PROCESSES: WRITING AND COMMUNICATION

t. Communicate effectively in modes appropriate to a discipline or area of inquiry.

In their weekly writing assignments and in the two longer papers assigned in the course, I require that the students follow the standard style found in scientific journals. Students are expected to use the vocabulary appropriate to the field of Conservation Ecology and Ecology generally.

u. Evaluate and critically assess sources and use the conventions of attribution and citation correctly.

In their papers, I require that the students provide citations for all information, and that the citations follow the standard style used in the journal *Conservation Biology*. Students are told that journals cited and citation style are among the most important criteria used in the course for assessment.

v. Analyze and synthesize information and ideas from multiple sources to generate new insights.

The readings in this course will range from books (eg., *The Sixth Extinction*, Elizabeth Kolbert, Bloomsbury, 2014) to peer-reviewed journal articles from the world's top scientific journals such as *Science* and *Nature*. The readings will cover from the 1970's to the present, and will range in authorship from an opinion piece by the Dalai Lama to technical papers by leading scientists. This will provide the students with a wide range of source material from which they will learn to summarize and synthesize multiple viewpoints. All of the writing assignments in the course require analysis and synthesis.

21st CENTURY CHALLENGES

GOAL c - Analyze the relationship that science and technology have to a contemporary social issue.				
Relevant assignments	OUTSTANDING (A)	GOOD (B)	SATISFACTORY (C)	UNSATISFACTORY (D/F)
<p>Writing assignments for Classes 7, 9, 11, and 12.</p> <p>Research paper</p>	<p>Understands how advances in science and technology explain many of the causes of complex socio-technological issues such as global climate change and declines of global food supply.</p>	<p>Understands the advantages and limitations of science and technology in explaining specific environmental issues.</p>	<p>Is able to explain how the scientific and non-scientific readings in the course complement each other with respect to environmental issues.</p>	<p>Cannot understand how science and technology can clarify contemporary environmental issues.</p>
<p>Writing assignments for Classes 7, 9, 11, and 12.</p> <p>Research paper</p>	<p>Has a comprehensive understanding of the limitations and advantages of ways currently suggested to cope with environmental issues.</p>	<p>Shows ability to deal realistically with the suggested "solutions" to particular environmental problems.</p>	<p>Shows creativity in proposing environmental solutions, and understands some of their potential shortfalls.</p>	<p>Fails to identify possible solutions or the need for possible solutions of current environmental problems..</p>

COGNITIVE SKILLS AND PROCESSES: WRITING AND COMMUNICATION

GOAL t – Student is able to communicate effectively in modes appropriate to a discipline or area of inquiry.				
	OUTSTANDING	GOOD	SATISFACTORY	UNSATISFACTORY (D/F)
All 12 weekly writing assignments. Midterm paper Research paper	Clearly written, concise and eloquent, without excess verbiage using appropriate scientific language.	Well-argued and well-reasoned with minor errors in language usage. Few grammar and spelling errors.	Writing allows reader to follow the argument and relate it to the teachings but shows little use of appropriate language.	Writing is difficult to follow, lacking in coherent ideas. Padded.

GOAL u – Evaluate and critically assess sources and use the conventions of attribution and citation correctly.				
	OUTSTANDING (A)	GOOD (B)	SATISFACTORY (C)	UNSATISFACTORY (D/F)
Research paper	Can independently find necessary sources, including electronic sources, and evaluate their credibility, bias, and timeliness.	With some guidance, can find necessary sources and assess their reliability.	With guidance, can find and assess the reliability of most of the relevant sources.	Does not understand how to find the necessary sources, or how to assess their reliability.
Research paper	Cites a comprehensive range of relevant and appropriate sources, and applies appropriate conventions for attribution and citation accurately.	Cites some relevant sources, though not all clearly connected to the argument. Applies appropriate conventions for attribution and citation, with perhaps a few technical mistakes (misplaces punctuation, etc.)	Cites a limited number of sources, not all relevant. Notable errors in applying appropriate conventions for attribution and citation	Sources, if cited at all, are irrelevant to the topic or discipline, and/or inaccurately characterized. Fails to apply appropriate conventions for citation & attribution.*
*Cases of suspected plagiarism should be reported to the department undergraduate chair and/or Judicial Affairs in the Office of the Dean of Students. http://judicialaffairs.rutgers.edu/				

GOAL v – Student is able to: Analyze and synthesize information and ideas from multiple sources to generate new insights.				
	OUTSTANDING	GOOD	SATISFACTORY	UNSATISFACTORY (D/F)
<p>All 12 weekly writing assignments.</p> <p>Midterm paper</p> <p>Research paper</p>	<p>Demonstrates both in the written reports and class discussion a sophisticated understanding of the evidence and arguments in the readings and other sources, and an ability to synthesize this information into cohesive analyses of complex issues.</p>	<p>Can understand the main thrusts of the readings, and can use the scientific and non-scientific materials of the course to put these arguments in a critical context.</p>	<p>Shows comprehension of most of the readings, with some gaps. Can reproduce the arguments advanced in these readings, but is not able to use other course materials to evaluate them, and does not put the readings in a larger context.</p>	<p>Lacks the reading comprehension skills to extract the main points of the scientific and non-scientific readings. Does not know how to criticize the many environmental hypotheses or how to fit them into a bigger picture.</p>
<p>All 12 weekly writing assignments.</p> <p>Midterm paper</p> <p>Research paper</p>	<p>Explores larger implications and connections; demonstrating original/insightful thinking; and/or explicates limits of findings.</p>	<p>Makes some effort to explore larger implications and connections; demonstrating original/insightful thinking; and/or explicates limits of findings.</p>	<p>Demonstrates little awareness of larger implications and connections and/or limits of findings. Little evidence of original/insightful thinking.</p>	<p>Demonstrates scant to no awareness of larger implications and connections and/or limits of findings. Scant to no evidence of original/insightful thinking.</p>

