COURSE SYLLABUS

Conservation Ecology 11:216:317 Spring 2021
Wednesdays 9:15 - 12:15, room 123 ENR building
3 credits
Fulfills requirement for 21st century challenges, Writing and communication

Instructor
Professor Rachael Winfree, 128 ENR building, rachael.winfree@rutgers.edu

Pre-requisites
General biology (01:119:115 or 01:119:116), or equivalent, or permission of instructor

Course Objectives
- Introduce students to the major environmental challenges of our time, including climate change, biodiversity loss, terrestrial and marine habitat destruction, invasive species, and the environmental consequences of our food and energy systems.
- Develop students' critical reasoning and writing skills.

Learning Outcomes
- Appropriately, knowledgeably, and concisely contribute to class discussions. Lead class discussion on an assigned paper.
- Knowledgeably discuss the world's greatest environmental problems and their potential solutions, including understanding and evaluating the often opposing opinions that each issue generates.
- Evaluate published articles for their scientific merit; evaluate and cite sources of information appropriately.
- Write in the scientific language appropriate to the field of Conservation Ecology.
- Design and carry out a review of the scientific literature on a topic. Write an organized, informed, and well-argued paper that evaluates and interprets this literature.

Format
One 3 hour meeting per week. Class time will be largely devoted to discussion and small group problem-solving exercises.

Grading policy
Grades will be assigned according to the following thresholds: 90% of possible points is an A, 80% B, 70% C, 60% D, <60% F. Total points for the course 400. Broken down as: 12 class meetings at 20 points per class (quiz + weekly writing assignment + class participation), 10 points for leading discussion of a paper, 50 points for midterm paper, 100 points for final paper.
Class schedule and assignments

class 1, Jan 20  Course intro / Critical thinking and (mis)information
Puruggan, M and and J Hewitt. 2004. How to read a scientific article.

class 2, Jan 27  Biodiversity and natural history
due: weekly writing assignment with summary of each reading; see 'read me' in folder with pdfs for additional instructions
due: post photos of 3 species to iNaturalist
[The three news articles below are in one pdf, and should be written about jointly]
Plumer, B. May 6, 2019. Humans are speeding extinction and altering the natural world at an 'unprecedented' pace. The New York Times.
Allen, V. May 6, 2019. One million species of plants and animals are now threatened with extinction, UN warns. The Daily Mail.
Anonymous. May 9, 2019. A new report confirms that life on earth is in trouble. The Economist

class 3, Feb 3  What is conservation ecology?
due: weekly writing assignment with summary of each reading

class 4, Feb 10  How to write well
due: 5 bullet points per reading indicating things you learned that you are going to implement in your own writing. This is in place of the usual WWA assignment, which would not make sense for these readings.
Winfree, Organizing a paper
class 5, Feb 17  Ecosystem services
due: weekly writing assignment with summary of each reading
Max, D T. 2014. Green is good. The New Yorker, 12 May 2014 issue, 54-63

class 6, Feb 24  Habitat loss
due: weekly writing assignment with summary of each reading

class 7, Mar 3  Overharvesting
due: weekly writing assignment with summary of each reading
due: if you are leading a paper discussion, turn in 'LeadingDiscussion' for the paper you are leading, plus the usual weekly writing assignment for the other 4 papers
due: 1-PAGE TOPIC FOR RESEARCH PAPER - upload to Canvas before class
Goettsch, B et al. 2015. High proportion of cactus species threatened with extinction. Nature Plants: article number 15142

class 8, Mar 10  Invasive species
due: weekly writing assignment with summary of each reading
due: if you are leading a paper discussion, turn in 'LeadingDiscussion' for the paper you are leading, plus the usual weekly writing assignment for the other 4 papers
Lowe, S et al. 2000. 100 of the world's worst invasive alien species: A selection from the global invasive species database. Published by the Invasive Species Specialist Group of the Species Survival Commission of the IUCN. 12 pages


MIDTERM PAPER Due to Canvas by 11:59pm, Friday March 12

Mar 17 NO CLASS SPRING BREAK

class 9 , Mar 24 Quantitative critical thinking
due: weekly writing assignment with summary of each reading
note: there are three assigned readings here (selected pages from three different chapters), even though they are in the same pdf and from the same book

class 10, Mar 31 Human population growth and resource use
due: weekly writing assignment with summary of each reading; see Read Me for instructions on how to write up the Our World in Data graphs
due: 1-PAGE PROGRESS REPORT ON RESEARCH PAPER - upload to Canvas before class

class 11, Apr 7 Climate change
due: weekly writing assignment with summary of each reading; write up each set of readings as grouped below, such that you write up three WWA total
Our World in Data 2020. H Ritchie and M Roser 2020, CO2 and greenhouse gas emissions. Read and be prepared to discuss the entire page found at the following link. https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions


class 12, Apr 14  Human culture & ideas
due: weekly writing assignment with summary of each reading

class 13, Apr 21  In-class writing workshop
due: Self-assessment of your writing. One page that summarizes (1) the comments you have received in the course thus far with respect to what aspects of your writing most need to be improved, and (2) the recommendations from the assigned readings on how to write well (see class 4) that would most improve your writing if you implemented them going forward.
due: HAVE A COMPLETE ROUGH DRAFT OF YOUR FINAL PAPER ready for this class as you will revise it in class and will exchange papers with another student.

no class Apr 28  Use this time to work on your final exam / paper

FINAL RESEARCH PAPER  Due to Canvas by 11:59pm, Monday May 3