GLOBAL CHANGE AND ECOLOGY
11:216:451
Fall 2022
Lecture: Wednesday 8:30 to 11:30, ENR 123

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Learning Goals

(1) Understand the Earth's climate system and how it has changed through anthropogenic effects
(2) Demonstrate knowledge of the ecological effects of climate change on individuals, species and ecological communities
(3) Identify scientific approaches to predicting the future effects of climate change on ecological systems
(4) Recognize pros and cons of ecological solutions to the climate change crises
(5) Define key terms and concepts associated with climate change ecology
(6) Integrate ecological knowledge with climate-related information derived from economics, chemistry, physics

DATE	LECTURE TOPIC
7 SEPT	Overview + Climate system
14 SEPT	Carbon cycle: natural and anthropogenic processes
21 SEPT	Impacts: heat, sea level, ocean acidification, water cycle
28 SEPT	**Exam I** + Impacts of Climate Change: individuals
5 OCT	Impacts: species range shifts, phenology
12 OCT	Impacts: ecosystems and biomes
19 OCT	**Exam II** + Predicting the Future: climate change models
26 OCT	Predicting the Future: ecological experiments
2 NOV	Predicting the Future: ecological forecasting
9 NOV	*Climate Change and Biodiversity Symposium*; zoom or in-person
16 NOV	**Exam III** + Solutions: evolutionary adaptation
30 NOV	Solutions: conservation, restoration and assisted migration
7 DEC	Solutions: nature-based approaches to impact mitigation
14 DEC	Solutions: carbon sinks, carbon offsets, and carbon markets

FINAL EXAM; TBD, Solutions lectures only (not comprehensive)

GRADE: I do not curve grades and I do not give extra credit. I do round grades up from the 0.5% level (for example, if your final grade is 86.5%, you will be rounded up to 87%). If you want an A in this class, you have to earn it by studying hard, showing up to class, and participating in discussions. Grade cut-offs are as follows:

A **90 TO 100%**
B+ **87 TO 89**
B **80 TO 86**
C+ **77 TO 79**

C **70 TO 76**
D **60 TO 69**
F **BELOW 60**

GRADES ARE BASED ON the four exams (85%) and lecture attendance (20%). Exam content is short-answer and short essay. You will be given a make-up exam based on the schedule of the instructor. Attendance to lecture is mandatory. I will take attendance at the beginning of each lecture. You will be counted as 'absent' if you arrive more than **15 minutes** after class start time.

SUGGESTED TEXT: Climate Change Biology, Third Edition. Lee Hannah, Academic Press