

CLIMATE CHANGE ECOLOGY

11:216:451

Fall 2024

Lecture: Wednesday 3:50 to 6:50, IFNH 101

Dr. Julie Lockwood

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Course Learning Goals

- (1) Describe, using language and graphics, 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 using quantitative reasoning
- (3) Identify and describe 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 challenge
- (5) Define key terms and concepts associated with climate change ecology
- (6) Integrate ecological knowledge with climate-related information derived from adjacent disciplines

Program Learning Goals

DEENR Learning Goal 5. Use quantitative methods to analyze and understand ecological systems, including interpretation of numeric and graphical data.

DEENR Learning Goal 7. Evaluate ecology, evolution, and natural resource management concepts in a global context.

DATE	LECTURE TOPIC
9 SEPT	Overview, Climate and Biosphere
16 SEPT	Carbon Cycle
23 SEPT	Asynchronous Climate and the Carbon Cycle: Carbon in the Atmosphere Lab 3 (all) Due 30 September
30 SEPT	Physical Impacts: heat, sea level, ocean acidification, water cycle
7 OCT	Exam I
14 OCT	Biological Impacts: individuals
21 OCT	Biological Impacts: species
28 OCT	Biological Impacts: species interactions
4 NOV	Exam II
11 NOV	Asynchronous Corals: Predicting Bleaching Events Lab 6 (all) Due 18 November
18 NOV	Predicting the Future: climate change models, ecological forecasting
25 NOV	Predicting the Future: ecological experiments
2 DEC	Solutions: carbon offsets and markets; nature-based climate change mitigation
9 DEC	Solutions: protected areas, restoration and assisted migration

FINAL EXAM; December 23rd 12:00 to 3:00pm (double check!)

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 three lecture exams (70%), lecture attendance (10%), and 2 asynchronous assignments turned in via Canvas (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. If you expect to miss a class, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me. At-home assignments are due as indicated on the syllabus and canvas. No late assignments/quizzes are accepted unless ***prior permission is granted***. 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.

ASYNCHRONOUS ASSIGNMENTS: Earth Labs
<https://serc.carleton.edu/earthlabs/index.html>. Details are on Canvas.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/getting-registered>. Full policies and procedures are at <https://ods.rutgers.edu/>

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <https://academicintegrity.rutgers.edu/sites/default/files/pdfs/current.pdf>. The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated, and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld

SEBS DEI STATEMENT

It is our intention that students of all backgrounds will be well served by this course. We will work to create an environment of inclusion which respects and affirms the inherent dignity, value, and uniqueness of all individuals, communities and perspectives. We are lucky to have a diverse university. Diverse voices and life experiences enhance the learning process and we welcome students to share their personal experiences. We will not tolerate disrespectful language or behavior against any individual or group. If you feel as though you have been disrespected or treated unfairly by the instructors or any other individual please let us know. You may speak with the instructors in person, over email or report anonymously via the Office of Academic Programs. In addition, you may also report bias to the Rutgers Diversity and Inclusion initiative using this link: <http://inclusion.rutgers.edu/report-bias-incident/>.

STUDENT WELLNESS SERVICES

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://webapps.rutgers.edu/student-ods/forms/registration>.

DoSomething button through Rutgers Dean of Students office:
<http://health.rutgers.edu/do-something-to-help/>

Wellness Coaching through Rutgers HOPE:
<http://health.rutgers.edu/education/hope/wellness-coaching/>

Self-Help Apps found on the Rutgers Student Health website:
<http://health.rutgers.edu/education/self-help/self-help-apps/>

NJ Hopeline - (1-855-654-6735) | **National Suicide Hotline** - (1-800-273-8255)

BASIC NEEDS RESOURCES

Any student who has difficulty affording groceries or accessing sufficient food, or who lacks a safe and stable place to live, is urged to contact the Rutgers Student Food Pantry and/or the Dean of Students (details below). Furthermore, please notify the professor if you are comfortable doing so, as they may be able to provide additional support.

Rutgers Student Food Pantry

848-932-5500 / College Ave Student Center, Room 115 (126 College Ave) / <http://ruoffcampus.rutgers.edu/food/>

Check their website for hours and additional locations. The Rutgers Student Food Pantry is dedicated to helping all Rutgers students in need of food, no questions asked. Students will be provided with groceries that typically last about one week.

Dean of Students Office

848-932-2300 / 88 College Avenue, New Brunswick, NJ 08901 / <https://deanofstudents.rutgers.edu/>

Mon-Fri, 8:30am-5:00pm

The Dean of Students Office at Rutgers University-New Brunswick provides solutions, services, and support to help students navigate Rutgers University. The Office serves as a student support network by providing advocacy, problem resolution, and critical incident intervention for those times when additional assistance is needed. Please call to schedule an appointment to meet with a representative from the Dean's office.