

**ANTARCTIC ECOLOGY, GEOLOGY, HISTORY,  
AND POLICY (BIO 367)  
FALL 2023**

**Lecture: TR 2:00 - 3:15 pm, Friday 1014**

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**Office: Dobo 2077**  
**Office Hrs: open (drop in anytime I'm there, or make an appointment)**

| <b>Date</b> | <b>Subject</b>                                    | <b>Required Readings</b>            |
|-------------|---|-------------------------------------|
| 24 Aug.     | Introduction to Antarctica                        |                                     |
| 29 Aug.     | Antarctic origins, geology and plate tectonics    | Ch. 2                               |
| 31 Aug.     | Ice sheet origins and modern climate              | Ch. 3: 77—80; Ch. 4: 102-128        |
| 5 Sept.     | Sea ice, ice shelves, and polynyas                | Ch. 3: 67-76; Ch. 5                 |
| 7 Sept.     | Ice cores, stable isotopes, and paleoclimates     | Ch. 3: 81-101                       |
| 12 Sept.    | Space Science and ozone                           | Ch. 4: 129-136; Ch. 7               |
| 14 Sept.    | <b>Exam I</b> (through Space Science and ozone)   |                                     |
| 19 Sept.    | Marine ecosystems and ice fish                    | Ch. 6: 161-167; 176-189             |
| 21 Sept.    | Terrestrial ecosystems: soils, plants and inverts | Ch. 6: 189-200; 202-204             |
| 26 Sept.    | Ornithogenic soils/Antarctic Lakes                | Ch. 6: 200-202; online reading      |
| 28 Sept.    | Subantarctic islands                              | Ch. 6: 189-196                      |
| 3 Oct.      | Marine mammals in the Southern Ocean              |                                     |
| 5 Oct.      | <b>Exam II</b> (through Marine mammals)           |                                     |
| 10 Oct.     | Whaling and the Krill Surplus Hypothesis          |                                     |
| 12 Oct.     | <b>Fall Break (no class)</b>                      |                                     |
| 17 Oct.     | Penguins and other seabirds                       |                                     |
| 19 Oct.     | Adélie penguin paleohistory and current status    |                                     |
| 24 Oct.     | Discovery and human history                       | Ch. 1                               |
| 26 Oct.     | Heroic Age and the first scientist explorers      | Ch. 1                               |
| 31 Oct.     | Heroic Age (continued)                            |                                     |
| 2 Nov.      | <b>Exam III</b> (through Heroic Age)              |                                     |
| 7 Nov.      | Race to the Pole                                  |                                     |
| 9 Nov.      | International Geophysical Year and science        | Ch. 1: 19-24; Ch. 9; online reading |
| 14 Nov.     | Antarctic treaty: Antarctica as a world park      | Ch. 10; online reading              |
| 16 Nov.     | Research stations and dealing with cold           | Ch. 8                               |
| 21 Nov.     | Anthropogenic impacts: research and tourism       | Ch. 11                              |
| 23 Nov.     | <b>Thanksgiving Break: no class</b>               |                                     |
| 28 Nov.     | Marine fisheries and illegal fishing              | online reading                      |
| 30 Nov.     | Antarctica and the Future                         |                                     |
| 5 Dec.      | <b>Exam IV</b>                                    |                                     |

**Text:** Walton, David W. H. 2013. *Antarctica Global Science from a Frozen Continent*. Cambridge Univ. Press. **Text is on reserve in the library, so purchase is not required.** Additional readings will be assigned as needed.

This schedule is subject to change due to class cancellations or other circumstances.

**Literature Project:** Each student will be asked to read one paper in the scientific literature and write a 2-page evaluation/interpretation of the paper. The scientific paper must be relevant to Antarctica and from the primary literature; do not select notes or short communications in the journals, only full-length articles. Relevant journals to consult in the library include *Antarctic*

*Science, Polar Biology, and Marine Ecology Progress Series*; many other peer-reviewed journals also have articles on Antarctic research. Your evaluation must be **typed, double-spaced**, in 11 or 12 font size. Give the complete citation of the article, using the standard format found in these journals, at the beginning of your paper. The first half of the paper should summarize its contents in your own words. **Do not repeat what is already written or use extensive quotes!** The second half of the paper should discuss your perceptions of the research, its strong and weak points, and any other relevant information. This paper will be due by email at 5 pm on **5 Sept.** You do not need to submit the article you read, just the citation. Standard citation format for a journal article is:

Smith, T., Edwards, R., and Jones, M. 2021. Title of article. *Antarctic Science* 47: 12-24.

**\*NOTE\*: Plagiarism** will not be tolerated! Be sure to educate yourself on what this is and how to avoid it. Deliberate plagiarism will result in an F in the course and you will be reported to the Dean of Students. See the link on the course web page for additional information.

**Grades:** Grades will be based on four lecture exams (100 pts. each) and the literature project (20 pts.) for a total of 420 points. There will be no comprehensive final exam, just the lecture exams. All exams will be largely essay, short answer, or definitions. I do not grade on a curve. Because your entire grade is based largely on the exams, it's important for you to not miss class and keep up on lecture topics. Doing poorly on one exam will impact your final grade. Final grades will include a "+" or "-" for borderline cases (+/- 2% from cutoff). **No makeup exams** will be given except due to illness or other relevant circumstances. Additional details on exams will be provided in class.

The grading scale for the course is:

|                 |                 |
|-----------------|-----------------|
| 92 – 100% = A   | 72 – 77.9% = C  |
| 90 – 91.9% = A- | 70 – 71.9% = C- |
| 88 – 89.9% = B+ | 68 – 69.9% = D+ |
| 82 – 87.9% = B  | 62 – 67.9% = D  |
| 80 – 81.9% = B- | 60 – 61.9% = D- |
| 78 – 79.9% = C+ | below 60% = F   |

**Class policies: I do not allow the use of cell phones, laptops, ipads, ipods, or any other electronic devices in class. I also do not tolerate talking, texting or any other disruptive behavior in class and I will deduct 5 points from your total grade for each infraction of this nature.** I recognize that most students are serious, mature individuals, but I state these policies here for those few that can ruin the class for the others.

Please feel free to see me at any time during or outside of my scheduled office hours. Call to make an appointment or send me e-mail with your questions. All students are expected to have e-mail accounts. If not, open an account during the first week of class. There is no reason why you can't reach me by one of the above methods.

This class has its own website at: <http://people.uncw.edu/emslies/AntarcticEcology.htm>

The bulk of the course information will be on this site and not on Canvas. This class also has a 19-part podcast that presents each lecture topic in an 8-12 minute summary that can be useful for exam review. The podcast is available on my [website](#) (mp4 files) or you can access it on [Spotify](#)

or [Apple Podcasts](#).

**Note the copyright policy below.** This policy does not apply when you are sharing notes with a friend from class to help study for exams. The policy mainly applies to those students who would provide or sell notes to websites or other media forms that make them widely available to anyone with access to those sites. Anyone caught disseminating notes in this manner would be in big trouble, so be sure to avoid this!

### **Copyright**

Any dissemination of lecture slides, recordings, handouts, or any other derivative work without permission of the instructor is **prohibited** by UNCW policy. UNCW Copyright Use and Ownership Policy (<http://www.uncw.edu/policies/documents/01210.copyrightpolicy.pdf>) specifies that class notes are considered derivative of original intellectual property of the course instructor. As such, the course instructor (not the student) retains copyright ownership and must provide specific permission to distribute and/or reuse their intellectual property for anything other than personal scholarship by the student. Commercial use, display, or dissemination of such notes or recordings, will generally constitute an infringement of the content creator's copyright. Materials that qualify as student-owned are listed in the policy.

### **Covid Protocols**

**Please do not come to class** when you are not feeling well or are experiencing any COVID-19 symptoms. If you have been exposed to COVID-19 or are concerned about exposure, please contact the Student Health Center at (910) 962-3280 for specific information about testing, contact tracing and quarantine/isolation requirements, which differ for vaccinated and non-vaccinated individuals, according to CDC guidance. Remember, keeping healthy is essential to keeping campus open. Thank you for your help and compliance.

**Academic Integrity:** All members of UNCW's community are expected to follow the academic Honor Code. Please read the UNCW Honor Code carefully, as covered in the UNCW Student Handbook and available here: <http://www.uncw.edu/odos/honorcode/>. Academic dishonesty in any form will not be tolerated in this class. Academic integrity violations could include:

- Use of unauthorized materials or consulting or receiving help from anyone during exams
- Plagiarism or failure to appropriately cite references or images
- Sharing exam questions or answers with other students or the public (class material is copyrighted)

**Disability Resource Center** UNCW supports the right of enrolled students to a full and equal educational opportunity and is committed to reasonable accommodations for individuals with documented disabilities or who are impacted by Title IX concerns. Students with disabilities for whom accommodations may be necessary must be registered with, and provide official notification through, UNCW's [Disability Resource Center](#). Once established, responsibility for disability-related accommodations and access is shared by DRC, faculty, and the student.

**Non-Discrimination Policy** Individuals who wish to report any form of gender-based discrimination or sexual misconduct/harassment should contact UNCW's [Title IX Office](#). Students may also report incidents of misconduct to faculty; however, be aware that faculty are required by law to notify the Title IX office. If students seek confidential resources without reporting an

incident, UNCW departments exempt from mandatory reporting are [CARE](#) Interpersonal Violence Prevention & Response, University Counseling, and Abrons Student Health Center.

### **Diversity, Equity, Inclusion:**

I embrace diversity, equity, and inclusivity in the classroom and in academia. I strive to make this class inclusive for all students, free of discrimination based on race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, or physical and learning ability. I value your presence and contributions to this course and our department. If you think I can improve the accessibility and inclusivity of our learning environment, please reach out to me with suggestions.

### **Diversity, Equity, and Inclusion: What to expect of your department**

The UNCW Department of Biology and Marine Biology seeks to promote equity and diversity. We respect and welcome all people, with zero tolerance for discrimination of any kind. Discrimination includes all derogatory, inappropriate, and negative incidents including, but not limited to, words and actions based on personal biases related to race, color, gender, gender identity, national origin/ancestry, citizenship, religion, age, maternity, marital status, indigenous status, social origin, disability, sexual orientation, or veteran status. It is your right to learn in a safe environment and to be treated with dignity and respect, no matter your visible or nonvisible differences.

### **Diversity, Equity, and Inclusion: What we expect of you**

It is expected that students and instructors collaborate to foster an equitable and inclusive learning environment and hold themselves accountable for being respectful. Members of the UNCW community coexist with those who are different from themselves and it is our responsibility to nurture, respect, and appreciate those differences. We engage in civil discourse as a part of the learning enterprise, but do not tolerate harassment or discriminatory behavior that seeks to marginalize or demean members of our community.

### **UNCW Community Safety & Resources**

UNCW is against violence and harassment of any kind. If you are concerned about a harassment situation, resources are available from [CARE](#) (910-962-2273) or through the [Campus Police](#) (910-962-3184). To officially (but anonymously) report any incident of gender-based discrimination or sexual misconduct/harassment, [fill out this report](#). Any other concerns or suggestions can be reported anonymously via our [Departmental Comment Card](#).

### **UNCW Code of conduct**

We will uphold the values endorsed in the [Seahawk Respect Compact](#) regardless of the mode of instruction. Any student behavior deviating from this code will be reported to the Dean of Students and may result in academic penalties up to and including academic suspension and dismissal.