



Department of Biology, College of Natural and Social Sciences

BIO 1005/1005L | Ecology and Conservation (FE) | Fall 2024

4 units (3 hours of lecture and 2.5 hours of lab, weekly)

Mandatory Field Trip to Catalina Island:

Friday, September 20, 2024 – Sunday, September 22, 2024

Lectures: Mondays, Wednesdays, and Fridays | 11:00 am – 11:50 am | Latter Hall 02

Labs: Mondays (Section 01) or Wednesdays (Section 02) | 2:45 pm – 5:15 pm | Sator Hall 105

Final Exam: Monday, December 16, 2024 | 10:30 am – 1:00 pm | Latter Hall 02

Instructor:	Dr. Andrew Nosal (he/him)
Phone:	619-849-2656
Email:	anosal@pointloma.edu
Office location and hours:	Rohr Science 140* Mondays and Fridays 9:00 – 10:00 am, and also other days and times as needed (please e-mail Dr. Nosal to make appointment) <i>*Note that Rohr Science (across from Sator and Latter Halls) is not the same as Rohr Hall (other side of campus).</i>

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Foundational Explorations (FE) Mission

PLNU provides a foundational course of study in the liberal arts informed by the life, death, and resurrection of Jesus Christ. In keeping with the Wesleyan tradition, the curriculum equips students with a broad range of knowledge and skills within and across disciplines to enrich major study, lifelong learning, and vocational service as Christ-like participants in the world’s diverse societies and culture.

Course Description

A wide-ranging exploration of major topics in ecological science relating to current issues in conservation biology. Drawing from academic and applied fields, the course examines major concepts in conservation biology and their impact on society, public policy, wise management of natural resources, consumerism, and ethical choices encountered in everyday life. Focus topics include biodiversity, habitat destruction,

exotic species introductions, human harvesting, protected areas, and climate change. Course approach emphasizes the process of science, critical thinking, active learning, social relevancy, and building connections between case studies and general concepts. An inquiry-based laboratory (BIO 1005L) is a co-requisite for BIO 1005.

Program and Course Learning Outcomes

By the end of this course, you will be able to:

1. Describe how interactions between organisms and their environment influence populations, communities, and ecosystems;
2. Identify and evaluate strategies for conserving biodiversity and protecting or restoring ecosystems;
3. Analyze the social, political, and economic dimensions of achieving environmental sustainability;
4. Design and conduct an experiment and/or observational investigation to test hypotheses and generate scientific knowledge relevant to ecology and conservation;
5. Analyze data using appropriate scientific methods and make valid and reliable interpretations;
6. Develop and defend a position (worldview) on 'Creation care' or environmental stewardship.

Foundational Explorations Learning Outcomes (FELOs)

Foundational Exploration (FE) courses are required to assess a FELO. In this course, we will assess FELO 1D: Critical Thinking – “Students will be able to examine, critique and synthesize information in order to arrive at reasoned conclusions.” This FELO will be assessed by means of a few questions embedded into the final exam. For more information on FE assessment at PLNU, please go to:

<https://assessment.pointloma.edu/academic-assessment/general-education/assessment-plan/>

Required Texts and Equipment

Environmental Science for a Changing World (Fourth Edition), by Karr, Interlandi, and Houtman

You may purchase (new or used) or rent a hard copy of the textbook, or the online e-book. You are encouraged to check the [PLNU Bookstore](#), [Amazon](#), and [Macmillan Learning](#) websites, and others, to find the best option for you. You are NOT required to have access to the textbook's online supporting material via an access code. However, the textbook MUST be the fourth edition (the one with ducks on the front cover).

Supplementary readings and videos will also be assigned; these will be available on Canvas.

iClicker remote (iClicker+ or iClicker2)

I will be using iClicker to make our class time more engaging. This will show me what you know, give everyone a chance to participate, and increase how much you learn in class. This will also provide you with feedback on how well you are comprehending course concepts and help you master challenging concepts. Participating in my iClicker activities will be counted towards your final grade (see section on Assessments and Grading below).

You are required to bring an iClicker remote to participate in my iClicker activities during every class. I will be allowing participation with iClicker remotes only (iClicker+ or iClicker2); you may NOT use the iClicker

app on your smartphone, tablet, or laptop. In order to participate in my iClicker activities and ensure that your grades are properly reflected in the gradebook, please follow the steps below:

1. Purchase (new or used; you may resell the iClicker remote after the course ends) or rent an iClicker remote (iClicker+ or iClicker2) from the PLNU Bookstore, Amazon, or Macmillan Learning websites, among others.
2. Register your remote online. Visit <https://www.iclicker.com/remote-registration-form-for-classic> and complete the registration form. Enter your Canvas username (the part of your PLNU email address before the @ symbol) in the "Student ID" field. You will also need the [8 digit alphanumeric remote ID on your iClicker remote](#). Please note that if you have a used iClicker remote, you may need to pay a one-time registration fee.
3. Bring your remote to each class, including the first class. Make sure your [remote frequency is set](#) to "AA" (the default). When I ask a multiple-choice question, use your remote to respond.

Course Credit Hour Information

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 4-unit class delivered over 15 weeks. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 150 total hours meeting the course learning outcomes.

Assessment and Grading

Assessment	Percentage of Final Grade
Exam 1	15%
Exam 2	15%
Exam 3 (Final Exam)	15%
Reading Homework Questions	10%
Reading In-Class iClicker Questions	10%
Environmental Stewardship Reflection Paper	5%
Lab Assignments and Reports	25%
Lecture and Lab Participation	5%
Total	100%

The following scale will be used to determine your final course letter grade (students will receive the same grade for both lecture and lab):

93.0% ≥	A		73.0% ≥	C	< 77.0%
90.0% ≥	A-	< 93.0%	70.0% ≥	C-	< 73.0%
87.0% ≥	B+	< 90.0%	67.0% ≥	D+	< 70.0%
83.0% ≥	B	< 87.0%	63.0% ≥	D	< 67.0%
80.0% ≥	B-	< 83.0%	60.0% ≥	D-	< 63.0%
77.0% ≥	C+	< 80.0%		F	< 60.0%

Exams 1 – 3 (45%):

This course has three exams. The first exam covers material from the first third of the semester. The second exam focuses on material from the middle third of the semester, but, because the course constantly builds on prior knowledge, will make some connections with previously tested material and thus is technically cumulative. The first two exams will take place during regularly

scheduled lab time in the lab classroom (Sator Hall 105). The third exam will take place during finals week in the lecture classroom (Taylor Hall 312). Like the second exam, it will focus on material from the last third of the semester, but will also make connections with previously tested material and thus is technically cumulative. Exams consist of 50% multiple-choice (including true/false) questions and 50% short-answer questions. Grading questions and corrections must be completed within two weeks of graded exams being returned.

Reading Homework Questions (10%):

For each assigned chapter (module) of the textbook, there will be a brief, 5-point homework assignment consisting of several questions to assess students' understanding. These questions will be posted on Canvas, which is where you will submit your responses before the start of the relevant 'lecture' class. Late reading homework will be accepted, but with a penalty of 1 point (20%) per day late (or fraction thereof, including weekends).

Reading In-Class iClicker Questions (10%):

Most lectures will consist of several iClicker questions (multiple choice and true/false) about the assigned reading, to assess students' understanding. Students who miss these questions due to an unexcused absence or tardy will get 0 points. Students who are present, but answer incorrectly, will receive 0.5 points for each response. Correct answers will earn the full 1 point each. At the end of the semester, the bottom 10 questions, or 10% of the total number of questions, whichever is greater, will be dropped from each student's grade calculation.

Environmental Stewardship Reflection Paper (5%):

Additional details will be provided in class, but, in summary, each student will write a 500- to 750-word reflection paper/essay that describes and defends their position (worldview) on environmental stewardship. This paper should be thoughtful, personal, specific, and engage material covered in BIO 1005 during the semester. However, an "A" paper will go beyond material covered in class. Students should address the following questions in their paper/essay, as well as integrate their faith traditions and/or personal values, as appropriate:

1. How do you view humans' relationship with the environment (both living and non-living) around them?
2. What are humans' responsibilities, if any, in caring for the environment? Be specific and discuss the extent to which environmental considerations should affect our personal choices and how we live our lives.
3. Relating sustainability to your position/worldview, do you feel that each of the three Ps (people, planet, profit) should have equal weight? Why or why not?
4. What motivates you personally to care for the environment? How much are you willing to do (i.e., how far are you willing to go)? What are you not willing to do?

As always, be very careful not to plagiarize others' ideas and be sure to cite your sources using footnotes or in-text (parenthetical) citations with a works cited list at the end of the paper (not included in the word limit). Students are encouraged to use the Writing Center (Writer's Studio) in Bond Academic Center: <https://www.pointloma.edu/opportunities/writers-studio>

Lab Assignments and Reports (25%):

Each lab exercise will include questions to be answered, graphs to be completed, and/or reports to be written and submitted. Students who miss a lab due to an unexcused absence are not permitted to submit the associated assignment or report and will receive 0 points for that

assignment or report. Detailed instructions and due dates will be posted on Canvas. Late lab assignments and reports will be accepted, but with a penalty of 20% per day late, or fraction thereof.

Lecture and Lab Participation (5%):

Students are expected to arrive to lecture and lab on time and prepared, and be engaged with in-class activities (i.e., not distracted by cell phones or asleep), listening respectfully to others, answering questions, and asking questions. All students are expected to contribute their fair share to group work.

Final Examination Policy

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the [Class Schedules](#) site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

Spiritual Care

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact your professor or the [Office of Spiritual Life and Formation](#).

State Authorization

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow online (distance education) outside of California.

PLNU Copyright Policy

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU Academic Honesty Policy

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty

should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

Artificial Intelligence (AI) Policy

Use of Artificial Intelligence (AI) tools (e.g, ChatGPT, iA Writer, Marmot, Botowski) is not permitted, and use of these tools will be treated as plagiarism.

PLNU Academic Accommodations Policy

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course and/or if they do not wish to utilize some or all of the elements of their AP in that course.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

Language and Belonging

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

You may report an incident(s) using the [Bias Incident Reporting Form](#).

Sexual Misconduct and Discrimination

In support of a safe learning environment, if you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that accommodations and resources are available through the Title IX Office at pointloma.edu/Title-

IX. Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at counselingservices@pointloma.edu or find a list of campus pastors at pointloma.edu/title-ix.

PLNU Attendance and Participation Policy

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive an “F” grade.

In some courses, a portion of the credit hour content will be delivered asynchronously and attendance will be determined by submitting the assignments by the posted due dates. See [Academic Policies](#) in the Undergraduate Academic Catalog.

Asynchronous Attendance/Participation Definition:

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

Use of Technology

In order to be successful in the online or hybrid environment, you'll need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements](#) information. Additionally, students are required to have headphone speakers, microphone, or webcams compatible with their computer available to use. Please note that any course with online proctored exams requires a computer with a camera (tablets are not compatible) to complete exams online.

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.

PLNU Recording Notification

In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students and authorized personnel. Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

Course Format

This course consists of highly interactive ‘lecture’ sessions that will employ Socratic dialogue, using probing questions to guide classroom discussion. Students are expected to come to class prepared, having completed the scheduled readings and homework questions, ready to participate in classroom activities. ‘Lecture’ sessions will regularly consist of class discussions, PowerPoint presentations, iClicker questions, board work, videos, breakout groups, and student sharing. The goal of ‘lecture’ sessions is to review and

highlight elements of assigned readings, answer students' questions, and apply concepts learned to new issues. A co-requisite laboratory session will apply concepts learned in 'lecture' to real-world situations.

Your Expectations of Me

My goal is to maintain a warm and inclusive learning environment. Teaching and learning are inherently interactive and thus social and emotional; thus, I will never intentionally intimidate or embarrass you. Instead, I will try to challenge, empower, and inspire you. I will be friendly, fun, and approachable, but never at the expense of integrity, thoroughness, and fairness. I invite your questions and challenges (I make mistakes too) whenever they arise. In addition to your teacher, I am also your mentor and advocate; feel free to approach me with any question or concern about this class or otherwise. I am committed to mastery of the material I am teaching, to punctuality, accountability, organization, and preparedness. I will have assignments and exams graded and e-mails answered in short order, and I will make myself as available to students as possible.

My Expectations of You

I expect you to attend every lecture and lab session, arriving slightly *early* so we can begin on time. You should arrive prepared, having completed any assignments due as well as the scheduled readings. I expect a certain decorum in the classroom. Please respect your fellow students and me, as I will respect you. Your cell phones should be turned off or silenced and put away (out of sight, out of your hands) during class, unless you have prior approval from me (e.g., you have a child in daycare, a relative in hospice, etc.).

To succeed in this course, you must attend every lecture and lab, complete all assigned readings by their due date, and submit assignments on time. When completing assigned readings, read *actively* and *do not ignore the figures*. That means not merely skimming and/or highlighting. Reading actively means taking notes and drawing concept maps while reading and developing insightful questions you can bring to class. Most importantly, COME TO OFFICE HOURS EARLY AND OFTEN! I love helping students and office hours are perfect for me to work with you individually or in small groups. Coming to office hours early and often is bound to improve your grade! I am personally invested in your success; however, you must be proactive and seek out help as needed. You must take ownership of your education! Lastly, use this general rule of thumb to self-assess your learning: if you truly understand the material, you should be able to teach it (explain it) clearly and concisely to another student.

I prefer that you take notes by hand, as several recent studies have shown that handwriting notes improves learning and retention over typing notes on a computer. One reason is that using your computer can be distracting, with countless temptations to engage with social media, e-mail, etc. The other reason is that handwriting notes is slower, which means you must actively distill in real time the lecture material to the most important points. This vital processing step is lost when you type notes because you can probably type fast enough to write every word being said. Nevertheless, if, for whatever reasons, you feel typing your notes in class works best for you and your learning style, I will be happy to accommodate this. Please just talk to me.

If you know ahead of time you will miss class for a valid reason (e.g., interview for graduate/medical school, competing in an intercollegiate athletic event, etc.), please notify me AT LEAST TWO WEEKS ahead of time. Alternative arrangements *may* be possible, but are not guaranteed. If you unexpectedly miss class for a valid reason (e.g., severe illness, family emergency, etc.), contact me as soon as possible; you may be asked to provide proof of absence (e.g., a doctor's note). Note that other travel plans (e.g., leaving PLNU

early for Spring Break, Easter Break, or similar) DO NOT count as a valid reason to miss class and may not be accommodated.

Land Acknowledgement

I want to acknowledge that the land on which we gather is the traditional and unceded territory of the Kumeyaay Nation. I want to pay respect to the citizens of the Kumeyaay Nation, both past and present, and their continuing relationship to their ancestral lands.

Tentative Course Schedule (*subject to change – changes will be announced in class and on Canvas.*)

Note: Assigned textbook chapter modules (e.g., 1.1, 1.2, 2.1, etc.) are indicated in parentheses and should be completed before lecture begins (11:00 am) on the date indicated.

Day	Date	Topics Covered
WED	9/4	Wicked Environmental Problems, Sustainability, Social Traps, Environmental Ethics (1.1.1, 1.1.3, 1.1.6, 1.1.8 – 1.1.9) Mon/Wed LAB: NO LAB – LABOR DAY
FRI	9/6	Scientific Method, Correlation vs. Causation (1.2.1 – 1.2.2, 1.2.4 – 1.2.6)
MON	9/9	Ecological Hierarchy, Ecosystem Components, Biomes, Ranges of Tolerance (2.1.1 – 2.1.4)
WED	9/11	Energy Flow in Ecosystems, Matter Cycles and Sinks (2.1.2, 2.1.5 – 2.1.7) Mon/Wed LAB: Ecospheres
FRI	9/13	Population Distribution, Size, Density, Growth Factors (2.2.1 – 2.2.3, 2.2.6, 2.2.8)
MON	9/16	Exponential and Logistic Population Growth, Life History Strategies (2.2.4 – 2.2.5, 2.2.7)
WED	9/18	Community Ecology, Food Webs, Trophic Levels, Species Diversity (2.3.1 – 2.3.4) Mon/Wed LAB: Measuring and Conserving Species Diversity
FRI	9/20	NO LECTURE – Required Catalina Island Field Trip
SAT	9/21	Required Catalina Island Field Trip
SUN	9/22	Required Catalina Island Field Trip
MON	9/23	Habitat Structure, Keystone Species, Species Interactions (2.3.5 – 2.3.7)
WED	9/25	Genetic Diversity, Natural Selection, Adaptation (3.1.1 – 3.1.4) Mon/Wed LAB: NO LAB – ACTIVITY ALREADY COMPLETED ON CATALINA ISLAND
FRI	9/27	Conservation Grant Proposal Exercise (3.1.6 – 3.1.7; other required reading on Canvas)
MON	9/30	Measuring and Valuing Biodiversity (3.2.1 – 3.2.3)
WED	10/2	Biodiversity Hot Spots, Threats to Biodiversity (3.2.4 – 3.2.6) Mon/Wed LAB: NO LAB – ACTIVITY ALREADY COMPLETED ON CATALINA ISLAND
FRI	10/4	Catchup and Review for Exam 1 (Washington Post interactive article)
MON	10/7	Interdisciplinary Shark Conservation Case Study (Nosál et al. 2016)
WED	10/9	Human Population Size, Distribution, and Growth (4.1.1 – 4.1.3) Mon/Wed LAB: Exam 1 (covers material from 9/3 through 10/4)
FRI	10/11	Human Population Carrying Capacity, Ecological Footprints (4.1.6 – 4.1.7, 5.1.2 – 5.1.3)
MON	10/14	Urbanization and Suburban Sprawl (4.2.1 – 4.2.4)
WED	10/16	Environmental Toxicology (4.3.4 – 4.3.6, 6.1.5, Silent Spring: Forward and Chapter 1) Mon/Wed LAB: Environmental Water Quality II
FRI	10/18	True Cost Accounting, Linear vs. Circular Economic Systems (5.1.5 – 5.1.7)
MON	10/21	Impacts of Mismanaged Solid Waste (5.3.1 – 5.3.3)
WED	10/23	NO LECTURE – ACTIVITY ALREADY COMPLETED ON CATALINA ISLAND
MON/Wed LAB:		NO LAB – ACTIVITY ALREADY COMPLETED ON CATALINA ISLAND
FRI	10/25	NO LECTURE – FALL BREAK

- MON 10/28 Solid Waste Disposal, Methods to Reduce Solid Waste (5.3.4 – 5.3.8)
 WED 10/30 Freshwater Distribution, Water Cycle, Water Supply and Scarcity (6.1.1 – 6.1.4)
 Mon/Wed LAB: *NO LAB – ACTIVITY ALREADY COMPLETED ON CATALINA ISLAND*
 FRI 11/1 Addressing Water Shortages with Technology and Conservation (6.1.7 – 6.1.8, [this article](#))
- MON 11/4 Water Pollution, Eutrophication, Dead Zones (6.2.1 – 6.2.3)
 WED 11/6 Riparian Habitat Ecosystem Services and Watershed Management (6.2.6 – 6.2.7)
 Mon/Wed LAB: [Field Trip to San Diego International Airport](#)
 FRI 11/8 Catchup and Review for Exam 2 (no assigned reading or homework questions)
- MON 11/11 *NO LECTURE – ACTIVITY ALREADY COMPLETED ON CATALINA ISLAND*
 WED 11/13 Electric Vehicles and Lithium Extraction (7.1.1, 7.1.5 – 7.1.6, [this article](#))
 Mon/Wed LAB: **Exam 2 (cumulative, but focusing on material from 10/7 through 11/8)**
 FRI 11/15 World Hunger, Malnutrition, Green Revolution, Industrial Agriculture (8.1.1 – 8.1.4)
- MON 11/18 Pesticides, Fertilizers, Genetically Modified Organisms (8.1.5 – 8.1.6)
 WED 11/20 Sustainable Diets, Environmental Impacts of Meat Consumption (8.2.6, 8.3.2 – 8.3.4)
 Mon/Wed LAB: [Field Trip to San Diego Zoo](#)
 FRI 11/22 Fossil Fuels: Coal, Oil, Natural Gas (9.1.1 – 9.1.3, 9.1.6, 9.2.1, 9.2.2, 9.2.4)
- MON 11/25 *NO LECTURE – THANKSGIVING BREAK*
 WED 11/27 *NO LECTURE – THANKSGIVING BREAK*
 Mon/Wed LAB: *NO LAB – THANKSGIVING BREAK*
 FRI 11/29 *NO LECTURE – THANKSGIVING BREAK*
- MON 12/2 Evidence for and Impacts of Climate Change I (10.2.1 – 10.2.2, 10.2.7)
 WED 12/4 Evidence for and Impacts of Climate Change II (10.2.1 – 10.2.2, 10.2.7)
 Mon/Wed LAB: [Radio Telemetry](#)
 FRI 12/6 Causes of and Responses to Climate Change I (10.2.3 – 10.2.6, 10.2.8)
- MON 12/9 Causes of and Responses to Climate Change II (10.2.3 – 10.2.6, 10.2.8)
 WED 12/11 Fossil Fuel Alternatives (skim 11.1.1 – 11.1.7, then read 11.1.8, 11.2.1 – 11.2.8)
 Mon/Wed LAB: [Climate Change \(Complete Student Evaluations\)](#)
 FRI 12/13 Catchup and Review for Exam 3
- MON 12/16 **Exam 3 (cumulative, but focusing on material from 11/11 through 12/13)**
During final exam time slot, 10:30 AM – 1:00 PM, in [lecture classroom \(Latter 02\)](#)