ENSC 181 – Terrestrial Environment

\*\*\* More details are available one the class site on Moodle. \*\*\*

Meeting: Time \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Room:\_\_\_\_\_\_\_\_\_\_\_ Building 16

Course Credit: 4

CRN: \_\_\_\_\_\_\_\_\_

Instructor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Office: Room \_\_\_\_\_\_, Building 16

Email: \_\_\_\_\_\_\_\_\_\_@LaneCC.edu

Office phone: 541-463-\_\_\_\_\_\_

Office Hours: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or by appointment

Course Description: Interactions among humans and natural land-based systems and their environmental consequences. Topics and labs include terrestrial ecology, biodiversity, biomes, forests, agriculture, rangelands, soils, groundwater, geologic mineral and energy resources, mining, waste management, recycling, environmental justice, ecological economics, conservation, and sustainable production. Take ENSC 181-183 in any order.

Learning Outcomes:

* Evaluate and perform scientific procedures and methods.
* Evaluate interactions among humans and natural land-based systems and their environmental consequences in case studies.
* Describe terrestrial ecology, biomes, and biodiversity and explain the biological, geologic, chemical and physical interactions of their components.
* Describe benefits and drawbacks of practices in forests, agriculture, rangelands, soils, groundwater use, mining, conservation, and waste management.
* Describe methods of mineral and energy resources extraction and their environmental consequences and mitigation and evaluate the human benefits and consequences of their extraction and use.
* Evaluate environmental justice, ecological economics, and sustainable production.

Class website: This class will rely heavily on the Moodle class site. Extensive details about assignments and policy, as well as the definitive schedule, are kept there.

Textbook:

Required:

* *Environmental Science: Foundations and Applications* by Friedland, Relyea, and Courard-

Hauri, 1st edition

Suggested:

* *Forests: A Very Short Introduction*, by Jaboury Ghazoul

In-class: This class meets for 6 hours a week, with an expectation of about the same amount of time spent on homework outside of class. Class time will be split between lectures and lab work. The labs will take place in class and outside at field sites.

* Lectures will draw mainly from the textbook
* Classroom and field activities are absolutely essential, and very difficult to make up.
* Attendance is essential.
* If you miss a class, first look at the Moodle site to see what we covered. Also you should contact a classmate to get notes. After you have done both of those things, feel free to come see me with any questions you still have.
* Each week’s lab will be due at the beginning of class on the following Monday.
* Late labs will be given half credit, up until Friday of week 9.
* The lowest score will be dropped.

Civility in the classroom and respect for others’ learning is very important in an academic environment. All students are expected to conduct themselves at all times in a manner that does not disrupt teaching or learning.

Field Trips: We will be taking small local field trips during class sessions. They will generally be announced ahead of time, and attendance at all of them will be absolutely essential.

Homework: As with most LCC Science classes, you will be expected to do about 2 hours of work outside of class for every credit of class, or about 8 hours per week. Students will be expected to read the textbook and study outside of class.

* Before class each week, you will be expected to look over the chapter and have a general sense of what we are doing. I reserve the right to give **pop quizzes**, if this

does not seem to be happening.

* Review questions: After the lab, you should study the chapter and supplemental materials more thoroughly, and answer the given review questions. Review questions are **not collected**, they are intended for you to use as a study guide. We will go over them in class.
* Class work: Each week’s lab and field work will be due at the beginning of class the following week, turned in together as a packet. These materials might include

worksheets that have been filled out, a lab write-up for fieldwork, data analysis, or

written position statements on current events.

* There will also be assignments associated with the…

Issues Project: The issues project is a major component of this class, a research project and presentation described in detail on the class Moodle page. For your project you will examine a subject related to terrestrial ecosystems about which scientists disagree. You will examine evidence from the conflicting perspectives on the subject, and present your findings in an outline. You will then present your issue to the class during the last part of the term. This project will showcase important research, analysis, and communication skills you’ve developed throughout the term.

Note: If you absolutely do not want to do a presentation to the class, come talk to me.

Exams: There will be two in-class midterms weeks 4 and 8, and one cumulative final. The final will cover more material from the second half of the quarter than the first half. Both will include multiple choice and written-answer questions. Some questions will be very similar to the review questions given each week, while others will be designed to challenge you and make you apply what you’ve learned in class to a new situation.

Exams must be taken in class, at the time they are given. Make-up exams will only

be given in the case of documented emergencies.

Late Policy: Late labs will receive half credit, and will be accepted only up until Friday of week 9.

Grading:

|  |  |  |
| --- | --- | --- |
| 90 - 100 | A |  |
| 87 – 89.9 | B+ |
| 80 - 89.9 | B |
| 83 – 36.9 | B |
| 70 - 79.9 | C |
| 80 – 82.9 | B- |
| 60 - 69.9 | D |  |
| below 60 | F |

|  |  |
| --- | --- |
|  | ***%*** |
| attendance and participation | 5 |
| classwork | 30 |
| issues project | 20 |
| midterms | 20 |
| final | 25 |

Extra Credit: There are many ways to earn extra credit in this course. Examples:

* going to a relevant academic lecture or event, and writing up a review
* visiting a place which displays some process or concept we have covered
* relevant volunteer work
* teaching the material to kids

You can earn up to 5 points of extra credit, one point every two weeks of the class. I encourage all students to earn all of those points. Any extra credit must be approved ahead of time by the instructor, and must be turned in by Friday of the week it is due.

Source unknown



**ENSC 181: Terrestrial Environment Course Schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week**  | **Major Topics** and Topics | **Lab** | **Readings**  |
| **1** | **Part 1 Introduction** What is this class about? Science, energy and life, cells, chemistry, chemical cycles, feedback, and scale. Earth systems. Sustainability, resilience. | Lab 1 Scientific Methods | Ch 1, Ch 2 |
| **2** | **Part 2 Ecology** intro. Ecology, biological communities, trophic levels, biodiversity, evolution. Preserving species. Environmental health and toxicology **Quiz 1** | Lab 2 Biodiversity | Ch 3, Ch 5, Ch 6 |
| **3** | **Part 3 Biomes** Biomes. Forests, and forestry, trees in Oregon.  | Lab 3 Biomes  | Ch 4 |
| **4** | Ecosystem services and restoration. Grasslands, and prairie restoration | Lab 4 Tree ID | Ch 10, Ch 18 |
|  | **Field Trip**  |  | **Field trip handout** |
| **5** | **Part 4 Land Use** Agriculture, water and soils, rangelands, industrial and alternative agriculture. Food, hunger, and groundwater **Exam 1** | Lab 5 Soils and Agriculture | Ch 11, Ch 9 |
| **6** | **Part 5 Geology and Earth Systems** Geology, plate tectonics. Geologic resources, minerals and rocks, mining **Quiz 2**  | Lab 6 Mineral resources and mining | Ch 8 |
| **7** | **Part 6 Energy** Energy resources: Conventional energy and fossil fuels, greenhouse effect, consequences of energy use  | Lab 7 Carbon cycle | Ch 12 |
| **8** | Sustainable energy resources. **Exam 2** | Lab 8 Sustainable energy | Ch 13 |
| **9** | **Part 7 Issues and Policy** Waste management.Urbanization and sustainable cities. Footprint. Environmental justice, toxicology, health risks. | Lab 9 Waste audit | Ch 16, Ch 17 |
| **10** | Impact project presentations. Ecological economics and environmental law. | Presentations | Ch 20 |
| **Finals** | Monday, 3-Dec at normal class time |  | **Cumulative** |

**Accessibility and Accommodations:**

**To request accommodations contact the Center for Accessible Resources at** **(541) 463-5150** **or AccessibleResources@lanecc.edu**

**Please be aware that any accessible tables and chairs in this room should remain available for authorized students who find that standard classroom seating is not usable.**

**In case of emergencies**, including medical emergency, call Public Safety at (541) 463-5555 (or 5555 from campus phones, such as the courtesy phones

located on the second floor of the Science Building)