

John Felice Rome Center
The Scientific Basis of Environmental Issues
ENVS101 A01 F21
Spring 2023

Mondays, 9:00am-11:30am
Instructor: Bruno Bellisario, PhD
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CLASS MEETINGS

Monday, 9:00am-11:30am from January the 16th to April the 17th; final exam is on Monday, April the 24th

OFFICE HOURS

Monday 11:45am-12:30pm, Faculty Office. If necessary, contact by email for a remote appointment via Skype, Zoom or Meet.

CORE AREA SATISFIED

This is a foundational scientific course as part of the Core Curriculum at Loyola University of Chicago.

COURSE DESCRIPTION

In this course we will explore the scientific bases of environmental science, to understand the complexity of life on earth for an effective integration between human needs and the conservation of natural resources. Climate change, pollution, loss of biodiversity, increase in human population are examples of interconnected critical issues to which we should be able to give answers. Given such complexity, environmental science draws on a wide range of disciplines and skills, and multiple ways of knowing are often helpful for finding answers. Environmental questions are complex, and we need orderly methods of examining and understanding them. This course includes elements of life science, biology, chemistry, geology, data analysis, among others, to help students develop a critical scientific thinking to seek better answers to important questions. The ultimate goal of the course will be to lay the foundations for a proper understanding of natural systems, to provide faster and more effective responses to environmental issues.

LEARNING OUTCOMES

By the end of semester, students should be able to:

1. Be prepared to apply critical and reflective thinking in environmental science
2. Explain what environmental science is, and how it draws on different kinds of knowledge
3. Describe sustainable development and its goals
4. Describe the scientific method and explain how it works
5. Understand the complexity of life on earth
6. Reflect on what kind of future we are creating
7. Summarize some of the ways we benefit from biodiversity
8. Characterize the threats to biodiversity
9. Explain how we can make a difference
10. Define the challenge of sustainability

TEXTS

Christensen, N , Lege L. 2016. The Environment & You. Pearson. USA. It is expected that students will get textbook before course begins.

OTHER RESOURCES

Course materials (e.g., slides, selected scientific papers and assignments) will be provided via the Sakai learning management system, which can be accessed at: <https://sakai.luc.edu/>. It is expected that students will access and submit assignments and other coursework via the Sakai system using their Loyola ID and password at: <http://www.luc.edu/itrs/sakai/sakai-student-tutorials.shtml>.

LIBRARY RESOURCES:

Anne Wittrick, Librarian, awittrick@luc.edu.

Phone: +39 06 35588341

<http://libraries.luc.edu/rome>; <http://www.luc.edu/rome/>.

ASSESSMENT COMPONENTS

1. In-class participation (including assignments) → 20%
2. Midterm Exam → 25%
3. Group presentation → 25%
4. Final Exam → 30%

1. In-class participation (including assignments) (20%)

Participation and attendance are key aspects of the course. Students must be active and prepared about the readings assigned along the course. They also should demonstrate to have passion and awareness towards this topic and should also contribute to stimulate the discussions respecting the different opinions of other students. Students must be present during class sessions to receive credit as we will hold frequent discussions in the class. For these discussions, students will need to have done the reading ahead of time for class and be prepared.

2. Midterm Exam (25%)

The midterm exam is a fundamental appointment and will be based on quizzes related to the topics covered up to then in the course.

3. Group presentation (25%)

Students will be separated into groups depending on the actual number of people attending the course. Each group will prepare a presentation covering different topics of the course. Recent articles should be used to communicate the current status of the issue and include any controversies. Presentations should be around 20 minutes long and the presenting group should then lead and facilitate the class discussion.

4. Final Exam (30%)

The final exam will be based on the topics presented and discussed throughout the course and will take place on Monday December the 5th. Students will have 2 hours to complete the exam.

STUDY TRIP – OPTIONAL ACTIVITY (TO BE CONFIRMED)

When: End March/Early April 2023 – (Date to be determined, Friday to Sunday)

Where: *Riserva Naturale di Acquapendente/Torre Alfina*

The field activity will offer students the opportunity to have practical feedback on the main issues covered in the course, with particular emphasis on biodiversity measures, the effects of anthropogenic impacts on ecosystems (e.g., pollution, climate change), as well as to become aware on how to protect our environment to slow down the effects of human pressures.



The experience will take place in one of the most interesting scenarios of the Lazio Region (*Monte Rufeno Nature Reserve, Acquapendente*), characterized by a perfect synergy between human needs and natural environment. Students will have the opportunity to observe the pristine beauty of the forests, streams, and wildlife, with the help of expertise from the *State Forestry Corps*, LUC-JFRC teachers and technical experts operating in the area.

GRADING

Final letter grades will be calculated as follow, based on the cumulative percentage from the tasks described above:

- A → 94-100 A⁻ → 90-93
- B⁺ → 87-89 B → 84-86 B⁻ → 80-83
- C⁺ → 77-79 C → 74-76 C⁻ → 70-73
- D⁺ → 67-69 D → 60-66
- F → ≤ 59

PRIVACY STATEMENT:

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

ATTENDANCE POLICY

In accordance with the JFRC mission to promote a higher level of academic rigor, all courses adhere to the following absence policy. Prompt attendance, preparation and active participation in course discussions are expected from every student.

For all classes meeting once a week, students cannot incur more than one unexcused absence.

This course meets **once** a week, thus a total of **one** unexcused absence will be permitted. Unexcused absences beyond these will result in 1% lowering of the final course grade, for every absence after the ‘approved limit’. The collective health of the JFRC is everyone’s responsibility.

Please, refer to <https://www.luc.edu/rome/campuslife/healthwellness/covid/> for the JFRC’s behavioral rules for COVID19 prevention. Please, **do not attend class if you are ill**.

ACCESSIBILITY

Students who have disabilities which they believe entitle them to accommodations under the Americans with Disabilities Act should register with the Services for Students with Disabilities (SSWD) office. To request accommodations, students must schedule an appointment with an SSWD coordinator. Students should contact SSWD at least four weeks before their first semester or term at Loyola. Returning students should schedule an appointment within the first two weeks of the semester or term. The University policy on accommodations and participation in courses is available at: <http://www.luc.edu/sswd/>.

HARASSMENT (BIAS REPORTING)

It is unacceptable and a violation of university policy to harass, discriminate against or abuse any person because of his or her race, color, national origin, gender, sexual orientation, disability, religion, age, or any other characteristic protected by applicable law. Such behavior threatens to destroy the environment of tolerance and mutual respect that must prevail for this university to fulfil its educational and health care mission. For this reason, every incident of harassment, discrimination or abuse undermines the aspirations and attacks the ideals of our community. The university qualifies these incidents as incidents of bias. Any incident(s) of bias must be reported and appropriately addressed.

The Bias Response (BR) Team was created to assist members of the Loyola University Chicago community in bringing incidents of bias to the attention of the university.

If you believe you are subject to such bias, you should notify the Bias Response Team at this link: <http://webapps.luc.edu/biasreporting/>.

ACADEMIC HONESTY

Plagiarism and other forms of academic dishonesty are unacceptable at the JFRC and will be dealt with in accordance with Loyola University Chicago’s guidelines. Please familiarize yourself with Loyola’s standards here: http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml.

You are responsible to comply with the LUC Student Handbook.

LATE OR MISSED ASSIGNMENTS

Late or missed assignments will not be accepted for grading without the authorization of the instructor.

ACCESSIBILITY ACCOMMODATIONS

Students registered with the Student Accessibility Center requiring academic accommodations should contact the Office of the Dean at the John Felice Rome Center, the first week of classes.

COURSE SCHEDULE

Below you will find a short and very general description of the main topics covered in the course.

	Topic	Date
Session 1	Course introduction/A roadmap to environmental science Defining the environment and environmental science The human dimension Sustainable development Ethics, Faith, Conservation, and Justice	Jan 16 th 2023
Session 2	Systems, science, and the scientific method Defining science Definition and importance of statistics Defining systems Consensus, conflicts and critical thinking in science	Jan 23 rd 2023
Session 3	From genes to communities The evolutionary drivers of species diversity Defining ecological communities Species interactions & Community dynamics Properties of ecological communities	Jan 30 th 2023
Session 4	Biodiversity I: Species What is biodiversity? Benefits of biodiversity Threats to biodiversity Species management	Feb 6 th 2023
Session 5	Biodiversity II: Landscapes Defining landscapes Principle of landscape ecology Threatened landscapes Parks & Natural reserves	Feb 13 th 2023
Session 6	The building blocks of life Elements of life Energy Energy & life Material Cycles and Life Processes	Feb 20 th 2023
Session 7	MIDTERM EXAM	Feb 24 th 2023
Session 8	Biomes Terrestrial Marine Freshwater Disturbances	Feb 27 th 2023
SPRING SEMESTER BREAK (3rd - 12th March)		
Session 9	Geology & Earth Resources Geological processes Rocks & minerals Geological resources Geological hazards	March 13 th 2023
Session 10	Atmosphere & Climate Atmosphere & weather Natural climate variability Anthropogenic Climate Change Climate change effects	March 20 th 2023
Session 11	Group Presentation	March 27 th 2023
Session 12	Policy, Law, and Planning Environmental policies USA vs EU Environmental laws International conventions Local knowledge and new approaches to policy	April 3 rd 2023



EASTER BREAK (7th – 10th April)

Session 13

How can we make a difference? (Principles of environmental ethics)

April 17th 2023

Education

Individual responses

Working together

The global challenge of sustainability

Final exam

9:00-11:00am

April 24th 2023
