

Introduction to Environmental Studies and Climate Change ENVI -1000 (3 credits)

Portugal: Environmental Studies and Climate Change

This syllabus represents an Experiment summer thematic program. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from program to program.

Course Description

This course introduces students to the field of environmental studies and initiates them to practical tools and skills that are necessary for the study of impacts of climate change. Portugal's sustainability approach maps directions for alternative designs in green policies, sustainable environmental tourism, and access to a sustainable urban environment. Portugal generates an average of 60% that may reach 100% in windy and rainy days, of the country's needs in electricity consumption from renewable energy and Lisbon has been awarded the title of the European Green Capital for 2020. Through field excursions and discussions with environment experts and stakeholders and, students learn about sustainability and conservation projects, environmental good practice, and innovative use of renewable energy.

Student Learning Outcomes

Upon completion of the course, students will be able to:

- Develop an understanding of the baseline concepts of environmental studies and tools used in the study of impacts of climate change;
- Explain impacts of gentrification on the urban design in Lisbon;
- Summarize adverse environmental impacts on human health;
- Develop a general understanding of Portugal's experience with wildfire prevention and management;
- Demonstrate knowledge of cultural intelligence, interpersonal communication and teamwork skills;
- Synthesize the learning acquired on the program in a short paper, podcast or video presentation, and college admission essays.

Course Schedule

*Please be aware that topics and excursions may vary to take advantage of any emerging events, to accommodate changes in our lecturers' availability, and to respect any changes that would affect student safety. Students will be notified if this occurs.

The course is delivered using classroom sessions, field activities, workshops as well as a weekly three-hour group synthesis or activities. Some sessions will include short videos and class discussion.

Module 1: Environment Studies and Climate Change

This module introduces key issues in the debate about environmental studies and climate change considering the UN sustainable development goals. Students develop a general overview of some of the main fields of interest for environmental studies researchers and professionals including energy and climate change, pollution prevention, and environmental conservation.

Sessions, activities, and class discussions in this module may include:

- Introduction to environmental studies and climate change
- Emerging sustainability models
- Biodiversity and pollution prevention
- Portugal's marine and aquatic systems
- Field visit to e.g., Parque Natural da Ria Formosa in Algarve

Required Reading:

Europe Sustainable Development Report 2020, <https://eu-dashboards.sdgindex.org/>

Raworth, K. (2017). Doughnut economics: seven ways to think like a 21st-century economist. Chelsea Green Publishing.

Sachs, J. (2015). The Age of Sustainable Development, Columbia University Press (selected chapters).

Module 2: Gentrification and Environmental Migration

This module explores the relationship between gentrification and environmental migration. With its long coastline, Portugal is at risk of an increase in sea-level due to climate change. At the same time, aggressive gentrification in metropolitan cities such as Lisbon has led to the displacement of population from many neighborhoods.

Sessions and discussions in this module explore:

- Urban planning and impact on economic development
- Urban environmental conflicts
- Climate change and environmental migration
- Impact of refugees on urban regeneration
- Field visits with neighborhood environmental associations

Required Reading:

Ramos M..C.P., Ramos N., Moreira A.I..R. (2016). Climate Change and Forced Environmental Migration Vulnerability of the Portuguese Coastline. In: Leal Filho W., Azeiteiro U., Alves F. (eds.) *Climate Change and Health: Climate Change Management*. Cham: Springer.

Module 3: Environmental Sustainability and Health Equity

This module aims to accomplish two main objectives. First, students learn about the Portuguese innovation initiatives in the field of healthcare. The second aim is to develop a general understanding of impacts of environmental sustainability on health equity.

Sessions, activities, and class discussions in this module explore:

- Innovation in healthcare in Portugal
- Environmental degradation and health disparities
- Healthcare in low-income neighborhoods
- Neighborhood environment and mental health determinants in Lisbon
- Field activity: green exercise in Lisbon

Required Reading:

Abrantes, A. and Simões, J. (2018). Thinking Ahead: Portugal's Health in 2017. *Portuguese Journal of Public Health*. Available: <https://www.karger.com/Article/Pdf/488336>

Module 4: Sustainability and Forest Fire Management

This module addresses Portugal's experience in managing forest fires. Students meet with wildfire prevention professionals to learn about Portugal's Fire Plan and impacts of climate change on forest fire occurrence. Experts explain how Portugal is pursuing a balanced and sustainable strategy to preempt fire threats and develop forest intervention areas.

Sessions, field visits, and class discussions in this module explore:

- Impacts of climate change on wildfire management
- Portugal's Fire Plan (Plano Nacional de Defesa da Floresta Contra Incêndios)
- Rural Civil Protection and fire management
- Portugal's approach to fire prevention
- Field visit: Serra de Monchique, one of Portugal's most affected areas by extreme wildfires

Required reading:

Beighley, Mark & Hyde, A. C. (2018). Portugal Wildfire Management in a New Era: Assessing Fire Risks, Resources and Reforms. Accessed: [https://www.isa.ulisboa.pt/files/cef/pub/articles/2018-04/2018 Portugal Wildfire Management in a New Era English.pdf](https://www.isa.ulisboa.pt/files/cef/pub/articles/2018-04/2018%20Portugal%20Wildfire%20Management%20in%20a%20New%20Era%20English.pdf)

Collins, Ross D. et al. (2013). Forest fire management to avoid unintended consequences: A case study of Portugal using system dynamics. *Journal of Environmental Management*, 130 (pp. 1-9).

Accessed: <http://www.cienciaviva.pt/img/upload/Forestfiremanagement.pdf>

Assignments and Evaluation

Assignment Descriptions and Grading Criteria

1) Voluntary Services (25%)

Students are asked to conduct voluntary work together with a Portuguese organization or community and observe how their voluntary work affected the community or the ecosystems. After these experiences, students are asked to write a small reflection paper of 300 words about their activities and learning experiences as volunteers in a Portuguese context.

2) Environmental Studies and Climate Change Paper/Video/Podcast (40%)

For this assignment, students conduct a small fieldwork project on an aspect related to sustainability or climate change. Students can do observation or conduct informal interviews/conversations and synthesize the information in a 600-word paper/10-minute video/20-minute podcast or other creative project of their choice.

3) Weekly Synthesis Sessions (20%)

All Students are required to lead one weekly synthesis session along with a small group. Leading a synthesis session requires that the student prepare a snapshot summary of the week's sessions and activities and prepare questions for discussion.

4) Participation (15%)

This includes active involvement in lectures, readings, discussions, and excursions using the following criteria:

- Attendance - promptness to class and positive presence in class.
- Active Listening - paying attention in class and during field excursions, asking appropriate questions, showing interest and enthusiasm (this includes body language), entertaining contradictory perspectives, taking notes.
- Involvement in Discussions - either in small or large groups, sharing knowledge. This means challenging yourself to speak up if you usually don't, and also means allowing others to speak if you are a person who tends to dominate class discussions.
- Group Accountability – positive participation in the group during field excursions and classes; not keeping others waiting.
- Displaying Respect – culturally appropriate interaction with hosts, program staff, speakers and communities.

Assessment

Voluntary Services – 25%

Environmental Studies and Climate Change Paper/Video/Podcast – 40%

Weekly Synthesis Sessions – 20%

Participation – 15%

Attendance and Participation

Due to the nature of The Experiment programs, and the importance of student and instructor contributions in each and every class session, attendance at all classes and for all program excursions is required. Criteria for evaluation of student performance include attendance and participation in program activities. Students must fully participate in all program components and courses. Students may not voluntarily opt out of required program activities. Valid reasons for absence – such as illness – must be discussed with the group leader, academic director or other designated staff person.

Late Assignments

The Experiment programs integrate traditional classroom lectures and discussion with field-based experiences, site visits and debriefs. It is critical that students complete assignments in a timely manner to continue to benefit from the sequences in assignments, reflections and experiences throughout the program.

Grading Scale

94-100%	A
90-93%	A-
87-89%	B+
84-86%	B
80-83%	B-
77-79%	C+
74-76%	C
70-73%	C-
67-69%	D+
64-66%	D
below 64%	F

Program Expectations

- Show up prepared. Be on time, have your readings completed and points in mind for discussion or clarification. Complying with these elements raises the level of class discussion for everyone.
- Have assignments completed on schedule, printed, and done accordingly to the specified requirements. This will help ensure that your assignments are returned in a timely manner.
- Ask questions in class. Engage the lecturer. These are often very busy professionals who are doing us an honor by coming to speak.
- Comply with academic integrity policies (no plagiarism or cheating, nothing unethical).
- Respect differences of opinion (classmates', lecturers, local constituents engaged with on the visits). You are not expected to agree with everything you hear, but you are expected to listen across difference and consider other perspectives with respect.
- Storing Your Work: Keep several copies of your work as back up and keep one copy accessible to you through an online forum, such as an attachment in your email, the course learning management system, or cloud-based storage. This way your work will

always be available to despite technical issues. Lost files, deleted drives, or computer crashes are not excuses for late, missing work.

- Personal Technology Use: Cell phones and other personal electronics can be used for taking notes and other class activities. Off-task usage is not acceptable. You may be marked as absent for habitually using them for something other than classroom activities.
- Classroom recording policy: To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

The Experiment Policies and Resources

Please refer to The Experiment handbook for policies on academic integrity, ethics, warning and probation, diversity and disability, sexual harassment, and the academic appeals process.