

Ecology of Spain

COURSE DESIGNATOR: MADR 3002

LANGUAGE OF INSTRUCTION: English

NUMBER OF CREDITS: 3

CONTACT HOURS 45 hours

COURSE DESCRIPTION

INSTRUCTOR Tania de la Fuente. tania76@yahoo.com

The course includes basic concepts in Ecology, including populations, communities, biomes and landscapes. Special importance is given to processes and adaptations taking place in the Mediterranean type of ecosystems. The course also includes practical activities that lead the student to learn by doing and applying the knowledge explained in the lectures.

LEARNING OUTCOMES

- Students should be able to explain the basic methods of science, including the importance of hypothesis testing and the role of models, paradigms, and theories in understanding nature.
- Students should be able to differentiate from among information that is based on science, pseudoscience, or opinions/beliefs.
- Students should be able to describe the key processes that control the structure and biodiversity of ecological communities.
- Students should be able to describe energy flow and biogeochemical cycling in ecosystems.
- Students should be able to explain the connection between evolution and ecology in shaping the Earth's biodiversity.
- Distinguish between density dependent and density independent birth and death rates.
- Describe how population data can be analyzed using statistics, graphs, life tables, and survivorship curves.
- Describe the principal interactions between different species and how they affect the respective species.
- Describe the major forces structuring communities and explain how community structure can be represented by food webs.
- Explain how communities change in both space (biomes and gradients) and time (succession).
- Explain the large-scale patterns of biodiversity describe how biodiversity is measured and predict the consequences of continued species loss.

METHODOLOGY

In order to achieve the course objectives, the professor will explain the basic ecological concepts using audiovisual material, such as presentations, videos, animated models, Internet resources, etc. Among others, the use of natural resources or the relation between pollution and the greenhouse effect are two of the topics used for participation and discussion.

Case studies will be used to further study the relation between the ecosystem's components or the environmental alterations. Students will present and analyze in class a recent news article or a current issue by gathering information and investigating. Students will do individual papers about specific aspects of ecosystems and Spain's flora and fauna. In order to achieve a closer approach to nature-related topics (at times far from the students'

interests), some field trips will be organized. We will also do several virtual labs to get a better understanding of the topics covered in class.

CONTENTS

WEEK 1

- Understanding our Environment

WEEK 2

Evolution, Species Interactions

Barnacle competition lab

- <http://virtualbiologylab.org/ModelsHTML5/BarnacleCompetition/BarnacleCompetitionModel.html>

WEEK 3

Human Population (footprint)

<https://www.footprintcalculator.org/>

Demographics Lab

- <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/demo-graphics-lab/>

WEEK 4

Fundamentals of environmental oceanography

WEEK 5

Food and Agriculture

Corn Mold test mycotoxins virtual lab

- <http://virtuallabs.nmsu.edu/corn.php>

WEEK 6

MIDTERM

WEEK 7

Biomes and Biodiversity

Communities and biomes lab

[360 Virtual Reality Biomes | Ask A Biologist \(asu.edu\)](#)

WEEK 8

Environmental Health, Toxicology

The Infectious disease project

WEEK 9

Air, Climate and Pollution
Air Pollution project

WEEK 10

Energy and Renewables
Alternative energy source lab
<https://www.youngscientistlab.com/sites/default/files/interactives/wind-energy/>

WEEK 11

SPRING BREAK

WEEK 12

Waste management & Water Issues

WEEK 13 & 14

- *Presentations, paper due, field lab*

WEEK 15

- *Final Exam*

Any information on changes regarding the course content will be communicated to students in advance.

EVALUATION

Grading Rubric

A	93-100	Achievement that is outstanding relative to the level necessary to meet course requirements.
A- B+	90-92 87-89	Achievement that is significantly above the level necessary to meet course requirements.
B	83-86	
B- C+	80-82 77-79	Achievement that meets the course requirements in every respect.
C	73-76	
C- D+	70-72 67-69	Achievement that is worthy of credit even though it fails to meet fully the course requirements.
D	60-66	
F	0-59	Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.

Midterm exam	20%
Final exam	20%
Paper and presentation	15%

Labs and homework's	40%
Class participation	5%
Overall Grade	100%

MATERIALS

Required readings will be made available during the semester. The rest of the information needed can be found in Moodle.

ATTENDANCE

Regular attendance and punctuality are mandatory in order to earn full marks. The final grade will take into consideration preparation required for class (i.e. readings) and participation in class discussions. If you miss any meetings without an excused absence from the on-site director, your final grade will be dropped accordingly. In the case of absences, it is the student's responsibility to find out what information was given in class including any announcements made.

Students must attend all classes. An absence cannot be excused arguing friends or relatives' visits, unjustified sickness or week-end planning, etc. **Only one unjustified absence** will be allowed per class. Each unexcused absence could end in lowering your final grade in 5 points [e.g.: from grade 92 (A-) to a grade 87 (B+) in the final grade].

A student will not be accepted in class when being late for more than 10 minutes. If late arrival is repeated, students will be recorded for a "half-class missed" and the instructor may not let him in.

UNIVERSITY OF MINNESOTA POLICIES AND PROCEDURES

Academic integrity is essential to a positive teaching and learning environment. All students enrolled in University courses are expected to complete coursework responsibilities with fairness and honesty. Failure to do so by seeking unfair advantage over others or misrepresenting someone else's work as your own, can result in disciplinary action. The University Student Conduct Code defines scholastic dishonesty as follows:

Scholastic dishonesty

Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis.

Within this course, a student responsible for scholastic dishonesty can be assigned a penalty up to and including an "F" or "N" for the course. If you have any questions regarding the expectations for a specific assignment or exam, ask.

Student conduct

The University of Minnesota has specific policies concerning student conduct and student needs. This information can be found on the Learning Abroad Center website.

