Année universitaire 2025-2026

Introduction à l'Ecologie
Introduction to Ecology
Code ENS-PSL Pegasus : UNBIO1-103

Responsable du cours :
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Autre(s) enseignante(s) / enseignant(s) : None

Descriptif du cours :
In this crash course (in English) I will introduce the basic notions of ecology. Around the general concept of biodiversity, students will learn the principles of population dynamics, how to define an ecological community, what an ecosystem is, and examples of mechanisms that drive ecosystem function and the response of ecological systems to global environmental change.

Objectifs pédagogiques et compétences développées :
This compact introductory course is intended to prepare the students to attend the ENS L3 course Ecologie & Biodiversité. The students will

- Acquire basic concepts, including : individual, population, community, ecosystem, ecological network, ecological function, environment, biogeochemical cycle.
- Apply basic concepts to describe the structure of real ecological systems (in class we will take the example of a coral reef ecosystem).
- Formulate simple research questions using basing concepts applied to real ecosystems.
- Learn about three main approaches to study ecological systems (long-term monitoring, experiments, mathematical and computational modeling).
- Read short articles from current ecological research literature.

Contenu détaillé du cours :
The course will take place in four sessions.
Session 1 – in common with the ENS Biology L3 course Ecologie & Biodiversité. An introduction to the history of concepts and methods in ecology, connecting the development of ecological sciences with major scientific discoveries from the 19th century to the current days.
Session 2. Dissecting an ecosystem: the coral reef example. How to describe the system structure: species diversity, species interactions, trophic and non-trophic levels, network.
Session 3. Population dynamics: viability, regulation, effect of species interactions. We will cover basic concepts and data about antagonistic and cooperative interactions.
Session 4. Ecosystem function. Physico-chemical properties of the abiotic environment. Introduction to biogeochemical fluxes and cycles: main processes in the carbon, nitrogen and phosphorus cycles. How ecosystem function relates to biodiversity.

Schedule for 2025

Monday 9/15,	**10am-12pm,**	**ENS Department of Biology, room 316.**
Tuesday 9/16,	**5:30-7pm,**	**ENS Department of Biology, room 306.**
Wednesday 9/17,	**5:30-7pm,**	**ENS Department of Biology, room 306.**
Thursday 9/18,	**5:30-7pm,**	**ENS Department of Biology, room 306.**

Langue d'enseignement : English

Type de cours :
Lecture-based.

Modalités d'évaluation :
This course is not for validation.

Année : L1, L2 and all students with no prior training in ecology.

Semestre : Semestre 1

Lectures obligatoires :
Short articles or excerpts may be provided for reading and discussion in class.

Lectures recommandées :
No textbook is assigned but the following references are recommended to support and go beyond the material covered in class.

- Barbault, R. (2008) *Ecologie Générale.* 6ème édition. Dunod, Paris.
- Gotelli, N.J. (2008) *A Primer Of Ecology.* 4th edition. Sinauer Assoc.
- Levin, S.A. ed. (2012) *The Princeton Guide To Ecology.* Princeton Univ. Press.
- Ricklefs R., Relyea, R. (2014) *Ecology: The Economy Of Nature.* 4th edition. W.H. Freeman.