

# COASTAL AND MARINE BIOLOGY AND ECOLOGY (LM51)

(Lecce - Università degli Studi)

## Teaching THEORETICAL ECOLOGY

GenCod A006027

**Owner professor** Alberto BASSET

**Teaching in italian** THEORETICAL ECOLOGY

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**SSD code** BIO/07

**Reference course** COASTAL AND MARINE BIOLOGY AND ECOLOGY

**Course type** Laurea Magistrale

**Credits** 6.0

**Teaching hours** Front activity hours: 48.0

**For enrolled in** 2023/2024

**Taught in** 2023/2024

**Course year** 1

**Language** ENGLISH

**Curriculum** Curriculum E-Biodiversity and Ecosystem Sciences

**Location** Lecce

**Semester** First Semester

**Exam type** Oral

**Assessment** Final grade

**Course timetable**

<https://easyroom.unisalento.it/Orario>

## BRIEF COURSE DESCRIPTION

The course will start with an introduction to thermodynamic theory of ecosystems and Evolutionary theory and their integration: thermodynamic of living systems far from the equilibrium, exergy, eco-exergy and ascendency; maximum entropy theory. The course will address biodiversity theories considering all different scales of ecological interests, from individual ecology to macrosystem ecology, including spatial ecology and evolutionary one.

## REQUIREMENTS

The student need to have a basic knowledge of: 1. population, community and ecosystem ecology; 2. ecological energetics; evolutionary ecology; behavioural ecology; functional ecology; 3. Organization processes; trophic transfer processes; nutrient cycling processes and biogeochemical cycles

## COURSE AIMS

The course is aimed at giving to the students an overview of the main theoretical bodies in ecology and an highlight on the most recent theoretical advancement in ecological theories.

## TEACHING METHODOLOGY

The teaching methodology will include frontal lectures, discussion/brainstorming sessions, thematic seminars involving national and international colleagues with outstanding theoretical research activities, practical exercitation using the LifeWatch ERICtraining platforms

## ASSESSMENT TYPE

Oral dissertation on specific theoretical bodies with the aid (optional) of presentation softwares (e.g., powerpoint, keynote, prezi,...)

## REFERENCE TEXT BOOKS

Theoretical Ecology: concepts and applications (Oxford University Press, 2020); A New Ecology: system perspective (Elsevier Science, 2007)