COASTAL AND MARINE BIOLOGY AND ECOLOGY (LM51)

(Lecce - Università degli Studi)

Teaching EVOLUTIONARY BIOLOGY

GenCod A006026

Owner professor Stefano PIRAINO

Reference professors for teaching Giulia FURFARO, Stefano PIRAINO

Teaching in italian EVOLUTIONARY BIOLOGY

Teaching EVOLUTIONARY BIOLOGY

SSD code BIO/05

Reference course COASTAL AND MARINE BIOLOGY AND ECOLOGY

Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 52.0

For enrolled in 2020/2021

Taught in 2020/2021

Course year 1

Language ENGLISH

Curriculum Curriculum E-Biodiversity and Ecosystem Sciences

Location Lecce

Semester Second Semester

Exam type Oral

Assessment Final grade

Course timetable https://easyroom.unisalento.it/Orario

BRIEF COURSE DESCRIPTION

This course will encompass the genetic architecture of adaptation, molecular evolution, and the different forces that contribute to evolution, such as sexual selection, genetic drift, and biogeography. Principles of evolutionary and ecological developmental biology ("eco-evo-devo") will show a wider synthesis that integrates developmental biology with the fields of study covered by the earlier evolutionary synthesis, including ecology. The course will particularly deal with responses of animals to global warming in terms of life cycle variations, or organismal, cellular and molecular adaptations. Study and analysis of ecological vulnerability characteristics: research on ecological niches, trophic networks, the dispersive potential of species, models and examples of the concept of habitat availability, monitoring of genetic variability, adaptation. Adaptive phenotypic plasticity vs. genetic changes, genetic evolution. The concept of rapid evolutionary changes and the link between demographic processes of different organisms belonging to the same ecological community will be mentioned. Focus will be given to eco-evo-devo aspects of marine organisms.

REQUIREMENTS

No requirements are foreseen to attend this course, apart from basic knowledge of general biology.

COURSE AIMS

The students will pursue topics across a broad span of interconnected fields, including ecosystem biology, community and population biology, organismal biology, molecular ecology, population genetics, genomics, speciation and macroevolution.

TEACHING METHODOLOGY

Theoretical lessons (32 h), integrated by round-table sessions (JOURNAL CLUB sessions) (16 h) on evolutionary biology and evolutionary ecology hot topics (6 ECTS in total, 48 hours).

ASSESSMENT TYPE	The achievement of the credits attributed to teaching is obtained through a written test with five open-ended questions with different degrees of complexity, together with a qualitative assessment of the participation to the journal club sessions. This will evaluate the learning outcomes acquired by the student. The analysis of answers to the written test will be carried out by direct interview with the teacher. Upon motivated request of the student, the written test is completely replaced by a full oral exam. The final grade is expressed in thirtieths, with possible praise. For each given answer, the student will get up to 6 point, depending on the level of inclusivity and the supporting arguments provided by the answer. Any answer not given will equal to 0 points. To pass the exam it is necessary to obtain a minimum score of 18 points, equal to a grade of 18/30. If the exam is insufficient, or the final score is less than 18, the written test must be repeated. Following a double failure to pass the written test (due to insufficiency or non-acceptance of the grade obtained), the exam can only be taken by interview with the teacher. The attribution of the final score will be taken into account: of the level of theoretical and practical knowledge acquired (50%); the ability to apply the acquired knowledge (30%); autonomy of judgment (10%); of communication skills (10%).
REFERENCE TEXT BOOKS	D. Futuyuma . Evolutionary Biology. E. Pianka - Evolutionary Ecology, Harper & Row.