



UNIVERSITÀ DEGLI STUDI DI PALERMO

Department: Earth and sea sciences

A.Y. 2021/2022

DEGREE COURSE IN MARINE BIOLOGY

Characteristics



Class of Master's Degree
(MSc) on Biology (LM-6)



2 YEARS



PALERMO



FREE ACCESS



2105

Educational objectives

The 2nd cycle Degree Course in Marine Ecology aims at providing solid groundings in basic and applied marine biology, with respect, in particular, to the conservation and care of the environment and of fishing and aquaculture resources, and the assessment of environmental impacts.

The 2nd cycle degree course in Marine Biology aims at training high level experts possessing:

- Sound groundings about the abiotic and biotic characteristics, the levels of biodiversity and operation processes of various types of marine ecosystems, on the evaluation and monitoring of the effects of anthropic pressures on marine ecosystems;
- good grasp of the scientific research method enabling them to work autonomously and to participate in the design and interpretation of experiments;
- knowledge of the English language, scientific literature and computer techniques enabling them to confront the international scientific community, the continuous scientific updating, as well as the ability to present scientific data using the most modern methods.

Such graduates are professionals of high qualification able to operate on the territory using advanced and technologically innovative methods and to perform specialized tasks in the management of marine ecosystems. In particular, they will be able to undertake activities to promote and develop scientific and technological innovation in the marine field as well as professional activities in areas related to biological disciplines in industry and public administration, with particular emphasis on environmental management, evaluation and planning. Specific tasks are in fact related to the management of marine ecosystems, environmental assessment and of the conservation status of resources, the proposition of actions and technologies for the increase of resources and environmental quality through the application of consolidated and sustainable methods.

The educational programme provides knowledge in class-specific activities with two possible options: "biomedical sector" or "nutrition sector and other applications" with the possibility to include teachings providing knowledge on issues related to the biology of organisms and the processing of environmental data or to environmental management and to the quality of marine biological resources. The presence of two options in class-specific activities and the variety of sectors envisaged in the related and integrated activities respond to the need, emerging from the comparison with the world of production, services and professions, of greater flexibility of the formative path, expanding its potential in terms of content offered. The specific objectives of the Degree Courses are achieved through teachings in the areas of marine biology and ecology and their applications, including also theoretical-practical exercises, during which, as well as through traineeships and the preparation of the thesis, students will gain experience in the design and implementation of research and environmental assessment activities.

Professional opportunities

Profile: Marine Biologist

Functions:

The functions of a marine biologist can be assimilated to both managerial and technical roles in public and private research organizations, public agencies or private companies in the management of the marine area and natural resources and in public or private research bodies dealing with environmental impact evaluation.

Skills:

The multidisciplinary skills gained during the course are mostly related to the conservation of the marine environment and coastal management, resource management (fishing and aquaculture), environmental monitoring and environmental impact evaluation. These skills are complemented by further knowledge in marine chemistry, marine geology and sedimentology, marine microbiology and statistical analysis of ecological systems.

Legenda: Per. = periodo o semestre, Val. = Valutazione (V=voto, G=giudizio), TAF= Tipologia Attività Formativa (A=base, B=caratterizzante, C=Affine, S=stages, D=a scelta, F=altre)

Professional opportunities:

The biologist is a recognized professional. 2nd cycle graduates may enrol in the National Register of Biologists, upon passing a State Examination.

They may find employment at:

- Public and private research centres and public agencies managing marine protected areas;
- Aquaculture and mariculture companies;
- Scientific consulting and environmental monitoring companies and public agencies overseeing environmental monitoring and control;
- Fishing and fishery products processing companies and agencies and consulting companies in the field of fishing and coastal management.

They may also participate to PhD programs and recognized graduate schools that are necessary for research and management career, both in the public and in the private sector.

Final examination features

It consists of a written dissertation related to the presentation of original experimental outcomes of a research project or part of it, obtained while attending the scientific facility where the project has been developed: university research laboratories, or other public or private laboratories which have agreements with the University. Normally, laboratories will be attended during the second course year. However the Board of the Degree course, with regard to individual candidate's curriculum, might admit laboratory attendance starting in the second semester of the first year. The research project is developed under the guidance of a professor (full professor, associate professor, researcher) with the role of tutor. The project will be discussed during the final examination.

| Subjects 1 ° year | CFU | Sem. | Val. | SSD | TAF |
|---|-----|------|------|--------|-----|
| 20504 - APPLIED MARINE ZOOLOGY <i>Arculeo(PO)</i> | 6 | 1 | V | BIO/05 | B |
| 20505 - BIOLOGY AND TAXONOMY OF MARINE ALGAE <i>Mannino(PA)</i> | 6 | 1 | V | BIO/02 | B |
| 13918 - ECOLOGY AND TECHNOLOGY OF FISHING AND AQUACULTURE <i>Mazzola(PQ)</i> | 6 | 1 | V | BIO/07 | B |
| 13834 - MARINE ECOLOGY <i>Vizzini(PO)</i> | 6 | 1 | V | BIO/07 | B |
| 21202 - ENVIRONMENTAL EVALUATION AND BIOTIC INDEXES - INTEGRATED COURSE | 12 | 2 | V | | |
| - BIOLOGY AND ECOLOGY OF MARINE FANEROGAME <i>Tomasello(PA)</i> | 6 | 2 | | BIO/03 | C |
| - ENVIRONMENTAL IMPACT EVALUATION <i>Calvo(PQ)</i> | 6 | 2 | | BIO/07 | B |
| 13917 - MARINE CONSERVATION AND COASTAL STRIP MANAGEMENT <i>Chemello(PO)</i> | 6 | 2 | V | BIO/07 | B |
| 14430 - MARINE GEOLOGY AND SEDIMENTOLOGY <i>Agate(PA)</i> | 6 | 2 | V | GEO/02 | C |
| 03040 - EDUCATIONAL TRIPS | 2 | 2 | G | | F |

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| Subjects 2 ° year | CFU | Sem. | Val. | SSD | TAF |
|--|-----|------|------|-----------|-----|
| 16177 - ANALYSIS OF ECOLOGICAL SYSTEMS <i>Milazzo(PO)</i> | 6 | 1 | V | BIO/07 | B |
| 16178 - APPLIED STATISTICS FOR ECOLOGICAL SYSTEMS <i>Cilluffo(RD)</i> | 6 | 1 | V | SECS-S/02 | B |
| 21253 - MARINE MICROBIOLOGY <i>Quatrini(PA)</i> | 6 | 1 | V | BIO/19 | B |
| 21200 - SUSTAINABLE USE OF MARINE BIOLOGICAL RESOURCES <i>Messina(PO)</i> | 6 | 1 | V | AGR/20 | C |
| 20691 - ENGLISH LANGUAGE SKILLS - EQUIVALENT TO LEVEL B2 | 3 | 1 | G | | F |

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| Subjects 2 ° year | CFU | Sem. | Val. | SSD | TAF |
|---------------------------|-----------|------|------|-----|-----|
| 20611 - GIS LABORATORY | 3 | 1 | G | | F |
| 13121 - PRACTICE | 3 | 1 | G | | F |
| 05917 - FINAL EXAMINATION | 25 | 2 | G | | E |
| Free subjects (suggested) | 12 | | | | D |
| | 70 | | | | |

OPTIONAL SUBJECTS

| Free subjects (suggested) | CFU | Sem. | Val. | SSD | TAF |
|--|-----|------|------|--------|-----|
| 20503 - BIOLOGICAL AND ENVIRONMENTAL SCIENCES TEACHING METHODOLOGY - INTEGRATED COURSE | 6 | 2 | V | | |
| - ZOOLOGY <i>Cammarata(PO)</i> | 3 | 2 | V | BIO/05 | D |
| - ECOLOGY <i>Gianguzza(PA)</i> | 3 | 2 | V | BIO/07 | D |

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