

# **TEACHING REGULATIONS OF THE MASTER'S DEGREE COURSE**

## **IN**

### **MARINE BIOLOGY AND ECOLOGY (LM-6)**

#### **Art. 1**

##### **Subject of this regulation**

1. This Regulation governs the educational organization and the conduct of the educational activities of the Master Course in Marine Biology and Ecology in accordance with the guidelines of the Academic Senate, of the Council of the Department of Ecological and Biological Sciences (DEB) and in compliance with the provisions of the Statute, the University Teaching Regulations and the Department Regulations

#### **Art. 2**

##### **Denomination and degree programme class**

1. Is activated at the University of Tuscia the Master's Degree Course in Marine Biology and Ecology (MBB), the class of master's degrees in Biological Sciences (LM-6).

#### **Art.3**

##### **Educational objectives of the course**

1. The primary objectives of the Master Degree Course in Marine Biology and Ecology (LM-6) are to:

- (i) deepen the cultural preparation and knowledge in the field of basic and applied biology with a focus on the marine environment, achieved by an in-depth scientific preparation, as well as operational level in the disciplines that characterize the course;
- (ii) provide students with the opportunity to acquire specific cultural tools and analytical methodologies during the course of the experimental thesis work.

In particular, a highly qualified professional figure with a high degree of specialization will be trained to deal with environmental problems using a biological approach, but able also to embrace all the ecological processes that are the basis of the production of goods and services that the marine environment offers to society. A further focus will be given to research and characterization of new resources that marine biodiversity can provide for the development of new or improved biotechnological processes and products.

The course is structured to form the figure of the marine environmental biologist, a professional profile useful to know, classify and solve environmental problems with a systemic and interdisciplinary approach, privileging skills in management, conservation and sustainable exploitation of both coastal and oceanic marine biological resources.

The course is aimed at acquiring in-depth knowledge in the field of biological and ecological disciplines, both basic and applied to the marine environment; elements of managerial applied disciplines useful to contextualize adequately the biological resources in the reference environmental system; methods of analysis through laboratory activities in the different subject areas and specifically in the field of sustainable management of fisheries resources; methods for research, characterisation and sustainable exploitation of the chemical and biological diversity of the marine environment for biotechnological purposes; professional experience through external training activities, such as internships, and in-house, such as the preparation of an experimental thesis.

For this purpose, all the scientific laboratories that make use of the Degree Programme (CDS) are able to provide the necessary skills as the research lines of the CDS teachers are consistent with the cultural profile of the course.

## 2. Knowledge and skills - *2a Knowledge*

The Master Course in Marine Biology and Ecology is structured in such a way as to lead to the acquisition of specific skills such as:

- in-depth knowledge of biological and ecological disciplines, both basic and applied to the marine environment and to potential developments in biotechnology;
- elements of economic and/or managerial applied disciplines useful to adequately contextualize the biological resources in the reference environmental system;
- analytical methods through laboratory activities in the different disciplinary areas and in particular in the field of sustainable management of fisheries resources and in the isolation and characterisation of new bioactive molecules;
- professionalizing experiences through external training activities, such as internships; and internal activities, such as the preparation of an experimental thesis involving research work at universities or public or private research bodies.

## *2b Skills*

At the end of the training the following skills are provided:

- detection, classification, analysis, restoration and conservation of the biotic components of marine ecosystems, with their correct framing in the general environmental context and in the sustainable exploitation in biotechnology;
- monitoring and management of environmental systems and processes with specific reference to biological resources;
- design and management of assessment, rehabilitation, restoration and conservation of the coastal and marine environment with particular reference to the biotic component.

The skills of graduates at the end of their training include:

- the ability to identify, analyse and understand the interactions of the different factors constituting complex environmental processes, systems and problems with particular regard to coastal, offshore, and land-sea interface environments;
- the ability to use instrumentation and survey techniques in the study of living organisms, their interactions with the environment and their potential in biotechnology;
- the ability to use mathematical and statistical methods in data processing for the characterisation of the environment and the diversity of all its biotic components;
- ability to choose and apply in the problems related to the control and management of the environment, considering the sustainability and biodiversity criteria;
- ability to identify, analyse and solve problems due to human impact on marine and coastal species and habitats of particular socio-economic interest;
- ability to develop and manage projects aimed at the protection and conservation of living organisms and their diversity as well as the sustainable management of resources and services offered by coastal marine ecosystems;
- the requirements to be able to work with broad autonomy, even assuming responsibility for projects and structures.

The educational path is developed through in-depth knowledge of biological, ecological, and biodiversity disciplines, integrated by knowledge in biotechnology, economics and management. Theoretical, methodological, experimental and applicative skills will be provided for the analysis of environmental systems, with a degree of greater depth than of the BSc courses and focused on the biotic components of the marine and coastal environment. Most of the courses involve experimental laboratory and on field activities. Ample space is dedicated to the development of the graduation thesis that involves experimental

work. During the course of the thesis work the student will be further encouraged to deepen specific issues and to acquire critical skills

### 3. Employment and professional opportunities:

The occupational prospects of the graduate in Marine Biology and Ecology are inherent in independent professional activities and managerial tasks in public bodies (Ministries, Regions, Provinces, Municipalities, Health Agencies, National and Regional Agencies for Environmental Protection, Parks, Reserves, etc.) and private (companies, professional studios, analysis laboratories, etc.) in the following areas:

- analysis, certification and management of the environment codified by standards to protect the quality of marine waters;
- analysis, conservation, management, monitoring and sustainable exploitation of marine and coastal resources and environmental systems, oriented to the maintenance of biodiversity in its different components and functional levels;
- professional and project activities in areas related to biological and ecological disciplines in the fields of public administration, industry and health, with particular reference to knowledge of marine and coastal environments and their organisms;
- management of parks and natural reserves;
- assessment of the environment quality and production of tools and services aimed at its improvement;
- contribution to the implementation and evaluation of environmental impact studies and strategic assessment;
- pollutants analysis and control;
- design and monitoring of environmental control interventions;
- planning, promotion and coordination of sustainable development initiatives.

Further employment opportunities include scientific research at universities and other public and private research institutions. These opportunities find the third level of training in doctoral courses.

The figure of the Biologist is professionally recognized. For the Master's degree, registration is required in the Register A of the "Ordine Nazionale dei Biologi" (National Order of Biologists, Senior Biologist), after passing a State Examination.

#### **Art. 4**

##### **Governing bodies of the Degree Programme**

1. Governing bodies of the Degree Programme (CdS) are:
  - a) Degree programme Council (CCS);
  - b) President of the Degree programme Council
2. The functioning of these governing bodies is governed by the Statute and the General Regulations of the University.
3. A Teaching Commission appointed by the Department Council (CDD) on a proposal of the CCS, with a deliberative function on the subjects identified by the CDD.

#### **Art. 5**

##### **Admission requirements and verification procedures**

1. Students wishing to enrol in the Master Degree Course in Marine Biology and Ecology must be in possession of a bachelor's degree or other qualification obtained abroad recognized as eligible under current legislation.
2. The following curricular requirements are required for access to the Degree Programme:
  - Bachelor's degree in the L-13 Italian BSc class or equivalent BSc degrees in Biological Sciences;
  - for graduates of other BSc classes, it is required to have at least 32 ECTS (university credits) in total in the scientific-disciplinary fields (SSD) indicated as characteristic in the order of the Master's Degree as follows. Botany (for the Italian BSc BIO/01, and/or BIO/02, and/or BIO/03); Zoology (for the Italian BSc BIO/05); Ecology (for the Italian BSc BIO/07); Microbiology (for the Italian BSc BIO/19), having acquired sufficient credits in all other related sectors including non-biological basic disciplines (Chemistry, Mathematics and Physics).
  - the enrolment in the course requires knowledge of English at a level not lower than B2 (Common European Framework of Reference for Languages), which must be certified by suitable documentation (i.e., TOEFL > 87; IELTS > 5.5; City and Guilds (PITMAN) > IESOL B2 communicator; Cambridge ESOL > FCE; Trinity College London > ISE II; British Institute > ESOL B2). The certificates must have been awarded within the last three years. For Language certificates valid for more or less than three years, refer to the certificate expiry date.

In the absence of a certification attesting to a level B2 (or higher) of knowledge of English, the individual

preparation will be verified during admission with the passing of a test that will take place at the headquarters of Viterbo. Different certifications can be evaluated by the commission during admission. Students who have attended a bachelor's or other university degree courses (Master's degree or PhD) in English are admitted without the need for language certification. English mother-tongue students do not require any language certificate.

3. In order to complete the enrolment, any academic deficiencies with respect to the curricular requirements must be filled. The adequacy of personal preparation is verified through an interview; the schedule of interviews will be published annually.

4. The Degree Program has free access: there is no maximum number of places available and the enrolment does not involve passing a selection, but it may be mandatory to take an entry test.

#### **Art. 6**

##### **ECTS for qualification, full-time and part-time students**

1. To obtain the Master's Degree it is necessary to acquire 120 ECTS
2. Upon enrolment or enrolment in subsequent years, students may opt for a full-time or part-time commitment in accordance with the University Teaching Regulations and the Regulations for students enrolled in part-time.

#### **Art. 7**

##### **Recognition of credits in case of transition from another course of study**

1. Students who request the transition from another Master's Degree Course, from this or another University, may request the recognition of the ECTS already acquired.
2. The Department Council, in relation to the class of Master's Degree, ensures the recognition of credits already earned by the student taking into account the consistency of the programs related to the courses already supported with those provided by the Master's Degree. In the case of partial equivalence, the ECTS already acquired may be recognized after a supplementary interview. In the case of passage between courses (see Italian D.M. n. 270/04) of the same class must be recognized at least 50% of the credits acquired in each SSD (see art. 3 paragraph 9 of the Italian D.M. of the Master's Degree classes). Failure to recognise credits in SSDs in the CDS system must be properly justified.
3. Pursuant to art. 5, paragraph 7, of the Italian DM 270/2004 are recognizable certified professional

knowledge and skills, as well as other knowledge and skills gained in post-secondary level educational activities to which the university has competed, for a maximum of 12 ECTS.

4. Students from other Master's Degree programs of this University or other Universities, subject to verification of the entry requirements, will be able to enrol in the second year of the course only if they obtain recognition of a minimum of 32 ECTS.
5. The CCS, after the cultural and administrative evaluation of the previous career, with particular attention to the verification of the non-obsolescence of the contents of the passed exams, establishes the enrollment to the CDS of those who hold a degree obtained according to the old legal system.
6. The recognition of ECTS already acquired is approved by the Department Council in accordance with the University Teaching Regulations.

#### **Art. 8**

##### **Credit recognition for student mobility programmes**

The student who intends to use student mobility programs must, before departure, indicate the educational activities, and the relative ECTF, that he intends to achieve abroad, agreeing on the training plan (learning agreement) with the Department Responsible for Internationalization. This study plan, approved by the Department Council, can be modified even after the student's departure (change), following the same procedure. The recognition of the ECTS will take place by the decision of the Department Council following the transmission by the foreign University or host institution of the final document (transcript) proving the total or partial achievement of the expected training objectives

#### **Art. 9**

##### **Organization of Teaching**

1. The educational system of the Course is organized according to Italian D.M. n. 270/2004 in order to meet the requirements of the LM-6 Class.
2. The educational system is inserted in the database of the Training Offer of the Ministry of Education, University and Research pursuant to art. 9, c. 3, of the Ministerial Decree no. 270 of 22 October 2004 and on the website of the Department and forms an integral part of this Regulation.
3. The course of studies is organized in semesters. The calendar of lessons and exams is established by the Department Council and published on the appropriate bulletin boards and on the CDS website.

4. There are no prerequisites. However, the student guide will provide useful information on the most valid educational order for passing the proficiency exams.

#### **Art. 10**

##### **List and characteristics of courses**

The Student Guide and the Department website contain a list of courses broken down by year of course; for each course is also indicated the number of ECTS and the academic discipline (SSD) to which it belongs. In the presence of particular and proven didactic and formative needs, the teachings can be articulated in modules; in this case the final assessment of the training activity must be unique and inclusive of all the training contents provided in each module.

#### **Art. 11**

##### **Typology of the didactic forms**

1. The training programme shall involve the use of different forms of teaching with different specific objectives and distinct pedagogical significance.
2. The programme shall include:
  - frontal lectures;
  - teaching laboratory activities or exercises;
  - training activities aimed at the acquisition of specific professional skills, including experience in external research laboratories, work experience (internships or externships) in public or private service or production facilities;
  - seminars held at the University level that give the right to the recognition of ECTS as established in the catalogue made known by the University itself. Also to be included in this case are the seminars held at Department level and for which the Department Council has resolved the recognition of ECTS.

#### **Art. 12**

##### **Forms of profit verification and valuation**

1. Each training activity will be subject to a final assessment, with successful completion allowing the acquisition of the credits assigned to the training activity in question.
2. The final findings may consist of:

- profit tests;
  - fitness tests.
3. Proficiency and fitness tests may be carried out only in the examination sessions identified in the teaching calendar.

### **Art. 13**

#### **Final Exam**

1. The final exam includes a period of research to be carried out in laboratories related to the Master's Degree Programme or in other structures inside or outside the Department of Ecological and Biological Sciences. During the experimental work, the student will acquire knowledge of experimental methodologies and scientific investigation method, as well as data analysis and processing. For the type of training and the professional figure formed, the originality of the thesis must be understood as the result of an experimental activity. In the course of the preparatory work, the student will also carry out bibliographic research on the subject, in scientific texts and in journals also in English. The thesis will be written in English.
2. The work required to the graduating student must be consistent, in terms of commitment and learning objectives required, to the number of ECTS assigned to the final test.
3. The relevance, content and drafting of the written report must be checked by a responsible Supervisor. The Supervisor is identified by the student among the teachers of the Degree Programme and, upon acceptance of the thesis request, follows the candidate in all phases of the work, approves the final version and presents the candidate in the graduation session.
4. The CCS, upon presentation of a specific request by the student, appoints a counter-speaker chosen from the teachers of the Department. It will be the responsibility of the graduate to meet the counter-speaker in a short time, and no later than 3 months before the expected date for the graduation exam, to inform him about the topic addressed during the experimental work and any results achieved. At that meeting, the Counter-speaker, if he considers it necessary, will agree with the candidate on the calendar of future talks.
5. The report on the work carried out is discussed before a Degree Commission appointed by the Director of the Department and composed, in accordance with the University's Teaching Regulations, by at least 5 teaching teachers in this or other University CDS. The Rapporteur and the Counter-Speaker must be part

of the Jury of the final test.

6. Admission to the final exam requires the acquisition of the credits (ECTS) provided by the teaching regulations of the course of study, net of the number of credits attributed to the final exam.

7. To obtain the degree, the student must successfully pass the final exam.

8. The final degree mark is expressed in one hundred and ten, with the possibility to follow the praise to the maximum score (110/110). The Commission will assign the vote on the basis of the following criteria:

(i) weighted average (expressed in one hundred tenths) of the scores of the examination tests taken in the CDS; (ii) completion of the studies within the expected period (2 points for current students and 1 point for out-of-year students, limited to the early-summer and summer graduation session); (iii) participation in international student mobility programmes that provide academic credits (ECTS) relevant for the allocation of the Ordinary Financing Fund (1 point); (iv) judgment on the quality of the report by the Supervisor (up to a maximum of 4 points); (v) judgment on the quality of the report by the Counter-speaker (up to a maximum of 3 points); (vi) assessment of the quality of the final report and the exposure by the Commission (up to a maximum of 2 points).

The final grade is based on the scores given for each of the above criteria. Praise is conferred unanimously to students who earn a starting score of at least 102 points.

9. After the debate, the President shall announce the vote established by the Commission in accordance with the foregoing, conferring the title of Master, but without proceeding with the proclamation. The legal effects related to the achievement of the title take effect from the date of conferral of the same.

10. The dates of the graduation sessions are fixed annually by the Department Council as part of the Academic Calendar and are published on the website of the Department.

11. The proclamation will take place in two days a year, fixed by the University for all CDS, in the presence of the academic body and the families of the graduates.

#### **Art. 14**

##### **Recognition of credits for internships and externships**

For internship and externship activities, the student can acquire the recognition of 2 ECTS (1 ECTS corresponds to 25 hours of activity) on certification provided by the host institution/company. The acquisition of the above credits may take place through the activation of curricular placements in agreement with the Department, recognition of work activities already carried out and documented, project work and

attendance of seminars of the University for which the recognition of credits is deliberated in the appropriate locations after having ascertained the acquisition of appropriate skills. For the recognition of activities carried out abroad, the provisions of Art. 8 apply.

### **Art. 15**

#### **Rules of presentation of individual study plans**

The study plan must be completed by the student on the appropriate teaching platform according to the time windows established by the Department. The study plan is approved subject to compliance with the rules of the teaching system.

### **Art. 16**

#### **Tutoring**

1. The following tutoring activities are provided for in accordance with Art. 14 of the University's Teaching

Regulations:

- collaboration with the various student orientation initiatives;
- orientation and assistance of students during the course of study, in order to make them actively involved

in the training process, removing obstacles to successful attendance of courses;

- interaction with the student secretariat (at the Department) and the centralised secretariat (at the Rectorate);
- *post-lauream* (post-graduate) and *placement* orientation.

2. The tutoring activities will be carried out by delegated teachers and/or by suitably selected qualified persons, also among the students of the master's and PhD programmes.

3. Tutoring is, however, one of the tasks of all the teachers of the course of study, after appropriate coordination with the President of the CCS or other teacher delegated by him.

### **Art. 17**

#### **Research activity**

The training activities carried out by CDS are based on the research activity with reference to the

scientific- disciplinary areas that are included in it.

### **Art. 18**

#### **Evaluation of the quality of the organization and the results of teaching**

1. The Course of Study (SDS), through the Review Group, implements initiatives for the evaluation and monitoring of teaching activities in the following ways:

- before taking the exams, students must complete, for each teaching, the assessment questionnaires of the teaching. The results of the questionnaires, viewable by each teacher within their own Portal, will be the subject of reflection and evaluation by the Review Group and the Study Course Council;
- the Degree Programme must adhere to the Evaluation and Self-assessment System (e.g. AVA 2.0), also updating, according to the deadlines laid down by law and at the level of the University and then of the Department, all the documents provided by the quality system.

### **Art. 19**

#### **Final Provisions**

For what is not regulated by this Regulation, please refer to the University Teaching Regulation and the General Regulation of the Department of Ecological and Biological Sciences. Amendments to these Regulations, on a proposal from the CCS, are approved by the Department Council, before being submitted to the Academic Senate.