UNIVERSITÀ DEL SALENTO
FACOLTÀ DI SCIENZE MATEMATICHE, FISICHE E NATURALI
MANIFESTO DEGLI STUDI A.A. 2017/2018

Corso di Laurea magistrale in

COASTAL AND MARINE BIOLOGY AND ECOLOGY

(BIOLOGIA ED ECOLOGIA COSTIERA E MARINA)

classe LM-6

UNIVERSITÀ DEL SALENTO
FACOLTÀ DI SCIENZE MATEMATICHE, FISICHE E NATURALI
MANIFESTO DEGLI STUDI A.A. 2017/2018

Master Course in "Coastal and Marine Biology and Ecology"
Class LM-6

(Master course entirely taught in English language)

General Information

Designed for students passionate of marine life and ecosystems, seeking for high professional qualification at international level, the Coastal and Marine Biology and Ecology (CMBE) Master Course delivers qualified education on fundamental and applied biological and ecological marine sciences, aiming at understanding of the phenomena at various scales in coastal, transitional, and marine ecosystems (see video at https://www.unisalento.it/web/10122/320).

CMBE is a two-year, second level course (according to Decree of Italian Educational, Universities and Research Ministry n°270/2004) without a programmed number of enrolled students. As specified within the annual CMBE Manifesto for Educational Activities, enrolment to the Course requires the possession of specific curricular requisites and the positive evaluation of the personal preparation of the applicant, according to the terms yearly published in the admission call. To obtain the final qualification, a student must achieve a minimum of 120 CFU's (University Formative Credits) including 30 CFU's related to the final verification test. This is related to reporting about internship or research work experience previously approved by the Academic Biology Council - at public or private research institutions, Universities, or companies.

In Italy, this is the first marine biology course entirely taught in English and the only one delivering a double Master degree by the recent agreement (March 2017) between the University of Lille1, and the University of Salento. Each year, five selected students of the University of Salento can get a fellowship to spend 6 to 12months of the second academic year in France, at University of Lille1. This period will entitle these students to achieve two master degrees (one from University of Salento, Lecce, and one from the University of Lille 1, instead of a single degree (https://goo.gl/cjT08B).

The CMBE faculty members are involved in several European research projects. These links and the ERASMUS+ program jointly provide our students superb opportunities to spend up to 12 month- mobility periods abroad, and to fulfil a master thesis in prestigious European research institutes. In this context, students from all over Italy and abroad find a stimulating training environment, including practical applications, making the course a true international laboratory.

The main occupational perspectives deal with research and consultancy work in public bodies and private companies in the field of conservation and management of coastal and marine ecosystems, management of protected areas, assessment of the environmental health status and risks. Also, the CMBE degree opens the access to postgraduate and PhD courses in several areas of Marine Sciences. The availability of a 14-m long research boat and terrestrial vehicles equipped for the different types of sampling activities represent further support to the need of gaining the practical skills typically requested by the international job market.

For the achievement of the CMBE academic title, students must acquire at least 120 ECTS (European Credit Transfer System) equivalent to 120 Italian CFUs (Crediti Formativi Universitari).
Each ECTS corresponds to 25 hours of learning activities, alternatively organized as follows:

- 8 hours of theoretical lectures + 17 hours of individual study of the student;
- 12 hours of laboratory activity (*practicals*) + 13 hours of personal re-elaboration of practical lab activities;
- 25 hours of personal traineeship training or final exam preparation.

Educational activities

The Master Course in Coastal and Marine Biology and Ecology includes 5 *categories of learning activities (*"B": Core subjects in various disciplines of biology; "C": Training activities in disciplines related to biology and consistent with the educational objectives of the course, plus an integrated interdisciplinary training; "D": Activities chosen by the student; "E": Training activities aimed at preparing the final examination for the attainment of the qualification; "F": Training activities to facilitate the professional choices through direct knowledge of the business sector the diploma may give access to, including, in particular, internships, apprenticeships and guidance) listed in the attached diagram.

Concerning typology D of learning activities (second year of the course, 12 ECTS/CFU), these may coincide with the teaching/training activities of any one of the University's degree programs, provided that they are consistent with the student's CMBE training plan and subject to the approval of the Academic Council of CMBE, or with activities related to the preparation of the final elaboration, and external apprenticeship activities.

The full list of learning activities offered in academic year 2017/2018 at the different University of Salento Course Programs is available online in the "Educational Offer" of each Faculty web page (https://www.unisalento.it/web/guest/facolta). A general overview (in English language) of graduate programs is available at http://international.unisalento.it/graduate-programmes/.

Among others, the Academic Council suggests the selection of the learning activity named "Zoologia applicata alla conservazione e gestione dei sistemi naturali" (SSD BIO/05, 6 ECTS/CFU, in Italian language) offered at the University of Salento in the framework of the Laurea Magistrale in Scienze Ambientali (cl. LM-75).
Also, the Academic Council encourages the participation to ERASMUS+ program to carry out internships, training activities, or research work experience abroad. This will be also acknowledged by 1 additional point to the scoring of the final exam.

Each student can include in the study plan either the training activities proposed in this *Manifesto* (to be selected by the on-line procedure on the Student Web Portal) or any other learning activities elsewhere offered in academic year 2017/2018.

Following enrolment, each student must fill the online curriculum provisionally selecting one or more activities of D type (up to 12 ECTS/CFU) among those proposed by the Academic Council. Then, by 15 December 2017, the student must submit to the Secretariat (Ecotekne Congress Centre, first floor) a paper form listing the preferred D-type learning activities (others than those available on the on-line portal) to replace the previously selected activities. This list will be subject to the approval of the Academic Council. The paper form is available at https://goo.gl/PSEvdF.
The deadline of 15 December 2017 is postponed to 19 January 2018 for students who are enrolled following the entrance exam of December 2017 and on May 2, 2018 for those who enroll following the entrance exam of April 2018.

The temporal sequence of learning activities proposed in the Manifesto of the CMBE course is suggested to the student for the examinations. Attendance to lectures is not compulsory, even though it is a key condition allowing a fruitful, smooth educational training of the CMBE student. Students, furthermore, are bound to attend laboratory activities, stages, seminars and trainings for at least 2/3 of their duration.

The Course includes the following *attendance rules*:
Attendance to theoretical lectures is not compulsory, even though it is an essential condition for a fruitful participation of the student to the teaching organization of the Course. Students, furthermore, are required to attend laboratory activities, stages, seminars and trainings for at least 2/3 of their duration.

Class calendar

Teaching activities are organized in two semesters.
Classes are scheduled as follows:

- I semester: from October 2, 2017 to January 19, 2018
- II semester: from March 12, 2018 to June 8, 2018

Acquisition of CFU and Exams

All activities that allow ECTS acquisition are subject to evaluation. Assessment procedures are made, as appropriate, by written, or oral, or written and oral examinations, or by other procedures suitable for particular types of activity.
The activities of type B, C and D are usually evaluated by appraisal in thirtieth, up to thirty *cum laude,* witnessing student's excellence. For teaching activities involving laboratory exercises, accreditation may be made through evaluation of individual work on subjects related to ongoing exercise, the details of which are given by the instructor and approved by the body responsible for Competent Teaching. The methods for the above tests are set by resolution of the Competent Body Learning (Academic Council) and illustrated by the instructor at the beginning of the course.

Exams are scheduled as follows (only during periods of suspension of learning activities):

- 3 sessions between January 22nd and March, 10th 2018
- 1 session in June (after the 8th)
- 2 sessions in July
- 1 session in September
- only for students who did not pass all exams within the prescribed periods (*fuori corso*), reserved sessions will be opened in **November 2017, March and May 2018**. Students enrolled in second year of the CMBE course may take advantage in the second semester of extraordinary sessions to be opened upon specific agreement with course teachers.

Students near to graduation (*graduands*) may request an extraordinary exam session before the session of graduation, if no sessions are scheduled.

To be considered *graduands*, students must:

a. have applied for graduation according to the terms fixed by the Student Secretariat;
b. have a maximum of remaining 15 ECTS to complete their educational path (this does not include the ECTS allocated for the traning period - also known as *stage* - and final thesis work)-

All examination appeals scheduled after 30 April 2018, even though extraordinary appeals reserved for students who have given up frequency requirements in A.A. 2016/2017, will be referred to the session Summer of the academic year 2017/2018 and NOT at the extraordinary session of the academic year 2016/2017.

The acquisition of ECTS of type f) concerning internships or work experience - previously cleared by the Academic Council - at research institutions or universities, public or private companies, may be based on an activity report and does not provide an associated vote, but only an assessment of fairness expressed by the Academic Council.

Sessions Degrees

Graduation sessions are planned in the following periods:

- 18-20 July 2018
- 23- 25 October 2018
- 11-13 December 2018

- 20-22 March 2019
- 15-17 April 2019

Final Test

The final test for the achievement of the Graduation in Coastal and Marine Biology and Ecology consists in the public presentation and discussion, in front of an appointed commission, of a written text (Thesis work). The topic will be agreed upon with a member of the teaching staff of the CMBE course and it may involve also external tutors

Knowledge required to access the course

Admission to the Master's Degree (Corso di Laurea Magistrale) in Coastal and Marine Biology and Ecology requires the possession of a three-year degree or a three-year university diploma, or any other title obtained abroad and recognized as suitable. To be enrolled in the Master's Degree in Coastal and Marine Biology and Ecology, candidates must possess the following curricular requisites (expressed in terms of ECTS referred to the groups of sectors listed below):

1) GROUP 1 (General Botany, Systematic Botany, Environmental and Applied Botany, Zoology, Ecology): from 6 to 40;
2) GROUP 2 (Comparative Anatomy and Cytology, Physiology, Biochemistry, Genetics, Microbiology): 6 to 20;
3) GROUP 3 (Mathematical Analysis, Probability 'and Mathematical Statistics, Mathematical Physics, General and Inorganic Chemistry, Organic Chemistry): 5 to 20.

The candidate, to be admitted to the next evaluation of the adequacy of personal preparation, must possess at least 60 ECTS (calculated as the sum of the ECTS held in the three groups of disciplines listed above).

To be admitted to the following evaluation of the adequacy of their personal preparation, candidates must have at least 60 CFU's (calculated as the sum of the possessed CFU in the three disciplinary groups reported above). In addition to the requisites listed above, students must also possess adequate knowledge of the English language.

Procedures for verifying the preparation of the student

To verify the adequacy of the personal preparation and appropriate level of English knowledge for the admission to the Master's Degree, each student will have to pass an oral admission test as specified in the admission call.

Professional Career opportunities for graduates

The course aims to prepare professionals with high knowledge in the various sectors of applied biology aimed at the understanding of the ecological phenomena that are realized at the level of the various scales in coastal, transitional, and marine ecosystems.

Graduates in Coastal and marine Biology and Ecology will be able to:
- design, lead, support, carry on research projects in response to public calls (from the EU, States, Regions, Municipalities) and private companies interested in the development of human activies in different productive sectors addressing the management and valorization of coastal and marine environments (eg. fishery, aquaculture, tourism, conservation biology, coastal management, environmental impact assessment);
- act as consultants in private firms or in public bodies, provide assessment and expert recommendation on different sectors in marine and coastal as defined above;
- design the content of books, articles, TV programs related to the marine environment, lead, support, carry out training programmes and dissemination events;

The main career opportunities relate to professional activities in technical and executive roles in various application areas including

- activities in research institues, Universities, public and private laboratories and manufacturing facilities involved in handling, use, production of living organisms and their constituents (e.g., fishery and aquaculture sectors, natural history repositories, museums)
- management of marine and coastal living resources and their ecosystems
- sustainable development of marine and coastal areas
- assessment of marine and coastal environment quality and impact assessment;
- management and valorization of marine and coastal biodiversity, eg. Marine Protected Areas, marine parks;
- multidisciplinary professional firms engaged in development of projects for the conservation and restoration of the environment and biodiversity and biosafety.

The Master degree CMBE also allows to:

- enroll in the National Association of Biologists (prior habilitation exam) for the exercise of the profession;
- access to schools of specializations (through competitive evaluation procedures);
- admission to post-graduate and PhD courses (through competitive evaluation procedures);
- attendance of specific educational training courses enabling access to competitions for jobs as school teachers.

Rules of admission to the Course

The terms will be established at the beginning of each academic year and will be made explicit in the admission notification (Ref. http://www.scienzemfn.unisalento.it/bandiammissionecds)

* * *

For more information see the Faculty Web Site on the URL http://www.scienzemfn.unisalento.it/home_page

Università del Salento - Facoltà di Scienze MM.FF.NN.
Corso di Laurea Magistrale in Coastal and Marine Biology and Ecology (Biologia ed Ecologia Costiera e Marina) - LM51
Offerta didattica erogata A.A. 2017/2018

I anno (Immatricolati A.A. 2017/2018)

Nome Insegnamento	Tipo Insegnamento (Monodisciplinare / Integrato / Modulo)	CFU complessivi	CFU lezione	CFU esercitazione / laboratorio	Ore lezione	Ore esercitazione	Ore complessive attività frontale	SSD	TAF	Ambito	Responsabile Didattico	Docente	Docente di riferimento	Semestre
Ecological indicators and biomonitoring	Monodisciplinare	6	3	3	24	36	60	BIO/07	Caratterizzante	Discipline del settore biodiversità e ambiente	Pinna Maurizio	Pinna Maurizio	SI	II
Ecology and Biology of Transitional Waters	Modulo di Ecology and Biology of Transitional and Marine Waters	6	4	2	32	24	56	BIO/07	Caratterizzante	Discipline del settore biodiversità e ambiente	Basset Alberto	Basset Alberto	SI	II
Marine Biology and Ecology	Modulo di Ecology and Biology of Transitional and Marine Waters	5	4	1	32	12	44	BIO/07	Caratterizzante	Discipline del settore biodiversità e ambiente	Basset Alberto	Fraschetti Simona		I
Community Ecology	Monodisciplinare	6	3	3	24	36	60	BIO/07	Caratterizzante	Discipline del settore biodiversità e ambiente	Mancinelli Giorgio	Mancinelli Giorgio	SI	II
Environmental microbiology	Monodisciplinare	6	6	----	48		48	BIO/19	Caratterizzante	Discipline del settore biomolecolare	Alifano Pietro	Alifano Pietro		I
Development and Evolution	Modulo di Life cycles, Development and Evolution	5	4	1	32	12	44	BIO/05	Caratterizzante	Discipline del settore biodiversità e ambiente	Piraino Stefano	Piraino Stefano	SI	I
Life cycles	Modulo di Life cycles, Development and Evolution	5	4	1	32	12	44	BIO/05	Caratterizzante	Discipline del settore biodiversità e ambiente	Piraino Stefano	Giangrande Adriana		I
Pelagos Biology (Zooplankton and Necton)	Monodisciplinare	8	7	1	56	12	68	BIO/05	Caratterizzante	Discipline del settore biodiversità e ambiente	Belmonte Genuario	Belmonte Genuario	SI	II
Biodiversity of coastal plants	Monodisciplinare	9	8	1	64	12	76	BIO/02	Caratterizzante	Discipline del settore biodiversità e ambiente	Zuccarello Vincenzo	Zuccarello Vincenzo		II
Oceanography of Marginal Seas and of the Coastal Zone	Monodisciplinare	6	6	----	48		48	GEO/12	Affine/Integrativa	Attività formative affini o integrative	Lionello Piero	Lionello Piero		I

II anno (Immatricolati A.A. 2016/2017)

Nome Insegnamento	Tipo Insegnamento (Monodisciplinare / Integrato / Modulo)	CFU complessivi	CFU lezione	CFU esercitazione / laboratorio	Ore lezione	Ore esercitazione	Ore complessive attività frontale	SSD	TAF	Ambito	Responsabile Didattico	Docente	Docente di riferimento	Semestre
Environmental Physiology	Monodisciplinare	6	5	1	40	12	52	BIO/09	Caratterizzante	Discipline del settore biomedico	Lionetto Giulia	Lionetto Giulia		I
Marine biodiversity and ecosystem functioning	Monodisciplinare	6	6	----	48		48	BIO/05	Caratterizzante	Discipline del settore biodiversità e ambiente	Boero Ferdinando	Boero Ferdinando	SI	I
Enviromental chemistry	Monodisciplinare	6	5	1	40	12	52	CHIM/12	Affine/Integrativa	Attività formative affini o integrative	Genga Alessandra	Genga Alessandra		I
Activities Chosen by the Student		9							A scelta dello studente	A scelta dello studente				---
Ethical, Economic and Normative Aspects		1							Altro	Altre conoscenze utili per l'inserimento nel mondo del lavoro				I
Final Test		30							Lingua/Prova finale	Per la prova finale				---

1 "CFU lezione" corresponds to nr. 8 hours of frontal lectures in the classroom
1 "CFU esercitazione/laboratorio" corresponds to n. 12 hours of practical activities