



### LABORATORY OF METHODS AND TECHNOLOGIES FOR THE ENVIRONMENT

<b>Enrollment year</b>	2019/2020
<b>Academic year</b>	2021/2022
<b>Regulations</b>	DM270
<b>Academic discipline</b>	BIO/13 (APPLIED BIOLOGY)
<b>Department</b>	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
<b>Course</b>	BIOLOGICAL SCIENCES
<b>Curriculum</b>	PERCORSO COMUNE
<b>Year of study</b>	3°
<b>Period</b>	2nd semester (01/03/2022 - 14/06/2022)
<b>ECTS</b>	6
<b>Lesson hours</b>	72 lesson hours
<b>Language</b>	Italian
<b>Activity type</b>	WRITTEN TEST
<b>Teacher</b>	ASSINI SILVIA PAOLA (titolare) - 3 ECTS DELLA ROCCA FRANCESCA - 3 ECTS
<b>Prerequisites</b>	Basic concepts of botanical classification and taxonomy.
<b>Learning outcomes</b>	To develop the capacity of applying the most adequate methods in relation to the considered environmental issues.
<b>Course contents</b>	<p>Module 1. The aim of the course is describing methods of analysis and evaluation of the environmental quality, using plant species. Particularly, the following methods will be discussed:</p> <ul style="list-style-type: none"><li>lichen identification;</li><li>plant identification;</li><li>phenological analysis;</li><li>floristic analysis;</li><li>phytosociological analysis (relevés, transects, permanent plots).</li></ul> <p>A part of the course will be dedicated to the analysis of plant groups</p>

which are indicators of particular environmental conditions, such as nemoral species, igrophilous and aquatic species, endemic species, nitrophilous species, invasive species. Part of the lessons will be conducted in the Botanical Garden or in other areas, to apply on the field the methodologies discussed in the classroom.

Module 2. A brief account of the history of Zoology, ancient classifications of animals from Aristotle and Linnaeus to the present day. Zoological nomenclature: functions and rules. Methods of specimen preservation in Zoology, dry and wet preservations. Models and waxworks for zoological education . Wunderkammern and naturalistic museums, dioramas and ecomuseums. Notions of museology and museography. Usage of dichotomic keys in systematic researches. Identification of the main vertebrate and invertebrate groups with observation of preparates and living organisms. Visits to several museums and collections of Natural History. Exhibit criteria of animal collections for educational purposes.

**Teaching methods**

The course includes laboratory exercise and field excursions.

**Reccomended or required readings**

Ubaldi D., 2003. Flora, fitocenosi e ambienti (Elementi di Geobotanica e Fitosociologia). CLUEB, Bologna.  
Cristea V., Gafta D., Pedrotti F., 2015. Fitosociologia. TEMI, Trent

**Assessment methods**

Elaboration of data collected during the activities and/or provided by the teacher.  
Preparation of a herbarium (at least 10 species).

**Further information**

The constant presence is requested (at least 75% of the activities).

**Sustainable development goals - Agenda 2030**

Goal 15  
[The goals](#)