



SYSTEMATIC BOTANY	
<b>Enrollment year</b>	2020/2021
<b>Academic year</b>	2021/2022
<b>Regulations</b>	DM270
<b>Academic discipline</b>	BIO/02 (SYSTEMATIC BOTANICS)
<b>Department</b>	DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES
<b>Course</b>	NATURAL SCIENCES AND TECHNOLOGIES
<b>Curriculum</b>	PERCORSO COMUNE
<b>Year of study</b>	2°
<b>Period</b>	2nd semester (01/03/2022 - 10/06/2022)
<b>ECTS</b>	9
<b>Lesson hours</b>	81 lesson hours
<b>Language</b>	Italian
<b>Activity type</b>	WRITTEN AND ORAL TEST
<b>Teacher</b>	TOSI SOLVEIG (titolare) - 3 ECTS BRUSONI MAURA - 2 ECTS ORSENIGO SIMONE - 2 ECTS SAVINO ELENA - 2 ECTS
<b>Prerequisites</b>	Basic knowledge of cytology, in particular cellular reproduction (meiosis and mitosis). Basic knowledge of general botany: the plant cell, the organs of a plant (roots, stems and leaves).
<b>Learning outcomes</b>	The main goal of the course are to introduce students to different topics in evolution and systematic of plants, algae, and fungi. The expected learning results are the capacity of understanding diversity and acquiring general methods to recognize these organisms at different taxonomic levels. At the end of the course students should have acquired the ability to use the identification keys of plants and fungi.
<b>Course contents</b>	Aims and mainstay of Systematic Botany; classification systems;

systematic and phylogenetic taxonomy; Nomenclature; organization and morphology of plants; vegetative and sexual reproduction; reproductive cycles: alternance of nuclear phases, alternance of generation; aplont, diplont and aplodiplont cycles  
 Cyanobacteria, algae, bryophytes, pteridophytes: general characteristics, reproduction, ecology, distribution, phylogeny, systematics; Spermatophytes: organization, stamens, pollen, carpels, ovules; biological cycle, pollination, fertilization, seed; systematic of Spermatophytae; Gymnosperms: general characteristics and reproduction, systematic; Angiosperms: vegetative organs, flower, floral wrap, pollination, fertilization; seeds and fruits; systematic; some families of Dicotyledons and Monocotyledons. Fungi: general characteristics, systematic and reproduction, ecological role of fungi, symbiotic interactions fungi-algae, fungi-plants, fungi-animals, generalities of applied mycology.

**Teaching methods**

The course includes frontal lessons aimed at providing a general overview of the evolution and systematic of plants, algae and fungi, and practical exercises during which students will be able to observe, with the help of microscopes and stereo-microscopes, samples of organisms belonging to the systematic groups treated during the lessons and use the keys to determination for the recognition of vascular plants. During the exercises, there will be given the indications needed to make a herbarium of vascular plants. There are written preparation monitoring tests with open questions and questions with multiple answers.

**Reccomended or required readings**

- 1) Pasqua G., Abbate G., Forni C., 2011  
 Botanica Generale e Diversità Vegetale. Piccin editore
- 2) Lecture notes provided by the teacher
- 3) pdf of some lessons provided through the Kiro portal

**Assessment methods**

Written examination with closed questions and open questions in which the learned knowledge will be verified. For the exam, students will also need to build a herbarium of vascular plants as the exercise of the use of the identification keys. The evaluation of the herbarium will be included in the final vote of the exam.

**Further information**

Written examination with closed questions and open questions in which the learned knowledge will be verified. For the exam, students will also need to build a herbarium of vascular plants as the exercise of the use of the identification keys. The evaluation of the herbarium will be included in the final vote of the exam.

**Sustainable development goals - Agenda 2030**

Goal 15: Life on Land. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.  
[\\$lbl legenda sviluppo sostenibile](#)