UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Laboratory for The Analysis of Vegetal Diversity

2425-3-E3201Q115

Aims

The course provides the basic knowledge of systematics in relation to plant biodiversity. The main objective of the course is the knowledge of the main taxonomic groups (especially at the level of families) of the flora of Italy and of the world, their morphological, functional and distributional characters. The tools for the identification of the species of the flora of Italy will also be provided using digital and traditional floras; floristic investigation by means of field trips will be also performed.
In particular, the following specific objectives are expected to be achieved

- Knowledge of the general and peculiar characters of the main taxonomic groups;
- Knowledge of the main aspects concerning the evolution and geographical distribution of species (flora, range, ecological and historical factors);
- Knowledge of the theoretical aspects and methods of taxonomic study: classifying, describing and identifying;
- Acquisition of the techniques of collecting, identifying and preparing herbarium samples of plants of the Italian flora.

Contents

In the course the topics of plant diversity will be addressed. Knowledge will be provided on the morphological, functional and distributional characters that characterise the different taxonomic groups present in the plant kingdom and that allow the identification of species. In particular, species belonging to the groups of Pteridophytes, Gymnosperms and Angiosperms will be considered.

Detailed program

Lectures

- Introduction to the contents of the workshop: historical background, role of systematics in the conservation of biodiversity,
- Concept of plant biodiversity;
- Concept of species;
- The rules of botanical nomenclature;
- Evolution and diversity of vascular plants Phylogenetic tree of the main groups and distinctive characters.

Laboratory activities
Morphological characters of the main families of Pteridophytes and Spermatophytes for their identification using dichotomous keys;
Identification of plant species using digital and traditional dichotomous keys;
Generalities on the following groups:

- Pteridophytes
- Gymnospermae
- Asteraceae
- Fabaceae
- Poaceae
- Rosaceae
- Brassicaceae
- Cariophyllaceae
- Lamiaceae;
- Ranunculaceae
- Apiaceae
  Statistical analysis of floristic and vegetational data.
  Herbarium and preparation of herbarium specimens.

Field activities
Collection and identification of plant species in the field (15h)

Prerequisites

Knowledge of the topics presented in the General Botany and Ecology courses is necessary for the conscious acquisition of the topics covered

Teaching form

- 6 two-hour lectures, in person, Delivered Didactics
- 6 three-hour lab activities, in person, Interactive Teaching
- 6 two-hour lab activities, in person, Interactive Teaching
- 2 seven and half-hour field activities, in person, Interactive Teaching

Textbook and teaching resource

Handouts provided by the teacher

Recommended textbooks
Judd, W.S., Campbell C.S., Kellogg E.A, Stevens, P.F., Donoghue M.J. (2019) Botanica Sistematica - Un approccio filogenetico; Piccin Editore
Simpson M.G. (2019) Plant Systematics, 3rd edition; Academic Press

Semester

Second semester

Assessment method

Oral examination with a discussion of the topics covered during the three section of the teaching: a) lectures, b) laboratory (plant identification) and c) field excursion. Preparation of a herbarium (to be prepared during the course and before the exam) with 25 plant species of the main families treated during the course, to be presented on the day of the exam; the herbarium will be the subject of discussions regarding the families treated during the laboratories.
In particular, the oral test aims to assess the student's ability to use the plant identification tools and recognise the main characters of the families of the Italian flora

Office hours

By appointment by sending an email to rodolfo.gentili@unimib.it

Sustainable Development Goals

SUSTAINABLE CITIES AND COMMUNITIES