UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Servizi Ecosistemici (supporto)

2627-1-F0602Q109-F0602Q10903

Aims

This course will focus on the practical knowledge of shrubs and trees and the understanding of their importance in urban vegetation for ecosystem functioning. Specifically, by the end of the term, students should be able to: 1) master the main notions in urban botany; 2) identify the main shrub and tree species occurring in the urban context, understanding their potential for reforestation, phyto-technological applications and biodiversity protection; 3) develop critical and analytical skills for the practical application of the acquired knowledge; 4) communicate their understanding of the topics presented using accurate scientific language and technical terminology; 5) read the scientific literature and deepen the main topics.

Contents

The overall aim of the course is to provide practical tools for vegetation assessment and analysis in urban and periurban settings. The student will be trained to be able to respond to practical questions like: 1) What is the taxonomic composition of an urban/suburban green space types? 2) What is the actual contribution of each species to the whole vegetation? 3) In which way the vegetation is spatially structured? The lab will be divided into various activities carried out in the classroom and in the field.

Detailed program

Introduction; flora and vegetation; floristic assessment; dichotomous keys tree and shrub identification; biological forms: hydrophytes, elophytes, geophytes, hemiptophytes, chamaephytes, phanerophytes; phytosociological analysis: analytical phase; the vegetation assessment: vertical and horizontal structure; analytical phase: calculation of vegetation composition indices (i.e. structural and biological); determination of the specific contribution; calculation of the Shannon-Wiener diversity index.

Statistical analysis: a very brief introduction to R, a free software environment for statistical computing and graphics; introduction to* vegan and BiodiversityR packages for statistical analysis of biodiversity and ecological communities. If necessary, other R packages can also be introduced.

Prerequisites

Botany, Plant Physiology.
Good familiarity with the basic use of the computer in a Windows environment and with the use of the Google Drive and Meet applications is recommended.
Basic knowledge of the R programming environment is recommended, but not necessary.

Teaching form

The lectures consist of 2 credits. All classes are held in person. Given the logistics that require assiduous participation in the field and in the laboratory, no registrations are expected.
Teaching with frontal hours and field and laboratory activities:

4 hours carried out in presence delivery mode;
6 hours of field exercises carried out in person;
10 hours carried out in the laboratory in delivery mode in the initial part which is aimed at involving students in an interactive way in the subsequent part. All activities are carried out in person.

Textbook and teaching resource

• Ubaldi Davide - Guida allo studio della flora e della vegetazione (2012) CLUEB Bologna.
• Reading material provided by the teacher.

Semester

Second semester

Assessment method

Oral
For the exam, students will discuss a topic on a case-study based on specific topics exposed during the course. No intermediate evaluation is foreseen. The accurate use of scientific language to explain the topics and the ability to relate them will also be evaluated. No intermediate evaluation will be performed.

Office hours

By appointment.
Prof. Werther Guidi Nissim: werther.guidinissim@unimib.it
Dott. Giovanni Zecca: giovanni.zecca@unimib.it

Sustainable Development Goals

SUSTAINABLE CITIES AND COMMUNITIES | CLIMATE ACTION