



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Botanica

2122-2-E1301Q063

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#### Aims

Knowledge and understanding: the course aims to provide the cytological, histological and anatomical bases to learn about plants and their biological characteristics.

Applying Knowledge and understanding: the course will deepen the use of the optical microscope for histological and anatomical analysis of plant.

Making judgments: Collect and interpret the relevant data regarding the structure and function of the plants.

Communication skills: the course aims to provide the skills to communicate effectively, appropriately and with specific language, the concepts learned during the course.

Learning skills: At the end of the course the student must be able to study in depth the topics covered in the course, also by consulting specific bibliography texts.

#### Contents

The plant cell;

Plant tissues and their characteristics;

The plant organs

Short evolutionary history of plant

## **Detailed program**

Peculiar characteristics of plant organisms. Heterotrophy and autotrophy. General organization of the plant cell. Peculiarities and characteristics of plant cells: plastid, vacuole and cell wall. The plant tissues: meristematic, tegumental, fundamental and vascular. The plant organs: stem, leaves and roots. Structure and function of the plant organs and their structural and functional modifications. Organization and development of roots and shoots. Reproduction in plants: vegetative, asexual and sexual. The organs for diffusion of the species. Plant metagenetic cycles and their evolution. Briefly history of plant evolution from bryophytes to angiosperms.

## **Prerequisites**

None

## **Teaching form**

Frontal lessons and laboratory exercises about plant histology and anatomy

The laboratory exercises will take place in according to the calendar that will be discussed during the first lessons

## **Textbook and teaching resource**

Diapos showed at lessons are available on the e-learning platform.

Suggested books

- Raven P.H., Evert R.F., Eichorn. S.E. *Biologia delle Piante*. Zanichelli ed.
- Pasqua G., Abbate G., Forni C. *Botanica generale e biodiversità vegetale*. Piccin ed.
- Mauseth J.D., *Botanica- Parte generale*. Idelson Gnocchi ed.

## **Semester**

First semester

## **Assessment method**

The oral exam will evaluate the student's knowledge about the plant biology at three different levels: cytology, histology and plant anatomy.

Usually, during the exam student will have to answer 4-5 questions. The first is an open question on a general topic of the course to evaluate the study method adopted to the student and the level of details pursued. The 2-3th questions are direct to the plant structures (acquired during laboratory exercises) and their functions. Finally, the 4-5th questions are dedicated to evaluate the ability of the student in the critical re-elaboration of the acquired knowledge.

Evaluation criteria: scientific and technical knowledge about plant structure and function, ability of the student to describe plant structure starting from plant histology and anatomy images and in the critical re-elaboration of the acquired knowledge as well as scientific language usage.

## **Office hours**

On appointment; mail to: [fabrizio.grassi@unimib.it](mailto:fabrizio.grassi@unimib.it)

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