COURSE DETAIL

BOTANY: INTERACTIONS OF PLANTS HUMANS AND ENVIRONMENT
Country Italy
Host Institution University of Bologna
Program(s) University of Bologna
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Biological Sciences
UCEAP Course Number 147
UCEAP Course Suffix
UCEAP Official Title BOTANY: INTERACTIONS OF PLANTS HUMANS AND ENVIRONMENT
UCEAP Transcript Title BOTANY:INTERACTIONS
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

At the end of the course, students have acquired knowledge on the main morphological, physiological, and molecular responses of higher plants to environmental cues and the basic mechanisms of tolerance and adaptation to adverse conditions. Students learn about how plants contribute to air quality by the release of biotic particulates and by interfering with air pollutants derived from anthropogenic activities. Due to changes in plant distribution in relation to climate change, students become acquainted with the contribution of alien species to the release of such biotic particulates. Students also learn about methods employed in aerobiology for the quantitative and qualitative assessment of pollen and other air-borne allergens, gain the capacity to interpret data, and critically read scientific literature relating to this topic. They also acquire knowledge on the ability of plants to monitor environmental quality and influence it, on the release of volatile plant compounds with therapeutic effects as well as on the possible use of plants in environmental phytoremediation. Additionally, students in the laboratory acquire methods to analyze plant allergenic proteins, to monitor the effect of stress on photosynthetic activity; in addition, students analyze an aerobiological sample, allowing them to know that a myriad of microorganisms and particulates (many of which are respirable) are present in the atmosphere.

Laboratory activities:

1. Microscopic recognition of aerobiological slide: allergenic and non-allergenic pollen

2. Western blotting/dot blotting for apple and pollen allergenic proteins

3. Pollen-fruit cross-reactivity with specific Ab and comparison with non-cross-reactive pollen/food

4. Handy-Pea: evaluation of photosynthetic activity in stressed and non-stressed plants (e.g. plants maintained at 4 °C)

Language(s) of Instruction
English

Host Institution Course Number
B6300

Host Institution Course Title
BOTANY: INTERACTIONS OF PLANTS HUMANS AND ENVIRONMENT

Host Institution Course Details
https://www.unibo.it/en/study/course-units-transferable-skills-moocs/course-uni...

Host Institution Campus
BOLOGNA

Host Institution Faculty

Host Institution Degree
L in BIOLOGY OF HUMAN AND ENVIRONMENTAL HEALTH

Host Institution Department
Biological, Geological, and Environmental Sciences

Course Last Reviewed
2025-2026

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