COURSE DETAIL

GENETICS FOR RESILIENT CROPS
Country Italy
Host Institution University of Bologna
Program(s) University of Bologna
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Bioengineering Agricultural Sciences
UCEAP Course Number 153
UCEAP Course Suffix
UCEAP Official Title GENETICS FOR RESILIENT CROPS
UCEAP Transcript Title RESILNT CROP GNETIC
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course is part of the Laurea Magistrale degree program and is intended for advanced level students. Enrollment is by permission of the instructor. At course completion, the student possesses knowledge on: the potential of biotechnology based genetic improvement to develop resilient cultivars suitable for sustainable agricultural systems; the molecular genetic control of the main features of agronomic interest including the response to abiotic and biotic stresses, the efficient use of water and nutrients, and host-pathogen interaction; genetic improvement methods that integrate assisted selection, phenotyping high-throughput, genetic engineering and genomic editing. In particular, the student possesses the skills to: participate in the management of genetic improvement programs aimed at varietal development in seed and nursery companies; evaluate and incorporate the appropriate biotechnological tools into genetic improvement programs; recognize and manage the positive aspects and critical issues of varietal innovation in agricultural systems, considering the entire production chain.

PREREQUISITES: The student who accesses this course must have a good knowledge of the fundamentals of mathematics, chemistry, plant biology, agronomy, crop biology and physiology, plant pathology, and the fundamentals of statistical analysis (sample, mean, variance and standard deviation). Most importantly, students must have already a clear and good knowledge of the fundamentals of Agricultural Genetics.

The course is divided into two parts: Genetics for sustainable agriculture; and Plant breeding and biotechnology for sustainable agriculture. During and at the end of PART 1, exercises are proposed to the class, and evaluations are assigned. Students that: i) attended the course, ii) scored positively (>18) to the exercises for PART2, in the final exam will be asked to defend PART2 only.

Language(s) of Instruction
English

Host Institution Course Number
B5183

Host Institution Course Title
GENETICS FOR RESILIENT CROPS

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
LM in PRECISE AND SUSTAINABLE AGRICULTURE

Host Institution Department
AGRICULTURAL AND FOOD SCIENCES

Course Last Reviewed
2025-2026

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