COURSE DETAIL

PLANT DEVELOPMENT AND ENVIRONMENT
Country Netherlands
Host Institution Utrecht University
Program(s) Utrecht University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Biological Sciences Agricultural Sciences
UCEAP Course Number 115
UCEAP Course Suffix
UCEAP Official Title PLANT DEVELOPMENT AND ENVIRONMENT
UCEAP Transcript Title PLANT DEVLPMT&ENVIR
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

Plants are continuously challenged by sometimes life-threatening changes in their environment. These can severely impact their development and even kill plants. Interestingly, plants can flexibly adjust their development to deal with these environmental changes. They can for example adjust root anatomy to resist drought, overall root architecture to forage for nutrients, and shoot architecture to escape from shade or submergence. In order to ascertain optimal development, plants have evolved a broad variety of mechanisms of developmental plasticity. This course discusses how plants control their development, how plants sense the environmental cues flooding and salinity, and how environmental signaling controls plant development through a combination of molecular genetics, physiology, and functional genomics. This course combines lectures with hands-on practice in wet lab practicals and data labs. This includes practicing how to define research questions and hypotheses, how to design and perform experiments, how to collect and analyze data, and how to interpret results in the biological context. In the wet labs, learn how to carry out experiments with plants, such as treating plants with different light and water regimes, measuring phenotypic traits, and assessing molecular level changes to protein and mRNA. In the data labs, learn how to analyze large gene expression datasets using online databases to gain biological insight on how roots and shoot respond to changes in their environment. Assumed previous knowledge is plants and micro-organisms, and Plant Physiology and Development are required. Molecular Genetic Research Techniques (B-B2MGOT14) and Plants in Context (B-B2PICO21) are recommended.

Language(s) of Instruction
English

Host Institution Course Number
B-B3PDE18

Host Institution Course Title
PLANT DEVELOPMENT AND ENVIRONMENT

Host Institution Campus

Utrecht University

Host Institution Faculty
Faculty of Science

Host Institution Degree

Host Institution Department
Biology

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