

# Molecular Plant Biology

## Courses

<b>Compulsory courses</b>		
<b>Concept courses</b>		
Molecular Life of Plants	551-0311-00L	6
<b>Master courses</b>		
Plant Biology Colloquium (Autumn Semester)	551-0120-00L	2
Plant Biology Colloquium (Spring Semester)	551-0120-01L	2
<b>Elective compulsory courses</b>		
<b>Concept courses</b>		
Cellular Biochemistry (Parts I & II)	551-0319-00L, 551-0320-00L	6
Concepts in Modern Genetics	551-0309-00L	6
Evolutionary Genetics	701-2413-00L	6
Introduction to Bioinformatics	551-1299-00L	6
Molecular and Structural Biology I: Protein Structure and Function/Molecular and Structural Biology II: Molecular Machines and Cellular Assemblies	551-0307-00L/551-0307-01L	6
Microbiology (Parts I & II)	551-0313-00L, 551-0314-00L	6
Nucleic Acids and Carbohydrates	529-0731-00L	6
Proteins and Lipids	529-0732-00L	6
Systems Biology	551-0324-00L	6
<b>Master courses</b>		
<i>Autumn semester</i>		
Chemical Biology and Synthetic Biochemistry	529-0733-02L	6
Insect Ecology	751-5121-00L	2
Plant Pathology I	751-4504-00L	2
RNA Biology Lecture Series I: Transcription & Processing & Translation	551-1407-00L	4
RNA Biology Lecture Series II: Non-coding RNAs: Biology & Therapeutics	551-1409-00L	4
Systems Biology of Metabolism	551-1153-00L	4
Computational Biology	636-0017-00L	6
Using R for Data Analysis and Graphics (Parts I & II)	401-6215-00L, 401-6217-00L	3
Applied Statistical Regression	401-0649-00L	5
Alternative Crops	751-4104-00L	2
<i>Spring semester</i>		
Advanced Proteomics	551-0224-00L	4
Epigenetics	551-0140-00L	4
Insects in Agroecosystems	751-5110-00L	2
Microbial Biochemistry	551-1103-00L	4
Microbial Pest Control	751-4904-00L	2
Plant Pathology II	751-4505-00L	2
Regulation of Plant Primary Metabolism	551-0138-00L	2
Evolutionary Developmental Biology	701-1480-00L	3
Functional Genomics	551-0364-00L	3
Molecular Plant Breeding	751-3606-00L	3
Crop Phenotyping	751-4106-00L	4
Elements of Microscopy	227-0390-00L	4
Recent Advances in Biocommunication	751-4805-00L	3
Selected Topics in Mycology	551-1130-00L	4
<b>Recommended Master courses</b>		
Scientific Writing for Life Sciences and Chemistry	529-0079-00L	1
Writing Scientific Reports for MSc Biology	551-0575-00L	2

**Master courses**  
According to agreement with study advisor

**Elective courses in Humanities, Social or Political Sciences**  
(min. 2 CP)

## About this major

The Master programme in Plant Biology emphasizes the fundamental understanding of plants from the molecular genetic to the organismal level. In particular, students will experience, both in theory and in their experimental work, how the interconnected networks of genes and gene products work together in steering processes in plants, e.g. during development or under specific environmental conditions. Apart from plant biology, students are encouraged to broaden their educational skills in areas such as cell and structural biology, genetics, RNA biology and plant protection, systems biology and metabolism. In plant biotechnology students learn how their knowledge can contribute to crop improvement. As members of the Zurich-Basel Plant Science Center (PSC, <http://www.plantscience.ethz.ch/>), ETH Master students also benefit from joint PSC courses and courses given at the other two universities.

The successful completion of the Master programme in Plant Biology prepares the student for a professional career in scientific research areas concerned with plant-related questions on the molecular, cellular and systems level. It provides a solid scientific background for further academic studies towards a PhD followed by postdoctoral training, but also provides the Master graduates with a scientific profile desired for competitive positions in biotechnology, agriculture, and the agrochemical and biomedical industry.

## Study advisor



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