Module Name
Lecture Molecular Plant and Microbial Sciences

Type of Module	**Module Code**
o Basic Module	Plant Science Lecture

Identification Number	**Workload**	**Credit Points**	**Term**	**Offered Every**	**Start**	**Duration**
MN-B-P 1	180 h	6 CP	1st term of studying	Winter term	Winter term only	1 term

1	**Course Types**	**Contact Time**	**Private Study**
	Lecture	49 h	131 h

2 Module Objectives and Skills to be Acquired

Students who successfully completed this module

- have acquired an understanding of advanced concepts and technologies related to the molecular basis of plant and microbe functions.
- possess the ability to develop hypotheses through problem analysis and will be able to develop experiments to test these hypotheses.
- will be familiar with the current discourse on molecular biological methods in plant and microbial sciences and, with their professional knowledge, will be able to contribute to social debate.
- have built cross-linked knowledge that is sustainable and applicable for designing and breeding plants that react in a predictable way to future challenges.
- will be in a position to be able to assess the developments in the area of molecular biology including those within a socio-economic context.

3 Module Content

- Plant and microbial genomics
- Plant genetics and development
- Plant cell biology
- Plant physiology and biochemistry
- Plant population biology
- Plant evolution
- Plant biotechnology
- Plant domestication, agriculture and food security
- Plant-microbe interactions
- Plant immunology behavior

4 Teaching Methods

- Lecture

5	**Prerequisites (for the Module)** Enrollment in one of the Master's of Science degree courses of the Department of Biology **Additional academic requirements** The knowledge of plant and microbial biology on the level of a general plant biology text book (*e.g.* Biochemistry & Molecular Biology of Plants by Buchanan *et al.* or Plant Biology by Harberd *et al.*) is required.
6	**Type of Examination** Two hours written examination about topics of the lectures (100 % of the total module mark)
7	**Credits Awarded** Written examination at least "sufficient"
8	**Compatibility with other Curricula*** Optional module for the second (or third) obligatory lecture module in the other Master's of Science degree courses of the Department of Biology
9	**Proportion of Final Grade** 7.5 %
10	**Module Coordinator** Prof. Dr. Gunther Döhlemann, phone 470 1647, e-mail: g.doehlemann@uni-koeln.de
11	**Further Information** **Participating faculty**: apl. Prof. Dr. B. Becker, Prof. Dr. M. Bucher, Prof. Dr. J. de Meaux, Prof. Dr. G. Döhlemann, Prof. Dr. T. Hildebrand Prof. Dr. U. Höcker, Prof. Dr. M. Hülskamp, Prof. Dr. S. Kopriva, Dr. T. Maekawa, Dr. I. Saur, Prof. Dr. M. Stetter, Prof. Dr. B. Thomma, Prof. Dr. N. Töpfer, Prof. Dr. A. Zuccaro **Literature:** • Information about textbooks and other reading material will be given on the ILIAS representation of the course (see https://www.ilias.uni-koeln.de/ilias/goto_uk_crs_5918262.html). **General time schedule:** Weeks 1-14: Tue. from 11:00 to 12:30 a.m. and Thu 08:15 to 09:45; Week 15 (Mon.-Fri). Preparation for the written examination **Introduction to the module:** October 14, 2025 at 11:00 a.m., online (further information/link will be sent to your Smail-Account); for preparation to the module, before this introduction see ILIAS link under literature. **Written examination:** February 11, 2026, second/supplementary examination March 25, 2026; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.