

Georg-August-Universität Göttingen Universität Kassel/Witzenhausen Module M.SIA.P23M: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research	9 C 8 WLH
Learning outcome, core skills: Theoretical backgrounds, advantages and disadvantages of the respective methods and analytical skills will be imparted to the students. They learn how to apply those methods in a targeted manner and learn how to interpret the data, put the results into context and analyse them as such. Furthermore, students will improve their team work skills by exchanging informations and communicating clearly about problems and solutions. Methods that will be taught are extraction of DNA, RNA and proteins of different samples, PCR, qPCR including primer design, 2D gel electrophoresis, sequencing and state of the art software data analysis.	Workload: Attendance time: 120 h Self-study time: 150 h
Course: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research (Block course, Internship, Lecture) <i>Contents:</i> Within this block module students will learn current molecular methods and their potential applications in plant nutrition research. In lecture sessions students will learn the theoretical background of the respective methods and then will apply those methods to study a central issue in practical sessions in the laboratory. The aim is to impart methodological skills in molecular analysis of microbial communities, as well as the analysis of genes, transcripts and proteins of microbes and plants. Students will be guided from planning and preparation of analyses to interpretation and evaluation of obtained data.	8 WLH
Examination: Written exam (90 minutes, 75%) and oral exam (approx. 15 minutes, 25%) M.SIA.P23M.Mp: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research Examination requirements: Knowledge about the molecular methods and their theoretical backgrounds, advantages and disadvantages, and the field of application. Additionally, knowledge about the relationship of molecular mechanisms in plants and the influence of plant nutrients on plant physiology as well as knowledge on the role of microbial communities for plant nutrition and methods for analysis of microbial communities and their activity in soil and plants.	9 C
Admission requirements: none	Recommended previous knowledge: Basic knowledge about soil and plant sciences (B.Sc.level)
Language: English	Person responsible for module: Jun.-Prof. Merle Tränkner
Course frequency:	Duration:

each summer semester; Göttingen	1 semester[s]
Number of repeat examinations permitted: twice	Recommended semester:
Maximum number of students: 15	