

Module number	MM6
Module name	Applied Genome and Proteome Research
Program of Study	MSc mandatory module
Offered	Once a year, summer semester
Module coordinator	Prof. Dr. K. H. Mühling
Module advisors	Prof. Dr. Daguang Cai, Prof. Dr. Christian Jung, Prof. Dr. Georg Thaller, Prof. Dr. Karl H. Mühling
Courses and teachers	Practical course: either: Genome research techniques (either C. Jung or G. Thaller or D. Cai) or: Proteome research techniques (K.H. Mühling with Dr. Christoph-Martin Geilfus) or: Off-Campus Internship (coordinated by one of the module advisors)
Prerequisites	Advanced understanding of genetics and protein biochemistry (according to modules "Biochemistry and Proteomics" (MM3) and "Introduction to Molecular Biology" (MM1))
Language	English
Module capacity on campus students	20, Registration from February 1 st to April 1 st at the secretary's office of the Plant Nutrition and Soil Science Institute, CAU, Hermann-Rodewald-Str. 2, 1 st floor, room 110
Module capacity off campus students	0
Course types (classroom/ total workload)	Practical course (60 h/180 h)
Schedule	Weekly and blocked courses
Grading	Practical report: 100% (one of the teachers)
ID-card	Required for exams
European Credit Points	6
Module Objectives	Understanding and application of genomic and proteomic technologies and methods
Contents	<u>Genome research:</u> <ul style="list-style-type: none"> ▪ Establishing genetic and physical maps from complex genomes ▪ Megabase techniques ▪ Cloning into large insert vectors ▪ Gene identification from sequenced large insert clones ▪ Sequence analysis in silico ▪ Genetic complementation ▪ mutagenesis and mutant analysis ▪ whole genome-based transcriptome analysis ▪ Transcript profiling of candidate genes <u>Proteome research:</u>

- Nutriproteomics of plants
- Plant proteomics under abiotic stress

Taught Skills

Methodical responsibility, key qualifications

Course materials

to be announced at the beginning of the practical course