Modulcode	**biol258**
number online registration	
Module number	**MM10**
Module name	**Computational and Comparative Genomics**
Module name - german	
Program of Study	MSc Compulsory Module AgriGenomics MSc Biology
Offered	Once a year, winter semester
Module coordinator	Prof. Dr. Tal Dagan
Module advisors	Prof. Dr. Tal Dagan
Courses and teachers	**Lecture**: Computational and Comparative Genomics: (Prof. Dr. Dagan, Dr. Ke Xiau, Dr. Georg Hemmrich, Dr. David Ellinghaus, Dr. Giddy Landan **Exercises:** Computational and Comparative Genomics: Prof. Dr. Dagan, Dr. Ke Xiau, Dr. Georg Hemmrich, Dr. David Ellinghaus, Dr. Giddy Landan
Prerequisites	Advanced understanding of genetics, molecular biology, animal and plant breeding as well as plant nutrition and phytopathology
Language	English
Module capacity on campus students	40 (20 places are allocated to the AgriGenomics program) enrollment from November 1 to November 30 via OLAT
Module capacity off campus students	0
Course types (classroom/ total workload)	Lecture (30 h/90 h), exercise (90 h/90 h)
Schedule	block course (UNIVIS)
Grading	Written test 100 % (K)
ID-card	Required for exams
European Credit Points	6
Module Objectives	The module is aimed at teaching basic methods for the analysis of genomic data. This includes an overview of the theory and practice of computational methods for the identification and characterization of genetic elements from DNA sequence data. The course focuses on approaches for extracting the maximum amount of information from protein and DNA sequence similarity through sequence database searches, statistical analysis, and multiple sequence alignment.
Contents	Genomic data mining, sequence comparison, phylogenetic trees, protein domain prediction, genome sequencing and assembly, genome annotation, identification of genomic structural variants, transcriptomics.
Taught Skills	Basic knowledge in the analysis of genomic and transcriptomic data.
Course materials	Praktikumsskript, Manuals, Videos