

# Advanced Module I-IV

**The following courses are available as advanced module I, II, III and IV for the students of qBio and qBio+**

qBio students can choose one of the following elective courses in the 5. semester.

qBio+ students can choose from the following elective courses in the 5., 6., and 7. semester.

## List of elective modules (V-Module) available at Heinrich Heine University

- V403 - Genomics and Molecular Biology of Plants
- V404 - General Microbiology
- V406 - The Cell Nucleus: Functional Organization and its Role in Neurodegenerative Diseases
- V409 - Molecular Population Genetics
- V411 - Principles of Eucaryotic Microbiology I
- V413 - Genetic Mechanisms of Pattern Formation during Invertebrate Development
- V415 - Molecular Techniques in *Drosophila melanogaster*
- V418 - Genetic and Molecular Principles of Microorganisms
- V416 - Transcriptional Control in Vertebrates
- V421 - Data Evaluation and Data Illustration
- V422 - Photo-oxidative Stress in Plants
- V423 - Molecular Biophysics: X-ray Structure Analysis
- V425 - Molecular Biophysics: Hydrodynamics
- V426 - Basic Principles in Microbiology and Enzyme technology
- V428 - NMR Spectroscopy of Biological Macromolecules
- V429 - PC Based Analysis and Presentation of biological Data
- V430 - Plant Biochemical Genetics
- V431 - Solid-State NMR-Spectroscopy in Structural Biology
- V434 - Cell Biology and Physiology
- V436 - Biochromatography
- V435 - Analysis of Protein Interactions by NMR Spectroscopy
- V440 - Plant Evolution
- V441 - Ecological and systematical field course
- V446 - Foundations of Biodiversity and Evolution
- V462 - Molecular and clinical Immunology
- V465 - Stem Cell Biology and Regenerative Medicine
- V474 - Genomics and Molecular Biology of Plants
- V484 - Phenotypic Adjustment of Plants
- V485 - Model Organism *Drosophila*
- V487 - Systematics of flowering plants
- V488 - Molecular Evolution
- V490 - Diseases of the central nervous system+
- V492 - Protein Folding and Protein Misfolding Diseases
- V493 - From genome sequence to protein expression

V496 - Plant Quantitative Genetics  
V501 - Physical Biology of the Cell  
V506 - Symbiosis and the evolution of eukaryotic compartments  
V507 - Glycobiology  
V509 - Principles of population and quantitative genetics  
V508 - Bioacoustics  
V510 - Theory of Biological Networks  
V515 - How to engineer stress tolerant crops  
V516 - Developmental basis of tumor formation from intestinal stem cells  
V517 - Ecological Developmental Biology  
V518 - Electrical signals in the nervous system  
V519 - Intracellular signal-transduction in Arabidopsis

The detailed description for the elective modules offered by biology department of HHU can be found on the following link <https://www.biologie.hhu.de/studium/studierende/modulvergabe.html>

### **List of elective modules (Wahlpflicht-module) available at University of Cologne**

Bioanalytics  
Biology of Freshwater Algae  
Experimental Ecology  
Fundamentals of Developmental Biology  
Molecular Plant Nutrition  
Signal Molecules and Communication in Plants  
Animal Physiology and Neurobiology  
Introduction to Biodiversity  
Genetics  
Model Systems and Methods In Cell Biology  
Molecular Plant Physiology  
Recombinant Proteins  
Module Descriptions Summer Semester  
Fundamentals of Developmental Biology  
Zoo Biology  
Molecular Plant Physiology  
Electron- Microscopic Methods in Cell Biology

The detailed description for the elective modules offered by biology department of UoC can be found on the following link

<https://biologie.uni-koeln.de/studium-lehre/bachelor-of-science/wahlpflichtmodule-i-und-ii>