bio675 - Molecular Ecology

Module label: Molecular Ecology
Module code: bio675
Credit points: 12.0 KP
Workload: 360 h
Used in course of study: Master's Programme Biology > Background Modules
Contact person: Arne Nolte, Gabriele Gerlach

Module responsibility
- Arne Nolte
- Gabriele Gerlach

Authorized examiners
- Arne Nolte
- Gabriele Gerlach

Entry requirements
B.Sc. (Biologie, Umweltwissenschaften)
M.Sc. (Biologie, Marine Umweltwissenschaften, Landschaftsökologie)

Skills to be acquired in this module
- The field of molecular ecology strives to identify relationships between species genotypes, phenotypes and ecological factors. It addresses questions about how organisms adapt and explains patterns of distribution and biodiversity. During the course, participants will get to know the biological background to design an experiment in the field of molecular ecology. We will discuss the state of the art according to literature. Participants will perform sampling and conduct steps of the analysis. The course will cover field methods (sampling) and lab methods (behavior experiments, genetic analyses, phenotypic analyses) as well as computer based analyses.

++ deepened biological expertise
++ deepened knowledge of biological working methods
++ data analysis skills
+ interdisciplinary thinking
+ critical and analytical thinking
+ independent searching and knowledge of scientific literature
++ ability to perform independent biological research
++ data presentation and discussion in German and English (written and spoken)
+ statistics & scientific programming

Module contents
Lecture: AN/GG - Molecular ecology background of specific study systems. The lectures will introduce a study system that will be analyzed during the course (study systems may vary from year to year). It is the goal of the lecture to provide students with background information to develop an experimental design of a field study during the practical.

Exercise: AN/GG - Mixed course with laboratory and field exercises. Samples will be collected in the field. One goal of the course is to apply modern analyses to understand how organisms are distributed. Another aspect is the application of molecular markers to analyze behavioral experiments.

Reader's advisory
will be announced during the course

Links
Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency

Module capacity
15

Reference text
associated with bio890 Current Topics of Biology (Seminar)

Modulart
Wahlpflicht / Elective

Vorkenntnisse / Previous knowledge
Reading of scientific literature in english and the ability to present a seminar topic in English. Basic skills in working in the genetics lab and with a computer.

Examination
Time of examination
Type of examination
Final exam of module during the module Präsentationen (50%), Portfolio (50%). Regular participation is a prerequisite to pass in the module.

Course type
Comment
SWS
Frequency
Workload attendance
Lecture 2.00 SuSe 28 h
Exercises 6.00 SuSe 84 h

Total time of attendance for the module
112 h