

name of the module	Plant Evolution
start	Mid February and Mid April
duration	5 weeks
location	Karlsruhe Institute of Technology, Botanical Institute
contact person	Peter Nick
ECTS (regular/max)	8
examination	<p>Rating of performance</p> <p>the performance is rated as examination of mixed type. In total 120 points can be raised. These are composed of</p> <ul style="list-style-type: none"> • a written test over 120 min on contents of the lecture maximally yielding 60 points. • group exercises (individual entry via Ilias) maximally yielding 18 points. • exercises on special topics accompanying the lecture maximally yielding 30 points. • a protocol on the practical project meeting scientific standards maximally yielding 8 points. • a project proposal following scientific criteria maximally yielding 4 points. • a presentation of the project which can improve the final mark by maximally a step of 0.3 <p>Successful participation in the practical project is a necessary condition for completion of the module. This is documented by a countersigned handover protocol. Success criteria are, in addition of regular presence, compliance with security rules, documentation of experiments and data, as well as handling of samples following good scientific practice. In case that the handover protocol is not accepted, due to violation of these criteria, the practical part is considered as not passed. This can be compensated by agreement of appropriate conditions that have to be met, before the practical part is accepted as successfully passed.</p>
graded	Yes, best grade 1.0, passed with 50% of scores
description of content (approx. ½ page)	<p>MFOR-V-1202: Mechanisms of Plant Evolution (Vorlesung)</p> <p>The course introduces into the mechanisms of evolution in general with strong focus on plant evolution. The idea is to foster a holistic approach combining molecular aspects with ecological, biogeographical, and even political aspects of biodiversity. In addition, the methodology of molecular phylogeny is explained.</p> <ul style="list-style-type: none"> • Sources of Variability: Mutation, Sexuality, Plant Speciation

- Key Points in Plant Evolution: Multicellularity, Land Plants, Coevolution
- Methods: Cladistics, Molecular Phylogeny, Molecular Authentication
- Coevolution of Plants and Humans: Biogeography, Crop Plants, Globalization
- Coevolution of Plants and Pathogens: Plant Immunity, Grapevine as Case Study

MFOR-P-1202: Research Projects in Plant Evolution

Students conduct small research projects on topics in evolution biology in the context of current research. They write up a report on their projects and present their results at the end of the block. Although they are intensively supervised, we expect a high degree of self-responsibility and self-organization. Goal is to acquire familiarity with current methodology, design and conception of scientific projects, competence in scientific documentation and presentation of scientific results.

Topics

come from current research projects and therefore change (see link below). General research fields are

- Genetic and developmental aspects of plant speciation
- Molecular authentication of Novel Food plants
- Evolution of crop plants
- Chemical ecology

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