

<b>Module Name</b>	<b>Module Code</b>
Plant x Environment Interactions	MNF-eco 114
<b>Module Coordinator</b>	
Prof. Dr. Alexandra Erfmeier	
<b>Organizer</b>	
Institute for Ecosystem Research	
<b>Faculty</b>	
Faculty of Mathematics and Natural Sciences	
<b>Examination Office</b>	
Examination Office of the Department of Geography and Geoscience	

<b>ECTS Credits</b>	6
<b>Evaluation</b>	Graded
<b>Duration</b>	One semester
<b>Frequency</b>	Winter term
<b>Workload per ECTS Credit</b>	30 h
<b>Total Workload</b>	180 h
<b>Contact Time</b>	60 h
<b>Independent Study</b>	120 h

<b>Teaching Language</b>	German or English
<b>Further Information on the Teaching Language</b>	
Teaching language may be English on demand	
<b>Entry Requirements as Stated in the Examination Regulations</b>	
<b>Recommended Requirements</b>	
Basic knowledge of botany, (plant) ecology, biometry; Bachelor of Science Biology, Ecology, Environmental Sciences or similar	

<b>Module Courses</b>		
<b>Course Type</b>	<b>Course Name</b>	<b>Compulsory/Optional</b>
Lecture	Plant-environment interactions	<b>Compulsory</b>
Exercise	Analysis of plant growth experiments	<b>Compulsory</b>
Seminar	Methods of analysis of <i>plant x environment interactions</i>	<b>Compulsory</b>
<b>Further Information on the Courses</b>		
The module includes the harvest and analysis of plant growth experiment comprising data collection, sample preparation and processing in the lab and statistical analysis Further lecturers involved: staff members of the Institute for Ecosystem Research / Geobotany Class size: 12		

<b>Prerequisites for Admission to the Examination(s)</b>
Active participation in exercises
<b>Further Requirements for Awarding ECTS Credits</b>

<b>Examination(s)</b>				
<b>Examination Name</b>	<b>Type of Examination</b>	<b>Evaluation</b>	<b>Compulsory/ Optional</b>	<b>Weighting</b>
Plant x Environment Interactions	Protocol	Graded	<b>Compulsory</b>	50%
Plant x Environment Interactions	Oral presentation	Graded	<b>Compulsory</b>	50 %
<b>Further Information on the Examination(s)</b>				
First and second examination period in winter term				

<b>Short Summary</b>
MSc course for Environmental Management, Applied Ecology and Biology students
<b>Course Content</b>
<p>The role of environmental variability for plant growth and ecosystem functioning. Principles in biodiversity – ecosystem functioning relationships.</p> <p>Greenhouse or Common Garden Experiments: growth studies, manipulation and quantification of abiotic and biotic conditions (e.g. temp., soil nutrients, competition). Analysis of plant x environment interactions.</p> <p>Critical reading of up to date primary literature (articles). Assessment and evaluation of published data and concepts. Creativity for developing new concepts. Presentation of research contents.</p>
<b>Learning Outcome</b>
<p><i>Knowledge gains:</i> Competence in identifying and understanding fundamental issues of geobotany and plant ecology by means of studying experimental systems (mesocosms). Ability to distinguish abiotic and biotic processes. Competence in using experimental settings to answer hypothesis-driven ecological questions, exemplified by the knowledge about the necessity to and the design of controlled experiments. By doing so, the meaning of abiotic and biotic factors for ecosystem functioning will be highlighted.</p> <p><i>Methodological skills:</i> Students learn to apply essential methods to quantify effects of abiotic and biotic factors in experimental study systems. They will be taught necessary techniques of lab analytics (edaphic factors, trait quantification) and of implementing appropriate experimental designs for statistical analysis. They will learn to analyze and interpret experimental ecological data and thus will gain knowledge on how to work independently on a scientific project.</p> <p><i>Communication:</i> Students will learn to understand and interpret ecological processes. They will present ecological results to a scientific audience. Moreover, they will gain experience in the peer review process. For example, students learn to assess their own results in the context of scientific discussions and to interpret contradictory outcomes.</p> <p>Teamwork will improve <i>interpersonal skills</i>.</p>
<b>Reading List</b>
<p>Primary sources in English</p> <p>General introductions to plant and vegetation ecology, e.g.,</p> <ul style="list-style-type: none"> <li>- The Ecology of Plants: Gurevitch, Scheiner, Fox</li> <li>- Ökologie: Townsend, Begon, Harper</li> <li>- Lehrbuch der Geobotanik: Frey &amp; Lösch</li> </ul>

**Additional Information**

Contact details of module coordinator:

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