



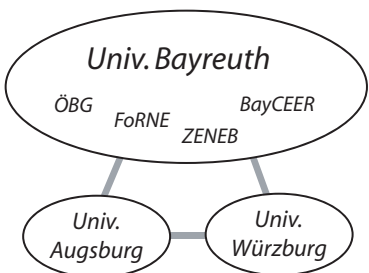
Global Change Ecology



Scope

The graduate program Global Change Ecology is devoted to understanding and analyzing the most important and consequential environmental concern of the 21st century, namely Global Change. Problems of an entirely new and interdisciplinary nature require the establishment of innovative approaches in research and education. A special program focus is the linking of natural science perspectives on global change with approaches in social science disciplines.

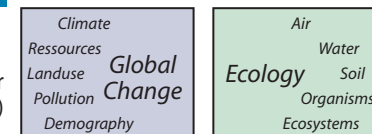
The elite study program combines expertise of the Universities of Bayreuth, Augsburg and Würzburg, with that of Bavarian and international research institutions, as well as economic, administrative and international organisations. The program is unique in Germany from the standpoint of content and at the forefront with respect to international efforts. The goal is training of highly qualified leaders for tasks and problem solving in science, environmental protection, and with respect to political or economic decision making.



Structure

The general structure of the program (120 CP) brings together natural sciences (research in global change and ecology - 70 %) and social sciences (laws and regulations, social dimensions, socio-economic implications - 30%). The degree is the Master of Science. Based on additional research activity, a PhD degree can be obtained.

In our education program the courses require a high level of performance. Students are selected via a standardized procedure that ensures meeting of the highest international criteria. Bachelor Degrees related to all fields of environmental science will provide for acceptance to the program. Nevertheless, a small number of students will be accepted who may profit from excellent infrastructure and direct one-on-one communication with their supervisors.



General Structure of the graduate program Global Change Ecology. The different modules are following a logical structure to connect the teaching contents.

Background

The ecosystems of the earth are exposed to various and rapid changes of their environment.

Consequences for the functioning of these systems are unclear.

Risks for ecological services such as pure protection against natural hazards, drinking water, food, and other resources can be expected.

Economic, social and political uncertainties may follow.



Declining glaciers act as demonstrative implication of global warming (Taschachferner, Pitztal, Austria)

Global Changes of ...

Climate,
Element Cycles,
Land Use, and
Biodiversity

Partnership

The University of Bayreuth acts to coordinate this program, but partners from the University of Augsburg and the University of Würzburg are integrated. At the national level, large research facilities, such as DLR and UFZ, participate.

The program integrates strong international partners in the field of economics (e.g. Münchener Rück, McKinsey, World Bank, Nature) and from international organisations as well governmental as non-governmental organisations (e.g. UNESCO, UNEP, EU). Internships at high ranking institutions are mandatory.





Global Change Ecology

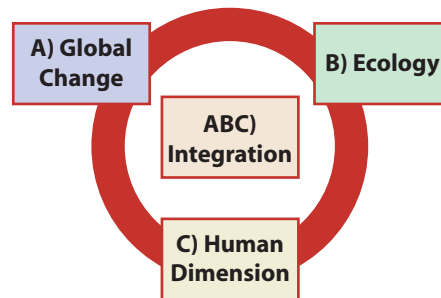


Learning in Networks

According to the general structure, the courses are organised in four modules, (see below). Pursuant to the interdisciplinarity of our graduate program Global Change Ecology, one of these particularly deals with integration and coordination.



In the Ecological-Botanical Garden (University of Bayreuth), influences of upcoming intensification of extreme weather events due to climate change on ecosystem functioning are investigated. The response of grassland and heath communities of different functional diversity to heavy rainfall, drought and more numerous freeze-thaw cycles are evaluated (EVENT-experiment, joint project of UFZ Leipzig-Halle and University of Bayreuth).



Teaching language is English. To integrate students into research exercise courses will be embedded in current research projects (see figures on the left hand side). Internships are offered inland and abroad. The international exchange of students is encouraged through intensive courses on selected themes (summer and winter schools) at various sites around the world. Working together with peer students from other countries will offer a new perspective for the students in this global field of research.



Climate change Experiment of the Bayreuth Center of Ecology and Environmental Research (BayCEER, University Bayreuth) to investigate the dynamics of soil processes under extreme meteorological conditions, meaning drying-rewetting and freezing-thawing cycles (DFG Research Group 562).

Projected Occupations

National Administration (Federal Agencies, Landesämter)
Political Consulting (Environmental Policy)
Economic Consulting (Risk Assessment, Due Diligence)
Global Change Research (Universities, Research Centres)
International Organisations (UN, EU, World Bank, NGOs)
Scientific Management and Coordination

Modules & Study Program

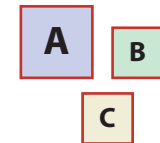
A Global Change
Students will deepen their knowledge of climate change, its causes and its effects on ecosystems and society. Furthermore they are familiarised with the appropriate experimental and statistical methods to analyse climate change and its consequences.

B Ecology
Analysis and reconstruction of ecosystem changes during long time periods are one main issue of this topic. Moreover students are acquainted with the modelling of spatial structures and processes, as well as with current research subjects in the field of biodiversity and biogeochemistry.

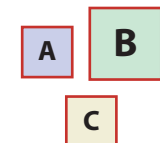
C Human Dimension
According to the interdisciplinary scope of our graduate program, the thematic focus on natural, environmental and geosciences is linked to the fields of policy, law and social sciences. Ecological services for mankind and resource management are further anthropogenic aspects, which are influenced by global change and thus are addressed by our program.

ABC Integration, Coordination and Practical Experience
International summer and winter schools provide a forum for interdisciplinary discussions about current problems related to global environmental change. Key qualifications like project management and communication strategies are taught, internships in international and national organisations, companies, research centres or administration offer an insight into occupational fields.

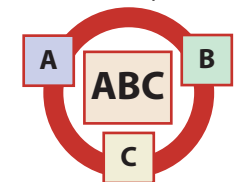
1.Semester (Global Change)



2. Semester (Ecology)



3. Semester (Implications)



4. Semester (Master Thesis)

