



UNIVERSITY of NATURAL RESOURCES and LIFE SCIENCES

Master's programme

"Applied Limnology"

<http://www.wau.boku.ac.at/al.html>



Department of WATER, ATMOSPHERE and ENVIRONMENT
Institute of HYDROBIOLOGY and AQUATIC ECOSYSTEM MANAGEMENT

Why Applied Limnology

Water is life! Humans depend on ecological services provided by aquatic ecosystems, which are among the most threatened in the world. Human activities have led to serious degradation of rivers, groundwaters and lakes. Fundamental understanding of ecosystem functions and processes is essential to stop degradation, mitigate impacts and restore freshwater ecosystems.

Social needs

Society recognizes the importance of aquatic ecosystems. Ecologically orientated laws apply to all of Europe as a result of European Union directives. The “Water Framework Directive” targets “good ecological status” for water bodies. The “Habitats and Birds Directive” strives for the protection and recovery of endangered habitats and species. International conventions such as the UN Convention on Biodiversity impose a more sustainable management of aquatic resources. Well-educated experts are required to properly implement these directives and agreements.

Scientific approach

The uncertainty from global sources of change challenges us to develop and apply science at unprecedented levels of complexity. Holistic perceptions of ecosystem functions and processes, i.e. hydromorphologic dynamics, nutrient cycling, matter fluxes, food webs, habitat requirements, and biotic interactions, are necessary to cope with challenges in management of complex systems. Coupling the chemical/physical characteristics of freshwaters with biological requirements of organisms provides an integrative understanding of ecological interrelations. Identification of organisms such as algae, floodplain vegetation, benthic invertebrates and fishes, in addition to understanding their anatomy, ecophysiology and habitat requirements is essential for evaluating their indicative value for ecosystem functioning and integrity.

Innovative applications

Professional skills are needed to understand and apply innovative methods, models and tools. Expertise in monitoring of aquatic organisms, assessment of human impacts and ecological status, protection and conservation of endangered species and habitats, identification of appropriate restoration measures, and validation of management actions is required for modern river basin management. Well-educated experts are needed to support society in maintaining and restoring ecological services of freshwater ecosystems!



Contents and course structure

Students are educated within an interdisciplinary framework of literature review, lectures and field work guided by biologists, ecologists, landscape planners, river engineers, modellers, systems analysts, statisticians, GIS-experts, water managers, lawyers, and historians.

The 2 years master programme consists of 5 mandatory (1st semester) and 10 optional modules (2nd, 3rd semester) and a master thesis (4th semester).

Mandatory modules	ECTS
Basics in limnology	9
Ecology of aquatic organisms	6
Basics in applied limnology	6
Aquatic ecosystem management	6
Scientific working	6
Optional modules	
Ecohydromorphological monitoring	6
Fish monitoring and assessment	6
Benthic invertebrate monitoring and assessment	6
Environmental impacts	6
Restoration and conservation	6
Planning and applications	6
Interdisciplinarity and socioeconomics	6
Aquatic plants	6
Fisheries management and aquaculture	6
Ecosystem modelling	6
Hydrology and morphology	6

Last but not least: Career prospects

Graduates of the International Masters Programme in 'Applied Limnology' are specialised in sustainable management of aquatic ecosystems and trained to integrate the technical, ecological, economic, social and cultural aspects of their fields of work. Graduates of this programme can make substantial contributions in the following fields of work: private, governmental and non-governmental organisations, especially international organizations such as the European Commission, UNESCO, FAO, International River Commissions, technical and administrative planning institutions and companies, development cooperation agencies, non-profit organisations, national and international environmental associations, civil engineering, consultants as well as research and education.

International Master's Programme

Applied Limnology

University of Life

The University of Natural Resources and Life Sciences (BOKU) is committed to contributing to the responsible use and to the safekeeping of natural life resources.

Teaching and research concentrate on managing natural resources, on shaping biospheres and on life sciences.

To us, students are more than just a number

Student surveys identified the BOKU as one of Austria's most favoured universities. There are good reasons for that: within a personal setting students' needs are attended to. Projects are mentored in small groups and individually. Studies are based on scientific training of an international standard, focusing on high quality hands-on experience thus paving the way for many a successful career of our graduates. Last but not least: BOKU Vienna has a truly attractive campus beyond its lecture halls and class rooms!

The International Master's Programme

Applied Limnology is recognised as an International Master's degree. It is open to all applicants with a degree (Bachelor/Master's or equivalent) in natural sciences from an accredited university. Since the Master's programme is taught in English, the prospective students must show competency in the English language. Graduates will be awarded the degree "Master of Science in Applied Limnology."

Further information

Detailed information on the study of Applied Limnology and how to get accepted:

BOKU4YOU – Study Service:

Tel. (+43/1) 47654-2608

E-mail: boku4you@boku.ac.at

homepage: <http://www.boku4you.at>

Here you can find all updated online information on BOKU's programmes including all study curricula Students' Union at the BOKU

E-mail: matura@oehboku.at

homepage: <http://oeh.boku.ac.at>

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