

The Master of science (M.Sc.) programme “Biological Oceanography” provides knowledge and skills in a number of disciplines that address various areas of the global ocean as a complex system.

The curriculum is focussed on biology and imparts knowledge in chemistry, geology, physics and mathematics.

The first 2 semesters have been set for the theoretical and practical fundament for the systemic analysis of the marine environment. Building on this knowledge, graduates begin in the 2nd semester to form their individual focus within the curriculum in compulsory/elective and elective modules. Already in the 2nd semester, the students take part in theory and practice of running research projects.

With preparatory modules in the 3rd semester and the realization of the master's thesis in the 4th semester, the graduates have formed and proven their professional scientific expertise.

Graduates are able to identify marine organismic communities (zoology, botany, microbiology) and to characterize them using modern methods (physiology, biochemistry, genetics, evolutionary biology and genetics, molecular biology, taxonomy, etc.), their physico-chemical environment, nutrient requirements and interactions of seabed and atmosphere (inorganic chemistry and analysis, geology, physics (especially oceanography and meteorology)) and population changes (stock assessment, statistics) to determine and assess their importance in the marine context.

The thesis shows that the graduates are able to analyze and solve complex biological problems in a clear cut structure within a defined period of time. They are trained to connect aspects from different disciplines and to communicate their results to the scientific community as well as to the public.

The ability to cross-system considerations and use of resulting synergies is more and more important where results out of basic research are included as well as application aspects are considered in decision processes.

This versatility is reflected by the wide range of professional activities.

Graduates are especially qualified for work in the fields

- Research and teaching, for example of marine science institutes, universities
- Marine environmental monitoring for environmental authorities and fisheries research institutions
- Environmental Management: Assessment and monitoring of existing biological, energy and mineral resources and their environmentally friendly use
- Private sector: e.g. environmental analysis, marine consultants, maritime technology (shipping, pipeline projects, offshore wind farms, etc.)
- Food industry (marine food supplements)
- Pharmacy and medicine (biologically active ingredients from the sea)
- Science journalism, science publishers