

Quality concept Master ISATEC

Program objectives

The overriding objective pursued by the master's program ISATEC is to provide German and international students with an education and specialization in the field of tropical ecology. Participants develop comprehensive knowledge in the area of theory and applied ecology as well as resource evaluation, computational modeling and management, whereby special emphasis is placed on concepts and methods for the protection and sustainable management of tropical coastal ecosystems.

Besides in-depth scientific knowledge, students develop a practice-oriented foundation in socioeconomics and environmental legislation, learn how to conduct scientific work, and to make written as well as oral presentations on scientific themes.

In addition to these subject-related aspects, cooperation within an international, multicultural group occupies a central position.

The main career field for ISATEC graduates lies in the area of resource conservation and management of tropical coastal zones. For this reason, interdisciplinary and intercultural communication constitutes a further program focus. Due to the frequently high complexity of the tasks at hand, professional activities in science and technology increasingly call for the ability to think in interdisciplinary terms and to communicate efficiently across disciplines. The problem issues facing tropical coastal waters – depleted fishing stocks, deforested mangroves, coral bleaching, acidification of coastal waters, rising water temperatures, growth of extreme climate events, as well as urbanization, migrations, mass tourism and diverse other anthropogenic environmental pressures – fuel the rising demand for countermeasures and research. During the mandatory stay abroad at a partner university in the tropics undertaken by third-semester students on the program, in the course of which they collect materials and conduct the field research for their master's thesis, students are made acquainted with life and scientific work in a tropical partner country. This fosters intercultural learning and they also gather experience of working in the tropics, which is important for developing the competences required for future career fields. The new research projects constantly being initiated by ZMT with its partners in the tropics ensure that ISATEC students are regularly able to gain such experience.

Further details on areas of specialization on the ISATEC master's program:

I. ECOLOGY

- Important basics for understanding functional ecological correlations
- Methods and concepts for researching populations and communities of species
- Knowledge of tropical aquatic habitats and populations
- Knowledge concerning the economic value and performance of aquatic populations and their resources

II. EVALUATION & MANAGEMENT OF AQUATIC RESOURCES

- Theoretical concepts and methods applied to resource evaluation and yield assessment
- Knowledge of aquaculture systems /farming techniques and their impact on natural ecosystems
- Appreciation of the complex decision-making processes in environmental management

III. GENERAL COMPETENCES

- Ability to learn independently and in groups as well as teamwork
- Knowledge of sources/data bases on topics in the areas of aquatic ecology and management of coastal zones as well as the use of modern information technologies
- Ability to create simple models, analyze problem interrelationships as well as good oral and written communication skills

Evaluation concept

Evaluations of teaching quality are carried out in all of the modules that make up the ISATEC program. While the leaders of teaching modules (usually lasting one-week) ask for feedback when the unit ends, the students are asked to give the program coordinator feedback on all the modules that make up the study program. This is done via electronic and anonymized evaluation questionnaires for each individual teaching module. These are standard questionnaires posted on the course management system Stud.IP. A student survey is carried out at the end of the second semester before students undertake their semester abroad to collect data for their master's theses.

This survey, which is also carried out via an electronic and anonymized questionnaire on Stud.IP, provides a picture of all modules taught in the first year. Once a year, three months after expiration of the standard period of study, a final survey is made of the graduate cohort.

In the event that problems of deficiencies are identified in the quality of teaching, the program leaders meet with the member(s) of the teaching staff concerned to seek solutions. The evaluation results are passed on to the persons responsible for the module(s), who on the basis of the teaching evaluations, questionnaires and data surveys (key figures) then analyze the data before it is presented to lecturers and discussed. Student representatives are also invited to attend these meetings – beyond this, there is currently no further feedback from students.