International Studies in Aquatic Tropical Ecology (ISATEC)

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Description of the Study Program

The study program International Studies in Aquatic Tropical Ecology (ISATEC) is an international postgraduate study program at the University of Bremen in collaboration with the associated Leibniz Centre for Tropical Marine Research (ZMT). It aims at the joint education and specialization of German and foreign postgraduate students in the field of tropical aquatic ecology. Students receive a broad knowledge in theoretical and applied ecology, with emphasis on concepts and methodologies for the sustainable utilization and conservation of tropical aquatic ecosystems. Thus, general ecology as well as fisheries biology, aquaculture sciences, ecological economics and social sciences relevant to coastal planning and management are significant parts of the study program. Successful completion of the program will result in a Master of Science degree.

The main objectives of the ISATEC program are to provide:

- The essentials for understanding the structure and function of aquatic ecosystems in the tropics.
- Theoretical concepts and methods for resource assessment and evaluation.
- Approaches for coastal planning and management.

Highly qualified personnel is urgently needed for the world-wide challenges of effectively assessing and managing resource use and conflicts in coastal environments. The Master of Science course in Tropical Aquatic Ecology has been developed in order to meet those challenges by providing young scientists with the necessary knowledge and skills.

Bremen is well suited for the implementation of the M.Sc. program because of its high scientific standard in aquatic science, its modern scientific infrastructure, its international scientific co-operation, and its numerous lecturers experienced in teaching abroad.
Admission Criteria and Requirements

The admission regulations specify the admission requirements and selection criteria of the master’s program. The information provided below is an excerpt of the admission regulations from January 22, 2014 and refers to winter semester 2018/19. Please recheck the current requirements as they are subject to change: www.uni-bremen.de/en/master

To be considered applicants need to provide:

- A proof of a Bachelor of Science (B.Sc.) degree in biological/environmental sciences.
- A proof of proficiency in English at the level of C1 (according to the Common European Framework of Reference for Languages CEF) or higher unless the last academic degree was obtained from a university in which the primary language of instruction was English. Information on language certificates accepted as proof of C1-Level can be found at www.fremdsprachenzentrum-bremen.de/EngZert.
- Furthermore, applicants are expected to state their motives for participation in a letter of motivation to be submitted with the application.

Information on the required application documents (official certification, translation, health insurance, language certificates etc.) can be found at: www.uni-bremen.de/en/master/faq/

It is advisable for foreign students to have some basic knowledge of the German language. This makes the arrival in Germany and the adjustment to life outside the campus much easier.

Foreigners are encouraged to apply for a scholarship in their home country to cover living expenses and travel costs. ISATEC is part of the program “Development-Related Postgraduate Courses” of the DAAD (German Academic Exchange Service) and receives a certain number of scholarships for applicants from developing countries. Scholarship associated admission information can be found on the ISATEC webpage: www.uni-bremen.de/isatec/application-and-admission/daad-scholarship.html.
Occupational Fields and Career Opportunities
Participants of the ISATEC course will become experts in the field of tropical aquatic ecosystem research and its application to the conflicting areas of utilization and conservation of aquatic ecosystems in the tropics. They will be equipped to join or conduct multidisciplinary teams working in the investigation and management of tropical coastal zones or freshwater systems as well as to continue university studies (PhD) in the areas of aquatic ecology or integrated coastal zone management.

Employment may be found with national and international organizations involved in research and nature conservation projects, governmental institutions dedicated to coastal systems and resource management, consulting agencies involved in environmental approval work, universities and with organizations dedicated to developmental aid (GIZ, DAAD, DED, CIM etc.).

Curriculum
The first two terms consist of thematic teaching modules; each is composed of weekly block courses. The more fundamental courses are offered primarily to ensure that students from different backgrounds receive the necessary training before proceeding with the more advanced courses. Most of the modules are assessed by a written examination at the end of the respective module. In addition, the participants in the first academic year must present an oral presentation (winter term) and a scientific essay (summer term) that will be graded and contribute to the final M.Sc. grade.

Experimental field and laboratory work is carried out during a two-week excursion in the first term.

During the third term, participants are required to study at one of the partner institutions of the ZMT/University of Bremen, where students carry out field work and data collection for their M.Sc. thesis.

The thesis is carried out during the fourth semester under the guidance of an ISATEC professor and a professor based at the partner institution.

The master thesis has to be written in English. Each student must present an oral seminar of his*her thesis work.
First (Winter) Semester at the University of Bremen
Module I: AQUATIC ECOLOGY
- Concepts of aquatic ecology
- Tropical coastal ecosystems
- Introduction to marine microbiology
- Aquatic flora & fauna

Module II: RESOURCE USE & ASSESSMENT
- Introduction to fisheries biology
- Monitoring of marine ecosystems/GIS
- Tropical aquaculture and its physiological basics
- Tropical fisheries & catching methods

Module III: FUNDAMENTALS OF SCIENTIFIC WORK
- Introduction to systems analysis
- Experimental design & data analysis
- Scientific writing

Module IV: SEMESTER STUDY AND ITS ORAL PRESENTATION
- Oral Presentation

Second (Summer) Semester at the University of Bremen
Module V: THE ABIOTIC ENVIRONMENT
- Fundamentals in physical oceanography
- Biogeochemical cycling of elements in the aquatic environment
- Aquatic pollution
- Coastal geomorphology & coastal processes

Module VI: COMPUTER USE & MODELLING
- Population dynamics & stock assessment
- Trophic modelling of ecosystems
- Modelling spatio-temporal dynamics
- Modelling in conservation biology
Module VII: COASTAL PLANNING & MANAGEMENT

- Ecological economics & social-ecological systems
- Participatory techniques & stakeholder analysis
- Interdisciplinary themes between natural and social sciences
- Law of the sea and international environmental marine law

Module VIII: SCIENTIFIC ESSAY

- Scientific essay

Third (Winter) Semester at a Partner Institution
Field work and data collection for M.Sc. thesis

Fourth (Summer) Semester at the University of Bremen
Thesis seminar and completion of thesis

Junior scientists and technicians assist with the laboratory work. In addition to the formal lectures and class work, students are encouraged to do independent studies. A permanent course tutor provides assistance for course and logistic affairs.

Language of Instruction
The program is taught completely in English.
For foreign students German language courses run parallel to the main program.

Semester Abroad
In the third semester field work at a tropical partner institution is required to get field work experience and to become familiar with problems of the use of tropic aquatic resources and environments.
(Research) Co-operations
The ISATEC study program closely co-operates with associated research institutions: Leibniz Center for Tropical Marine Research (ZMT), Max Planck Institute for Marine Microbiology (MPI), Alfred-Wegner-Institute for Polar and Marine Research (AWI) as well as other German marine science centres in Kiel, Osnabrück and Rostock.

On the international level ISATEC holds vital co-operations with research institutions in the tropics such as the Charles Darwin Research Station (Galapagos), Aquaba Marine Science Station (Jordan), CIMAR/UCR (Costa Rica), UNHAS & UI & DKP & IPB + RISTEK (Indonesia), IBAMA & NUMA (Brazil), INIDEP (Argentina), IO (Vietnam) a.m.m.

Start of the Study Program
The program starts at the beginning of the winter semester (WS) of each year in October. Classes in the winter semester begin early in October and end late in February, the summer semester (SS) period lasts from April to mid-July. In the winter semester, the lecture period is interrupted by the Christmas vacation.

Lecture period winter semester 2019/20
October 07, 2019 – February 24, 2020
Christmas break: December 23, 2019 – January 4, 2020

Lecture period summer semester 2020:
April 14 - July 27, 2020

Duration of Study
The ISATEC M.Sc. program is a two year course, composed of four semesters.

The first two semesters are full time study, whereas the third semester is comprised of field work at a tropical partner institution. The fourth semester includes a thesis seminar and the completion of the thesis.

Degree
Master of Science (M.Sc.) in Aquatic Tropical Ecology
Faculty
About 31 professors and lectures at the University of Bremen and the associated research institutions (Leibniz Center for Tropical Marine Research (ZMT), Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI), Max Planck Institute for Marine Microbiology (MPI) and other national and international universities and institutions contribute to teaching the ISATEC MSc-program and thesis supervision).

Number of Students in the First Semester
A total of 20 positions are available each year, of which 6-8 positions are reserved for students of the DAAD scholarship.

Fees and Accommodation
The semester fee will be approximately 350 Euro per semester. It includes the use of public transportation in Bremen and the region around. For current information see www.uni-bremen.de/en/semester-contribution

After fourteen semesters of study in an EU- or EEA- country or after reaching the age of 55, students have to pay an additional fee of 500 Euro. Information about the long-term tuition fees can be found at www.uni-bremen.de/en/tuition-fee

General information about the city of Bremen and rental accommodation can be found at www.bremen.de and www.uni-bremen.de/en/accommodation

Students moving to Bremen receive 150 Euro as a welcome gift.

For information on study finance and jobs see www.uni-bremen.de/en/student-finances

Information for international students concerning visa, health insurance and finances can be found at www.uni-bremen.de/en/studentstatus

Information about university services: www.uni-bremen.de/en/consultation
Admission and Application

Application closing dates
The application deadline for the course starting in the following winter semester is April 30.

The deadline for DAAD scholarship applications in the program “Development-Related Postgraduate Courses” is one year in advance, October 15.

Any additional deadlines or closing dates for submitting required documents will be notified together with confirmation of admission / registration.

Applications are to be submitted online at:
www.uni-bremen.de/en/master

Applications are to be submitted online via the Master Portal of the Admission Office under www.uni-bremen.de/en/master. The online application form is activated about 8 weeks before the application deadline. For special applications (for example, admission to a higher semester or special hardship), use only the forms provided online by the University of Bremen. You will be notified of all required documents for enrollment together with the confirmation of admission/registration.

Student and Admission Office
Contact point for all formalities regarding admission and enrollment, re-registration, leave of absence, change of address.
Visiting address: Bibliothekstraße 1, Verwaltungsgebäude (VWG), Ground floor
Postal address: Universität Bremen
   Sekretariat für Studierende
   Postfach 33 04 40
   28334 Bremen
phone: +49 421 218-61002
master@uni-bremen.de
www.uni-bremen.de/en/master
Visiting hours: Mo, Tue & Thu 9–12 a.m., Wed 14–16 p.m.
(no advanced notification necessary)
For **DAAD Scholarship applications** follow the instructions on the web page: www.uni-bremen.de/isatec/application-and-admission/daad-scholarship.html

For questions, please contact isatec@uni-bremen.de
Contact and Advisory Services

Internet address of the study program
www.uni-bremen.de/isatec

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Student Tutor & Contact Person Applications
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University Services
www.uni-bremen.de/en/consultation

Service and Information for International Students
(Accommodation, jobs, finances, language learning)
www.uni-bremen.de/en/offers-international-students/

Information and Advice on Visa Matters and Social Security
www.inneremission-bremen.de/beratungen/internationale_studierende/
www.uni-bremen.de/bsu/ (see menu: Ausländerangelegenheiten)
Student Representatives for the Whole University
General Students' Committee (AStA)
Services include: Advice on BAföG student grants, social counseling, and childcare
AStA-Etage, Studentenhaus (StH)
www.asta.uni-bremen.de/asta-services/

Last update: 1/2019 (Ka)
Central Student Advisory Service

Visiting address:
Bibliothekstr. 1, Verwaltungsgebäude VWG
Ground floor

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Universität Bremen
Zentrale Studienberatung
Postfach 33 04 40
28334 Bremen
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www.zsb.uni-bremen.de

Advisory hours (no advanced notification necessary):
Mo, Tue & Thur 9 –12 a.m.
Wed 14–16 p.m.
Additional appointments by agreement