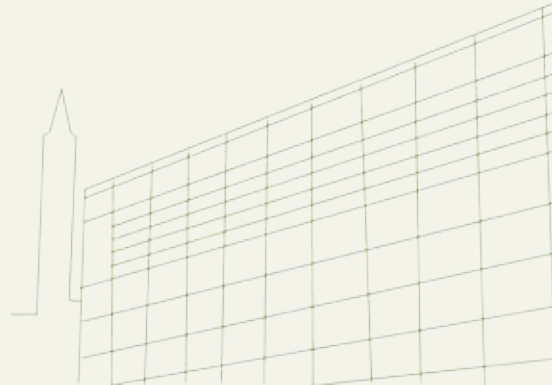




Ecology Master



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Description of the study programme

The master of ecology at the University of Bremen is a programme for students with a background in biology, ecology or related subjects. All courses are offered in English. The master of ecology is multidisciplinary and contains many innovative elements such as a mentoring programme, integrated skills courses, supporting online material, scientific projects, and individual research training.

A particular strength is the broad spectrum of research fields in terrestrial and marine habitats practised by the instructors in the master's programme, including biodiversity and conservation research, behavioural ecology, population ecology, plant ecology, marine ecology, soil ecology, environmental risk assessment and sustainability studies.

Admission requirements

To apply for the programme, you must have a bachelor's degree (or equivalent) in biology, ecology, environmental science or a related field, or have 135 credit points (CP/ECTS) and expect to finish your bachelor's before starting the master's programme. At least 3 ECTS of the previous studies have to be specifically in the field of ecology. Applications should include a CV, your bachelor's degree (if you don't have a bachelor's degree yet, include a transcript of records), a letter of motivation and a proof of proficiency in English (European C1-level (see for more information: www.fremdsprachenzentrum-bremen.de)). If the last academic degree was obtained at a school where the primary language of instruction was English, language skills are accepted as sufficient.

Please check current admission requirements at www.uni-bremen.de/master.

Recommended qualifications

Most importantly, students should be enthusiastic about ecology. A good knowledge of basic ecological concepts is important and not being afraid of learning statistics certainly helps.

Occupational fields and career opportunities

The master of ecology will provide you with a broad ecological background and will train you to become a critically thinking scientist. Not only will you get extensive research experience qualifying you for PhD studies and an academic career. The acquired scientific, technical and communication skills also open a wide array of additional opportunities. During the programme, you will become familiar with many techniques and approaches including field experiments, analysis of animal behaviour, mathematical modelling, sustainability research, advanced statistics, and modern molecular methods.

Occupational fields besides an academic career are governmental and non-governmental organisations involved in nature conservation, environmental risk assessment, or biological control and integrated pest management.

Curriculum

The programme consists of 4 semesters (two years) including the M.Sc.-thesis. The 1st term starts with ecological basics: the main concepts of ecology are covered and also experimental design and data analysis, earth sciences, molecular ecology and an introduction to current topics in cutting edge ecology. Specialisation is offered with an individual choice of courses during the 2nd and 3rd semester, including behavioural, population, vegetation, cognitive, soil or marine ecology, as well as conservation biology, risk assessment, or ecological modelling. Excursions are also part of the curriculum as is a research project and a course on writing successful grant proposals. Especially during the 3rd semester, students have the possibility to study at one of our partner universities abroad. The master's thesis is conducted during the 4th semester, either at the University of Bremen or at one of our partner universities, depending on the student's interests.

A course catalogue providing detailed module descriptions can be downloaded from our website: www.ecology.uni-bremen.de.

Goals of the programme

The main goal of the master's programme "Ecology" is the education in the field of ecology, qualifying for both profession and scientific research. The programme is interdisciplinary and research-oriented. It conveys a broad spectrum of current ecological essentials and, building on these, provides access to areas of specialization in various ecological sub-disciplines such as plant ecology, behavioural ecology, soil ecology, population ecology, marine ecology or environmental risk assessment.

Compulsory and compulsory optional courses

The basics of the research-oriented education programme are composed of a profound training in the planning and statistical analysis of ecological investigations and also in general scientific skills, which is up and above conventional standards. This is complemented by various methodical approaches to experiments and observations both under field conditions and in the laboratory. Also, this course of studies systematically conveys the use and implementation of ecological knowledge. The complexity of this field of study will be accommodated by a strong interconnectedness of the different sub-disciplines, thus enabling individual tracks with different emphases, such as plant ecology, behavioural ecology, soil ecology, population ecology, marine ecology or environmental risk assessment.

Universal skills, not necessarily restricted to science or biology, such as experimental/project planning, communication and presentation techniques shall be conveyed in some basic seminars, related to the general studies modules of the bachelor's course of study. These will help the future ecologists towards a successful qualification and orientation in their profession.

Research project

A major element of our study programme is the research project. It allows the student to work on a current topic in an ecological sub-area of choice. The project is conducted mostly in independent group work, skilfully guided by a supervisor. In this way, the students gain basic experience in the planning, execution, analysis and written description of a research project, already before starting the master's thesis. The project can be carried out at Bremen University or at one of our partner universities.

Each module has a certain number of credit points reflecting the average work load of a student for the module in question. 1 CP corresponds to 30 hours of work including the times of presence at the university, but also the time necessary for preparation, reading, home exercises, learning for the exam etc. A module is a coherent teaching unit about a specific topic that may consist of only one course or combine several courses including lectures, seminars, practical exercises and excursions. Modules can be compulsory or elective.

Each semester on average 30 CP should be accomplished. Over the course of the 4 semesters (2 years) totally 120 CP need to be acquired.

Time scheme

Week 1	2	3	4	5	6	7	8	9	10	11	12	13	14	Concurrent courses or semester break	
1. Semester (Winter semester)															
Concepts of Ecology (Module 401, 3 CP)*	Experimental Design and Data Analysis (Module 402, 12 CP)*					Exam week	Earth Sciences (Module 403, 6 CP)*			Molecular Ecology (Module 404, 9 CP)* + 1 st week of semester break			Current Topics in Ecology 1 & Mentoring (Module 405, 3 CP)*		
2. Semester (Summer semester)															
Population Ecology (Module 411, 9 CP)*				Behavioural Ecology (Module 413, 6 CP)		Exam week	Vegetation Ecology and Conservation Biology (Module 415, 6 CP)		Soil and Ecosystem Ecology (Module 416, 6 CP)		Marine Macroalgae and associated animals (Module 409, 6 CP) Ecological Excursion and Field Course (Module 414/414a, 6/3 CP)				
				Research Project (Module 412, 12 CP)* (The project may be started in any of the blocks or after the teaching term)											
3. Semester (Winter semester)															
Ecophysiology (Module 503, 6 CP)		Microbiology of Terrestrial Ecosystems (Module 507, 6 CP)				Exam week	Grant Proposal and Defense (Module 502, 6 CP)		Spatial Analysis and GIS (Module 504, 6 CP)			Exam week	Introduction to Behavioural Ecology (Module 406, 3 CP) Biodiversity (Module 407, 3 CP) Environmental Risks and Ecotoxicology (Module 408, 3 CP) Current Topics in Ecology 2 & Mentoring (Module 505, 3 CP) Introduction to Ecological Modelling (Module 506, 3 CP; semester break) Coral Reef Ecology of the Red Sea (Module 508, 6 CP; semester break)		
Sustainability Research (Module 501, 6 CP)															
4. Semester (Summer semester): Master Thesis and Defense (Module 510, 30 CP)*															

*- compulsory courses (401-405, 411, 412, 510)

(Research-) Cooperations

Students enrolled at Bremen University are free to also take courses at the University of Oldenburg. Additionally, the biology department holds ERASMUS-exchange agreements with universities in Umeå, Lund, Göteborg, Odense, Trondheim, Oulu, Toulouse and Oviedo, amongst others. Scientific cooperations that might allow for conducting projects or the master's thesis abroad exist for example with universities in Cameroon, Canada, China, Egypt, France, Latvia, Sweden, The Netherlands.

Methods of instruction

Our courses consist of theoretical and practical parts, but also include assisted self-tutoring. The following methods of instruction will be used:

Lectures serve as a way to systemically convey academic knowledge as well as methodical and instrumental skills. They are based on scripts, text books, power-point slides and other materials and further the coherent presentation and reflexion of the topic. The usage of literature, both before and after the lectures, as well as exercise, is essential for comprehension.

Tutorials consist of the independent work through study material, the communication of knowledge and skills and the education concerning field methods. The instructor oversees the tutorial, gives out tasks, checks the actions of the students and leads the discussion. The students train their skills and methods, work on contributions and communicate these.

In comparison to the other types of courses, **seminars** emphasize a more self-dependent kind of scientific work. Complex questions will be developed; presentations of a problem will be considered with scientific methods in alternation between lecture and discussion. The goal is to improve the students' skills in using literature as well as communicating complex contexts, both orally and in writing. Seminars are organized as a chain of lectures, which are held by the students and are discussed by all attendants.

Practical training (co-op programmes and field courses) is an essential part of the education, and serves to gain practical skills and abilities to solve empirical and experimental assignments both in the laboratory and under field conditions. In the co-op programmes the focus lies on the acquirement and appliance of the chosen area's basics.

Field excursions give insights in the occurrences of plants and animals in the ecosystematic context, enhance the knowledge of species and their habitats, and also introduce the possible fields of profession. They are conducted within a module, naturally mostly in the summer terms.

Colloquia include lectures held by both external readers and, less often, tutors of the master's programme "Ecology". As an exception, students of the master's programme will also be integrated. Primarily, colloquia provide the opportunity to get to know researchers and research projects of other universities and non-university institutes.

Assisted self-tutoring consists of the independent work of the students on recommended materials (literature, scripts, programmes for e-learning etc.). In doing so, they are individually supported by the instructors, for example by intensive counsel regarding the focus of the presentation of a problem, by assistance at finding a solution, by the evaluation of first approaches toward a solution and by the mutual identification of the necessary amount of learning of each student. The students are informed when and how they can rely on the active support of the instructors (by announcements in the list of lectures, extended consultation times, net-based help, chat rooms etc.).

These methods of instruction can be presented in various combinations, including the assisted self-tutoring. They will be communicated to the students not later than the start of the term, if they were not appointed in the module description or the list of lectures in the first place.

Restrictions of permission

The study programme had a limited number of study places in the winter semester 2014/15. Please check current information at www.uni-bremen.de/master.

Deadline for application

April 30

January 15 (advanced students only)

Documents required for application

Current admission requirements can be found at www.uni-bremen.de/en/masterportal/master-of-science.html.

Required Documents

1. Application form: complete and signed application form (you will receive a printable application form during the online application process)
2. Official academic transcripts: transcripts of records in English or German from all colleges/universities attended (one certified copy)
3. Academic diplomas: certificate of your high school diploma and of further academic diplomas, if applicable (in English or German; one certified copy of each document)
4. A tabular curriculum vitae
5. Professional experience in the field of ecology
6. Letter of motivation

Notice that your application will NOT be processed if items 1-6 are incomplete or arrive after April 30 (or January 15)!

Additional Documents

Proof of proficiency in English: applicants whose native language is not English or who have not accomplished their previous degree in the English language are asked to submit a proof of proficiency in English at the European level C1 until two weeks after semester start at the latest.

Starting date for new students

October (winter term)

Standard programme length

4 semester

Degree/qualification

Master of Science (M.Sc.)

Instruction language

English

Studies abroad

Every research group in the master's programme "Ecology" has international contacts, which will of course benefit the students and postgraduates as well. Within the scope of the master's programme in ecology, a visit abroad (preferably in the third term) is strongly recommended. For example, the student exchange via the ERASMUS -programme may be used for this.

Number of teachers

18

Number of students in the first semester

Limited to 20

Contact and Advisory

www.ecology.uni-bremen.de

Contact person:

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mdiekman@uni-bremen.de

Advice for international students

Information and advice on housing, working, health insurance, visa and more
Claudia Pellegrino
SFG, Room 0370
Mon, Thu 10–12 a.m., Wed 14–16 p.m.
+49 421 218 60365
claudia.pellegrino@vw.uni-bremen.de

Enrolment Office (Secretariat for Students International)

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Ground floor

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master@uni-bremen.de

www.uni-bremen.de/master

Visiting hours: Mo, Tue & Thu 9–12 a.m., Wed 14–16 p.m.
(no advanced notification necessary)

Office of the board of examiners

University of Bremen

Master of Ecology board of examiners

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zsb@uni-bremen.de

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