



# INTERNATIONAL PROGRAMMES

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# Master's degree

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## **Environmental Sciences**

University of Freiburg • Freiburg im Breisgau

### Overview

Degree	Master of Science in Environmental Sciences
Teaching language	• English
Languages	It is possible to complete the Master's programme entirely in English or German (each with a different elective track) as well as through a combination of German and English modules.
Full-time / part-time	• full-time
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	15 May
Tuition fees per semester in EUR	Varied
Additional information on tuition fees	The tuition fees in Baden-Württemberg apply only to non-EU students (1,500 EUR per semester).
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	The MSc course in Environmental Sciences deals with various aspects of the analysis of environmental change and its impacts on natural systems and human societies as well as with the development of measures to mitigate existing problems and prevent future ones. Aspects of Global Change and its effects on wildlife and biodiversity are covered, as are new approaches towards a sustainable bioeconomy, developing new biomaterials and making more effective use of bioenergy.
	Students can choose between <b>four English-taught majors</b> (and one German major):
	Climate Change Ecology:
	In this major, students will study the impact of climate change on terrestrial ecosystems at local, regional and global scales. Hands-on laboratory and field-based approaches are used to quantify stress-induced changes in plants and ecosystems. The aim is to gain in-depth knowledge on alterations of important ecosystem processes, such as carbon or water cycles. Finally, an
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introduction to earth system modelling approaches addresses these processes at larger scales.

### Wildlife and Biodiversity:

Understanding the ecology and conservation biology of wildlife and biodiversity with a focus on terrestrial ecosystem is the aim of this major. It targets ecological research in a conservation context, but it is also aimed at students interested in the interface between science and its application. Therefore, module contents range from theory and research methods to field work, data analysis and scientific writing.

### **Environmental Modelling and Data Sciences:**

Environmental Modelling and Data Sciences aims at equipping the students with a wide and relevant range of computer-based skills to address research and application challenges in environmental science. Ever-larger data sets from automatised data collections (remote sensing, omics) and large research and public data collections (weather stations, iNaturalist, ebird) require appropriate data science and modelling competences. As these methods are in constant flux, the profile Environmental Modelling and Data Sciences (EMDS) develops fundamental skills in statistics and programming and combines them with concrete studies and analyses.

### Sustainability Assessment and Transformation

This major is a new interdisciplinary track for students who want to build a solid scientific basis for addressing sustainability questions in organisations, communities and societies. You will become an expert in cutting-edge sustainability assessment tools, including material and energy flow analysis, cost benefit analysis, life cycle assessment (LCA), and legal analysis! You will engage in world-class training in systems thinking, critical thinking, and analytical thinking on the above questions. You will learn how to apply models and develop indicators to evaluate innovative business, technical, infrastructural, regulatory, policy, and behavioural solutions for a sustainable future.

### **Course Details**

### Course organisation

The first and third semesters are taught in weekly continuing classes. The second (summer) semester consists of three-week blocks, as it involves excursions and field trips. The fourth semester is reserved for writing and submitting the Master's thesis (30 ECTS).

It is mandatory to do an internship of at least seven weeks (10 ECTS).

Students earn five ECTS credits upon successful completion of each module.

In total, 120 credits are required.

Content of the study programme

### Mandatory Modules (all majors):

- Research Skills
- Multi-Disciplinary Perspectives on Environmental Sciences
- Research in Environmental Sciences

### Specific for Climate Change Ecology:

- Lab-Analysis of CC Impact
- EcoFun
- Environmental Statistics
- Land-Atmosphere Interactions
- Methods in Ecosystem Research
- Experimental Climate Stress Physiology
- Climate Impact Research

### Wildlife and Biodiversity:

- Analysis of Biodiversity Data
- Environmental Statistics
- Biodiversity & Conservation Biology
- Analysis of Biodiversity Data
- Genet. & Genom. Methods in Wildlife Management and Conservation
- Experimental Ecology
- Research in Wildlife Ecology
- Protected Area Management
- Wildlife Behavioural Ecology

### **Environmental Modelling and Data Sciences**

- Environmental Monitoring, Data Analysis & Visualisation
- Environmental Statistics
- EcoFun
- Earth System Modelling
- Remote Sensing & Geoinformatics
- Applied Land Surface Modelling
- Bioinformatics
- Modelling Environmental Systems

### **Sustainability Assessment and Transformation**

- Environmental & Resource Economics
- Material and Energy Flow Analysis
- Supply Chain Modelling
- Systems Thinking, Planning and Transition
- Energy System Transition
- EcoFun
- Sustainability Law and Transformation

### Some Elective Courses (all majors):

- Agroforestry Systems
- Marine Ecology
- Python & GIS
- Environmental Psychology
- Life Cycle Management
- Stable Isotope Ecology
- Economics of Biodiversity and Ecosystem Services
- Water in Drylands

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A Diploma supplement will be issued	Yes
International elements	<ul> <li>International guest lecturers</li> <li>Training in intercultural skills</li> <li>International comparisons and thematic reference to the international context</li> </ul>
Integrated internships	A seven-week internship is an obligatory part of the programme (10 ECTS).
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

## Costs / Funding

Tuition fees per semester in EUR	1,500 EUR
Additional information on tuition fees	The tuition fees in Baden-Württemberg apply only to non-EU students (1,500 EUR per semester).
Semester contribution	<ul> <li>Administrative fee: 70 EUR</li> <li>Contribution to the constituted student body: 7 EUR</li> <li>Contribution to the student union: 103 EUR</li> </ul>
Costs of living	Participants must ensure that sufficient funding is available to finance their participation in a course of study. The average cost of living in Freiburg for one month is currently approx. 850 EUR to 1,000 EUR.  Some details:  Rooms in private accommodation including extra costs: 350 EUR – 700 EUR Rooms in student residences including extra costs: 250 EUR – 550 EUR Private expenses amount to around 350 EUR per month. Health insurance (recommended) is available for approx. 120 EUR per month. Transport: A special student ticket for regional transport costs approx. 89 EUR per semester.  www.studium.uni-freiburg.de/en/counseling/welcome-guide-for-international-students/finance
Funding opportunities within the university	No

# Requirements / Registration

Academic admission requirements	BSc degree or equivalent, above-average in environmental sciences, geosciences, hydrology, biology, forestry, agricultural sciences, nature conservation, landscape planning or a related field
Language requirements	Applicants must provide proof of their English skills on level C1 according to the Common European Framework of Reference for Languages (CEFR): TOEFL Internet-based 100, IELTS 7 or equivalent, Pearson Academic score 76, Cambridge Advanced Certificate or the OOPT.
Application deadline	15 May
Submit application to	University of Freiburg Faculty of Environment and Natural Resources Studienbüro / Sunniva Dahlmühle Tennenbacherstraße 4 79106 Freiburg Germany

### **Services**

### Possibility of finding parttime employment

As a student, you are allowed to work up to 120 days per year and 85 hours per month. A limited number of positions as student research assistants or tutors are available in the department.

### Accommodation

As Freiburg is an attractive city, finding a suitable and affordable place to live can take a little while. The University of Freiburg offers all newly enrolled international students the possibility to apply for student housing via the International Office. In addition to these dormitories, which are run by the Studierendenwerk Freiburg (www.swfr.de/en), several independent residence halls are listed on the university website (http://www.housing.uni-freiburg.de). The Studierendenwerk Freiburg and the International Office also offer a list of available private rooms.

### Career advisory service

The Central Academic Advising Office provides acareer advisory service for students about to graduate or recent graduates trying to decide what to do next. "Strategic career planning" and internship advice are only two examples of the career services the University of Freiburg offers to its students.

Support for international students and doctoral candidates

- Welcome event
- Buddy programme
- Tutors
- Cultural and linguistic preparation

Supervisor-student ratio

1:7

# University of Freiburg



The University of Freiburg was founded in 1457 as a classical comprehensive university, making it one of the oldest institutions of higher education in Germany. Awarded for its excellence in both research and teaching, the university also boasts a long history, with numerous Nobel laureates. Brilliant scholars and creative thinking distinguish it today as a modern, top-notch university, well equipped for the challenges of the 21st century. As an organisation with around 24,500 students, 288 degree programmes, and 6,536 employees (2021), the University of Freiburg is committed to family friendliness, equal opportunities, and environmental consciousness in its day-to-day operations. The structure of the university is multifaceted, ranging from 11 academic faculties – from the humanities and the social and natural sciences all the way to engineering – to 19 research centres. This goes to show that we are a dynamic, large-scale institution with a

diverse educational offering. As studies, research, and continuing education are all an integral part of this offering, we maintain a close relationship with the city and the region as well as with the international academic community. Bilateral partnerships, research projects, joint study courses and memberships in international networks such as the League of European Research Universities (LERU) and of EUCOR – The European Campus are examples of the university's strong transnational relations. All our students, including those from abroad, can take courses at the Universities of Basel (Switzerland) and Strasbourg (France) without having to enrol. Via EUCOR, The European Campus mobility grant, they also receive allowances for travel expenses to their partner institutions.

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### University location

Freiburg im Breisgau is a city in south-western Germany on the edge of the Black Forest. Freiburg was founded by Konrad and Duke Bertold III of Zähringen in 1120 as a free market town – hence its name, which translates to "free town". Freiburg holds a central position in Europe at the trijunction of Switzerland, France, and Germany, and is the city with the most hours of sunshine per year in Germany. It is nestled in one of the oldest cultural landscapes north of the Alps, a location which has had an unmistakable influence on the town. The university plays an essential part in the quality of life in Freiburg; both in the academic sphere and in the perception of the general public, the activities of the university are of central importance. Since its founding, teaching, learning and research have formed an indivisible whole.

With approx. 230,000 inhabitants, Freiburg has a friendly size, offering the safe surroundings of a smaller city whilst at the same time excelling in terms of culture, shopping and infrastructure. Both the inhabitants and the city government of Freiburg attach great importance to ecological values and sustainable development. This "green city" atmosphere influences many aspects of city life – from the numerous cyclists on the streets to cutting-edge solar energy research. Surrounded by the beautiful landscapes of the Black Forest and the wine-growing regions of the Rhine Valley, Freiburg is a popular destination for tourism and leisure activities.

### **Contact**

### **University of Freiburg**

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Course website: https://www.msc-umwelt.uni-freiburg.de/en

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### Editor

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### **GATE-Germany**

Consortium for International Higher Education Marketing www.gate-germany.de

### Disclaimer

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